Submission to Senate inquiry on the Direct Action Plan

Summary

Problems with the Emissions Reduction Fund include:

1. It ignores key implications of climate change science (see pp. 3-6).
2. It ignores Australia's responsibility to lead (see p. 7).
3. Its target is inadequate (see pp. 7-8).
4. It doesn't penalize business-as-usual (see pp. 8-9).
5. It's voluntary so can't guarantee results (see p. 10).
6. It rewards polluters (see p. 10).
7. It's designed to cut emissions intensity, not absolute emissions (see pp. 10-11).
8. Its claimed emissions intensity cuts may not be real (see pp. 11-12).
9. It will weaken the Carbon Farming Initiative (see p. 12).
10. Its focus on least-cost action is short-sighted (see pp. 12-13).
11. It relies on unachievable soil carbon storage (see p. 13).
12. It may allow offsets after all (see p. 13).
13. Its budget cap limits action (see p. 13).
14. It won't attract finance (see p. 14).
15. It's designed by polluting industries (see p. 14).

Problems with the Government's broader climate policy include:

16. It locks in fossil fuel industry growth (see p. 14).
17. It weakens already weak climate policies (see pp. 14-15).
18. It abolishes independent reviews of climate policy (see p. 15).
19. It delays deployment of existing renewable energy technologies (see p. 15).
20. It cuts small island states out of climate talks (see p. 15).
21. It threatens national sovereignty and democracy (see p. 16).

Some criticisms of the Direct Action Plan are unjustified (see p. 16).

The Climate Change Authority Targets Review's draft report is flawed (see p. 16).

Australia needs a real direct action plan (see pp. 16-18).

- Although the carbon tax is deeply flawed, it should be repaired, not repealed (see pp. 17-18).

About Me

I am a student and blogger with no vested interests or affiliations. I write a blog about climate change politics (www.precariousclimate.com). I have also written for www.skepticalscience.com among other blogs. My interest in this Senate inquiry relates to its implications for Australian mitigation of anthropogenic global warming.

Known information about the Government's climate policies

This section outlines what is known about the Government's proposed climate policies. This section should not be read as an endorsement of those policies, merely as a neutral description to provide context for my (almost entirely critical) evaluation in the rest of this submission.

Emissions Reduction Fund

Based on the Emissions Reduction Fund Green Paper[1] and other Coalition/Government sources, I understand the planned design of the Fund to be as described below.

Crediting emissions reductions

The Emissions Reduction Fund is a voluntary incentive-based market mechanism intended to deliver the cheapest possible emissions cuts. It will begin in 1 July 2014 and is intended to cut Australia's emissions 5% below 2000 by 2020. The Fund will financially reward polluting companies (and other entities, including organizations aggregating small projects) who voluntarily act to avoid emitting CO_2 they otherwise would have emitted. It can be understood as a sort of reverse carbon price: instead of setting a mandatory penalty which polluting companies pay the government, it will give polluters incentives to voluntarily avoid emissions.

More precisely, the Fund will purchase carbon credits representing government estimates of avoided emissions relative to a counterfactual baseline of business-as-usual growth based on historical emissions intensity. This baseline-and-credit approach is similar to the Kyoto Protocol international offset mechanisms to which Labor's emissions trading scheme (ETS) would have been linked, except that Emissions Reduction Fund credits are expected not to be routinely tradable (though the Green Paper suggests trading or offsetting could occur in some circumstances). The Green Paper's guidance on how baselines and additionality will be determined is too complex to be summarized here, and will be discussed in other sections of this submission.

The Fund will be administrated by the existing Clean Energy Regulator (CER). It will measure emissions using the existing National Greenhouse and Energy Reporting System. It will adapt the existing Carbon Farming Initiative (CFI) by expanding it to cover all sectors of the economy and possibly weakening its rules. Its methods of verifying emissions cuts will be advised by the existing Domestic Offsets Integrity Committee (with the Government having final approval), and existing CFI methods will continue to apply. Delivered emissions cuts will be credited with Australian Carbon Credit Units (ACCUs).

Purchasing emissions reductions

Polluting companies and other entities applying for funding will make bids at regular reverse auctions, and CER will select the lowest-priced projects. CER will sign standardized contracts, with a maximum duration of five years, guaranteeing a payment rate per tonne of CO_2 emissions avoided. Payments will be made only after the promised emissions intensity reductions are delivered. Contracts will include provisions to monitor delivery, flexibility to vary amount and timing if implementation is delayed, and requirements for any recipients who fail to deliver to "make good", probably by buying offsets.

The Fund will not be allowed to exceed an annual budget: $300 million in its first year, followed by $500 million, $750 million, and $1 billion per year from then on. There could also be budget caps for

each individual auction, and CER will have a secret benchmark price above which bids will not be considered.

Safeguarding emissions reductions

A safeguard mechanism will be designed to discourage emissions intensity growth by companies outside the Fund which threatens to cancel out its reductions. It will not be a financial penalty for pollution; it may be a requirement to buy offsets. The safeguard will apply only in the extremely unlikely case of a company's emissions exceeding its baseline, and not even then for new companies or significant business expansion. The safeguard will not begin until 1 July 2015, to allow time to consult with polluting companies on how to design it.

Other climate-related policies

The Government proposes numerous measures beyond the Emissions Reduction Fund, including a phase-out of HFCs; One Million Solar Roofs by 2023; 125 community renewable energy projects; reserving part of the RET for emerging technologies; voluntary energy efficiency targets for energy-intensive businesses; a "Green Army" to plant 20 million trees; and investigating thorium as a potential future energy source. Internationally, it is deprioritizing UN climate talks, and says it will instead lobby the US, EU, China, and India (the "G4") to negotiate agreements to cut emissions in specific sectors, particularly forestry. A review in late 2015 will design a post-2020 stage of the Direct Action Plan, which is intended to continue the approach of the Emissions Reduction Fund for the next 20 years.[2]

The Government seeks to repeal the carbon tax, Clean Energy Finance Corporation (CEFC), and Climate Change Authority (CCA). It claims to support the present Renewable Energy Target (RET) of 41,000 GWh by 2020, yet it will be reviewed, possibly by Productivity Commission who will almost certainly recommend scrapping or reducing the RET.[3]

The Government is expanding fossil fuel industries by fast-tracking coal mine approvals, and promoting coal seam gas development with a "use it or lose it" permit policy. It even aims to restore the profitability of coal-fired power stations.[4] It aims to reverse the World Heritage listing of Tasmanian forests, and spend billions of dollars building new roads. It is already well into the process of delegating its environmental protection powers to state governments. And in free trade negotiations the Government is offering to sign up to investor-state dispute settlement (ISDS).[5]

15 problems with the Emissions Reduction Fund

1. It ignores key implications of climate change science

Although the Government professes to acknowledge the basic science of human-caused global warming, their policy ignores the full implications of the science, in particular the dire situation revealed by the latest science, the extremely urgent need for rapid cuts in global greenhouse gas emissions, and the need to leave most of the world's fossil fuel reserves in the ground.

Global warming is more evident than ever

The recently released Working Group I (WGI) instalment of the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC) concluded in its Summary for Policymakers (SPM)[6], which was vetted line-by-line by the Australian Government, that human-caused global warming is more evident than ever.

There is overwhelming evidence (convincing 97% of climate experts[7]) that CO_2 emissions from fossil fuel burning warm the Earth. Humans have caused around 100% of global warming since 1950.[8] The

atmosphere continues to warm, despite misleading claims of a "pause" based on cherry-picked data. A recent study found that when satellite measurements are used to account for a lack of weather stations in the Arctic, the global surface temperature has continued rising at the same rate since 1997 as since 1951.[9] This continued warming is within the range of model projections and despite a cooling influence from natural factors such as ocean cycles. In any case, the atmosphere is only one part of the climate system; most of the heat from global warming goes into the oceans. The heating of the oceans, the rise of the seas, and the melting of ice have accelerated, in the latter case faster than predicted.[10] In total, the Earth has accumulated 2 trillion Hiroshima atomic bombs' worth of heat since 1998.[11]

At just 0.8°C global warming above preindustrial levels, Australia is already experiencing increases in heatwaves, floods, droughts, and bushfires that are costing lives, as the Climate Council's reports have shown. Those who spread confusion about climate like to emphasize that no single event can be definitively linked to climate change. It's true we can't say whether global warming caused a single hot day, just as we can't say tobacco smoking caused a single case of lung cancer, but in both cases we know it dramatically worsens the odds.

There is an established causal link between global warming and increases in many types of extreme weather. An increase in average temperature increases extreme hot weather. The increase of energy in the climate system also causes the water cycle to intensify: more water evaporating from the ground; more water being held in the air; more water falling as rain. The combination of hotter temperatures and drier soils leads to more frequent and worse bushfires. All the extreme weather we experience today is occurring in the context of a climate system warmer than it was 50 years ago.

Other oft-heard platitudes are that extreme weather has always occurred naturally, and that we still sometimes have days that are colder than average, but again these things prove little. Fires happen naturally, but that doesn't mean they can't be lit by arsonists. And cold days don't contradict a warming trend, just as an athlete taking steroids will improve their average strength and break more records but still have moments of weakness.

Mounting evidence shows global warming is already dangerous

The IPCC's conclusions are very conservative due to the cumbersome, bureaucratic, time-consuming, consensus-based process through which its reports are produced. The latest climate science shows scientists have systematically underestimated the impacts of global warming (possibly because they have overcorrected in response to accusations of alarmism).[12]

There is mounting evidence, either not included or not emphasized in AR5, that the present atmospheric CO_2 concentration of 400 ppm (which means there is further warming to come due to inertia[13]), and even the present global temperature of 0.8°C, are already too high to avoid tipping points for dangerous climate change:

- AR5 projections for Arctic sea ice melt (from simulations published a few years ago) have already been exceeded by real-world observations.[14]
- Whereas AR5 refers to the shrinking *extent* of Arctic sea ice, the much greater 80% reduction in its *volume* since 1979 suggests the Arctic in September could be sea-ice-free within a few years.[15] [16]
- An ice-free Arctic Ocean, by reversing the surface reflectivity of the northern polar region, threatens to set off a chain reaction of tipping points, including large-scale release of carbon from melting permafrost and collapse of the Greenland ice sheet.[17]

- It has recently been observed that permafrost is starting to thaw and emit carbon.[18]
- If the observed exponential acceleration of ice sheet mass loss continues, it would lead to several metres of sea level rise by 2100.[19]
- The last time the global temperature was ~1°C above preindustrial (in the last interglacial age 125,000 years ago), the poles were several degrees warmer[20], there was no summer sea ice in the Arctic[21], and sea level was 6-9 meters higher.[22] [23]
- AR5 estimates of climate sensitivity (and thereby projections for global warming and sea level rise) ignore evidence from the paleoclimate record indicating that even the present CO_2 level and global temperature could set off large unmodelled amplifying feedbacks; and that a doubling of CO_2 is associated with long-term warming much higher than 3°C and long-term sea level rise of tens of metres.[24]
- AR5's 270 GtC carbon budget does not account for a global temperature target safer than 2°C, a higher chance of achieving the target than 66%, the warming effect of cutting aerosol pollution, or permafrost carbon release.[25]

The above evidence implies it is necessary to reduce atmospheric CO_2 from its present level to prevent large feedbacks that could send climate change spiraling out of control. Because of the long lifetime of CO_2 in the atmosphere, to even begin to reduce its concentration humanity would need to rapidly cut global fossil fuel emissions to near-zero.[26] A safe level of CO_2 has been estimated as somewhere below 350 ppm, associated with ~1°C global warming above preindustrial.[27] That goal corresponds to a global fossil fuel emissions budget for 2012-2050 of just 136 GtC (500 Gt CO_2, or about 14 years of global emissions at the current rate), followed later this century by a global effort to remove at least 100 GtC (367 Gt CO_2) from the atmosphere.[28]

Political implications of climate change science

Human-caused global warming is arguably the greatest threat facing humanity today. It is impossible to predict the exact social impacts of climate change, but it is not difficult to imagine resource wars and unprecedented migrations of hundreds of millions of people. Many climate scientists express fears that the impacts of several degrees of global warming would be incompatible with the survival of human civilization as we know it.

It is therefore incongruous to treat climate change as one of many competing priorities. If greenhouse gas emissions are not adequately addressed, the resulting impacts will almost certainly outweigh all other attempts to make a better world. Because of this, the goal of climate change mitigation must override other objectives such as growing the economy, reducing electricity prices, protecting Australian industries, protecting jobs, cutting government spending, reducing regulation, removing trade barriers, or even improving the environment in ways unrelated to climate change.

The political implications of climate change science could hardly be clearer. The policy decisions made in this decade will determine the extent of global warming decades, centuries and millennia into the future. The vast majority of the Earth's known fossil fuel reserves must be left in the ground, even just to have a good chance of limiting global warming to the unsafe target of <2°C.[29] Humanity urgently needs to phase out global greenhouse gas emissions as quickly as possible. It is most important and urgent to phase out fossil fuel CO_2 emissions, because they are the largest and longest-lived cause of anthropogenic global warming. Given carbon capture and storage technology is unlikely to be deployed on a global scale for decades[30], this entails a global phaseout of fossil fuels. Governments must act now.

Because the effect of emissions is cumulative, it makes most sense from a climate point of view to cut global emissions steeply at first and then level off. Staying within a 140 GtC carbon budget with a steep start would involve cutting global fossil fuel emissions by 6%/year beginning in 2013.[31] If the world delays until 2020, the required emissions reduction rate would become 15%/year; a rate of 6%/year beginning in 2020 would result in CO_2 remaining above 350 ppm until 2300. At some point the required cuts become so steep they are impossible.

Governments should also seriously consider geoengineering to remove CO_2 from the atmosphere on a large scale and/or directly cool the planet, to keep the Earth from crossing the treacherous tipping points upon which it appears to be poised. However, given the myriad hazards of geoengineering techniques, they must be used only as a stopgap to treat the symptoms it is too late to prevent. The possibility of geoengineering must not be seen as an excuse to avoid prioritizing urgently phasing out fossil fuels.

Although the Government says it accepts the science, its approach seems to lack this sense of urgency.

Our present course leads to catastrophe

Global climate action is not happening at anywhere near the required scale and speed. CO_2 is now rising by ~2 ppm/year[32] and emissions are still accelerating: annual global fossil fuel CO_2 emissions have risen 61% since 1990.[33]

Australia cannot rely on United Nations Framework Convention on Climate Change (UNFCCC) negotiations to solve global warming. Those talks have delayed a possible global climate agreement until 2020 at the earliest[34] (and even then it is far from certain to be a globally binding regime[35]), relying almost entirely on voluntary pledges for the entirety of this decade. Present pledges (assuming they are successfully implemented, which is not happening[36]) put the Earth on course for an unimaginably catastrophic >4°C global warming by 2100 (plus potentially large feedbacks and post-2100 warming).[37]

In light of the mounting evidence that even 1°C of global warming is dangerous, it would be extremely reckless for the Government to be complacent about the world's present path to >4°C. Human civilization is unlikely to be able to adapt to anything like that level of global warming.[38] There is no precedent in human history: global temperature has varied only a few tenths of a degree during the relatively stable climate of the past 10,000 years in which human civilization developed, though even such small global variation sometimes produced local climate changes large enough to cause or contribute to the demise of local civilizations.[39] When the Earth was 5°C cooler 20,000 years ago, northern Europe and Canada were covered by ice sheets. The globe has not been multiple degrees warmer since prior to the evolution of the human species.

A recent book outlines the devastating impacts on Australia of this level of warming. The record-breaking heat of summer 2012-13 would become the new normal by 2030 and be considered an unusually cold summer by 2080. Melbourne's climate would become like inland southern NSW with up to 35% less rainfall. Northern Australia would shift to a climate non-existent on Earth. Heat deaths would increase, and the healthcare system is likely to collapse. There would be mass extinction of species; coral reefs would be long dead. Hotter and drier weather would dramatically reduce crop yields.[40]

By 2300 global temperature could rise up to 12°C, making about half of the Earth's inhabited land area simply too hot for humans to survive outdoors.[41]

2. It ignores Australia's responsibility to lead

The UNFCCC principle of "common but differentiated responsibilities"[42] obligates the world's richest and highest per-capita emitters to show leadership. Australia is a developed country which has emerged well from the global financial crisis. Its greenhouse gas emissions are the 15th largest in the world and the highest per capita in the OECD. Its cumulative historical emissions are the 14th highest in the world.[43] Its emissions excluding LULUCF have risen 32% since 1990 (ie. during a period when harm was foreseeable).[44] Australia is also the world's largest coal exporter. Australia's wealth and high responsibility for emissions oblige us to act faster than the global average.

It is unfair, undiplomatic, and counterproductive for Australia to make targets more ambitious than 5% conditional on the actions of other countries, particularly poorer countries. If all countries wait for others to lead, nobody ever will. The UNFCCC principle of "common but differentiated responsibilities" obligates the world's richest and highest per-capita emitters to show leadership. Moreover, Australia's long list of specific conditions are highly unreasonable and unlikely to ever be fully met. Poor countries are unlikely to ever be impressed by conditional emissions targets from Australia, let alone targets so weak and conditions so demanding from a country which has flouted its responsibility to lead for two decades. If a given target is justified, then Australia should adopt that target regardless of international action.

Conditional targets are not an effective way of driving global ambition; if anything, they are making global ambition less likely, by antagonizing countries who rightly expect Australia to act responsibly. Australia's conditional targets have failed to incentivize other countries to raise their ambition, as those targets have now been on the table for over four years and there has been no significant movement from other countries. The world's governments are scheduled to agree ambitious 2020 targets in 2014, and post-2020 targets in 2015. Disturbingly, despite the need for rapid emissions cuts before 2020, governments seem to be forgetting to raise pre-2020 ambition and instead focusing on post-2020 targets. If Australia continues to insist on a weak target for itself, it will contribute to the global institutionalization of inadequate action until 2020 or beyond.

Leadership is required to break the international deadlock and generate momentum for global action on the necessary scale. Thus the abysmal state of global action, far from being an excuse for inaction, is a reason for Australia to act ambitiously, unilaterally, and unconditionally – not in 2015 or 2020 but now, when it matters most, in what is supposed to be the year of ambition. Australia should be a leader, not a follower.

3. Its target is inadequate

The Government is aiming for the former government's emissions reduction target of 5% below 2000 by 2020, and its 2015 review looks set to delay stronger targets until post-2020. Instead of raising the 2020 target as is urgently needed, the review will focus on *post*-2020 targets and base its decision on the level of international action. This is completely inappropriate considering the situation outlined in the above two sections.

The former government's choice of a 5% target was based on Garnaut's "modified contraction and convergence" framework, which unfairly favors Australia by allowing Australia to maintain its high per-capita emissions for decades, rewarding Australia for its past failure to cut emissions, and

rewarding Australia for policies promoting rapid population growth.[45] The CCA Targets Review's draft report uses essentially the same unfair approach as Garnaut. In reality, 5%-by-2020 is ludicrously inadequate; Tony Abbott himself has described it as "crazy".[46] Just because the former government adopted a 5% target does not mean the Government should continue their incompetence.

Because of the urgency of rapid emissions cuts, Australia must adopt a near-term near-zero emissions target and a reduction trajectory fast enough to require large and systemic progress within a single electoral term in transitioning from the fossil fuel economy to a zero-carbon one. For example, the former government's 80%-by-2050 target could be brought forward to 2020. This would accelerate the pace of decarbonization and ensure the Government will have made meaningful progress by the next election.

The Green Paper indicates that Australia's surplus credits from the Kyoto Protocol's first commitment period will be used to meet the 2020 target. Not only will this displace future emissions cuts, it unfairly rewards Australia for having demanded an emissions growth target in Kyoto, and "achieved" that target with dubious accounting in LULUCF (land use, land use change, and forestry) without meaningfully reducing its contribution to climate change.[47] Instead these surplus credits should be cancelled.

The Government's present target is relative to a baseline of emissions levels in the year 2000 and includes LULUCF. But it would be much fairer to make 1990 the base year and exclude LULUCF from the main target, so that Australia is not rewarded for the failure of past governments to cut emissions (during a period when harm from emissions was foreseeable).[48]

Furthermore, the Direct Action Plan is highly unlikely to meet its target (let alone a more ambitious target), because of all the reasons described below.

4. It doesn't penalize business-as-usual

The Fund contains no penalty for continuing with business-as-usual (note the safeguard mechanism will only apply *above* business-as-usual, if at all). Yet if the world continues along a business-as-usual emissions growth trajectory, it will cause an unimaginably catastrophic ~6°C of global warming by 2100. It is unacceptable not to mandate a change of course.

Alleged costs of climate action versus costs of climate change

The Government's focus on minimizing the costs of climate action represents a failure to understand climate change is an urgent crisis. The Government appears to design climate policy to promote Australia's national interest, equate the national interest with short-term economic competitiveness, and equate short-term economic competitiveness with fossil fuel mining and export interests. But the scale of the climate change threat means Australia's true national interest is not in low-cost climate policy to protect the fossil fuel industry, but in phasing out fossil fuels to prevent dangerous climate change. Therefore climate policy must not be subordinated to the mistaken goal of protecting the fossil fuel industry.

Governments have a long history of overestimating the costs of climate action and underestimating the costs of climate change. Many of the massive costs predicted by the Liberal Party and other critics of the carbon tax have not transpired (eg. Whyalla has not been wiped off the map). This goes

to show the apparent costs of climate policies are greatly exaggerated. To the extent that the costs are real, they are short-term and mainly paid by polluting companies.

In contrast, the external costs of CO_2 emissions are greatly underestimated, long-lived, and paid by everyone. Most of the costs of climate change are long-term, unquantifiable, worst-case, and non-market costs, which are not included in cost-benefit analyses of climate action like that of the Garnaut Review.[49] Furthermore, many cost-benefit analyses use high discount rates to estimate the future costs of climate change, which effectively devalues the lives and living standards of future generations and young people like myself.[50] The true external cost of CO_2 emissions could be far higher than the current carbon tax of $24.15/tonne, so high that practically any measures to move to a zero-carbon economy are worth taking.[51]

The main contributor to Australian electricity price rises has been gold-plated investment in transmission and distribution, not climate policies.[52] In contrast, climate change can be expected to cause massive increases to the cost of living, particularly food prices.

Continuing to rely on fossil fuels would damage Australia's future competitiveness. The fact that most fossil fuels are unburnable implies the global economy contains a "carbon bubble". The valuation of fossil fuel companies is based on the assumption that their reserves will be burned. If humanity wishes to avoid global catastrophe, that bubble must burst. When it does, more than $20 trillion worth of fossil fuel reserves will become stranded assets and the companies' value will plummet.[53] Environmentally unsustainable investments are ultimately also economically unsustainable. Those countries least reliant on fossil fuels will be most competitive in the future.

Because continuing to rely on high-emitting industries will damage Australia's competitiveness in the long run, the alleged short-term impact of Australian climate policies on national competitiveness should not be a major concern. Concerns about job losses should be addressed by assisting employees to transition into green jobs, not by refusing to take strong climate action.

The contribution of fossil fuels to the Australian economy is overblown. Only 0.3% of Australian jobs are in coal mining. The majority of mining industry profits either go overseas or benefit only a small minority of Australians. The mining boom is driving up the Australian dollar and thereby destroying other industries. The mining sector did not prevent a recession as is popularly believed, but in fact went into recession itself in 2009.[54] Anyway, the relative importance of sectors in the Australian economy has always changed over time.

Claims (eg. by business groups) that climate policies would cause economic losses usually turn out to refer merely to slower economic growth. Even phasing out Australia's coal exports would merely cause Australian GDP to double by 2031 instead of by 2030[55], paling in comparison to the impacts of the several degrees of global warming associated with continuing demand for those exports. Concerns about the effects on developing countries can be addressed by providing those countries with funding and technology to develop sustainably, whereas the effects of continuing to supply the world with fossil fuels will hurt the poorest worst of all.

The reality is that Australia has the capacity to act on climate change. Australia has vast renewable energy resources. It is possible for Australia to achieve 100% renewable energy by scaling up existing technologies,[56] a result recently confirmed by the Australian Energy Market Operator (AEMO).[57] The prices of renewables are falling exponentially as they are deployed, and can be further reduced by scaling up deployment, whereas the prices of fossil fuels will ultimately rise as more countries price carbon and because they are non-renewable resources. The rapidly falling prices of renewable

energy technologies make it now much easier to cut emissions than was believed just a few years ago. Australia can exit the fossil fuel business and instead export renewable energy technologies to the world.

5. It's voluntary so can't guarantee results

A voluntary policy by definition cannot guarantee results. The Howard government's voluntary policies failed to achieve anything significant. In addition to not penalizing business-as-usual as noted above, the Fund offers no requirement for businesses to participate; no upfront incentive to participate; no way of knowing if contracts will result in delivery of action; and no guarantee that any emissions cuts will take place.

6. It rewards polluters

Not only does it not penalize polluters, the Fund actually rewards them if they slightly reduce their emissions. As those reductions are unlikely to be meaningful (as discussed below), in effect this is a financial reward for the bad behaviour of fossil fuel industries over the last 25 years (a period when harm from emissions was foreseeable), and thus a perverse incentive for industries to behave the same way in future.

7. It's designed to cut emissions intensity, not absolute emissions

Despite the Government's stated aim to cut Australia's absolute emissions 5% by 2020, the Fund is not actually designed to cut emissions. It is explicitly designed to allow the fossil fuel economy to continue growing along a business-as-usual trajectory, while encouraging voluntary reductions relative to historical levels of emissions *intensity* (emissions per economic output).

Offering incentives for emissions intensity reduction, instead of reduction in absolute emissions levels, is essentially pointless. Emissions intensity will fall automatically even if emissions rise[58]; it would be unusual for emissions intensity to *not* decrease. Efficiency tends to improve naturally as technology improves; the problem is that those efficiency gains are being cancelled out by the exponential growth of the fossil fuel economy. The Government itself implicitly acknowledges this when it says Australian businesses have already halved their emissions intensity during the last two decades, because during that period Australia's absolute emissions increased.[59] Rewarding businesses for what they are already doing is not enough: climate change requires urgent action on a far grander scale.

As of the Green Paper stage, it is unclear to what extent emissions intensity will be used to set baselines, and exactly how those baselines will be determined. The Government intends to consult closely with polluting companies on these details. However, it appears that emissions intensity baselines will effectively apply to most or all of the credits issued by the Fund, and for the entirety of the safeguard mechanism.

Baselines for activity-based credits

The Green Paper proposes two types of methods for assessing emissions reductions, one set for specific activities and another set for aggregating emissions cuts from multiple activities at large facilities. Activity-based methods will copy aspects of methods used in international schemes. It is unclear what kind of baselines these will use.

Baselines for facility-based credits

Presumably, the largeness of "large facilities" means they are likely to contribute the bulk of emissions cuts, and thus the methods for assessing their claims are more important. On the surface the Green Paper suggests the facility-based methods will use historical absolute emissions as their

baseline, but on closer examination it becomes clear those baselines will not apply to new facilities or facility expansions. Also, if a business's emissions have declined for non-technology-related reasons, their baseline will be normalized to allow them to regrow to their earlier size. In other words, emissions will be allowed to increase wherever production increases. Effectively, this means facility-based credits will represent merely reductions in emissions intensity.

The period for calculation of historical emissions levels will be periodically reset at the end of a crediting period. This would be a good thing if emissions are actually decreasing. However, given the unlikelihood that the Fund will actually cut emissions, this is likely to result in ever more generous baselines.

Baselines for safeguard mechanism

The Green Paper canvasses safeguard baselines based on either historical emissions intensity or historical absolute emissions levels. But either way, similarly to facility-based credits, safeguard baselines will account for temporary economic downturn by using a high point in historical emissions, and will not apply to new investments as long as they are at "best practice" emissions intensity. "Best practice" will not be defined as zero- or low-carbon, but relative to other facilities within the industry. Again, the effect is to allow emissions to increase wherever production increases. All this makes it very unlikely the safeguard mechanism will come into play.

8. Its claimed emissions intensity cuts may not be real

The above section shows that any claimed emissions reductions will be defined and measured relative to business-as-usual emissions intensity instead of in absolute terms. It will be hugely problematic to ensure they would not have happened anyway. Yet surely the whole point of an Emissions Reduction Fund is to fund actions that wouldn't have taken place otherwise. I do not understand how the Government would add up the emissions-intensity-reducing actions funded by the Fund to ensure they achieve an absolute emissions reduction of 5% by 2020 (let alone a more ambitious target). The target seems to be an aspirational goal, completely disconnected from the design of the policy.

The Green Paper is confusingly vague (and possibly contradictory) on how additionality will be determined. According to the Green Paper, emissions reductions willnot be counted as additional if they are mandated by law, already paid for or counted by another government program, caused by economic decline, or occurred before the beginning of the Fund. This is all good in theory, but the question is how well these rules will work in practice, especially considering they will be negotiated with polluting companies. The process is likely to involve very complex calculations which would create a breeding ground for fraud and creative accounting, similar to international offset mechanisms. Under a policy using such methodologies, actions which add up to the 5% target on paper may not add up in reality. As Malcolm Turnbull once explained:

> Arguments, of considerable ferocity, will arise as to whether a new piece of equipment would have been bought anyway with the risk that the Government ends up funnelling billions of dollars to companies to subsidise their profits without achieving any real additional cuts in emissions… Industries and businesses, attended by an army of lobbyists, are particularly persuasive and all too effective at getting their sticky fingers into the taxpayer's pocket.[60]

Moreover, there are indications elsewhere in the Green Paper that in some circumstances the Fund might pay for actions that would have happened anyway. The Fund may subsume ACCUs from existing CFI projects. Credits could be generated from voluntary actions not contracted by the Government. The Government intends to minimize the administration costs of additionality-estimating methods, which could lead to cutting corners. The Green Paper considers it too difficult to determine whether projects would have been commercial without the Fund's support. And the expectation of the Emissions Reduction Fund may be creating a perverse incentive for businesses to postpone greenhouse-gas-reducing investments because of the potential of government support.[61]

9. It will weaken the Carbon Farming Initiative

The Green Paper canvasses weakening CFI verification requirements. Its proposals include abolishing the CFI's approach to establishing additionality, reducing auditing requirements, reducing consultation periods, and reducing the permanence requirement from the present 100 years to merely 25. The latter is explicitly intended to allow the carbon-storing land to later be used for farming and deforestation. In such cases, both the carbon stored in the land and the CO_2 emissions it was supposed to be offsetting would end up in the atmosphere, rendering the entire exercise pointless.

10. Its focus on least-cost action is short-sighted

The Government should not limit itself to abatement that is apparently least-cost. Maximizing the scale, pace, and effectiveness of climate action is far more important than limiting the costs of action. Effective climate policies that mitigate enormous costs from climate change are preferable to climate policies that are cheap and ineffective.

A Fund designed to select the cheapest available abatement risks treating non-equivalent types of emissions and abatement as equivalent, and is unlikely to deem the most important places to cut emissions as the cheapest. In many cases a source of emissions cuts which appears cheap can be less credible or less significant than one with a higher upfront cost. Contribution to the long-term structural change required to decarbonize the economy should be prioritized over short-term low-cost abatement. It is most important and urgent to phase out fossil fuel CO_2 emissions, the largest and longest-lived cause of global warming.

It is not clear whether the Fund will target greenhouse gases other than CO_2. Phasing out short-lived greenhouse gases such as HFCs is important but should not be considered equivalent to reductions in long-lived fossil fuel CO_2 emissions; the former are more powerful at trapping heat but do not linger in the atmosphere for as long as the latter.

Potential sources of emissions cuts

The Government's estimates of emissions reduction opportunities apparently rely mainly on business estimates. The "opportunities" for emissions cuts outlined by the Government include soil carbon, conversion of coal power stations to natural gas, switching to gas more broadly, energy efficiency and green buildings, electricity generation from native forest biomass and waste coal mine gas, forestry, landfill, composting, recycling, transport fuels, cogeneration, trigeneration, thorium, carbon capture and storage (CCS), and more.

Many of these are of highly dubious merit in the context of the urgent need for rapid emissions cuts. Investment in new gas-fired electricity generation would be a terrible mistake, because it would lock

in new fossil fuel infrastructure with a lifetime of decades.[62] The same goes for cogeneration and trigeneration. Waste coal mine gas and native forest biomass are waste products of coal mining and deforestation respectively, so their use as energy sources arguably incentivizes those activities. There is no time to wait for new energy technologies such as thorium or CCS, which will not be deployed for decades. Even if CCS works, it shouldn't be used as an offset for ongoing emissions but for net removal of CO_2 from the atmosphere. Energy efficiency is positive, but can be cancelled out by growth in production and does not address the fundamental problem that most of Australia's energy currently comes from fossil fuels.

Perhaps most problematic of all is soil carbon, discussed in the section below.

11. It relies on unachievable soil carbon storage

The Government (in its 2010 Direct Action Plan policy document) has budgeted for 60% of the Fund's target to be met by sequestering carbon in soils, yet experts say the Government has dramatically overestimated the potential for soil carbon storage[63] and underestimated the cost of doing so.[64] Anyway, land carbon storage (in forests as well as soils) is impermanent and no substitute for urgently phasing out fossil fuel CO_2 emissions which will stay in the atmosphere for millennia.[65]

12. It may allow offsets after all

Despite the Government's public assurances that international offsets will not be used to meet Australia's emissions target, the Green Paper in several places suggests allowing polluters to buy either domestic or international permits as an alternative to cutting their own emissions.

I agree with the Government's pre-election argument that international offsets should not be allowed because they allow Australia's domestic emissions to go up instead of down.[66] As Tony Abbott said, this would be "shirking our environmental duty".[67] In a pre-election speech, Greg Hunt listed several reasons not to allow international offsets.[68] Not only do international offsets have similar additionality issues to the Emissions Reduction Fund, they also delay systemic economic decarbonization in Australia and unfairly shift the burden of Australia's target onto other countries, making a mockery of the (already misguided) notion that Australia is doing its fair share. Australia's targets must be met by action within Australia's borders.

13. Its budget cap limits action

Several analyses have found the Fund would need to spend up to $35 billion more than budgeted to meet even just the 5% target (let alone a more ambitious target).[69] [70] Under optimistic assumptions, the Climate Institute projects emissions would *rise* 10% by 2020.[71] Even the Government's own (pre-election) estimates of total tonnes avoided, total cost, and cost per tonne avoided do not add up.[72] Given the Fund's costings depend on achieving 60% of its abatement through soil carbon, and the Government's other intended sources of emissions cuts are unlikely to take up the slack[73], it is difficult to see how the Fund could make genuine absolute emissions cuts without going over budget. Also, it is incongruous that the timeframe of funding has not been accelerated since the 2010 election despite the fact that the target date is three years closer.[74]

The Government's confidence that it has budgeted enough money seems to be based solely on assurances from polluting companies eligible for support from the Fund. Such assurances are not reliable, particularly since the price of carbon credits from the Fund will be set by the market so

companies may be able to game the price. Thus a strict budget cap will make it extremely unlikely that much emissions reduction will take place, unless the Government introduces significant new regulatory measures additional to the Fund.

14. It won't attract finance

There is a large question mark over whether five-year contracts will be sufficient for projects to attract finance.[75] [76]

15. It's designed by polluting industries

The Green Paper is filled with references to consultation with polluting industries who will benefit from the Fund, and very little evidence of consultation with anyone else or any attention being paid to the various independent analyses showing the Direct Action Plan won't work. Almost all members of the recently announced Expert Reference Group are corporate executives or lobbyists.

Because of the need for their product to be urgently phased out, fossil fuel industries cannot be trusted to participate in the design of climate policies. Misleading, self-serving arguments will be made to the Senate by the fossil fuel lobby and the broader business lobby. While it could be argued these organizations have a right to lobby in their self-interest, their interests should not be put ahead of the public interest. They have known for many decades about climate change and the risk it poses to fossil fuel investments, and they should now face the consequences of the investment choices they have made without special treatment by governments.

There is a treaty banning the tobacco industry from influencing health policies.[77] Given that the impacts of the fossil fuel industry are far more devastating, they should be subject to a similar ban on political influence.

6 problems with the Government's broader climate policy

16. It locks in fossil fuel industry growth

As explained earlier in this submission, most of the Earth's fossil fuels cannot be burned if we are to stabilize the climate. Yet the Government intends to vastly expand fossil fuel mining and exports, make coal power plants profitable again, and drive investment in gas-fired power stations.

Emissions from the burning of fossil fuel exports are Australia's largest contribution to climate change, dwarfing its domestic emissions.[78] In a world where national emissions targets do not add up to a safe global target, Australia shares ethical responsibility for these exported emissions. Demand for Australia's planned fossil fuel export growth depends on an emissions scenario leading to an unimaginable catastrophic >4°C global warming.[79] As well as the emissions overseas from when fossil fuel exports are burned, fossil fuel export growth is also the main reason for the projected increase in Australia's domestic emissions.

17. It weakens already weak climate policies

The former government's climate change and environment policies were already completely inadequate compared to the scale of the climate crisis, allowing Australia's domestic emissions to rise and fossil fuel exports to expand. Now is the worst possible time to dismantle climate policies because they urgently need to be *strengthened* (see "Australia needs a real Direct Action Plan").

Implications of the repeal bills

If my understanding of the Carbon Tax Repeal bills is correct, implications include:

- The repeal bills remove the requirement to legislate an emissions target. While ETS caps are potentially problematic because they create property rights for pollution and thus could limit ambition, it is also problematic to have no legislated target at all.
- Leftover free carbon units could deliver windfalls to polluting companies.
- The repeal bills and Direct Action Plan may remove or weaken requirements to report emissions. (The Green Paper suggests quadrupling the reporting threshold from 25,000 to 100,000 t CO_2/year.)
- If the carbon tax is repealed and the Government is unable to implement the Direct Action Plan, Australia would be left with no climate policy (except the RET, which is up for review).

For more details, see my submission to the Carbon Tax Repeal Exposure Draft Legislation.

18. It abolishes independent reviews of climate policy

The repeal legislation includes the abolition of the CCA, which could instead have been tasked with reviewing the Fund. The Government needs an independent source of advice on climate policy. Having multiple independent advisory bodies is part of a healthy democracy, not bureaucratic duplication. Transferring the CCA's functions to the Department of the Environment brings a risk that the Department will merely tell the Government what it wants to hear, particularly considering the new Government has apparently already sacked a number of public servants with differing political views.

19. It delays deployment of existing renewable energy technologies

Members of the Government have argued renewable energy is not ready yet, and its approach to clean energy appears to focus on R&D (eg. creating a carveout in the RET for emerging technologies). Its goal of 1 million new solar roofs is already on track to be achieved by 2017 anyway.[80] If the Government decided to reduce the RET, it would effectively halt the deployment of renewables by 2016.[81] And renewable energy is not mentioned anywhere in the Emissions Reduction Fund Green Paper (except in relation to the Renewable Energy Target).

Instead of R&D, the Government should focus on large-scale deployment of existing zero-carbon technologies. Beyond Zero Emissions has shown it is possible for existing renewable energy technologies to provide 100% of Australia's energy within ten years.[82]

20. It cuts small island states out of climate talks

Although the G4 countries and Australia have the power to largely solve climate change because they are responsible for most global emissions, for exactly the same reason they do not have the political will to agree and implement the rapid phaseout of fossil fuels that is urgently required. Although a G4 agreement would sideline oil exporters who have helped obstruct the UN process, it would also sideline the best advocates for the required scale of climate action, the small island states.

Also, while the Government's proposed sector-specific approach to climate talks has the advantage of acknowledging different sources of emissions are non-equivalent, it would likely lead to agreements on anything but what is most urgently required: rapidly cutting fossil fuel CO_2 emissions.

21. It threatens national sovereignty and democracy

Investor-state dispute settlement clauses in free trade agreements give multinational corporations the power to sue a government for any policy that hurts their profits. An ISDS tribunal would have the authority to overrule a national government and force it to pay unlimited compensation to companies, with no accountability. It would effectively be an attack on national sovereignty and democracy, and a radical transfer of power from government to corporations. If governments sign away their power to regulate transnational corporations, then it will become virtually impossible to solve climate change. Any climate policy or restriction on fossil fuel industries could be overturned through ISDS.

A brief rebuttal to unjustified criticisms of the Direct Action Plan

The Direct Action Plan has attracted criticism from across the political spectrum. Some of those criticisms I have found unconvincing.

Some (eg. Ross Garnaut) have misrepresented the Direct Action Plan as anti-free-market. In reality, it is a market mechanism intended to deliver the cheapest possible emissions cuts. And as a voluntary incentive-based system, it is much more light-touch than a mandatory carbon tax. The underlying premise of Garnaut *et al.* is that a market-based approach is the best way to cut emissions, but I am not convinced of this: it is a market failure driving climate change in the first place. It is unfortunate that the "Direct Action Plan = anti-free-market" meme has gained so much traction, because there are so many real problems with the policy.

Another unjustified criticism is that the Emissions Reduction Fund will cost too much money. But as the greatest present threat to humanity, climate change is worth spending money on.

A third criticism until recently appeared to be true. In the pre-election policy, in order to be supported by the Fund projects were required to have non-climate-related environmental benefits and no negative impacts on jobs or prices; while some statements by Coalition politicians implied the Government might select its pet projects. Fortunately, however, these counterproductive criteria appear to have been dropped in the Green Paper.

Comments on the Climate Change Authority's Targets Review

I notice this inquiry will have regard to the CCA Targets Review draft report. I have written a critique of the report at http://precariousclimate.com/2013/10/30/cca-targets-review-daft-draft-report/

Australia needs a real direct action plan

My analysis above has been overwhelmingly negative. Here I will make some positive comments about what kind of climate policies Australia should adopt.

I agree with the Government's emphasis on direct action as opposed to emissions trading, but I think its so-called "Direct Action Plan" is neither direct, nor active, nor likely to achieve much. Australia needs a better direct action plan.

Climate policies should be easily understandable to the public; hold corporations accountable to the electorate; not need to be perfect to work; result in transparent, concrete, and systemic progress toward decarbonisation, aim to cut emissions at the speed described in section 3, and prioritize phasing out fossil fuel CO_2 emissions. It is unwise to leave too many climate-related decisions to

markets, because it is a market failure driving climate change in the first place; a climate policy with more limited markets and more restrictive regulations is more likely to be effective. Real action will involve accepting some short-term economic costs to avoid devastating long-term costs from global warming.

Instead of seeking to fast-track fossil fuel mines, the Government should stop them. This could be done by declaring an immediate moratorium on new fossil fuel mining and export projects. Australia could then draw up a plan to phase out its fossil fuel exports and launch international negotiations on a global fossil fuel phaseout, putting it on the global agenda. Beyond Zero Emissions has outlined how Australia could go about doing this.[83] At the very least, a greenhouse trigger should be added to the Environmental Protection and Biodiversity Conservation Act, and the federal government should retain its approval powers under the Act. As Australia is the world's largest coal exporter, exiting the fossil fuel trade would substantially reduce global supply, increase global coal prices, and help create a new international norm of leaving fossil fuels in the ground. Other countries would not be able to immediately scale up supply to replace Australia.[84]

Instead of seeking to make coal power plants profitable again, the Government should ban new coal-fired and gas-fired power plants, transfer fossil fuel subsidies to renewables, and fund a renewable electricity grid and other zero-carbon infrastructure. The RET must be retained at least at its present level, and preferably increased to reach 100% or nearly 100% within ten years (which has been shown to be achievable[85]). The Government's present goal of 1 million new solar roofs must also be dramatically increased. The mechanism most effective at delivering renewable energy would be a federal feed-in tariff for each technology; most of the EU's renewable energy has been delivered by feed-in tariffs.[86] The Clean Energy Finance Corporation (CEFC) should be retained and its funding should be increased, solely directed to zero-carbon technologies, and made additional to the RET. Renewable energy subsidies are justified, especially considering the fossil fuel industry is profitable today thanks to enormous past and present subsidies and other supportive policies. A fixed carbon tax could also be part of the set of policies (see below).

In UNFCCC talks, Australia should:

- Accept an unconditional ambitious target for the Kyoto Protocol second commitment period.
- Cancel surplus emissions units from the first commitment period.
- Propose an amendment to revoke the "Australia clause" allowing Australia to count LULUCF reductions as an offset for increasing emissions, because land carbon storage is no substitute for urgently phasing out fossil fuel CO_2 emissions.[87]
- Lobby other countries to raise their ambition.
- Prioritize pre-2020 ambition over the promised post-2020 agreement.
- Provide funding and technology for climate change mitigation and adaptation in developing countries.

Finally, the Government must reject proposals for investor-state dispute settlement (ISDS) in all free trade agreements, to ensure it retains the power to implement climate policies.

Alternatives to carbon tax repeal

The carbon tax as currently designed is inadequate and deeply flawed. Its impending ETS phase, scheduled to begin in 2015 under existing law, would cause Australia's emissions to go up instead of

down, an unacceptable outcome. However, the fixed carbon tax is a small step toward the necessary emissions reductions, setting a mandatory penalty for greenhouse gas pollution and a price signal to encourage investment in decarbonizing the Australian economy.

The carbon tax could and should be repaired instead of repealed. This could be done by either:

- repairing the scheduled future ETS as outlined below, or
- repealing the scheduled future ETS and extending the *fixed* carbon tax.

Repairing the ETS

The prospect of rising Australian emissions is due to policy time-bombs set to explode when the fixed carbon tax becomes an ETS. But the time-bombs could be defused before the ETS begins, by taking the following steps:

- Allow zero international offsets (as in the pre-election Direct Action Plan).
- Set much deeper emissions targets, unconditional on international action.
- Enforce emissions caps in a way that does not preclude raising ambition.
- Design a clear mechanism to immediately tighten emissions caps to account for verifiable voluntary emissions cuts, including emissions cuts from other federal, state, and local policies.
- Ban banking and borrowing of emissions units.
- Reinstate the carbon floor price.
- If possible, compartmentalize the ETS by sector and/or greenhouse gas to ensure apples will not be exchanged for oranges, and prioritize fossil fuel CO_2 emissions cuts.
- Redesign the Carbon Farming Initiative (CFI) as a separate cap-and-trade scheme, instead of an offset scheme connected to the ETS.
- Introduce other elements of a real direct action plan (see above), to help ensure emissions cuts occur domestically and where they are most important.

Extending the fixed carbon tax

The Government is right to be suspicious of the complexity of emissions trading schemes. An ETS creates pollution rights (some of which are free), equates non-equivalent types of action, and can hide increasing emissions by shuffling emissions units through space and time (including offsets overseas). Consequently any ETS that is less than perfect can actively prevent climate action, and a perfect policy is difficult to achieve.

All the issues with emissions trading schemes could be avoided by simply extending the fixed carbon tax. Unlike an ETS, a fixed carbon tax does not need to be perfect to work, cannot be compromised by external offsets, sends a stable price signal which cannot crash due to recession or bad policy design, and can easily complement other climate policies. The fixed carbon tax could be extended indefinitely, but should at least remain until such time as the Government has a credible alternative set of policies ready to replace it.

Repealing the carbon tax without replacing it with something better would be neglecting the Government’s fundamental ethical obligation to protect its present and future citizens.

Conclusion

Australia needs a real direct action plan, but the plan proposed by the Government is not it.

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