A joint submission by
Mr Tim Kelly & Professor Barry Brook
Adelaide South Australia

6 April 2009

The Secretary
Senate Select Committee on Climate Policy
PO Box 6100
Parliament House
CANBERRA ACT 2600
Email: climate.sen@aph.gov.au

Dear Sir/Madam

RE: Inquiry into the choice of emissions trading as the central policy to reduce Australia 's carbon pollution

This submission is not confidential

Thankyou for the opportunity to comment on the choice of emissions trading as the central policy to reduce Australia 's greenhouse gas emissions pollution.

We provide this submission for the Senate Select Committee, raising concerns on significant issues caused by the mechanism of a cap and trade approach, which combined with inadequate targets and disregard for protecting voluntary market mechanisms, will lock in failure of the Government's policy to motivate Australia and its citizens to play an adequate part in tackling climate change.

Introduction

In this submission, we assert that emissions trading or 'Cap and Trade' is not the appropriate mechanism to use as the central policy to reduce Australia's emissions. A cap and trade mechanism is by its nature, all consuming of complementary measures and extinguishes the effectiveness of voluntary actions on reducing National Emissions, harming rather than enhancing the evolution of Australia's low carbon economy. We argue that the cap and trade approach loses its effective during times of economic slowdown as permit prices drop and the opportunities to rebuild with a low carbon economy are diminished.

In regard to the Carbon Pollution Reduction Scheme (CPRS) Exposure Draft, the role of traditional tangible voluntary action is not adequately supported as there is nothing more than a suggestion that the Minister "may have regard to" voluntary actions in setting future scheme caps and gateways. Furthermore, the defined outline on "Voluntary cancellation of Australian Emissions Units" contradicts the role of traditional tangible voluntary actions as both approaches have an opposite impact on the scarcity and price of AUEs and hence Australia's capacity to reduce emissions which is the key Government consideration in determining the feasibility to reduce future scheme caps.

When it comes to electricity, it is widely recognised that electricity dominates the greenhouse footprint of many households and businesses, and it is acknowledged that prices will increase as a result of the CPRS. It is less well recognised that there is no mechanism in the CPRS draft legislation or in the National Greenhouse and Energy Reporting System (NGERS) that protects customers that buy accredited GreenPower or other low emissions electricity products from paying CPRS costs in addition to their voluntary contribution. It is quite likely that the Government's decision to ignore the significant problems of GreenPower are at least in part due to how it considers that GreenPower may operate under a Emissions Trading, or if it can continue at all.

Under Australian Law, GreenPower works as nothing more than a donation to all other customers. It does not reduce customer emissions and is double counted when reduced emissions are printed on electricity customer bills as the *use* aspect and *reduced emissions* have been legally assigned to all grid customers. Even where a business builds their own renewable energy facility in connection with their activities, if it needs to use 1mm of the National grid then the Government takes the *use* aspect and *greenhouse benefits* assigning them to all state users in proportion to their consumption. No other method is supported (see Pages 305-307 of the NGERS Technical Guidelines 2008).

Under the proposed emissions trading scheme and the current GreenPower accreditation scheme, GreenPower will not reduce customer emissions and will not reduce National emissions. It will continue to be double claimed on GreenPower customer bills and renewable energy customers are likely to pay for pollution that they have already paid to avoid.

This is no way to build a low carbon economy that could respond to carbon price signal on electricity, Australia's largest source of domestic GHG emissions.

About Tim Kelly and Professor Barry Brook

Tim Kelly
Tim Kelly works as a Principal Climate Change Advisor in the water industry and specialises in the areas of developing and improving climate change policy to adapt to climate change (within limits), to reduce emissions, to support the necessary research to understand the vulnerabilities of human settlements and to develop solutions.

Tim has considerable knowledge of greenhouse and renewable energy accounting matters, where double counting takes place and where policies become ineffective in delivering on stated goals or where policy fails to provide additional greenhouse reduction benefits.

Barry Brook
Professor Barry Brook is Director, Research Institute for Climate Change and Sustainability (www.adelaide.edu.au/climatechange). Barry holds the Foundation Sir Hubert Wilkins Chair of Climate Change at the University of Adelaide. Barry coordinates an open discussion forum on climate change related issues on: www.bravenewclimate.com.

Addressing the Terms of Reference

In relation to the Terms of Reference, a summary response is provided on each component followed by further detailed coverage of issues in this submission.

(1) (a) the choice of emissions trading as the central policy to reduce Australia 's carbon pollution, taking into account the need to:

Response:

With a cap and trade approach, the target is everything as both the emissions cap and emissions floor are locked in. No one can do better than the cap, and so the cap must be a science based all consuming sustainable target pathway that won't lock in failure. As we don't yet have the widespread political and economic preparedness to commit to an all consuming sustainable target pathway (either nationally or internationally), the cap and trade mechanism is the wrong approach and we should instead focus on a carbon tax with complementary mechanisms that would transform the economy more effectively than the proposed Carbon Pollution Reduction Scheme (CPRS).

(i) reduce carbon pollution at the lowest economic cost,

Response:

- Emissions trading cannot reduce Australia's carbon pollution at the lowest economic cost as the economic challenge and diversity of situations are too complex to be managed through such an idealistic framework. Cap and trade systems are best suited to simple confined resource issues, but typically fail in more complex situations through an inability to establish, agree and comply with a sustainable cap, such as has happened with the Murray Darling Basin.
- The lowest economic cost is not achieved through grandfathering of permits (60% or 90%) to large areas of covered sectors. The lowset cost aspect is fully compromised by this action which prevents the creation of a level playing field for all technologies.
- Lowest economic cost is not achieved when creating a merry-go-round of collecting revenue and then providing compensation straight back to polluters and energy users.
- Lowest cost is not achieved by the nature of an ETS that cripples voluntary market mechanisms and deprives customers of legitimate choices for low emissions solutions to avoid the carbon price and reduce their emissions (a specific example is the complete absence of the inclusion of GreenPower and lower emissions electricity being integrated with the CPRS and NGERS.
- Lowest cost is not achieved by limiting the carbon market to liable covered companies, virtually excluding most of Australia from being able to contribute beyond becoming more efficient.
- Lowest economic cost is not achieved through ridiculous intangible tricks such as voluntarily throwing Australian Emissions Units in the bin, doing nothing to create a green economy or green jobs un-necessarily causing permit scarcity, and higher prices making the situation less feasible for the Government to reduce the cap in later years.
- Similarly, Australia's carbon pollution and Australia's transition to a low carbon economy is not improved through buying up overseas emissions reduction units of various kinds.
- Lowest economic cost is not achieved through taking extraordinary measures such as indirectly manipulating the price through free permit allocation, capping the price at $40, when un-capping the cap for unlimited $40 permits in any given year.

(ii) put in place long-term incentives for investment in clean energy and low-emission technology

Response:

A cap and trade mechanism is by its nature, an all consuming policy instrument that extinguishes the effectiveness of voluntary actions, harming rather than enhancing the evolution of a low carbon economy, and failing to optimise market conditions for investment in clean energy and low-emission technology.

Emissions Trading fails as a key driver for clean energy generation

Emissions trading being so vulnerable to loss of integrity through compromises as described above, loses the ability to drive low emissions technologies including renewable energy. It is not possible make such compromises without destroying the market conditions for low emissions technologies to compete. Softening of the emissions pollution costs by issuing free AEUs to coal fired power generators for example, keeps renewable energy at a disadvantage because barely a fraction of the externality cost of greenhouse harm is brought into the market. It is because of this failure to create the right market conditions that the Federal Government requires a separate higher Mandatory Renewable Energy component as part of its expanded National Renewable Energy Target to provide the driver.

Because emissions trading harms voluntary mechanisms and actions, it becomes a cancer that will prevent the creation of a healthy low emissions economy

Voluntary actions including the cancellation of Australian Emissions Units (AEUs) are meaningless within the context of reducing National emissions under the CPRS. The Government has suggested contradictory logic in seeking to justify the role of voluntary actions under the Carbon Pollution Reduction Scheme. On the one hand Minister Wong has advised, and the Discussion Paper on a proposed National Carbon Offsets Standard promotes that:

- The role of traditional voluntary action is to build capacity to reduce emissions, reducing scarcity and lowering permit prices so that it becomes "*increasingly feasible to set more ambitious emissions reduction targets*";

yet this is completely contradicted by;

- The concept of voluntary surrender of AEUs (CPRS permits) presented as lowering the cap to educe emissions, but this will increase scarcity and increase permit prices whilst not improving Australia's capacity to reduce emissions making the situation less feasible for the Government to lower the cap in future years.

The CPRS Exposure draft supports neither concept to work effectively!

Emissions trading being an all-consuming policy instrument fails as a key driver for clean / renewable energy use.

At the outset, the Senate Select Committee should consider that an emissions[1] cap and trade mechanism is by its nature, all-consuming and is not something that is compatible with complementary measures. Other activities such as the Mandatory Renewable Energy Target and the home insulation rebate merely become picked winners within the National cap and don't reduce Australia's emissions any more than the cap has already determined.

Proposals to adjust the cap in future years to reflect voluntary actions are largely un-achievable as it is not possible to track individual choices. For example, it is not possible to track when individuals improve their household efficiency, or when they walk, ride a bicycle or use public transport rather than driving a car.

Whilst it might be technically possible to manually intervene to attach a retired Australian Emissions Unit to say voluntary purchased GreenPower, such an approach is external to the mechanism, would cover only a small fraction of the potential voluntary action of businesses and households and will largely be rendered as meaningless, due to the nature of the process to determine National Scheme Cap and National Scheme Gateways.

[1] The term 'carbon' is used in this submission as an abbreviation of the term greenhouse gas emissions which does includes carbon dioxide, methane, nitrous oxide and other gaseous emissions. It is acknowledged that elemental carbon is a solid material that does not contribute to enhanced anthropogenic climate change.

Emissions Trading is the wrong market instrument to use in turbulent economic times

A cap and trade approach based largely on cushioning financial impact on business, is the wrong policy and market instrument to use during economically turbulent times where it is not possible to determine business as usual emissions. The cap and gateway will either be too aggressive and will cause a political backlash, or too soft leading to coasting when we should be transforming the economy.

In the European Emissions Trading Scheme the driver was lost for years when too many permits were allocated. The same thing can happen with recession. For example, if a cap is set at 5% reduction on 2000 levels and there is a 10% reduction caused by global recession, then the ETS won't help Australia use the opportunity to create a low emissions economy.

and

(iii) contribute to a global solution to climate change;

Where

(b) the relative contributions to overall emission reduction targets from complementary measures such as renewable energy feed-in laws, energy efficiency and the protection or development of terrestrial carbon stores such as native forests and soils;

Response:

Renewable energy feed-in laws, energy efficiency and the protection or development of terrestrial carbon stores such as native forests and soils are all covered by the National Cap and as such, are consumed by emissions trading and are not complementary to emissions trading. Such measures merely become picked winners that compromise the effectiveness of the scheme, just as handing out free AEUs to emitters compromise the effectiveness of the scheme.

This is a critical issue that goes to the heart of understanding how a National Cap works with and emissions trading system. If the Australian Government feels that it is necessary to pick the winners, it does not believe in emissions trading and should therefore select a carbon tax as the foundation Greenhouse Management Policy that works with complementary measures.

(c) whether the Government's Carbon Pollution Reduction Scheme is environmentally effective, in particular with regard to the adequacy or otherwise of the Government's 2020 and 2050 greenhouse gas emission reduction targets in avoiding dangerous climate change;

Response:

The proposed targets are not in line with managing the risks identified by the IPCC in their 4th Assessment Report and more recent science is suggesting that to prevent dangerous climate change we will need to cut emissions harder and faster again.

Because the targets are not environmentally effective, they cannot be economically effective or protect human settlements either, and are therefore un-sustainable.

Australia's proposed 5% to 15% target will be viewed as an insult to developing nations such as China and India that have much lower per capita emissions yet higher national emissions. Australia's pre-announcement of a target range has been an act of *negative leadership*, that is; leadership only towards global climate failure and negotiation failure.

The Government has been too pre-occupied with securing permit levels and targets for business certainty rather than giving business the business certainty that a dramatic change to a low emissions economy is required.

A change from our current collision course with dangerous, if not disastrous climate change, will require developed countries such as Australia to take a lead role in reducing emissions in order to build support in developing and emissions intensive nations to also reduce their emissions in a huge way.

It is ironic that 5% reductions may be achieved by economic downturn leading to a free ride with no transition to lower emissions technology for many years. It is also likely that the science and growing climate change impacts will reveal that Australia's targets are woefully inadequate, and that the cap may need to be lowered and permits recovered at cost to the taxpayer.

With a cap and trade approach, the target is everything as both the emissions cap and emissions floor are locked in. No one can do better than the cap, and so there must be open ended target caps that can be adjusted at any time without the need for compensation. For example, if the rest of the world strives for 25% to 40% reduction targets by 2020, Australia should lift its efforts to achieve this goal and do even better.

The Senate Select Committee should consider all options, including the abandonment of the cap and trade approach because issues of critical importance have not been dealt with adequately, including the removal of around voluntary empowerment, and that the cap and trade scheme cannot be effective during changing and erratic economic conditions. The Government will never be forgiven for picking the wrong mechanism where identified risks were ignored.

(d) an appropriate mechanism for determining what a fair and equitable contribution to the global emission reduction effort would be;

Response:

The ideal situation would be for all nations to bring their emissions down to zero, and so Australia's contribution should be zero emissions to stabilise climate. Whilst this may not be practical at this stage, it may be essential to reduce global emissions by 90% and therefore Australia should be working to decrease its emissions as hard and fast as it can.

The Australian Government does not fully acknowledge or report embodied emissions in the nations exports such as coal and natural gas, and fails to acknowledge embodied emissions in the nation's imports such as manufactured goods. Australia does also not acknowledge emissions from *in-forestry* activities such as harvesting, clear felling and burning. If we take the case of a Victorian tree, "Felled old-growth tree '500 years old', the felling and harvesting of this tree and the forests containing such trees would not be counted in Australia's emissions trading scheme, yet the Federal Government would be comfortable in allowing carbon credits from avoided deforestation in other nations that don't have reduction targets to be used in Australia's scheme. One thing that Australia could work towards is a single set of comprehensive accounting rules without exclusions and loopholes.

An effective global solution does need to be worked out to establish consistent and complete standards on how emissions liabilities will be carried out through supply chains across the life cycle of goods and services. Emissions trading however, is not suited to such a challenge as it deals with limited emissions at only one point, rather than throughout the life cycle of products and services that move through domestic and global markets.

A National carbon tax provides a better foundation and works with additional complementary measures dealing with fairness and the full life cycle contribution of Australia's emissions reduction efforts.

(e) whether the design of the proposed scheme will send appropriate investment signals for green collar jobs, research and development, and the manufacturing and service industries, taking into account permit allocation, leakage, compensation mechanisms and additionality issues; and

Response:

From the treasury modelling, it appears that the Federal Government is planning to allow a large proportion of carbon credits from overseas in order for Australia to achieve its targets. Buying overseas credits will not create green collar jobs in Australia.

Emissions trading sends the wrong investment signal to markets.

Emissions Trading says to business that the Australian Government will give you a right to pollute now and in the future, when businesses should understand that emissions must be reduced as fast as possible by as much as possible, we risk loosing the future economy. The science suggests that ultimately the cost of emissions must increase until greenhouse pollution becomes unaffordable or illegal.

Emissions trading says to citizens that it makes no difference if you drive a Hummer SUV or ride a bicycle, National emissions will be the same. Ordinary citizens and businesses that drive markets are disenfranchised .

(f) any related matter.

Response:

The feasibility and impact on voluntary mechanisms of the Emissions *Cap and Trade* option was not fully understood by Government or stakeholders when it was selected as the preferred option.

A carbon tax should be considered with an open mindset. The Australian Government has not had a full an open debate on which policy mechanism would be best suited to reducing Australia's emissions and driving a transformation to a low emissions economy where voluntary efforts are enhanced by placing a cost on GHG emissions. The attached discussion paper "*Greenhouse Tax Versus Greenhouse Cap and trade - The Debate We Never Had*", explores these issues in detail.

Voluntary actions including the cancellation of Australian Emissions Units are meaningless within the context of reducing National emissions under the CPRS.

In understanding that a cap and trade approach is as an all consuming policy mechanism, the setting of a National Scheme Cap and 5 year gateways over-arch any particular action, initiative or complementary measure.

The draft advises that the Minister in setting both the Scheme Cap and National Scheme Gateway "***may have regard to:***" "*voluntary action which is expected to be taken to reduce Australia's greenhouse gas emissions*". Such "*regard*" is however, not quantitative, there is no methodology in determining what constitutes "*regard*" and there is no assurance or mechanism identified in the draft Bill. It is far more likely that the Government and Minister will set the caps based on lobbying and political assessment which will outweigh any level of voluntary action achieved or perceived.

Because the *cap and trade* approach does such harm to voluntary processes it prevents the evolution of an effective market based economy. The Minister will be seeking to have "*regard*" to voluntary actions that are crippled by the scheme. In comparison, a carbon tax approach drives all greenhouse actions as *voluntary*, initially at a low carbon price, yet motivated with the knowledge that if collective emissions don't reduce fast enough the tax will increase until they do.

With the target range already been locked by the Australian Government, voluntary actions are effectively excluded from influencing the cap as well as being ineffective under the CPRS cap and trade mechanism. Whilst households and businesses that buy electricity and other greenhouse intensive products and services will pay a higher carbon price, they cannot buy alternative emissions free electricity, or other effective carbon neutral and offset products under the proposed CPRS Bill, or under NGERS or under the proposal for a National Carbon Offset Standard. How then can back yard innovation hope to find a pathway towards developing solutions for a low emissions economy?

The use of overseas Kyoto units also covered in sections 14 and 15, cannot reduce emissions in Australia, do not create a green economy or green employment within Australia and should be limited to an option of last resort to be used where the policies within Australia have failed. It is also important to recognise that such units will become increasingly scarce as developing nations join a global fight to reduce emissions and take on reduction goals of their own.

Special Note on GreenPower and Scope 2 emissions accounting

GreenPower as it currently exists is nothing more than a donation mechanism to all grid customers. It does not reduce customer emissions under Australian Law and double counting takes place when reduced emissions are shown on over 800,000 GreenPower customer electricity bills. There is no established mechanism to protect GreenPower customers against greenhouse costs under an emissions trading system. To understand the issues in full, read Tim Kelly's submission[2] on an expanded National Renewable Energy Target.

Key issues for the Senate Select Committee to consider

The two key issues that the Senate Select Committee should consider in this matter are that:

1. Because the proposed ETS is all consuming, it requires a target that reflects the full extent of emissions cuts required by science, including Australia's mandatory cuts and plausible voluntary actions. Such a target is much higher than the 5% proposed minimum and with potential voluntary actions including widespread household and

[2] http://www.climatechange.gov.au/renewabletarget/consultation/pubs/067timkelly.pdf

business efficiency initiatives, a potential massive take-up of GreenPower if the scheme is reformed so customers receive reduced emissions and avoid CPRS costs, low emissions transport, and greener supply chains, then 25% to 40% should be the minimum starting range for the Australian Government to consider, and to present at talks in Copenhagen.

2. The nature of a cap and trade approach is that it cannot be 'fixed' to recognise vast potential voluntary actions that would arise with a genuine price on emissions. Non traded efficiency reductions cannot show up in economy wide data monitoring that also includes growth and other factors.

   A cap and trade mechanism is not something that can be made t be '*just one of many climate policy instruments'* as all other initiatives end up as being picked *winners within the cap (*not additional), or as guessed and fiddled adjustments to the cap.

Consider a carbon tax

Alternative to a cap and trade approach, a carbon tax, works by placing a price on carbon that then drives voluntary action in all sectors of the economy to avoid the tax, contributing to National emissions reduction even where contributions by individuals and thousands of small to medium businesses are not measured.

There is overall merit in a simple tax applied at roughly the same places where the CPRS costs would be applied close to the source of direct emissions and where bulk fuels are sold to diverse markets.

It is essential to note that the opportunity for voluntary action in an economy that has an effective price on carbon is not the same as voluntary action where no price on carbon exists. A carbon tax commencing at a very low rate can be most effective when used in conjunction with National reduction targets and gateways where businesses and communities understand that if emissions are not lowered fast enough, the tax will increase until they are. The difference is that every individual, household and business has a direct role in achieving the targets and in doing so will transform the whole economy, not just the 1000 or so businesses that currently pollute above the thresholds. In he case of electricity supply, the difference is that the retail market will be empowered to chose businesses that don't pollute rather than be forced to pay for businesses that do.

Revenue from a carbon tax should not just be handed back to polluters without significant conditions. Whether revenue from a carbon tax is paid to householders and individuals, or is used for direct government intervention to coordinate new low emissions infrastructure is important yet secondary to the comparison of a carbon tax versus a carbon cap and trade approach.

Neither a cap and trade approach nor a carbon tax are immune to being compromised when dealing with the realities of picking winners to protect jobs and existing businesses. It is however, all too easy to fall into the trap of thinking that because a cap and trade approach uses the word 'cap', that this would deliver a better emissions outcome.

It is therefore recommended that the Senate Select Committee consider the comparative benefits of a carbon tax, including:

- A carbon tax can be more transparent as any variation in rates for a particular industry sector or business can be on a public register. (e.g. what concessional rate is applied and for how long).
- A carbon tax can legitimately commence at a low rate yet still be an effective policy mechanism where businesses and households understand that the tax would increase each year if National emissions were not reduced fast enough.

- A carbon tax acts more smoothly throughout economic cycles and avoids periods when too many permits are issued, whereas cap and trade approaches create periods of coasting that waste valuable time in switching to a truly low emissions economy is needed.
- A carbon tax drives voluntary action everywhere in the economy, whereas under the proposed CPRS combined with the National Greenhouse and Energy Reporting System (NGERS), prices of energy will go up but consumers won't have choices for meaningful voluntary products and services to avoid the carbon price.
- A carbon tax can be adjusted more easily than changing the emissions caps. For examples of the impossibility of creating a sustainable 'cap'. Just consider the management record of Australia's Murray Darling Basin, which is typical of many complex cap and trade situations.
- Less data on future economy performance is needed for a carbon tax. No rights to pollute (that lead to potential compensation and buy back costs) are locked in with a carbon tax and a huge range of complementary policies are compatible.
- A carbon tax will drive more green jobs in Australia and won't be as dependent on greenhouse products from uncapped developing nations.
- When compromised with exemptions and picked winners, a carbon tax holds up better as a foundation policy to drive a low carbon economy because it can be used effectively with complementary measures whereas a cap and trade system can only be effective and fair as a policy instrument if the compromises and exemptions are small and the targets are founded in science.

A carbon tax must be set in the context of agreed goals such that businesses will have certainty that if collective emissions don't reduce fast enough, the tax will be increased. This creates a huge imperative for businesses to reduce emissions and to be seen to be reducing emissions so they are not responsible for increasing costs to all others in the economy.

We attach the paper "*Greenhouse Tax Versus Greenhouse Cap and Trade - The Debate We Never Had*", as Appendix 1, which explores why we think that there has never been a fully informed debate on these policy options.

Contradictory messages on voluntary mechanisms and no assurance through the CPRS Exposure Draft Legislation

Government messages on how voluntary efforts might be meaningful are contradictory to the voluntary mechanisms proposed in the draft legislation. On one hand the Government has suggested that traditional voluntary action suggesting that:

- improving efficiency and installing insulation (GreenPower also fits into this category) will build Australia's capacity to reduce emissions, free up emissions permits which will lower permit prices and make it more feasible for the Government to reduce the cap in future years. The CPRS Exposure draft explains that

On the other hand the draft legislation proposes an entirely contradictory mechanism for voluntary action.

- Part 14—describes the voluntary cancellation of Australian Emissions Units (AEUs). The voluntary surrender of AEUs (CPRS permits) will increase scarcity and permit prices whilst not improving Australia's capacity to reduce emissions and makes it less feasible for the Government to reduce the cap in future years.

It makes no sense to suggest that voluntary actions to build capacity for a green economy will reduce emissions by creating a surplus of AEUs, when at the same time suggesting that throwing AEUs in the bin, creating scarcity in the market with no addition to a green economy will also reduce emissions. The abstract concept of throwing permits in the bin is meaningless when the emissions cap is based on Government reading of a political landscape and what business can afford.

Kind regards

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Private Citizen

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APPENDIX 1 14 February, 2009

Greenhouse Tax Versus Greenhouse *Cap and trade*
The Debate We Never Had

1. INTRODUCTION TO THE DEBATE WE NEVER HAD

The Federal Government has now released its Carbon Pollution Scheme White Paper and as expected the mechanism it has chosen is that of a pollution permit and trade system (*cap and trade*). The *cap and trade* approach has been widely accepted by many businesses, green groups and Australia's major political parties including the Australian Greens and yet I am continuously witnessing surprise by individuals and groups when they learn more about the impact of such an approach on eliminating the economy wide benefits of voluntary behaviour.

At the outset when State and Federal Governments were considering which approach would best deliver reduced National emissions reduction, they should have explained the basic advantages and disadvantages in of the two likely contenders being a *carbon emissions tax* (*carbon tax*) or the *cap and trade* approach in an open and transparent manner. In the disadvantages column of a *cap and trade* scheme, stakeholders should have been advised of the following critical points

1. A *cap and trade* scheme by its nature, extinguishes the impact of voluntary efforts from reducing aggregated economy wide emissions as any greenhouse reduction or avoided emission by an individual or entity merely results in freeing up permits to pollute in another part of the economy. (i.e. it makes no difference whether I ride my bicycle to work or buy the biggest worst performing V8 petrol vehicle- National emissions will be the same!).
2. A *cap and trade* system by its nature does not drive innovation in voluntary markets and greatly reduces diversity in voluntary markets.
3. A *cap and trade* scheme that uses the voluntary surrender of permits as a greenhouse reduction mechanism ties the cost of voluntary abatement with the cost of pollution, ever diminishing prospects of continued voluntary action.

This is not to suggest that the *cap and trade* approach might not drive actions to reduce emissions by permit holders, but it leaves out vast numbers of individuals and small to medium businesses in the economy from being able to contribute to reduce National emissions in a meaningful way. A *cap and trade* approach largely alienates non-permit holding businesses and individuals from taking a meaningful role in reducing the Nation's emissions. There is a question as to whether there is any value in the Department of Climate Change slogan "Think climate. Think change. We can't afford not to".

2. WHAT WERE STAKEHOLDERS TOLD ABOUT CAP AND TRADE AND THE ALERNATIVE CARBON TAX APPROACH?

2.1. McKibbin and Wilcoxen Blueprint: Sensible Climate Policy

Professor Warwick McKibbin and Peter Wilcoxen have been proposing a hybrid approach since the late 1990s presented as being somewhere between a *cap and trade* approach and a tax approach picking the best of both approaches. The idea has appeal but the concern is that the Blueprint could be considered to implement a cap in later years causing the failure of individual actions from reducing National emissions.

Their most well known paper is the McKibbin and Wilcoxen Blueprint "Sensible Climate Policy"(2005) which outlines an economy wide greenhouse management approach that would operate within Australia and link to international systems. The approach has since evolved and continues to be improved.

The hybrid policy proposed by McKibbin and Wilcoxen and more recent updates of the concept has a long-term goal for emissions reduction but also seeks to minimise short-term costs in achieving those targets. It does this by "focusing on the price of carbon in the short run but guided by information on the expected future price of a carbon target in the long run".

McKibbin and Wilcoxen argue that fixing the cost of abatement, has the disadvantage of involving potentially huge transfers of wealth either within countries for a domestic system or between countries for an international system, and would be politically unrealistic. However, a hybrid policy, combining the best features of the two would be an efficient and practical approach.

So the first thing that the McKibbin Wilcoxen approach does is to fix the price of permits (which is somewhat similar to fixing the cost of abatement) and provide unlimited permits in a given year. In my mind, this aspect is a carbon emissions tax. The *cap and trade* part of the concept comes into play where a limited number of long term permits are issued, and ultimately short-term permits would diminish.

Blueprint describes that "Every ten years countries would meet to evaluate the information on emissions, climate change, and climate science and then decide whether or not to change the agreed annual permit price to be in place for the following decade". This is a sound approach to review and update the tax rate in line with emerging science and global co-operation to tackle climate change, but perhaps it should happen every 5 years to be more up to date with global changes.

There is a problem however with the scheme proposal to release long term *rights to pollute* in diminishing permits that in time do cease all together (with varying specified rates for up to 100 years). Whilst the release of diminishing permits could be done cautiously, a growing number of scientists are suggesting that the Global situation may require zero emissions or even negative net emissions. There is little value in five or ten yearly reviews if too many long-term permits have already been issued. If this turns out that extreme cuts are needed, virtually all issued permits would need to be bought back or cancelled.

I fully agree that the mechanism would perform well in comparison to the Kyoto Protocol, which has its foundations in trading greenhouse benefits from countries with no greenhouse constraints to countries with constraints. I compare this to trading when insolvent and suggest that this must change when all countries agree to constraints.

In regards to supporting voluntary actions, the McKibbin - Wilcoxen Blueprint is virtually a *carbon tax* based approach in the short term, and then a *cap and trade* scheme in the longer term causing the elimination of the role of individuals and business entities in reducing National emissions because the associated permits are used elsewhere.

This problem was not discussed in the Blueprint and at the time of its creation, and it is possible that few people had thought these issues through, certainly not to the extent that is only now just being covered in the Federal Governments Discussion paper on a proposed National Carbon Offsets Standard. (see policy analysis on Bravenewclimate.com.

2.2. National Emissions Trading Taskforce.

When the National Greenhouse and Energy Taskforce (NETT) headed up by Roger Wilkins presented its National Emissions Trading Taskforce Report in 2007, it contained a brief discussion on the merits of *cap and trade* compared with 'alternatives'.

The paper asked the question: "Why emissions trading?" In answering the question, the paper made the following statements:

> "Compared with alternatives, it is widely acknowledged that emissions trading is a practical, flexible and relatively low cost means of achieving an emissions target for some sectors, potentially including the energy sector. However, stakeholder views on alternative approaches are sought".

It is interesting that the paper starts with an unsubstantiated viewpoint, and then asks for stakeholder views, rather than describing the nature of the problem, in that there needs to be lower emissions and then asking for real discussion about what is the best approach that would motivate markets towards achieving this goal.

Further statements:

> "Another strength of an emissions trading scheme compared with alternative measures is that it has an inbuilt mechanism for providing adjustment assistance. Scarce permits to emit greenhouse gases have value. The way in which this initial value is allocated can be used as a way of ensuring that those who are likely to be most adversely affected by the introduction of the scheme are assisted.

Such a strength can be equally applied through a *carbon tax* mechanisms via tax exemptions of discounts to certain entities for a period of time.

> "A further advantage is that a scheme can be designed to facilitate trading in future emission permits—which provides both market estimates of future emissions costs and an opportunity for companies making long-lived investments to hedge them. In this way, an emissions trading scheme can reduce investment risks in the power and energy-intensive industry sectors."

This is a feature of the mechanism that is not needed with a *carbon tax* approach. Emission reduction pathways and targets identified by Governments can also be used to provide estimates of the future costs of a *carbon tax*. The mechanism is really about cost mitigation for certain emitters rather than being an advantage of the scheme.

> "One of the great strengths of an emissions trading scheme is that it is technology-neutral (ie, does not specify suitable technologies). It allows the market to seek out the lowest-cost ways of achieving any particular emissions cap. It does not rely on omniscient governments directing investments and abatement activities through more traditional 'command and control' regulation, or through industry- or technology-specific subsidies. It allows a variety of technologies to be adopted based on commercial competitiveness."

With the Taskforce having expressed this view in 2007, we see in 2009 that the CPRS proposes to pick large emitters as winners through the granting of vast amounts of free permits to fossil fuel technologies. We also see large amounts of assistance to energy intensive trade exposed industries and strongly affected industries and so the intended "great strength" is completely lost and commercial competitiveness between low emissions technologies and existing fossil fuel industries is barely changed. It is rather disturbing that a market based ideology dependent on the market forces determining the price of permits is now compromised by capping the costs. A true *cap and trade* mechanism fixes the cap for permits, and never fixes the price.

Of most particular interest to the current situation regarding offset products, the NETT Report presented a positive future for carbon offset products. The NETT Report did not acknowledge any of the risks that we now see emerging for voluntary markets, and did not acknowledge that the nature of *cap and trade* mechanism would ruin the impact of voluntary action on reducing National emissions. Instead, the NETT Report said:

> "A number of priority areas for the development of methodologies for offsets have been identified: forestry; carbon capture and storage; reductions in industrial process emissions; and destruction of methane in the waste sector. It is proposed that a flexible approach be adopted that would allow project proponents to submit methodologies for projects in other areas. These would then be reviewed by the Scheme Developer … against set criteria designed to protect the integrity of the scheme. Projects for which methodologies were approved would be eligible to create offset credits".

On a final note, the text in the main document suggested that:

> "While a number of different potential models for emissions trading exist, the collection of *cap and trade* models are widely preferred as they better guarantee emissions reductions while the costs can be capped".

This comment is not backed up with examples of success or failure in complex markets.

In concluding an assessment of the NETT Report discussion on the issues, there are no compelling reasons as to why *cap and trade* would be better than a tax, just statements about widely viewed preferences, benefits that can equally be claimed with an emissions tax approach and a somewhat misguiding viewpoint on carbon offsets.

2.3. The Garnaut Review

Ross Garnaut in the 2008 Garnaut Review suggested that the role of complementary measures to the emissions trading scheme is to " lower the cost of meeting emissions reduction trajectories, as well as adapting to the impacts of climate change by correcting market failures". It is surprising that the Garnaut review did not openly discuss the impacts of a *cap and trade* approach on voluntary actions. Whilst it is possible for a reader to interpret that some discussion on complementary measures might include voluntary actions, it is not explicit.

The Garnaut Review made one additional comment that policy makers should heed.

> "A well-designed emissions trading scheme has important advantages over other forms of policy intervention. However, a carbon tax would be better than a heavily compromised emissions trading scheme".

Since the release of the White Paper, Garnaut has openly criticised the level of free permits and compensation identified in the CPRS proposal. Garnaut's following comments suggest that the CPRS is now heavily compromised:

- "There is no public policy justification for $3.9 billion in unconditional payments to generators in relation to hypothetical future "loss of asset value"".
- "Never in the history of Australian public finance has so much been given without public policy purpose, by so many, to so few".
- "The proposed issue of free permits to trade-exposed emissions-intensive industries raises different issues. Like free permits to generators and the price cap, it carries risks to the public finances — in this case, of much greater dimension".

2.4. CPRS Green Paper

In section 1.22 of the Green Paper there is a comparison of the CPRS *cap and trade* approach against other possible policy responses. The Department of Climate Change set about with ideological statements to justify a pre-existing viewpoint without fully describing advantages and disadvantages. Most of the discussion is placed into a neat little box[3] which by itself is a method of marginalising the issue. The discussion presents a number of claims as reasoning.

With regards to the section on "Why not a Tax?", I have numbered the paragraphs in the box in order to make comments on each in text that follows.

Box 1.9 – Extract from the CPRS Green Paper

Why not a tax?

1. Both an emissions trading scheme and a *carbon tax* are ways of putting a price on carbon. An emissions trading scheme restricts the quantity of emissions and allows the market to set the price of carbon pollution permits–the carbon price. A *carbon tax* increases the cost of emissions by a set amount and allows the market to determine how much abatement to undertake in response–that is, whether it is more cost effective to pay the *carbon tax* or to undertake abatement.

2. Where the Government has full information, a *carbon tax* and an emissions trading scheme can deliver similar economic and environmental outcomes. However, it is rare that the necessary information conditions can be met for a *carbon tax* and an emissions trading scheme to be equivalent policy instruments.

[3] A similar approach was used to stage discuss Scope 2 emissions accounting matters in the December 2007 Discussion Paper on the NGERS Determination, Page 128, or see my comments on this in the appendix of my personal submission on the expanded National Renewable Energy Target).

3. The key benefit of an emissions trading scheme over a tax is that it secures the environmental objective by controlling the quantity of emissions directly. Emissions trading may provide greater long-term policy credibility as the community can see the direct link between the policy instrument and the environmental objective.
4. Australia's international commitments are likely to continue to be defined as quantitative targets so this approach allows international obligations to be managed more effectively.
5. Emissions trading has emerged as the preferred approach in many other developed countries. In part, this is because domestic emissions trading schemes can easily be linked, giving firms the capacity to access least cost abatement opportunities internationally. As this occurs, carbon prices will equalise across countries, creating a global carbon price, without the need for centralised decision making.
6. *Carbon tax*es could also be harmonised but this would involve multi-party agreement and would therefore be difficult to achieve in practice.
7. Emissions trading also allows for mechanisms to help entities manage the uncertainty around future carbon prices. For example, emissions trading allows for derivative financial products to be developed. It is difficult for a *carbon tax* approach to provide similar means to manage uncertainty around future carbon prices.

RE: Paragraph 1: on context

Paragraph one outlines how in an ideal theoretical situation the two approaches would work. In reality, the statement regarding an emissions trading scheme allowing "the market to set the price of carbon pollution permits–the carbon price" is false. The proposed CPRS uses grand fathering; compensation payments on a massive scale to manipulate the price of permits and costs for picked industry situations; and one way trade restrictions to prevent exports of Australian CPRS permits (converted into Kyoto tradable units).

The Government backs up price control by capping the price at $40/tonne CO_2-e. When the Green Paper was released, the Government had already planned such market interventions and must have known that the *cap and trade* approach in this form would not allow the market to determine the price.

RE: Paragraph 2: on Full information

Such a statement on the need for full information in a *carbon tax* is complete nonsense. A *carbon tax* does not require full information as the rate of tax is easily adjusted to drive a faster or slower market response. Setting the reduction targets and pathways lets the market know that the cost of emissions will increase if businesses fail to reduce emissions and this acts as an additional constant driver across periods of high and low economic and emissions growth.

In contrast, the emissions *cap and trade* approach always requires an assessment current and future economy wide emissions and business emissions creating vast opportunities for mistakes. We have already seen this fail spectacularly in Europe where too many permits were issued in the first trading period, virtually wasting 5 years in starting to bring down emissions and creating windfall profits for a number of polluters. A *cap and trade* approach does not create a constant market driver across economic cycles of and low emissions growth.

RE Paragraph 3: on the Key benefit being a secure environmental objective

Firstly I particularly dislike the belittling of the importance of reducing emissions to being " an environmental objective". As the Government points out in its Green Paper the IPCC suggests that climate change presents the risk of increased temperatures in Australia by 1 to 6.4 degrees. On current global Fossil Intensive behavior (Closely aligned to the A1FI Scenario) the range is between 2.5 degrees and 6.4 degrees with a best estimate of 4 degrees by 2100. This is double the dangerous climate change usually referred to at 2 degrees and many human settlements, economies and ecosystems would not be able to adapt. Most human settlements and economies in Southern Australia's vulnerable dry zone could not adapt to such an extremes and would decline. The high end of A1FI human behaviour suggests three times dangerous climate change and the Government should keep reminding us that the risks to the economy, people and environment increase in a non linear way as temperature rises.

As for the key benefit being secure emissions control, this is dependent on achieving a target that does the job. Currently, emissions reduction objectives set between 5% and 15% reductions by 2020 are not sufficient and there is a risk that the cap and trade mechanism with the targets may lock in failure.

There is an added risk that everything will revolve around achieving a specific value cap causing too much attention on accounting methodologies that support results being achieved (including clever accounting loopholes) rather than drivers which support constant action and change for emission reduction.

At 5% reductions it is arguable that there may be no direct link between the Scheme and the objective to reduce Australia's emissions to sustainable levels.

RE Paragraph 4: International Targets

There is no reason why an emissions tax cannot be used to achieve quantitative targets. International frameworks do not prescribe how nations will achieve their commitments. There is however a real danger that when Australia does start to reduce emissions in a significant way, pressured by the international community in the face of emerging climate impacts, and when true scarcity is introduced, the artificially priced controlled permits will be fully consumed causing businesses to run out of permit supply. At that point we will say *'what now?'* There will have been insufficient drivers for change to transition to a low emissions economy. Large Corporations would have used market position to buy up permits leaving smaller players to struggle. In ten years time, we may need to re-visit the whole mess and acknowledge that the stage managed *cap and trade* approach failed to contain drivers for change. This will be the Murray Darling Basin situation repeated but in the atmosphere, contributing to global worsening and not just regional failure.

RE Paragraph 5: Emissions trading has emerged as the preferred approach

The Australian Government should look past what "many other developed countries" are doing and assess the best approach that will be effective and sustainable. Domestic schemes under a *cap and trade* approach can also be linked to other nations giving firms greater capacity to access or sell least cost abatement opportunities internationally. This does not happen under the CPRS which is extremely restrictive, particularly in reducing offset opportunities, reducing voluntary renewable energy mechanisms and restricting export markets in offsets and low emissions products.

RE Paragraph 6: *Carbon tax*es could also be harmonised but this would involve multi-party agreement and would therefore be difficult to achieve in practice.

Is the Australian Government seriously suggesting that linking *cap and trade* schemes will harmonise carbon prices but *carbon tax*es would not?
The reality check needed here is that harmonisation is not likely to occur in either case because even if all nations could participate in the market, nations have different economic wealth. We don't have free trade and market parity in any other aspect of global markets so it is a fallacy to suggest that carbon prices will equalise across nations regardless of whether there is a *carbon tax* or a *cap and trade* approach, particularly when we need action from both developed and developing nations.

RE Paragraph 7 Emissions trading also allows for mechanisms to help entities manage the uncertainty around future carbon prices.
Nothing could be further from the truth. With a *carbon tax*, the market knows the starting cost straight away without the need for market intervention for free permits to indirectly manipulate the price and cost. The Government has proven that it does not even believe this statement because it has fallen back to a price cap of $40 per tonne CO2-e, just as a *carbon tax* would set the price.

In a *carbon tax* approach, depending on how quickly the market is responding, future tax gateways and projections could be used in the same way as when setting emissions caps.
An emissions *cap and trade* approach provides no certainty in price where emissions will need to be reduced (more than the 5% that might happen with recession anyway). There is a risk that with an artificial price cap, the ceiling might be reached and businesses will run out of permits. At that stage we will face an impossible economic dilemma and the Government will need to choose between acknowledging that the CPRS didn't work or it might force business sectors into closure.

The claim that it is difficult for a *carbon tax* approach to manage uncertainty around future carbon price is by definition untrue because it is far more direct, transparent and can be more easily forecast.

With regard to derivative financial products such abstract creations are not necessarily welcome. The last thing we would want is a perverse use of permits to create securities or to be hoarded by speculators. Permit products and rights issued to the market also create the conditions that will cause the need for compensation when the scheme targets need to be tightened up at a faster rate than anticipated. There is little benefit in creating a market sector based on intangible nonsense that gets us nowhere other than to secure perverse outcomes.

In reality, the *cap and trade* approach in destroying the ability for individuals and entities in being able to reduce economy wide emissions through tangible actions reduces market opportunity for offset products, renewable products financial products and even efficiency products in the wider economy.

Conclusion regarding the CPRS Green Paper "*Why not a tax*"
Based on the Green Paper, and its lack of reasoned justification on the merits of the *cap and trade* approach compared with a tax there is nothing of merit to suggest that the *cap and trade* approach would be better than a tax in achieving reduced emissions in line with identified targets and reduction pathways. Some of the stated advantages apply equally or are even stronger in an emissions tax approach. Other claims such as being better to manage price uncertainty by definition of the mechanisms, are simply not true.

There were carefully placed comments about the nature of carbon offsets in other parts of the document but the critical issues on how the *cap and trade* approach would differ from an emissions tax approach across the whole economy and what it would do to the efforts of individuals, were not covered in an open and transparent way in this important discussion.

3. ANOTHER VIEW - JAMES HANSEN

Dr. James E. Hansen of Columbia University is one well known example of people that have serious misgivings about the effectiveness of *cap and trade* approaches.

In January 2008, James Hansen in an open letter to the American President in Waiting Barrack Obama suggested that:

> "*Cap and trade*" generates special interests, lobbyists, and trading schemes, yielding non productive millionaires, all at public expense. The public is fed up with such business. Tax with 100 percent dividend, in contrast, would spur our economy, while aiding the disadvantaged, the climate, and our national security".

Hansen goes on to call for a *carbon tax* (on oil, gas, and coal) at the well-head or port of entry and then describes how the will then appropriately affect all products and activities that use fossil fuels. In making such a statement, Hansen is recognising the economy wide impact of a tax based system. He does not however acknowledge the constraints of a *cap and trade* system in destroying the efforts of an individual or business entity to bring down economy wide emissions through their actions.

On one matter I am not in complete agreement with Hanson and that is the idea that the tax will be returned to them as equal shares on a per capita basis (half shares for children up to a maximum of two child-shares per family), deposited monthly in bank accounts. (the tax gives the push away from polluting technologies and there is some legitimate debate to occur on the best way to use the revenue to pull through the lower emissions technologies) I would like to see the tax returned to those that pay for it, but only in the form of low emissions energy, low emissions transport and efficiency solutions installed in households and businesses. Hansen's approach has merit in avoiding the need for large bureaucracy yet there would be considerable bureaucracy in shifting revenue back to individuals.

Hansen's approach suggests that person reducing their carbon footprint more than average, will make money, whereas a person with large cars and a big house will pay a tax much higher than the dividend (indirectly). With Hansen's approach in the United States not one cent would go to or as Washington (Same with the Australian Government's CPRS) yet funds would not be returned to businesses as compensation and there would appear to be exemptions and thereby no support for lobbyists. Hansen suggests that unlike cap-and-trade, no millionaires would be made at the expense of the public.

4. TIM KELLY ON AN EMISSIONS TAX VERSUS *CAP AND TRADE*

In my personal submission on the NETs discussion paper in December 2006, I raised concerns that the proposed NETS would seek to create scarce emission permits whilst at the same time capping the costs. The difficulty with this approach is that this defies economic logic whereby scarcity should increase the market costs or else the artificially constrained low price will lead to rapid depletion of all permits with limited market trading. This I said would "create enormous pressure to compromise one or more of the intended outcomes, such as over allocating short and long-term emission permits to existing polluters".

The CPRS White Paper does indeed compromise every proposed aspect of the economic mechanism. It has gone to great lengths to control the price that the Government said the market would determine. The White Paper caps the cost and uncaps the emissions cap in any given year.

The 5% cap by 2020 (minimum Australian Government Guarantee), does not recognise that at such a small reduction, the impact of recession and uncertain measurement methodologies may cause reductions to be even greater than the reduction target. When this happens, the *cap and trade* approach stops working as an economic driver and there is a period of free floating until scarcity is re-introduced (as per the European experience) and when the economy picks up there will be enormous pressure to not let emissions restrictions stand in the way of economic growth.

Some argue that so long as this free floating occurs within the cap that the system is working as it is designed to, but it is also a lost opportunity as highlighted in McKibbin Morris & Wilcoxen paper of 2008: *Expecting the Unexpected.* The IPCC fourth Assessment Report also suggests that we really don't have time to spare in changing to a truly lower emission economy.

In my submission, I suggested that "there might be valid reasons why a *Permit and Trade* NETS may be better than a carbon *Levy (tax) and Trade NETS*, or otherwise, yet it is not possible to quantify the differences as no alternative market or economic modelling was presented" There is still no detailed modelling provided which would have resulted in a value for money comparison of a compromised emissions trading scheme compared with what happens in voluntary markets when a tax on emissions is applied. This is a key difference between the two approaches that has not been fully explored.

In 2006, I suggested that "the complexity of a carbon permit and trade system that incorporates grandfathering and compensation is going to be overwhelming". Just on the reports from the National Emissions Trading Taskforce, the main document is hundreds of pages long and supplementary documents such as the '*Further definition of the Auction Proposals in the NETT Discussion Paper'* is another 74 pages. The current CPRS White Paper is around 850 pages long and this is without the suite of documents relating to complementary measures.

In 2006 I suggested that there is a risk that emission permits will be over allocated, or if they are not, that the costs will not be shared fairly because of too much grandfathering and compensation. I maintain these concerns.

4.1. Simplicity of an Emissions Tax and Trade System

A *carbon tax* applied broadly to the market could be described in a document of not more than 20 pages, and the legislation and regulations would also be much simpler. All the other background and context covering the need to act should be properly covered in separate documents.
The same thresholds could apply and concessional tax rates could be granted to Energy Intensive Trade Exposed Industries (EITEIs) for a period of time (noting that this also compromises the Tax system). For a tax to work, it should be broadly based and include Energy, Transport, Industry, Forestry and land clearing sectors. The system could be administered through an Emissions Regulator and the levy collected through the taxation system. Revenue raised could then be directed towards establishing low cost , low emission sources of energy for trade exposed energy intensive businesses and helping sectors adapt to climate change.

4.2. Can voluntary action make the difference?

Some people have questioned whether issues relating to voluntary market mechanisms such as double counting or false and misleading programs are of material concern based on limited voluntary action to date. There is also a view that where activities are considered as inelastic voluntary actions would fail to deliver even if shortcomings were fixed. The logic suggests that because voluntary action has not reduced emissions to date that only a cap can make the difference. The matter needs to be carefully explored, and in the end it boils down to how well the introduction of a tax on carbon emissions, which interacts well with complementary measures and voluntary actions, can drive an economy wide change or whether a negotiated *cap and trade* mechanism can do it better.

Considering the example of personal transport, one view is that very few people would switch to pedal power, public transport or fuel efficient vehicles with a *carbon tax* so there will be little change. The alternative view is that a price on fuel **does** make a difference, combined with climate change awareness, compulsory vehicle charges, parking policies public transport standards and accessibility and support for cyclists and pedestrians. In 2008 when the price of transport fuels increased by approximately one third there was a dramatic response in National transport fuel use, many people switched to public transport, and there was a corresponding drop in sales of new vehicles, particularly those of poor fuel economy.

It is the combined effect of cost and choice that drives market change. A *carbon tax* can amplify such a market response whereby the cost of fuel would increase (as it would eventually under a CPRS) and in addition, individuals and entities could legitimately believe and claim their part in reducing emissions, and would feel confident in making choices to reduce emissions. The CPRS in comparison creates a carbon cost but virtually no choice for voluntary consumers.

Considering renewable energy, a *cap and trade* approach would increase the cost of fossil fuel produced electricity and constrain emissions causing energy producers, wholesalers and retailers to seek lower emissions technologies including renewables. The proposed CPRS however, contains such compromises with free permits, indirect price control and a price cap that the impact is unlikely to cause change. Furthermore, the combination of the CPRS with the NGERS Determination (2008) eliminates market choice for customers, and so the adoption of low emissions technologies to reduce National emissions is left largely in the hands of the fossil fuel generators and other large emitters.

The alternative *carbon tax* approach (with NGERS reform) extends the market influence of the carbon price into the decisions of ordinary individuals, households and businesses. A *carbon tax* would empower individuals to choose whether they pay a higher price caused by carbon permits, or a higher price for renewable or low emissions energy product that also serves to legally reduce their emissions and reduce National emissions. As the price of carbon increases through time, the price of renewables would decrease in comparative terms and possibly in real terms as well, further justifying continued voluntary action.

In this way, where voluntary markets frameworks are set up correctly to incorporate a given cost of greenhouse emissions, that they can deliver a greater economy wide response and outcome compared with *cap and trade*.

4.3. A National Plan for Climate Change Defence

Directing funds to particular areas (picking winners) is consistent with moves by both the Federal Government and Opposition which for example, both seek to directly inject assistance for carbon capture and storage technologies for coal fired power stations. More recently the Federal Opposition has released a storage focussed climate change plan to improve carbon in the landscape. Both major parties cannot refrain from picking winners due to concerns about protecting current jobs and current fossil fuel based domestic and export operations. So why not use the *carbon tax* to firstly push the market away from greenhouse intensive activities and secondly use the revenue to pull industries into adopting low emissions technologies in a positive way without penalty for many vulnerable businesses?

Using the tax revenue collected, the Department of Climate Change could be elevated to the status of a Climate Change Defence Force and operate in much the same way that our military defence forces act to get the job done using private industry to build and implement infrastructure and programs for National low emissions objectives.

The Department of Climate Defence would roll out and implement Nationally prioritised greenhouse reduction strategies and projects for both adapting to climate change and reducing emissions. In dong so there can be standards to ensure business transition rather than close. The point is not to protect say *brown coal fired generators*, but to help them change into *low emissions generators* whilst protecting their workers and shareholders as their businesses transform.

A system of checks, balances and reporting could be used to maintain accountability for projects to deliver a balance of investment across efficiency programs, fossil fuels, renewables and landscape based greenhouse programs. Key performance indicators such as $/$CO_2$-e captured or avoided and $/carbon neutral energy achieved would be most valuable.

Unlike the CPRS model, most of the funding would go into transforming Australia to a low emissions economy. Some of the funds could go to reduce or eliminate other taxes that inhibit good business, and some of the funds could go towards climate adaptation.

There would be push and pull drivers in the economy, every individual and business entity can play a part and the tax rate is likely to be more effective at a lower price.

There should be no merry-go-round of funds that take revenue from a polluter and gives it straight back to the polluter. This creates a false carbon price, is inefficient and causes significant financial transaction and administration losses. If the Government intends to hand back revenue, it should not have taken revenue from business in the first place.

4.4. Comparison between *Cap and trade* versus *Carbon tax*

I have entered my own assessment of the comparison between the two different approaches of *cap and trade* versus a *carbon tax*. For simplicity, I have not included the McKibbin Wilcoxen hybrid approach. I have also not fully reasoned my assessment within the table as this has been covered in the previous text and in some cases in other linked documents'

Table 1: Comparison between *Cap and trade* versus *Carbon tax* for reducing emissions

Aspect	***Cap and trade***	***Carbon tax***	**Winner**
Cost on business and community	For a given price on emissions the cost on carbon is has no influence for change in the broader economy where customers have no alternative.	The cost on emissions has a wider impact than just the covered emitters as the tax drives the broader community and smaller businesses to seek alternative low emission electricity, products and services that can reduce National emissions	Tax
Economy wide and community wide involvement	Destroys the ability for an individual or business entity from reducing economy wide impacts.	Drives action directly through emitters and in secondary voluntary markets as people use their choices to avoid the cost and contribute to national emissions reduction	Tax

Simplicity and bureaucracy cost	Terrible, complex documents, complex schemes, complex shifting of funds and compensation for little value, legal risks	Minimal Can be managed to charge only what is required to cause change, letting the market decide where the change would occur without the merry go round.	Tax
Encouraging innovation in the market	Rules out many offset products and as proposed, destroys the integrity of voluntary purchases of renewable energy	Drives innovation and a full suite of low emissions solutions and renewable energy solutions that can be led by market choice for genuine renewable energy	Tax
Need for non tangible offset frameworks.	Creates perverse outcomes and the need for intangible concepts such as using permits as carbon offsets which do not directly link to low emissions solutions and may not indirectly drive low emission solutions and may not even cause economy wide reductions.	No need for weird reverse logic intangible offset concepts using permits to pollute as tangible market offset products and renewable energy choices would work to lower economy wide emissions.	Tax
Price certainty	Requires massive free permit allocations to indirectly manage the permit price. Falls back on a *carbon tax* to ensure the price stays below $40 even with many emitters paying nothing like this when grandfathered permits are factored in	Easily assigned and controlled by Government. Easily adjusted with new science and negotiations at regular intervals at markets transition.	Tax
Need for full information	Requires complex assessment of current emissions and forecasting of future emissions in five year blocks to seek to minimise over-allocation that would constrain progress or under-allocation that would cause mechanism failure and the need for review and intervention	Not required as the price becomes a constant driver in the economy throughout economic cycles	Tax
Certainty in achieving the greenhouse reduction objective	Unclear as to whether the CPRS could achieve certainty due to its compromises, measurement methodologies and the ability for Government to issue unlimited permits in a given year	Reduces emissions without direct control and necessarily requires reviews the economy transition to lower emissions and updates with science and negotiation.	Neither approach provides absolute certainty
Creating a difference between pollution costs and abatement for customers to decide on what products and services they would buy.	Buying and surrendering CPRS permits to reduce emissions causes *Siamese twinning*, locking the cost of abatement with the cost of pollution. (ultimately all other offsets form national and international sources would cease where all nations adopt *cap and trade*)	Increases the cost of polluting technologies and provides a relative benefit for other technologies to compete more fairly, letting the market decide what type of electricity, offsets and efficiencies they buy, knowing that these will reduce National emissions	Tax
International linking	Reduces options for trading offsets and low emission products	Increases opportunities to trade in offsets and low emission products	Tax

5. CONCLUSION

No system can be perfect a scheme to tackling climate change. There are no ‘silver bullet mechanisms’ just like there are no ‘silver bullet’ greenhouse solutions. For any mechanism to drive change, it must change the economy. When this takes place, there will be costs! For any working market mechanism to reduce emissions to safe levels these costs will be significant and will increase. There will be winners and losers, and most importantly, some of our most vulnerable industries would change to become winners.

Mandatory systems should be developed in such a way that they do not eliminate the additional benefits of voluntary actions by organisations and individuals. The *cap and trade* approach fails this test and this was not made clear to stakeholders in either the NETT Review or the CPRS Green Paper.

It can be argued that there is a need for further debate on the benefits of a *carbon tax* versus a *cap and trade* system by our senior economists in Australia and overseas. Whilst the Federal Labor Government has virtually locked itself into its CPRS *cap and trade* approach, it is not too late for the Federal Opposition and minor parties to have a proper review of the merits on how effectively the two alternatives would drive greenhouse reductions throughout the entire economy.

Economic modelling on both approaches should be carried out in the context of the deeper cuts in emissions that will be required in the near future, not on 5% reductions that can occur naturally due to economic cycles of stability, boom and recession. Modelling of the cost effectiveness of the revenue raised should be for both approaches at 15% and at the 25% to 40% emission reduction range suggested as a guideline by 2020 at the UNFCC Climate Conference in Bali, and at 80%+ as required by science in the longer term. Some argue that we should be preparing for much deeper cuts even faster and we need to watch this space and perhaps start modelling how Australia could contribute to extreme cuts.

The mechanism to achieve targes should however be separate from the process that determines the targets and emissions reduction pathways.

And finally, it is not sufficient to consider the schemes in isolation from economy wide processes. A *carbon tax* should be considered as part of the solution with its ability to interact well with complementary measures and to drive voluntary actions.