SUBMISSION TO CLIMATE CHANGE AUTHORITY REVIEW OF CARBON CAP

Adjunct Prof Alan Pears AM May 2013

[redacted]

[redacted]

Submitted via www.climatechangeauthority.gov.au/submissions

Contents

Introduction

I have worked on climate change response issues for twenty-five years, particularly in the sustainable energy field. I have received a number of prestigious awards and other recognition for my work. Yet I remain bemused as to why and how our response to climate change has been so limited.

This submission reflects the outcomes of my work and experience. It assumes that climate change is real, dangerous and costly, and that we are close to (or may even have passed) a critical point at which ongoing adverse change is unstoppable. But it also recognises that we have many tools available to limit and even reverse the drivers of climate change, and that many of these are actually profitable and can add to human welfare. The challenge is to act in ways that maximise the benefits and minimise the costs, while playing a responsible global role, given our very high emissions per capita and our high wealth relative to most of the world. Carbon pricing is one important element in the range of policies we need to achieve this.

Proactive change can be beneficial

Conventional economic analysis tells us that, as we set and achieve stronger targets to cut emissions, the cost to society (as reflected in the cost per tonne of CO_2e avoided) will increase to what seem like very high levels. This has been used as a scare tactic by opponents of carbon pricing.

The total cost of carbon associated with an activity depends on both the carbon price and the carbon intensity of the activity. Consider electricity. At present, a kilowatt-hour of electricity creates roughly a kilogram of CO_2, which adds 2.3 cents to the price per kilowatt-hour of around 25 cents for small consumers, all other things being equal (which they are not). In 2050, Treasury estimates that producing a kWh of electricity will emit only about a quarter of a kilogram of CO_2. Further, we will use electricity much more efficiently. If we assume a doubling of efficiency, then in 2050 we will gain the same service by using half a kWh of electricity and emitting one eighth of a kilogram of CO_2. So if the carbon price in 2050 is $184/tonne , the overall cost impact on a consumer for delivery of the same service would be the same as it is today at a price of $23/tonne. At the same time, the halving in the amount of electricity needed to deliver the service would mean that the main costs of supply of electricity, the costs of generation, distribution etc, would halve. So the overall cost of electricity needed to deliver the service would be much lower than today. Alternatively, we could afford to pay for much more expensive electricity while not paying more overall. The sums for cost of energy to deliver this service that requires 1 kWh of electricity today are:

Today: 25 cents electricity cost+2.3 cents carbon cost = 28.3 cents

2050 after doubling energy efficiency and cutting emission intensity of electricity by three-quarters): 12.5 cents electricity cost+(1/8 of $184=2.3 cents carbon cost)=14.8 cents, leaving 13.5 cents saving or available to pay for possibly more expensive sustainable electricity and possible extra appliance cost to achieve the higher efficiency.

Of course, for those using 100 percent renewable energy efficiently, there will be a negligible carbon cost, and they will need to buy or generate less energy to deliver a given service.

We have substantial evidence to suggest that renewable energy costs are unlikely to be much higher than 'business as usual' polluting energy options, while improving energy efficiency of appliances, equipment and buildings is often negative overall cost or quite cheap.

It is also important for the community to recognise that a carbon price is not a cost to society. The revenue stays in Australia (unless we buy international carbon credits) and can be spent to support investment in further emission cuts and assistance to those that have to make changes. Indeed, the Clean Energy Futures package has shown how this can work.

However, what a carbon price does is create winners and losers: those who emit less or sell products and services that help others to emit less are winners. Those who emit more or sell high emission products and services lose. This is called a 'polluter pays' policy, and it is seen as economically rational, which is why most economists see carbon pricing as a sensible path forward.

Further, our policies and actions can cut the future cost of emission reduction. If we actively support forms of innovation that cut emissions, such as energy efficiency, renewable energy, reduction of agricultural emissions and so on, the 'supply-demand' effect comes into play. For a given target, there will be less demand for carbon permits, so the price will go down. Alternatively, we could achieve bigger emission cuts at the same overall cost.

Very little consideration of this potential has occurred in Australia: we have been too busy debating the science of climate change and reinforcing our sense of panic over the cost of cutting emissions. At an international level, analysis has been done. In its 2007 Working Group III report, the International Panel on Climate Change used nine economic models to explore the impact on the carbon price of strong innovation aimed at reducing emissions. The results are shown in Figure 1, drawn from that report.

It is clear that such innovation activity can dramatically reduce the carbon price. And, where it also reduces the amount of energy used or other sources of emissions per unit of economic activity, it also reduces the number of permits required to offset emissions from those activities.

One Australian business organisation, the Australian Sustainable Built Environment Council, has conducted studies on this issue. They have found that more aggressive energy efficiency improvement in the building sector would not only be financially beneficial for society through energy savings, but would also reduce the carbon price for all emitters.

So why are Australians so frightened of pricing carbon? Ignorance, active misinformation and lack of quality education on the issue seem to be the most likely reasons.

So it is important for the Climate Change Authority to clearly map out in its review how carbon pricing works, and why it is a sensible path forward, while emphasising that government policy must use the revenue from carbon pricing to drive innovation and assist our existing economy and society to adjust to the redistribution of costs. It should also point out that the scale of the impacts of a carbon price are modest compared with currency variations, interest rates and other factors businesses and households face in everyday life.

Figure 1. Range of future costs of emission permits for 450 and 550 ppm scenarios showing impact of accelerating technological change – average of 9 models. The gaps between the solid lines and the dashed lines show the reduction in carbon price due to innovation. The pale grey lines show the results from the various models for the 450 ppm scenario: this shows significant variation, although the trend is clear. (IPCC WG3 Contribution to 4th Assessment Report, Cross-sectoral chapter, Barker et al (2007)

Broad approach to setting emission goals

Climate science

The rationale for action to cut emissions is clearly based on an acceptance that human-induced climate change is real, rapid, dangerous and costly. This has been shown beyond all reasonable doubt by an enormous scientific effort. The climate science should be the basis for setting emission caps. There is also a case for a community engagement process to be recommended that explores with the community the level of risk considered acceptable for a proposed target. For example, the widely used 450 ppm target still leaves a significant probability of warming beyond 2C, and associated risk of more extreme consequences. Given this is the only planet we have, this level of risk may be considered by many as inappropriately high. Such a process may not be feasible during the CCA;s review process, or it may be appropriate to carry out regular such consultations. However, this situation supports my proposal (later in this submission) for inclusion of a 'flexibility' mechanism in the cap.

CCA must put as much effort into explaining why emission reduction is far less risky and painful for Australians and their children than not acting to cut emissions.

Two points below address the issue of climate science, while the previous section shows how action can be good for us and the economy – if we are smart in how we act.

First, Lord May, of the Royal Society and former UK chief scientist has pointed out that the amount of carbon dioxide released by human activity each year took the Earth a million years to store (see http://www.theaustralian.com.au/news/breaking-news/expert-says-embrace-climate-change/story-fn3dxiwe-1226581953847). How can we expect such disruption of the Earth's natural systems to

NOT have an impact? To act on the assumption that human induced climate change is not happening is risky and counter-intuitive in this context. It also reflects two deeply held beliefs: that the 'invisible hand' of the market is capable of addressing any problem, while each of us continues to act in our own perceived (usually short term) interest; and that resources (and the Earth's capacity cope with our impacts) are infinite relative to human requirements.

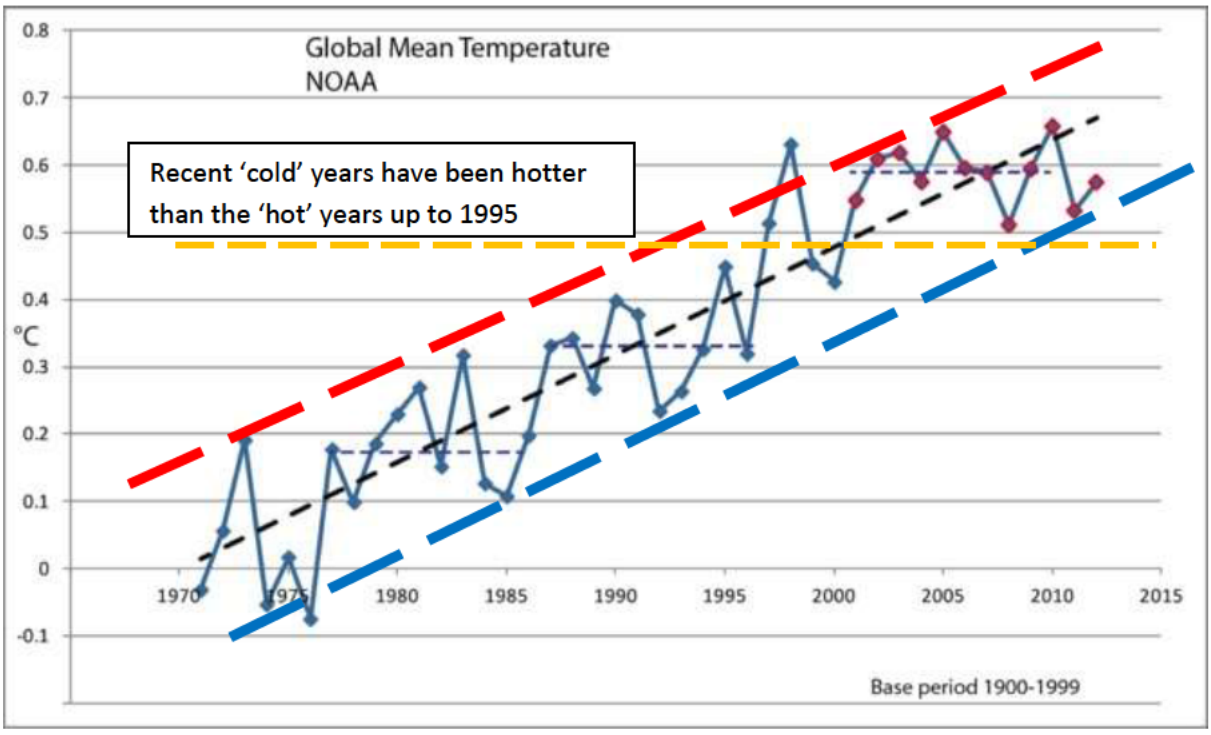
The limits of markets are now well understood, as are the limits of resources and ecological systems.

Second, the frequent claim that warming has stopped, or is slowing significantly, must be addressed. Figure 2 from NOAA (the US climate monitoring agency) shows recent global temperature trends. I have added upper and lower trend lines that show clearly that the 'cold' years have consistently become warmer, while the 'hot' years have become hotter. There are certainly short term variations, but these are explained by the many factors that affect our weather, as well as an increasing recognition of the role of heat flows within the oceans, where most of the heat is.

Figure 2 shows clearly that global temperatures have (apart from the extreme El Nino of 1997-98) stayed within an envelope of increasing temperature. The 'cold' years have become warmer, while the 'hot' years have become hotter. Indeed, as also shown on the graph, the 'cold' recent years have actually been warmer than the hottest years up to 1995. The 'cooling' periods have been followed by stronger 'heating' periods that have driven the overall trend.

Failure to act, given this information, is risky behaviour to put it mildly.

Figure 2. While this graph shows NOAA data, other data sources such as NASA and HADCRUT show a similar pattern.



Responses to specific points made in the CCA Issues Paper

Extent of recommendations beyond 2020

Recommendations for targets should extend to 2050 to provide long term guidance for investors, and should be based on climate science. They should include a mechanism that provides scope to adjust future caps based on specific circumstances such as a lengthy period of low (or extreme high) prices, changes in climate science, or other measurable factors. Experience both in Australia and the EU shows that setting of future caps is a very difficult thing to get right. Powerful interest groups, complexity of the world economy and other factors can undermine the effectiveness of a set cap by allowing negotiation of a more generous one, or simply because the world changes in unexpected ways. Such mechanisms would need to be carefully specified, and a transparent framework for their application established.

Links to international agreements

Australia's carbon market should support international agreements and processes, and other sectors can be handled with CFI or other mechanisms. But Australia should aim to exceed agreements and apply additional measures where international agreements fall short. As noted earlier, our reluctance to 'be a leader' or even do our fair share on climate is tied to perceived cost and impacts on the Australian economy that are grossly overstated, especially if we act intelligently to drive innovation. Now that the mining boom is evaporating, maybe we can take a more realistic perspective on this: rather than focusing on 'certainty' for existing emitters to keep emitting, which cannot be provided at other than a rapid rate of reduction of emissions, it is more important to focus on creating certainty for those investing in emission reduction. The more confidently people can invest the lower abatement costs will be. This means a floor price or scope to cancel permits or limit international interactions will be necessary to provide this certainty.

Limiting risk

If climate change is accepted as being real, dangerous and costly, then the low risk strategy for Australia is to move to zero emissions and beyond as quickly as we can, while maximising the benefits and minimising the costs of such change. So targets and caps should be set ambitiously, but include flexibility to respond both to lower and higher than expected carbon prices and transition costs.

Use of carry over credits from the first Kyoto period

We should remember the context within which this target was set in 1997. World leaders agreed to this target in exasperation, as Australia's 'poor little rich kid' behaviour threatened to block a global outcome. Cancelling these carryover permits would be a gesture of goodwill from Australia that would repair some of the damage done to our international reputation by our past behaviour on climate issues. This could be spread over a period of time, and the rate adjusted in response to unforeseen trends.

Stringency of targets

The impact of lower stringency of our goals is to reduce the carbon price in the short term, which is appealing to some industries and politicians. But if it discourages short term abatement action, the longer term carbon price would be higher, as global limits impact on Australia, and we are less prepared to respond. The carbon price will be sensitive to other factors, in particular the rate of innovation and economic transformation. The key is to capture maximum local investment in

abatement to reposition our economy to be a winner in a low carbon global economy. This means we need to have clear incentives for individuals, businesses, local and state governments to go beyond just compliance with targets, to maximise abatement.

Incentives to act can be delivered in many ways. But underpinning all of them is the need to ensure that additional action makes a real difference to Australian and global emissions. The past failure of the Australian government to ensure additionality for energy efficiency and other energy-related abatement action (as it now does for agriculture and forestry abatement through the Carbon Farming Initiative) undermines the incentive to act. It also drives abatement investment offshore. This is perverse. This issue is discussed in detail later in this submission.

Hedging options for future uncertainty

A hedge can be best created by a combination of tighter caps and incentives for abatement beyond compliance. The combination of 'carrot and stick' is well proven across many areas of policy. A 'stick' by itself is not only much less effective, but it provokes division and conflict, mobilises and empowers vested interest groups, and encourages a 'compliance culture'. A tighter cap potentially means higher revenue from permit sales, some of which can be used as a hedge to provide assistance to those who do need transitional assistance.

Heavy vehicles and carbon

Heavy vehicles should, in principle, pay a carbon price. However, the CFI demonstrates that it is possible to create incentives for abatement, so a similar approach may have potential for sectors where measurement is difficult and/or impacts on an industry of a carbon price may be high. Measurement of actual abatement by heavy vehicles should be more easily measurable than many CFI measures.

Analysis of underlying drivers of emissions

It is important that the CCA reviews the underlying drivers of emission trends over the past two decades, in particular the recent downward trends in electricity consumption, increase in use of public transport, growth of distributed electricity generation and improvements in energy efficiency by business, households and in buildings. There are many positive trends that can be built-upon.

The nature of recent changes shows that use of simple projection methods and econometric modelling may be misleading in times of rapid and complex change. So these approaches must be complemented by 'bottom-up' and engineering based modelling. For example, the effects of the shift to LED lighting, the dramatic recent improvement in TV energy efficiency, the ongoing improvement in building (and heating and cooling equipment) efficiency, and changes in industry structure and activity may not be easily modelled.

CCA should also outline the many benefits that abatement has delivered, including business benefits such as reduced costs, improved productivity and product quality, health and amenity benefits for building occupants, reduced air pollution, enhanced equity (eg through wider availability of public transport services), etc.

Linking to international markets

The risks and benefits of linking to international carbon markets are now much clearer than they were, so it is a good time to evaluate this issue. Some linking seems essential: the issues are how much, over what timeframe, and with what conditions and flexibility?

Beyond mandated markets, there is significant potential to encourage voluntary purchase and surrender of international permits. For example, some 'carbon neutral' businesses and local councils are selecting international offsets/permits that are associated with projects they see as offering multiple benefits and having links to their staff or communities. Australia also plays an important role in ensuring the integrity of international permits, which influences their market value.

Voluntary action: a key element of any successful policy response

Many Australians, at home and at work, are frustrated by the compromises made regarding emission abatement policy, carbon pricing and emission targets. At the same time they are strong supporters of a shift towards an efficient, renewable energy future. They are using their own money to buy Green Power, install renewable energy systems and save energy. Yet the accounting system used for the present carbon scheme fails to recognise and encourage such action: it does not treat such actions as 'additional' to the carbon cap, which would require cancelling permits to match the voluntary additional abatement. Indeed, the present accounting scheme encourages 'abatement leakage' – shifting investment in energy related abatement offshore, where it does count.

This is confirmed by the 'abatement leakage' actions of businesses like Qantas, who now use international offsets from projects listed on their website for their voluntary carbon offsets program, and at least one bank that has shifted to international offsets to meet its carbon neutral commitment.

The government has blurred its failure in this space by making promises to cancel permits to match Green Power sales up to July 2012 (but what happens after that?), and to investigate ways of factoring voluntary abatement into the setting of future carbon caps. Such proposals do not meet the stringent requirements of carbon accounting. Further, given the poor track record to date of forecasting future emissions, how would we know if appropriate adjustment had been made five years before?

I declare an interest: I have spent five depressing years fighting for recognition of voluntary action as a board member of the Voluntary Carbon Markets Association and in my own activities. I am still appalled that the Australian government has failed to introduce clear and accountable mechanisms to recognise additionality for energy related activities. The fact that government has introduced the Carbon Farming Initiative to recognise agricultural and forestry abatement and sequestration activity as additional abatement makes the present situation even more frustrating. If it's good enough for the farming and forestry sectors, why can't it be done for sustainable energy?

Are the fossil fuel and electricity industries that powerful? Are the Canberra econocrats so attached to their 'elegant' carbon trading model that they just cannot tolerate a complication? Do policy makers really believe that abatement will be driven by the electricity industry? Or is the government just trying to capture the abatement from energy-related activities for itself?

Let's look at some realities:

- Clearly, recent actions by several state governments have shown that they do not consider their voluntary actions beyond national measures to be additional. This has led to cutbacks in a variety of cost-effective or socially beneficial abatement measures, with the argument that, under carbon trading, abatement is a commonwealth government problem, and that states and local government should focus on adaptation. And, if one state did more than its 'fair share of abatement' it would just be freeing up more permits for other states to use.
- As noted earlier, in response to the lack of additionality for Australian energy related abatement, progressive businesses (and local governments) have shifted their investment in abatement from local actions such as energy efficiency and purchase of Green Power to purchase of international credits from developing countries. While this may be beneficial for those developing countries, it is effectively 'abatement leakage': investment that could have supported development of abatement businesses and delivered local abatement has been shifted overseas.
- While many have expressed concern about 'emission leakage' where some industries may move offshore to avoid carbon pricing, the problems created by 'abatement leakage' have been ignored. This is a serious issue that affects job creation, export potential, abatement effectiveness and cost, and the rate of restructuring towards a successful low emission economy within Australia. Its impacts must be quantified and the problem addressed.
- The Australian government has accepted that it is necessary to provide incentives for abatement in agriculture and forestry by making abatement actions in those sectors additional via the carbon farming Initiative. It is inconsistent for it to not provide a similar mechanism for energy-related abatement, either by cancelling permits to match such abatement, or by issuing additional tradable permits where reductions in energy use or other methods of abatement of energy-related emissions are implemented within Australia.

Carbon policy must motivate all levels of government, business and households to do as much as they reasonably can to contribute to abatement. This requires any targets to incorporate mechanisms that ensure voluntary actions are additional, and that they are recognised in ways that allow them to credibly show their customers, constituents and friends that their actions do 'count' as additional abatement.

CCA's role in progressing 'additionality' for voluntary abatement action

When the Voluntary Carbon Markets Association last approached Minister Greg Combet's office with regard to additionality of energy-related abatement action, we were told that this would be dealt with by the Climate Change Authority in its review process. This issue is included in the list of factors to be considered on page 4 of the discussion paper. But it does not seem to receive significant consideration in the body of the Discussion paper, although it is referred to on page 33 as a component of this review, and the CCA is instructed to "take voluntary action into account when setting caps".

I would argue that CCA has to do more than this: it must ensure that voluntary action leads to prompt, fair, transparent and accountable cancellation of permits to match its abatement outcomes. Such a mechanism should be developed in consultation with carbon accountants and legal experts so that businesses and other tiers of governments can be confident that investment in energy-

related abatement within Australia will comply with the Trades Practices Act and accounting transparency so shareholders and constituents can be assured that abatement investments 'make a difference' beyond the carbon cap.

There is still an opportunity to remedy this oversight.

This issue is critical, as it affects the potential rate and cost of abatement. It also affects the rate of repositioning of our economy to be successful part of a low carbon global future, as well as the cultural perspective that will be applied to abatement action.

The CCA has the opportunity to empower progressive business, governments and communities. Or it can continue to disempower them and support a culture of shifting responsibility for abatement onto the national government, when much of the real action must happen in the everyday worlds of state and local government, commerce and community.

Energy market reform

The present carbon pricing framework distorts response regarding energy-related abatement, and is fundamentally undermined by the structure and operation of the electricity market.

Within the electricity market, the carbon price competes with other powerful forces to influence the behaviour of power station owners and operators. The electricity market rewards generators for higher electricity sales, especially at times of high demand. It rewards electricity network owners for higher electricity sales and investment in infrastructure. For retailers, the financial loss from a reduction in sales is much greater than the profit from higher sales, so they have an incentive to maintain sales. The carbon price is a relatively minor factor in decision-making that is dominated by these forces.

Indeed, the electricity industry – and its policy makers, sees a decline in electricity consumption as a threat to their industry's viability, so they are working to oppose it. Consider a statement in the submission of the owners of Hazelwood brown coal power station to the Prime Minister's Energy Efficiency Working Group in 2010 (submission no 186):

> "Energy efficiency is about how energy is used, not about how it is produced. The latter is climate change policy and should be examined in that framework. IPRA rejects any proposal to introduce climate change policy, under the guise of energy efficiency measures, which has the potential to destroy the value of existing investments in the generator sector."

The Chair of the Australian Energy Market Commission, the lead policy agency, in evidence to the Senate Inquiry into Electricity Pricing (Hansard 25/9/12) made it clear that AEMC's view was that the objective of the National Electricity Market was focused on economic performance, and that it was not its role to act to reduce greenhouse gas emissions: that was a task for other agents of government. Indeed, he stated that it was AEMC's role to report to government on the implications of climate response and other actions for the achievement of economic objectives. This approach allows ongoing conflict between the policies and actions of the energy sector and broader government policies on climate response, despite the clear intent of National Competition Policy.

As reported in the media (see for example articles at www.RenewEconomy.com.au), the industry, with some of its regulators and policy makers, is now exploring ways of undermining the economics of end-use action such as installation of solar electricity. The measures proposed, such as higher fixed charges, also potentially undermine the economics of energy efficiency and are regressive.

Given the above, and the overwhelming evidence that energy efficiency can and is delivering large negative cost abatement, it is essential that the CCA recommends that much higher priority be given to pursuit of energy efficiency in Government policy and resource allocation.

For example, Australia's appliance efficiency program is delivering millions of tonnes of annual abatement at a cost of minus $56/tonne of CO2 avoided. It is logical that additional emphasis be placed on this program so that it captures additional abatement up to the expected carbon price over the next decade or so. This will require stronger political commitment and allocation of more resources to develop and implement stronger appliance efficiency programs. Only when the cost of avoided carbon from this program is around $20/tonne of CO2 avoided will we be able to say that we are taking a balanced, cost-effective approach to abatement through appliance energy efficiency improvement.

Integrating carbon pricing with other abatement action

There has been intense focus on ensuring that other emission abatement programs are 'complementary' to carbon pricing. This has led to some worthwhile programs being shut down or changed through processes such as the CoAG BAF review. These processes have been far from transparent, and the impacts on emission reduction are not at all clear.

It is important to recognise that a carbon price, implemented alone, can lead to less cost-effective outcomes unless the revenue is used to overcome distortions created by the combination of carbon pricing and other policies (such as the example for electricity, above). Other approaches can contribute substantial abatement:

- Policies affecting many sectors of the economy, such as taxation, subsidies, regulations, welfare programs and industry innovation can help or hinder reduction in Australia's emissions
- Investment in infrastructure can facilitate or block emission reduction in transport, health, education and other sectors, depending on where and how it is used and the emission intensity of the activities it supports
- Innovative international aid options, such as paying developing countries a bonus for high efficiency/low emission equipment they export to Australia, from part of the savings captured by Australians through lower energy use, can drive innovation and expand production capacity of low emission products that are then available to all. A focus on helping small Asia Pacific countries to reduce oil import costs could replace substantial aid payments while allowing Australians to buy high quality international carbon permits.

Conclusion

The CCA review is critically important in shaping Australia's future approach to climate response. The review should propose strong targets, and include mechanisms for 'fine tuning' over time, so that

investors in abatement can be confident of reasonably stable permit prices. If this creates uncertainty for those who wish to invest or continue to operate without considering abatement, it is a necessary side-effect of action, and there is some scope to use revenue from permit sales and other policy tools to help them to make a transition.

This review must propose a mechanism for voluntary abatement action in energy-related activities to be recognised as additional to the carbon cap, and be rewarded by prompt and transparent cancellation of matching permits: the government's present approach is inadequate.

The review must also look at how carbon pricing and caps can best complement other policies, and ensure that other policies do not conflict with the objective of emission reduction.