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# Senate select committee on climate policy

This submission has been prepared by the Consumer Utilities Advocacy Centre Ltd (CUAC), an independent consumer advocacy organisation, established to ensure the interests of Victorian consumers, especially low-income, disadvantaged, rural, regional and indigenous consumers are effectively represented in the policy and regulatory debate on electricity, gas and water.

We believe climate change policies must be fully cognisant of both the science of climate change, the efficacy of different policy mechanisms to address climate change and ultimately the equity impacts of those policies.

We believe that the emissions trading scheme proposed for Australia – the Carbon Pollution reduction Scheme (CPRS), in its current form, fails to be fully cognisant of the science of climate change, is likely to be an ineffective and inefficient policy tool, and while allowances have been made for compensation to households, does not fully address equity considerations that should be central to the climate change response.

In particular, the proposed trading scheme fails to take account of the significant cost of not mitigating the worst impacts of climate change, and the likelihood that adaptation will be most costly, and most difficult, for low income and disadvantaged households.

What follows is a summary of key recommendations that are elaborated on in more detail throughout the body of the submission.

***Summary of Recommendations:***

**Recommendation 1:** That in designing policy tools to reduce emissions, the Government must consider both economic costs of action and economic benefit of action. There is little merit in pursuing policy that minimises cost but also minimises potential benefits, or fails to account for other costs that remain externalised.

**Recommendation 2:** That the Australian Government adopt a policy objective to maximise domestic economic benefits for Australia, and global emission reductions, through an efficient transition to a low/no carbon economy, considering a full range of direct and indirect cost associated with Australia's domestic economic activity and international trade. Precise reduction targets should be subject to review based on evolving science; there is no merit pursuing reduction targets that have been outdated by advances in scientific understanding.

**Recommendation 3:** In order to facilitate a more accurate consideration of long run costs associated with climate change, an emission price equivalent to the 'social cost of carbon'[1] should be delivered through a tax - providing a far more transparent, predictable and effective price signal than emissions trading. This price signal would create certainty for private investors in all sectors, and throughout Government decision making on infrastructure investment and policy making more generally. Ultimately, this would help avoid risk of technology lock in or stranded investments that would impact significantly on costs borne by consumers for essential infrastructure.

**Recommendation 4:** That in order to create the right incentive for domestic investment specifically in new, renewable energy generation, the Government adopts a comprehensive feed in tariff for a full diversity of renewable energy generators. Research by Toke 2006, Kent 2006, Sonneborn 2004, Kelly 2007 and Menanteau 2002 suggests this is the most cost effective way of delivering new renewable energy, as opposed to the quota system adopted by Australia through the Mandatory Renewable Energy Target (MRET).

**Recommendation 5:** That if MRET is pursued, it be amended to ensure any clean electricity generation technology, of any size, has access to incentive created by the scheme by broadening the role of the multiplier. This would allow a diverse range of technology development and deployment, minimising risks of technology lock in and maximising the potential for positive spill over benefits to the broader economy. The multiplier must be carefully designed, as the feed in tariff was in Germany, to ensure incentive remains for continued technology improvement over time. Lastly, an accounting adjustment must be made so that while the multiplier allows certain technologies to generate additional revenue, it does not distort the real quantity of renewable energy delivered.

[1] the social cost of carbon could include the long term costs of climate change to the global economy associated at different emission levels, and the value of mitigating risk associated with different emissions levels. Sir Nicholas Stern estimated this cost to be around US$85t CO2 (2006 dollars)

**Recommendation 6:** That Government policy explicitly address the need to manage risks associated with dangerous climate change, being fully cognisant of climate tipping points or points of no return.

**Recommendation 7:** That the choice of policy tools used to reduce Australia's and global emissions must be fully cognisant of the global equity impacts of climate change itself, as well as the equity impacts of the policies chosen. Any policy mechanisms that either don't adequately address inequality, or exacerbate inequality, will have their legitimacy undermined and ultimately support for such policies will wane. In the interest of long term, effective policies, it is therefore fundamental to address a full range of equity considerations. These include:

- The extent to which the cost of historical emissions should be attributed to emitters today
- The extent to which emissions caused today will impact generations to come
- The extent to which climate change itself will have varying distributional impacts domestically and internationally
- The extent to which policies aimed at mitigating or adapting to climate change allocate costs and benefits equitably
- The need to protect fundamental human rights

When considering equity impacts, it is fundamental to understand that for society's most vulnerable constituents, consumption of essential services is inelastic to price. This is important to consider because price is often considered an effective way to encourage resource conservation and/or improved resource consumption efficiency. This may be so for relatively sophisticated organisations and perhaps some individuals. However, price is a very blunt instrument for the disadvantaged and can lead to debt issues, under consumption of essential services that leads so physical and social health issues, or a combination of both.

We believe the most efficient and transparent way to ensure cost attributed to carbon pollution is allocated equitably across the domestic sector would be through a carbon tax reflecting the full social cost of carbon. Through concession frameworks and other taxation mechanisms, those members of society least able to afford the cost of carbon pollution, could be protected. It is entirely reasonable that given climate change is primarily attributable to wealthy nations, and in particular, the high consuming wealthy elements of those societies, that these members of society undertake the 'heavy lifting' on climate change. As one of thr world's wealthy nations, Austraila should play its part by ensuring emission reduction targets at least exceed those targets required for the global economy.

Revenue raised by the tax could also be allocated to address international and intergenerational equity issues associated with climate change, as well as distributional impacts across Australia. Distributional impacts could include job losses caused by climate change driven policies, or higher energy and water costs in some areas more sensitive to climate change itself, or climate change policies. Revenue raised could also be used to assist

development of new clean energy technologies and/or systems to support businesses transition to a new clean economy.

While we recognise the proposed CPRS addresses some of these issues, we believe a tax system would allow greater transparency and so build confidence and support behind the policy.

The remainder of the submission elaborates on these issues according to the structure provided for by the senate committee terms of reference.

## *Consideration of Issues*

*The Select Committee on Climate Policy, has been established to inquire into and report by 14 May 2009 on (1) (a) the choice of emissions trading as the central policy to reduce Australia 's carbon pollution, taking into account the need to:*

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

It is important to first address the framing of this issue which suggests the objective of the emissions trading policy should be to reduce Australia's carbon pollution at least cost. Framing emissions trading in this way has three major drawbacks, the subject of which relate to Recommendations 1, 2, and 3. These recommendations are explored in more detail below.

**Recommendation 1:** That in designing policy tools to reduce emissions, the Government consider both economic costs of action and economic benefit of action. There is little merit in pursuing policy that minimises cost but also minimises potential benefits, or fails to account for other costs that remain externalised.

One of the ways CPRS purports to reduce emissions is through offsets. However, like much of economic activity, the price of an offset does not include all costs and benefits associated with that offset. For example, an offset created by switching to a more efficient light bulb may have low direct cost relative to replacing an inefficient air conditioner with a more efficient one. Per unit of emissions saved, light bulb switching is far more likely to be cost effective. However, more efficient lighting is unlikely to provide flow-on benefits to a household, while switching to a more efficient air conditioner may improve the health of a low income household, reducing health management costs for the broader economy or costs of providing Government concessions. In this way, what appears to be a more expensive offset activity, may in fact be more cost effective once a full consideration of its impact is considered.

Offsets driven by emission trading do not fully account for all costs and benefits associated with offset activity. Therefore, direct costs associated with achieving abatement may be minimised through offsets, but benefits to the broader economy may also be minimised or costs may remain externalised (such as health costs associated with energy affordability). This is as much a failure of emissions trading, as it is a failure of markets more generally to fully price costs and benefits associated with economic activity.

Illustrating the point, The Australian Academy of Technological Science and Engineering (ATSE) recently released a report highlighting work done in Europe to more fully quantify all

externalities associated with energy production, including health impacts caused by particular emissions[2]. The report recommends that work be done by Governments on quantifying the value of such externalities to help inform policy making. This principle could easily be extrapolated to other hidden externalities associated with economic activity.

Secondly, emission trading is not designed to necessarily reduce any one country's emissions, particularly the way it has been conceived for Australia. It is designed to reduce emissions at least-cost for businesses operating in the country that have a liability for emissions under the trading scheme – in this case Australia. This is best understood through the following thought experiment:

- Imagine an Australian economy that engages in no international trade. It produces all its needs domestically, for domestic consumption. All income is spent in the domestic economy. If emissions trading was implemented in this economy, and no offsets were procured in overseas markets, emissions trading would impose no net cost to the economy other than administration/transaction costs. It would merely transfer wealth from activity that produces emissions to activity that reduces emissions. In theory, this would have the potential to reduce Australia's carbon emissions at least cost.
- As soon as this hypothetical Australian economy trades internationally, costs imposed by emissions trading act as a domestic production cost factored into Australia's terms of trade. If offsets are allowed to be traded internationally, this creates potential to minimise those costs. In this scenario, Australia's emissions are not necessarily being reduced at least cost; global emissions are being reduced by businesses that have a liability under the Australian scheme, at least cost to those businesses. This scenario is indicative of the emissions trading scheme proposed for Australia.

If the policy objective is to reduce Australia's emissions at least cost, we find this objective to have limited merit, and for emissions trading to be a questionable tool to achieve the objective, particularly as it has been envisaged, i.e. with linkages to international offset markets.

**Recommendation 2:** That the Australian Government adopt a policy objective to maximise domestic economic benefits for Australia, and global emission reductions, through an efficient transition to a low/no carbon economy, considering a full range of direct and indirect cost associated with Australia's domestic economic activity and international trade. Precise reduction targets should be subject to review based on evolving science; there is no merit pursuing reduction targets that have been outdated by advances in scientific understanding.

It is important to address the ability of emissions trading to illicit an efficient emission reduction path over time. Fundamentally, the efficiency of an emissions trading scheme depends on the assumption that reducing emissions at lowest cost at any given time produces the most efficient, or lowest cost emission abatement path over time. This assumption is contentious.

Environmental policy research has highlighted that emissions trading can create "technology lock-in" which has the potential to mask more efficient economic equilibrium. One way this can occur is that a technology may be preferable today when emissions are valued at $0, but not $50, but not dislodged when emissions are priced at $50 in the future (Kline, 2001).

[2] See http://www.atse.org.au/index.php?sectionid=1283 for press release relating to the report

For example, this can occur because physical and social systems may be developed to support a technology while emissions are not priced or have low value. In the case of electricity generation this could include training and education of staff, and the building of electricity network assets that support particular types of electricity generation technology. In this way, the longer a technology becomes 'locked in', the more difficult and costly it becomes to dislodge that technology.

It is useful to think of the emissions price as a brake on technology momentum. While the use of certain technology has limited momentum, not much "breaking" power is required to stop it or change its direction. But as it gains momentum, more breaking power is required. By allowing the emissions price to slowly ramp up over time, emissions trading allows technology momentum to develop towards a suboptimal outcome. CPRS does this because polluting energy generation will be able to continue operating, and potentially expand, albeit while purchasing offsets from global markets.

The risk of technology "lock in" is partially dependant on the ability to forecast emission costs over the long term and accurately reflect those costs in investment decisions made today – which is very difficult to do. Electricity generation assets are typically long lived, and in some instances investors are looking for returns over 40 years or more. Let's assume an investor builds an asset today with an emissions price of $20t CO2, assuming it will reach $100t in 20 years time and $200t in 40 years time. However, in 20 years time, due to unforeseen changes to the global economy and science of climate change, emission caps are tighter and emissions reductions more expensive than expected, resulting in an emissions price of $200t. That investment, which initially looked optimal, may now represent an inefficient sunk cost.

Exacerbating these types of risks is that the cost of supplying electricity is heavily dependant on transmission and distribution network investment. If networks are built or reinforced around technology that becomes prematurely unviable, these are additional sunk costs that may be inefficient in the long term.

In short, emissions trading may encourage marginal efficiency improvements in the short term, but in the long term, may lock in inefficient technology and so create a sub optimal transition away from emission intensive technology. In this way, we contend CPRS creates significant risk that consumers will be exposed to, and ultimately pay for inefficient sunk costs. To overcome such risks, it is imperative to strongly pursue policies and programs complementary to emission trading, such as Research and Development (R&D), regulation, programs that facilitate coordinated action and policies that encourage more accurate consideration of long run costs (Kline 2001). We welcome Government efforts that have been made on these complementary measures to date, support their continuation and continual improvement.

**Recommendation 3:** In order to facilitate a more accurate consideration of long run costs associated with climate change, an emission price equivalent to the 'social cost of carbon'[1] should be delivered through a tax - providing a far more transparent, predictable and effective price signal than emissions trading. This price signal would create certainty for private investors in all sectors, and throughout Government decision making on infrastructure investment and policy making more generally. Ultimately, this would help avoid risk of technology lock in or stranded investments that would impact significantly on costs borne by consumers for essential infrastructure.

Related to this issue is the need to consider the long term economic objective desired by the policy intervention. In this instance, the long term objective may be a zero carbon economy. Through technology "lock in", an emission trading scheme may inhibit technology that is necessary to achieve the zero carbon objective, while locking in technology that doesn't enable the long term objective to be achieved in the long run. For example, it may encourage marginal efficiency gains in coal and gas fired generation, or worse – investment in R&D designed to reduce emissions coal/gas fired generation, that may ultimately not succeed, at the expense of deploying alternative technologies that can deliver zero emission electricity. However, by deploying zero emission technologies early, albeit at higher cost, and encouraging their development over time, a more efficient transition to a more desirable economic equilibrium may be achievable in the long run because the cost of technology "lock in", and risk of inefficient sunk costs are significantly reduced.

It is typically argued that taxes do not provide environmental certainty, because real emission reductions are not controlled by any cap. However, with regular reviews of emission growth trajectories, it would be relatively easy to adjust the tax and complementary regulation/policies designed to reduce emissions, such as feed in tariffs, renewable energy targets, energy efficiency, design standards and so on.

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

As discussed above, the need, efficacy and legitimacy of CPRS in creating long term incentive for the development and deployment of new clean and low emission technology, is highly questionable. One of the main reasons CPRS fails to create the right investment incentive is that it proposes allowing all emission liabilities to be met through purchasing offsets internationally through Kyoto compliant mechanisms. This means investors and operators of emission intensive generation face low scheme compliance costs, and ultimately low incentive to invest in clean domestic energy generation. This outcome is made worse because Kyoto mechanisms, particularly the Clean Development Mechanism (CDM) remain fundamentally flawed. A summary of issues is presented below:

- The experience of the European Union Emissions Trading Scheme (EU ETS) is that emissions trading has encouraged deployment of well proven low cost technologies, technologies that either may have been deployed regardless of the scheme, or could have been deployed more cost effectively without the scheme – i.e. through regulation.
    - The best example of this was the initial explosion of HFC-23 destruction projects – sold for a value of €4.7 billion while estimated costs of abatement were likely less than €100 million (Wara 2008). While issues relating to these projects have been identified and worked through, they have not been eliminated (Wara, 2008).
- At worst, the EU ETS may be locking in sub-optimal technologies or rewarding investment that would have occurred regardless of the trading scheme. For example, new hydro, gas and potentially super critical coal plants[3] are generating offsets through CDM. However much of this investment is driven by issues relating to energy demand outstripping resource availability, air pollution and the economics of generation, quite

[3] We are not aware that any supercritical coal plants have yet created certified emission reductions, but the methodology exists to allow it and there are applications being made by proponents of these plants

independent of greenhouse emission costs. For instance, hydro power can compete with conventional coal given the right geography. Almost all new gas and hydro plants being built in China are claiming emission credits (Wara, 2008), suggesting that none of these would be built without emissions trading – given soaring energy demand and coal scarcity in China, this is a highly improbably scenario.

In theory, it may be that over time, cheap offset projects are absorbed and the market moves to find more meaningful investment in new, clean technology that is providing genuinely additional emission reductions. It may also be that as more emission permits are auctioned, as opposed to allocated freely, the emission price may rise sufficiently to incentivise more genuine new investment. However, on such an important issue, it would be reckless to continue this line of policy.

While CPRS may create investment in overseas offset markets, it is likely to do very little for domestic investment in clean generation capacity, or clean generation technology which can be developed domestically for export markets.

**Recommendation 4:** That in order to create the right incentive for domestic investment, specifically, in new, renewable energy generation, the Government adopts a comprehensive feed-in tariff for a full diversity of renewable energy generators. Research by Toke 2006, Kent 2006, Sonneborn 2004, Kelly 2007 and Menanteau 2002 suggest this is the most cost effective way of delivering new renewable energy, as opposed to the quota system adopted by Australia through the Mandatory Renewable Energy Target (MRET).

Importantly, the Mandatory Renewable Energy Target (MRET), as it is conceived in Australia, is unlikely to deliver the diverse technology development and deployment required to ensure Australia can meet long term emission reduction targets, and exploit emerging markets in clean renewable energy. The multiplier mechanism proposed may be useful in that it helps encourage investment in small scale generation for niche applications, which overcomes the natural tendency for target schemes to encourage investment in large scale generation only, however, the proposed MRET scheme creates an artificial limit on the size of generation system (1.5kW) that is rewarded by the scheme. It has also been argued that the multiplier will reduce the volume of renewable energy generated, but this can be fixed relatively easily through an accounting adjustment.

**Recommendation 5:** That if MRET is pursued, it be amended to ensure any clean electricity generation technology, of any size, has access to incentive created by the scheme by broadening the role of the multiplier. This would allow a diverse range of technologies, and generation unit sizes to be developed and deployed, minimising risks of technology lock in and maximising the potential for positive spill over benefits to the broader economy. The multiplier must be carefully designed, as the feed in tariff was in Germany, to ensure incentive remains for continued technology improvement over time. Lastly, an accounting adjustment must be made so that while the multiplier allows certain technologies to generate additional revenue, it does not distort the real quantity of renewable energy delivered.

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

As alluded to previously, this is a potential strength of emissions trading. By creating international markets for emission reductions, it allows a wealth transfer from developed nations

– where emissions are typically greatest per capita, to developing countries. This may help solidify commitment to a global deal on climate change.

However, the benefit of this has to be considered along with risks and costs associated with this activity, and the considered against other potential wealth transfer mechanisms. For example, revenue earned through a tax system could be redistributed to developing nations through programs that encourage emission reducing activity.

*(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;*

It is self evident that the relative contributions these complementary policy measures can make are all dependant on their ultimate design. Renewable energy feed-in laws, renewable energy targets, energy efficiency scheme and the protection of terrestrial carbon stores may all have an important role to play in reducing Australia's emissions.

Most importantly, measures complementary to emissions trading have an important role in developing technologies and systems that can be applied internationally. Ultimately, it is likely that the greatest contribution Australia can make to global emission reductions will be through the development of technology and systems that can be applied globally. This is highlighted by the fact that emissions caused by exporting coal from Australia far outweigh emissions caused by domestic energy consumption.

In particular, the German experience has highlighted the importance of providing transparent, long term investment signals for the deployment of renewable energy technologies domestically. They have done this through a comprehensive feed in tariff scheme, allowing domestic industries to be developed with confidence because the price of renewable energy generation is known over the long term. Germany is now a world leading exporter of solar, wind and bioenergy technologies. Where prices are subject to market fluctuations, or worse, policy uncertainty, investment may be hesitant and potentially inefficient. While it can be argued price setting is an economic distortion and will create inefficiency, processes for review and adjustment of prices, including their gradual decline over time, can ensure industry has incentive to continually improve efficiency.

Emissions trading provides a relatively weak signal to the development of local industry and technology, particularly when the design of the scheme focuses on minimising costs to businesses operating domestically by allowing international offsets.

It is worth noting that of all abatement measures, energy efficiency is typically regarded as least cost and most beneficial. Levine et al (2007) estimate that 30% of cost effective emission reductions globally are available in the residential and commercial building industry through more effective design and efficiency upgrades. CPRS is highly unlikely to capture any of these reductions because the main barriers are split incentives and information asymmetries.

Under CPRS, energy efficiency would not be directly incentivised, and in fact may be negated by weakening the incentive for voluntary emissions reductions. This occurs because emission reductions caused by energy efficiency would accrue to liable parties, not those undertaking action.

The only incentive for energy efficiency provided by emissions trading is through increasing the cost of energy which makes investment in energy efficiency more attractive. However given electricity costs are more likely to be driven by a combination of resource scarcity, particularly natural gas, and new investment required in electricity networks, emission trading is likely to be a weak signal amongst energy cost 'noise'. This makes resolving split incentive and information asymmetry far more important for cost effective emission reductions through energy efficiency, than CPRS.

*(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;*

Environmental effectiveness needs to be thought of in two ways.

- Does the scheme set a target for emission reduction in a way which effectively manages risk associated with dangerous climate change?

- Will emission reductions caused by the scheme be legitimate emission reductions?

**Recommendation 6:** That Government policy explicitly address the need to manage risks associated with dangerous climate change, being fully cognisant of climate tipping points or points of no return.

It is increasingly apparent in the scientific literature that commonly discussed global emission targets of 450ppm or more representative unsatisfactory levels of risk for dangerous climate change, including that the risk that Arctic and Antarctic ice melt will become irreversible, triggering additional warming and runaway climate change.

An emerging position in science appears to be that at todays emission levels we are already experiencing or at risk of dangerous climate change. Hansen (2008) argues that paleoclimate evidence suggests given enough time, if emission levels were held constant from todays levels, there is a reasonable probability that sea levels could eventually rise 70m, and land based ice could virtually disappear[4]. Hanen (2008) suggests that in order to manage these risks with any confidence, we need to stabilise emissions between 300-325ppm in the long term, with an interim target of around 350ppm. Against this emerging science, Australia's CPRS and 2050 policy objective of a 60% reduction on 2000 emission levels, looks terminally inadequate.

On the second question, in its current design, Australia's CPRS is unlikely to deliver legitimate emission reductions. This is in part due to problems with international offset markets that have not been sufficiently addressed and partly due to inherent flaws in the offset model. Some of these issues have been addressed above in brief, but are expanded on here.

For offsets in a trading scheme to be legitimate, they must be shown to be additional. That is, it must be shown the offset activity would not have occurred without the trading scheme. This creates two problems. First, there is the problem of defining additionality. Second, is that even if offsets are additional, they must be meaningful reductions in relation to the emissions reduction target.

[4] the full paper can be read at http://pubs.giss.nasa.gov/docs/2008/2008_Hansen_etal.pdf

Assuming offsets can be shown to be additional, offsets are measured against a hypothecated increase in emissions that would have occurred in the absence of the trading scheme. In the scheme proposed for Australia, offsets would come from uncovered sectors of the global economy. This is problematic because if the global economy is expected to grow it's emissions by a quantity greater than Australia aims to reduce its emissions by, it will be impossible for a real net reduction in emissions to occur.

The fact that projected global emissions growth far exceeds the reduction targets of Australia, has profound implications for the meaning of emission reductions attributed to offsets under CPRS. While facilitating a transfer of wealth to countries with low cost offsets, CPRS would make no meaningful baseline emission reduction. This is one major problem of the Australian trading scheme as it is designed.

Secondly, there is the problem of actually proving additionality. Proving additionality is naturally a complex process but is not necessarily impossible. However a potentially terminal problem for the concept of offsets is the sheer logistics of certifying the amount of projects required and the impact this has on trading liquidity, and subsequently price finding. This problem is explained below:

- Over the course of the 21st century, the IPCC estimate that emissions must be reduced by approximately 660,000,000,000t. That is, 660billion tonne of CO2 must be reduced over a one hundred year period. Excluding emission reduction projects involving HFC-23 gas destruction, the average size of certified emission reduction projects in the clean development mechanism (CDM), where most offsets have been created, has been approximately 121,000t CO2. Including HFC-23 destruction projects, the average size has been 236,000t CO2. Should this average size of future offset projects range between 121,000 and 236,000, and offsets be used to deliver all abatement, then between 28,000 and 55,000 offset projects will need to be certified every year over the next 100 years in order to meet the 450ppm goal. In reality, average project sizes are likely to be much lower than 121,000tCO2 as the CDM board has prioritised certification of large projects.

To provide some sense of the logistical difficulties this presents, The CDM executive board has managed to certify 550 projects over the last 2 years. It is estimated they are certifying at a rate between 1-2% of that required to certify all registered projects in a timely manner over the next 5-10 years (Wara, 2008). If 50% of total emission reductions required over the next century were met through offsets, and the average project size was a generous 150,000t, the board overseeing these offsets would need to approve 22,000 projects per year, roughly 80times faster than the current CDM board approves the projects it is responsible for.

If more realistic assumptions are made about the probable average size of offset projects, this rate would be drastically increased again. Ultimately, delay in certifying emission reductions limits market liquidity and so increases the risk of large unpredictable price fluctuations that undermine investment signals.

This certification process also creates a significant drain on skilled resources that may otherwise be usefully deployed. For instance, Wara (2008) find that many skilled engineers, economists, project managers etc switch employment from project verification to project origination and vice versa. As well as highlighting the skilled labour constraint issue, this represents an issue for scheme compliance.

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

Emissions trading is not necessarily fair or unfair per se, this depends on how it is designed. Determining the fair and equitable contribution of Australia to global reduction efforts is dependant no the policy objective, not the policy mechanism.

(*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*

These issues have largely been addressed in the submission above.

*(f) any related matter.*

The choice of policy tools used to reduce Australia's and global emissions must be fully cognisant of the global equity impacts of climate change itself, as well as the equity impacts of the policies chosen. Any policy mechanisms that either don't adequately address inequality, or exacerbate inequality, will have their legitimacy undermined and ultimately support for such policies will wane. In the interest of long term, effective policies, it is therefore fundamental to address a full range of equity considerations. These include:

- The extent to which the cost of historical emissions should be attributed to emitters today
- The extent to which emissions caused today will impact generations to come
- The extent to which climate change itself will have varying distributional impacts domestically and internationally
- The extent to which policies aimed at mitigating or adapting to climate change allocate costs and benefits equitably
- The need to protect fundamental human rights

When considering equity impacts, it is fundamental to understand that for societies most vulnerable, consumption of essential services is inelastic to price. This is important to consider because price is often considered an effective way to encourage resource conservation and/or improved resource consumption efficiency. This may be so for relatively sophisticated organisations and perhaps some individuals. However price is a very blunt instrument for societies most vulnerable that typically leads to debt issues, under consumption of essential services that leads so physical and social health issues, or a combination of both.

Domestically, we believe the most efficient and transparent way to ensure cost attributed to carbon pollution are allocated equitably would be through a carbon tax reflecting the full social cost of carbon. Through concession frameworks and other taxation mechanisms, those members of society least able to afford the cost of carbon pollution, could be protected. It is entirely reasonable that given climate change is primarily attributable to wealthy nations, and

in particular, the high consuming wealthy elements of those societies, that these members of society undertake the ‘heavy lifting’ on climate change. As one of the worlds wealthy nations, Australia’s targets must at least exceed targets required for the global economy.

Revenue raised by the tax could also be allocated to address international and intergenerational equity issues associated with climate change, as well as distributional impacts across Australia. Distributional impacts could include job losses caused by climate change driven policies, or higher energy and water costs in some areas more sensitive to climate change itself, or climate change policies. Revenue raised would also be used to assist development of new clean energy technologies and/or systems to support businesses transition to a new clean economy.

While we recognise the proposed CPRS addresses some of these issues, we believe a tax system would allow greater transparency and so build confidence and support behind the policy. Ultimately, policy support will be needed to ensure its success.

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