



Centre for Energy and
Environmental Markets

CEEM Submission to the
National Carbon Offset Standard
Discussion Paper

Dr Rob Passey
Dr Iain MacGill

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About CEEM and this submission

The UNSW Centre for Energy and Environmental Markets (CEEM) undertakes interdisciplinary research in the design, analysis and performance monitoring of energy and environmental markets and their associated policy frameworks. CEEM brings together UNSW researchers from the Australian School of Business, the Faculty of Engineering, the Institute of Environmental Studies, and the Faculty of Arts and Social Sciences, working alongside a growing number of international partners. Its research areas include the design of spot, ancillary and forward electricity markets, market-based environmental regulation, the integration of stochastic renewable energy technologies into the electricity network, and the broader policy context in which all these markets operate.

This submission firstly outlines the physical and policy context in which voluntary actions to reduce greenhouse emissions occur, then discusses the additionality of different types of activities under Kyoto and the CPRS. The submission also canvases options for voluntary abatement for Australia, before finally addressing the particular questions raised in the Discussion Paper.

This submission draws on a range of work by researchers associated with the Centre. More details of the Centre can be found at the CEEM website – www.ceem.unsw.edu.au.

This is an area of ongoing work for CEEM and we are actively seeking feedback and comments on this submission, and on related work.

The corresponding authors of this submission are:

Dr Robert Passey

r.passey@unsw.edu.au

Dr Iain MacGill

i.macgill@unsw.edu.au

www.ceem.unsw.edu.au

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1 Introduction

The Government Discussion Paper on National Carbon Offsets Standards provides an important and timely opportunity to consider what impacts Australia's international commitments under Kyoto, and domestic policy intentions centered around an emissions trading scheme, may have on voluntary actions that help address climate change.

Such voluntary actions by individuals, communities and businesses can take many forms including improving their energy efficiency or installing renewable energy systems. These actions can also involve the purchase of instruments such as GreenPower, emissions permits within 'cap and trade' emissions trading schemes, domestic carbon offsets under projects such as Greenhouse Friendly, Kyoto certified emissions reductions in the developing world through the Clean Development Mechanism (CDM), and a range of non-Kyoto compliant domestic and international emissions reductions under voluntary programs.

There are complex yet vital issues at stake. Unfortunately, however, the Discussion Paper does not adequately address some key considerations. In particular, it:

- doesn't provide an appropriate physical context in terms of the underlying climate science, and what this means for effective mitigation actions,
- doesn't consider the complex motivations of voluntary action within the community or the complementary roles that mandatory and voluntary action can play,
- fails to adequately assess the international policy context around Kyoto
- uses confusing and contradictory terminology – some terminology is inconsistent within the paper, let alone in disagreement with more generally accepted usage,
- explores only a limited subset of possible voluntary actions that people within the community might wish to use, and
- proposes solutions to the interaction of voluntary action and the CPRS that appear to restrict the community from supporting tangible real emission reduction projects.

Our submission first attempts to address these issues. It then discusses the additionality of different types of activities under Kyoto and the CPRS, before canvassing options for voluntary abatement for Australia, and then finally addressing the particular questions raised in the Discussion Paper.

The key conclusions of this submission are that:

- voluntary efforts by concerned individuals and organisations can play a vital role in securing effective action on climate change directly through reduced emissions, and indirectly through establishing public support and

understanding, while also helping to deliver other important societal objectives such as employment and reduced environmental impacts

- unfortunately, current Federal Government commitments including inadequate national targets and a flawed Carbon Pollution Reduction Scheme design threaten the ability of voluntary action to reduce Australian and Global emissions
- proposed options for voluntary action limited to the voluntary retirement of CPRS permits or accepted international credits unduly restrict the ability of the public to support real tangible actions to reduce emissions. These options would also force them to rely on an unproven and uncertain scheme that cannot be assured of delivering effective abatement
- the flawed current CPRS design which permits unlimited use of some questionably additional international credits may have the perverse outcome that absolute global emissions reductions are more assured through the purchase of 'Gold Standard' international credits than through Australian based abatement actions involving the retirement of CPRS permits.
- the Federal Government must therefore establish procedures by which appropriate voluntary efforts by individuals and organisations as well as policy efforts by other levels of Government can strengthen Australia's contribution to effective global action. There are key design flaws in the proposed CPRS that also need urgent attention.

1.1 *The physical context of climate change*

Climate change is being driven by a range of natural and anthropogenic (human caused) factors. One key driver is changes to the atmospheric levels of greenhouse gases as a result of human activities. These atmospheric concentrations represent the accumulation of historical net flows (sources minus sinks) of these gases. We have complex and still uncertain scientific understandings of the links between changing atmospheric levels and climate change, and between human activities and net flows.

Relevant human activities have been changing in scope and magnitude for a wide range of reasons including population growth and technical progress. Climate change considerations have, until recently, generally been external to decision making on such activities. Still, the risks of climate change are significant and appear to be growing. An effective response to climate change therefore seems likely to require rapid and major global emission reductions starting within the coming decade.

Fortunately, we have a range of options for reducing these emissions. The climate change policy challenge, then, is to ensure that decisions about human activities are taken in the context of this urgent need for global action to reduce emissions. Given the scale of this challenge, we are almost certain to require wide ranging policies including regulatory approaches that restrict particular types of activities and price-based measures such as emissions trading that introduce an emissions 'cost' or 'incentive' into private decision making.

Another key policy area is support for voluntary action – with voluntary action defined here as “Done, given, or acting of one’s own free will, Working or done without payment”.¹ This freedom can be understood, following Isaiah Berlin’s definitions of liberty, in both ‘positive’ and ‘negative’ senses. The ‘positive’ sense of voluntary action would be its recognition through the appropriate frameworks such as national emissions accounts and being counted against national caps. The ‘negative’ sense of voluntary action are the constraints of state institutions and commitments that run contrary these actions. The imposition of a ‘target’, rather than a ‘cap’ would be an example of this (see Section 1.2.1 below). The challenge for policy makers, then, is to provide a balance between the community’s desire to reduce emissions while not constraining it through state actions that run contrary to their interests.

This means that individuals, community groups and businesses are able to choose to undertake actions that are not mandated or necessarily strictly financially rational yet reduce emissions. Such activities might involve improved energy efficiency, fuel switching or the direct use of renewable energy. It might also involve offsetting actions that help facilitate emission reductions by other parties such as the purchase of Accredited GreenPower. We particularly focus on these issues within our submission.

¹ See www.wikipedia.org.

1.2 The international policy response:

An international policy response to the climate change challenge can be dated to the establishment of the United Nations Framework Convention on Climate Change. This committed signatory governments to a voluntary "non-binding aim" to reduce atmospheric concentrations of greenhouse gases with the goal of "preventing dangerous anthropogenic interference with Earth's climate system."

International consensus on the likely failure of such a voluntary approach and the need for mandatory action by governments led to the Kyoto Protocol in 2007. This established maximum physical emission caps over five years 2008-12 for a number of developed countries. The Protocol doesn't specify how national Governments should achieve these caps.

A complex inventory of human-related greenhouse sources and sinks has been established to underpin these targets, covering the six key greenhouse gases over the energy, industrial, waste, fugitive and land-use sectors. There are uncertainties in the inventories for almost all activities and particular uncertainties for some, including waste, fugitive and land-use emissions. There are also particular difficulties in assigning human causation in some land-use activities. For these and other reasons the Kyoto accounting doesn't include all possible activities responsible for emissions. For example, emissions associated with old-growth logging in Australia within so-called managed forests don't count towards our Kyoto targets.

The Kyoto Protocol also established the option of emissions trading between countries with physical emissions caps under Article 17, and for project-based emission reductions under Joint Implementation. And the Clean Development Mechanism (CDM) permits countries with caps to offset increased physical national emissions by supporting offset projects in developing countries. Note that such project-based Certified Emissions Reductions (CERs) are qualitatively different from physical emissions as they represent imputed hypothetical emission reductions compared against a Business-As-Usual baseline. Note that the Discussion Paper defines 'offset' as "Represents a reduction in greenhouse gases relative to a business-As-Usual baseline." In common usage, such imputed reductions are claimed by a party to 'offset' physical emissions associated with their activities or products that occur elsewhere.

1.2.1 Implications for voluntary action

The Kyoto 'targets' are better referred to as caps (where emissions should not go above the target, but can go below). It was appreciated at the time of the Kyoto negotiations that the targets were inadequate given the climate science. Instead, they represented the political realities of the negotiation process.

The language of the Protocol makes it clear that the emissions targets represent minimum levels of emission reduction efforts.² The intent is therefore one of robustness

² For example, "The core commitment under the Kyoto Protocol, contained in Article 3, paragraph 1, requires each Annex I Party to ensure that its total emissions from GHG sources listed in Annex A to the

in ensuring that at least some action was taken. Voluntary efforts by governments to reduce their emissions below their mandated caps are therefore welcome and a clear opportunity for leadership.

Article 17 permits emissions trading between countries but doesn't require it. And some governments have chosen not to use it in some circumstances. For example, a number of countries have 1990 emissions baselines and Kyoto targets considerably below their current emissions due to widespread economic collapse over the decade of the 1990s. (Australia received its own 'hot air' through inclusion of land-clearing within the inventory and an 108% target). This 'hot air' from what might be termed calamitous Business-As-Usual is available for other developed countries to buy. However there has been considerable reluctance by other National Governments to purchase such obviously non-additional emissions 'reductions'.

In this regard the existence of Kyoto caps does not mean that voluntary action or additional policy efforts within a country are not able to reduce emissions beyond the cap level. Should any further reductions below the target be traded with other countries that are exceeding their targets then, indeed, global emissions will not be reduced. Clearly, however, governments and the public who elect them may choose to do otherwise.

There are also opportunities for individuals, community groups, businesses and governments to facilitate global emissions reductions through the CDM, particularly by supporting CDM projects that clearly demonstrate sustainable development and additionality (that is, would not have occurred without the existence of the CDM). Such parties can also undertake voluntary actions in sectors that aren't currently included in the Kyoto accounting framework such as forest management. As noted in the Discussion Paper, some of these activities may, indeed, become included in later commitment periods of the protocol.

1.3 The Australian policy context:

Australian State and Federal governments over the last decade have implemented a range of climate-related policies including energy efficiency regulation and market-based incentives for renewable energy. They have also facilitated voluntary action through measures including State Government Accredited GreenPower and the Greenhouse Friendly Program. Given other drivers to reduce land clearing, these modest policy efforts appear likely to be adequate to meet Australia's Kyoto Target of 108% over 2008-12.

The Australian Government has now proposed a 2020 target of emission reductions of between 5% and 15% from 2000 levels depending on international commitments. This almost certainly represents an inadequate contribution towards effective global action. The UNFCCC Bali meeting in 2007 highlighted the need for developed countries to commit to reductions of at least 25% by 2020. The Australian Government argues that a more appropriate measure of effort is per-capita emission reductions and that our high population growth should be factored in.

Kyoto Protocol over the commitment period do not exceed its allowable level of emissions"
www.unfccc.int

However, Australia's per-capita emissions are amongst the highest in the world and the proposed Australian targets represent less than half the emission reduction commitments of the EU (20% to 30% reductions from 1990 levels depending on international efforts) despite Australia having over twice the per-capita emissions. Many developed countries of course haven't yet committed to 2020 targets at all, and Australia's position might therefore be considered progress. Unfortunately, it seems the Government has merely committed to not delivering our fair share of global emission reductions to 2020, while claiming an entitlement to higher per-capita emissions than other countries for the foreseeable future. This is hardly the right starting point for policy development at home or abroad.

The primary policy instrument for achieving these national targets is intended to be the Carbon Pollution Reduction Scheme (CPRS). This scheme involves setting a series of annual caps for physical emissions in covered sectors. Scheme coverage is intended to include the stationary energy sector, transport, industry, fugitive emissions and waste; perhaps around 75% of total Kyoto accounting emissions depending on final design choices and the uptake of forestry opt-in. The Government has also stated its inclination to include agricultural emissions in 2015 should this prove feasible, and suggested only a very limited, if any, role for domestic offset projects in non-covered sectors.

The Government will sell, or give freely to favoured large emitters, permits to emit a tonne of greenhouse gases equivalent to the cap for each year. Emitters (or their fuel suppliers) are required to annually surrender a permit for each tonne of emissions released over that year. Note that these are caps rather than targets. If emissions fall below the allocated cap for a year then the unused permits can be banked for later use. It is still unclear what the CPRS targets will be in the context of the national 2020 target. Key issues for consideration include perceived emissions trends and policy options in sectors not currently covered by the CPRS.

For effective operation of an ETS, annual allowable emissions should be set at a level that ensures there is a shortage of permits. This establishes a permit price sufficient to reduce emissions at least to the level of the cap. However, weak initial targets and poor governance might conceivably see an oversupply of permits as was seen for the first phase of the EU Emissions Trading Scheme (ETS).³ The proposed scheme also fails to cap emissions should the price of allowances rise to \$40 and allows unlimited use of international CDM credits. The risks for scheme integrity of mixing physical emissions with imputed emissions reductions were noted above. As discussed in Section 2 below there is highly questionable additionality for some CDM projects and this threatens the physical integrity of the scheme cap.

The CPRS represents a different context for emissions trading than the Kyoto Protocol because it has explicit economic efficiency objectives that require trading and most

³ The situation is complicated in that the first phase of the EU ETS did not permit banking of 'allowances' into the second phase or beyond. The unlimited banking proposed for the CPRS should help ensure scarcity because permits will be valued in terms of their potential future value even if initial caps are weak. However, this does rely on market participants having the belief that the government is ready, willing and able to ensure serious reduction targets into the future. There are valid concerns about the Government's ability to provide such certainty given the flawed scheme design.

emitters will have to participate in the market to acquire their required permits (although some favoured emitters may receive sufficient allowances for free to not require market participation).

Also of relevance are the other policies being implemented that will impact decision making within covered sectors of the CPRS including the expanded national Renewable Energy Target (RET) and a growing range of energy efficiency regulations and incentives. It is agreed by the Government that these will not reduce emissions below the CPRS caps. However, they may be able to reduce the costs of meeting these caps in the short term (cost-effective energy efficiency) or support longer-term abatement goals (through development of a renewable energy industry). There are also limited policy efforts in sectors which are not proposed to be initially covered within the CPRS.

1.4 The Australian policy context and implications for voluntary action

The proposed national target range for 2020 is very significant with regard to potential Australian and global emissions reductions from voluntary action or additional policy efforts. The White Paper states that “The range represents a minimum (unconditional commitment) to reduce emissions to 5% below 2000 levels by 2020, and a commitment to reduce emissions by up to 15% ... in the context of global agreement under which all major economies commit to substantially restrain emissions...”⁴ The CPRS White Paper also states that these national ‘targets’ will not be adjusted and that should a comprehensive global agreement emerge consistent with a stabilisation of 450ppm or less, Australian is only “prepared to establish its post-2020 targets so as to ensure it plays its full role in achieving the agreed goal”⁵

Even the maximum 15% reduction represents an entirely inadequate Australian contribution to effective global action. Given this, there is a clear need for the Federal Government to facilitate voluntary action by individuals and organisations, and policy efforts by other levels of government, to contribute to greater emissions reductions than they are currently prepared to mandate.

For the CPRS, the concept of voluntary action is particularly complex; the only mandatory requirement under an emissions trading scheme is for liable emitters or their fuel suppliers to obtain and surrender permits equivalent to their direct (or upstream) emissions. Emitters are free to undertake any activities they wish as long as they have sufficient permits for annual compliance. The theory is that a price for carbon will emerge from trading between market participants who obtain different values from such emissions. This price will drive the most efficient changed decisions in order to meet the target.

Voluntary action in this context might therefore be considered as undertaking actions which support improved environmental outcomes that are not mandated or likely to occur under the existing policy settings including permit price. The

⁴ Carbon Pollution Reduction Scheme White Paper, Summary Report p.35.

⁵ Carbon Pollution Reduction Scheme White Paper, Summary Report p.6.

motivations of individuals, community organisations and businesses are potentially highly complex. They might include, for example, a desire to see greater use of renewable energy in Australia or promote energy efficiency in vulnerable households, or support action in developing countries.

It is argued in the Discussion Paper and elsewhere⁶, that voluntary action within sectors covered by the CPRS is not able to reduce aggregate global emissions. Instead, such actions will just free up permits and reduce their cost for other emitters to buy and use. As discussed in Section 2 below, the reality is more complex.

Nevertheless, there is a serious issue to be addressed here. Sometimes voluntary action is undertaken on the basis that it will ensure others do not have to act.⁷ However, it seems unlikely that environmentally concerned parties in Australia will choose to take voluntary actions on the basis that this will make it easier for other parties, particularly large emitters, to avoid taking action. Instead, voluntary action is most likely to be motivated by the desire to drive improved overall environmental outcomes for Australia and the world.

It is argued in the Discussion Paper that voluntary actions will reduce the costs to society of climate action and that "As the cost to the economy decreases it becomes increasingly feasible to set more ambitious emissions reduction targets." A simple analogy is sufficient to highlight the inadequacy of this argument. The Australian Government currently supports charitable giving by offering tax concessions for donations to approved organisations. Consider if, instead, the Government not only failed to provide such concessions for donations but then reduced budget expenditure on charitable causes by the same amount as was privately donated. Worse, it then provided an equivalent 'across the board' tax reduction for everyone including those who don't voluntarily give. And the government then argued that it is actually worth people making voluntary donations because by reducing budget expenditures and taxes, these volunteers create the opportunity for the government to increase taxes and then budget expenditure on charitable causes at some point in the future.

1.5 The meaning of carbon neutrality

The definition given for carbon neutrality in the Discussion Paper "as defined by the Oxford English Dictionary is making no net release of carbon dioxide equivalent emissions to the atmosphere". However, the Discussion Paper then appears to alter this definition in arguing that. "...the environmental credibility of carbon neutrality comes from the fact that offsetting means an entity's activities do not increase aggregate emissions". The change from 'no net release' to 'no increase' is important because it allows the claim that any scheme that caps emissions must therefore make covered entities carbon neutral. However, if the original Oxford definition is retained, schemes that cap emissions cannot be carbon neutral (no net release of carbon dioxide equivalent emissions), unless of course their cap is set at zero.

⁶ See, for example, the Voluntary Carbon Markets Association website www.vcma.org.au.

⁷ Volunteering to take the bins out is a common example

While it could be argued that the CPRS will mean that new activities are carbon neutral because they will not contribute any increase in emissions, this of course means that all existing activities (whose emissions are responsible for the cap being reached), are not carbon neutral. The Discussion Paper certainly highlights the inadequacies of traditional measures of 'carbon neutrality' in the context of emissions trading.

A related claim made in the Discussion Paper is that, because the CPRS places a cap on aggregate emissions from covered emissions sources, it breaks the link between individual action and aggregate emissions. Again the situation is more complex. It assumes of course that there is a scarcity of CPRS permits. More importantly, there are additionality issues with international credits that threaten the integrity of the emissions cap within the CPRS should permit prices rise to the point where emitters purchase from international carbon markets. We consider these issues in detail in the next section.

2 Possible impacts of the CPRS on global emissions

The Discussion Paper assumes that the CPRS will result in Australian emissions being capped, with any emissions above the cap being offset by reductions elsewhere through the use of international offset credits. However, as discussed below, this is unlikely to be the actual physical outcome for global emissions because such international credits are inherently imputed and are unlikely to result in absolute reductions in emissions.

CPRS-liable parties can use an unlimited number of specified Kyoto units (CERs, ERUs and RMUs)⁸, which correspond to a hypothecated tonne of CO₂-e avoided. The following describes each of these types of credits as well as their contribution to reducing emissions.

2.1 Certified Emissions Reductions (CERs)

CERs are issued under the Clean Development Mechanism (CDM) for projects undertaken in developing countries that do not have targets under the Kyoto Protocol. The number of CERs created is based on an estimate of what would have occurred in the project's absence, compared to actual emissions because of the project.

Article 12.5 of the Kyoto Protocol and the Marrakech Accords require that emission reductions are real and additional. A CDM project is additional if "anthropogenic

⁸ According to the CPRS White Paper, AAUs cannot be used by liable parties under the CPRS (because of concerns over the excess 'hot air' AAUs from countries such as Russia whose economies and hence emissions have declined since the Kyoto base year 1990). This will be reviewed post 2012/13. AAUs may still be used by the Commonwealth to help meet Australia's Kyoto target. CERs created through afforestation or reforestation (tCER and ICERs) that have a limited life cannot be used in the CPRS. RMUs created during the Kyoto Protocol's first commitment period (as well as ERUs converted from these RMUs) cannot be used post 2012/13 because they cannot be used to meet Kyoto obligations after this time. International non-Kyoto units cannot be used in the CPRS. Again, this will be reviewed post 2012/13 (White paper, 2008).

GHG emissions are reduced below those that would have occurred in the absence of the registered CDM project activity".⁹

This additionality requirement can usefully be divided into two components: i) would the project have gone ahead if it weren't for the CDM, and ii) did the project reduce emissions compared to what they were before the project took place (an *absolute* reduction),¹⁰ or did the project reduce emissions compared to what they would have been under an alternative project (a *relative* reduction).

i) Would the project have gone ahead¹¹

To assess whether the project would have gone ahead in the absence of the CDM, the following generic approaches or combinations of approaches have so far been used in baseline and monitoring methodologies:

Positive lists. A certain project category is assumed to be additional. Up to now, this rule has only been applied to the destruction of HFC-23 in HCFC-22 production facilities if regulatory requirements are exceeded (methodology AM0001).

Barrier analysis. The barrier analysis requires the demonstration that barriers exist that would prevent the proposed project from being carried out if the project activity was not registered as a CDM activity.

Investment analysis. The investment analysis requires the demonstration that the proposed project activity is economically or financially less attractive than at least one other credible alternative.

Common practice analysis. The common practice analysis requires an assessment of the extent to which the proposed project type (e.g. technology or practice) has already been deployed in the relevant sector and region.

The CDM Executive Board has combined the barrier, investment and common practice analysis into two alternative tools which are used in most approved methodologies for large-scale CDM projects: the "Tool for the demonstration and assessment of additionality" and the "Combined tool to identify the baseline scenario and demonstrate additionality". In these tools, the barrier and investment analysis are alternative approaches to demonstrate additionality or they can be combined. The common practice analysis complements these as a credibility check. For small-scale CDM projects, the CDM Executive Board has approved a simple barrier test.

Essentially, the current approach to demonstrate additionality requires project participants to demonstrate under which conditions they would be able to proceed with the project activity. This approach has been criticised as "intention-

⁹ Paragraph 43 of decision 3/CMP.1.

¹⁰ Note that this focus on an absolute reduction in emissions is not a formal part of the CDM framework. It accepts absolute and relative reduction in emissions as having equal value, and therefore legal standing. The reasons for our focus on absolute reductions is discussed below.

¹¹ The following indented section is paraphrased from Schneider (2007), which provides considerably more detail regarding the additionality concerns of the CDM.

based” and “highly subjective” by some stakeholders because it is difficult to assess in an objective manner whether a project would be implemented in the absence of the CDM. The difficulty in proving the motivation of project developers has been widely recognised. Indeed, investment decisions are complex and the choices, chances, risks, barriers and motivations for investments are difficult to compare and balance in an objective manner. Therefore, it is impossible to know with absolute certainty whether a project is additional or not.

Schneider (2007)¹² analysed 93 registered CDM projects and estimated the likelihood of their being additional, and as a result, the average additionality of the CERs created by these projects. They concluded that for about 40% of the registered CDM projects additionality is unlikely or questionable, and that these projects are expected to generate about 20% of the 93 project’s CERs. Thus, the average CER created by these projects is about 80% additional. This estimate is consistent with others cited in the literature, including a number in Schneider (2007).

Note that this description of additionality refers to whether the project would have gone ahead in the absence of the CDM (or is it just free riding on the CDM process). The second component of additionality, whether the reduction in GHG emissions was absolute or relative, is discussed below.

ii) Absolute or relative reductions in emissions

In order to calculate the number of CERs created by a particular CDM project, it is first necessary to estimate what the emissions would have been in the project’s absence. This is done through the creation of an emissions baseline.¹³

Under the Marrakech Accords, a baseline is defined as a “scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity”. Baselines have to be project-specific and defined in a way that CERs cannot be earned for decreases in activity levels outside the project activity or due to force majeure. Relevant national policies and circumstances and current practices in the host country or region as well as least cost technology for the project type are to be taken into account. Three principal approaches are available for defining a baseline methodology:

- i) Existing actual or historical emissions, as applicable
- ii) Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment
- iii) The average emissions of similar project activities undertaken in the previous five years, in similar social, economic, environmental and technological circumstances, and whose performance is among the top 20% of their category.

¹² Schneider, L. (2007) *Is the CDM fulfilling its environmental and sustainable development objectives? An evaluation of the CDM and options for improvement*, prepared for WWF by the Öko-Institut, Germany.

¹³ The following indented section is paraphrased from Michaelowa et al. (2007), which provides considerable more detail regarding the operation of the CDM

Approach i) thus defines an *absolute* reduction while approaches ii) and iii) define a *relative* reduction. This distinction is important to the CPRS' additionality because the CERs so created may be used for compliance with the CPRS scheme – which claims an *absolute* cap on emissions. This may best be illustrated by the following example.

A CDM project results in emissions increasing by, for example, 70,000 tonnes GHG instead of 100,000 tonnes GHG over its lifetime. As a result, the project creates 30,000 CERs for the relative reduction. However, each one of those CERs is also associated with $30,000 / 70,000 = 0.43$ tonnes absolute increase in GHG emissions due to the project.

Whether each of those CERs is considered to equate to a physical reduction of 1 tonne GHG or an increase of 0.43 tonnes GHG, is likely to end up being a value judgement.¹⁴ However, while a relative decrease is still valuable, it is not the same as an absolute reduction, and keeping emissions within the physical CPRS cap (as opposed to a cap legally recognised under the Kyoto Framework) requires an absolute reduction, not a relative reduction. Assuming the country in which the project took place had a cap on emissions (as does Australia), then projects that resulted in a smaller increase in emissions (ie. a relative reduction) would be penalised less, but they would still be penalised, not rewarded for reducing emissions.

2.2 Removal Units (RMUs)

RMUs are issued by a Kyoto Protocol country on the basis of land use, land-use change and forestry (LULUCF) activities under Articles 3.3 and 3.4 of the Kyoto Protocol. Essentially, where the net emissions from LULUCF sources and sinks is negative in a particular Kyoto Protocol country, that country can issue RMUs.¹⁵ The EU Linking Directive specifies that credits from LULUCF activities cannot be used in the EU ETS. This is because of concerns over non-permanence, additionality, leakage, uncertainties and socioeconomic and environmental impacts, including impacts on biodiversity and natural ecosystems.¹⁶

2.3 Emission Reduction Units (ERUs)

ERUs are issued under the Joint Implementation mechanism by a Kyoto Protocol country (the host country) when another Kyoto Protocol country undertakes abatement activities within the host country's borders. To issue ERUs the host country must cancel an equivalent number of AAUs from its national registry. This is intended to ensure the additionality of ERUs because issuing non-additional ERUs will make it harder for the host country to meet its Kyoto target. However, there is concern that countries with excess 'hot air' will use ERUs as a 'back door' way to sell their excess AAUs on the market. In addition, ERU abatement activities can include LULUCF projects, where the ERUs are created by converting RMUs. As a result, such ERUs cannot be used in the EU ETS.

¹⁴ Note that under the Kyoto Protocol accounting arrangements there is a legal judgement that says they are additional.

¹⁵ More information can be found at http://unfccc.int/methods_and_science/lulucf/items/4129.php.

¹⁶ Directive 2004/101/EC (2004) *DIRECTIVE 2004/101/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL*, available from <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:338:0018:0023:EN:PDF>.

The CPRS does allow ERUs created from RMUs to be used to meet obligations (but only up to the 2012/13 period), as well as ERUs from countries with excess 'hot air' AAUs.

2.4 Gold Standard certification

The market for voluntary abatement activities, that involve both Kyoto and non-Kyoto credits, is growing worldwide. Concerns over the additionality of such credits, as well as concerns over the environmental and social impacts of projects that create them, has led to the development of standards such as the Gold Standard and the Voluntary Carbon Standard.

Of these, the Gold Standard certification scheme is discussed below because it is most likely the most robust, and yet usefully highlights the problems of such approaches. It applies to the Clean Development Mechanism, Joint Implementation and all voluntary offset markets.

It uses three screens that aim to preserve environmental integrity and assist with identifying projects that contribute to sustainable development. The three screens are:¹⁷

- i) Project-type screen: Only renewable energy and energy efficiency are eligible.
- ii) Additionality screen: Aims to ensure the project would not have occurred in the absence of the CDM.
- iii) Sustainability screen: Aims to ensure the project drives sustainable development.

Thus, Gold Standard certified credits are more likely to be created by projects that would not have gone ahead regardless, and are more likely to drive sustainable development. However, the renewable energy projects can only result in an absolute decrease in emissions if they replace an existing fossil fuel plant, rather than displace a fossil fuel plant being built to meet increased demand for energy. The energy efficiency projects are more likely to result in absolute reductions in emissions, but won't necessarily do so, for example if:

- Energy efficiency (and credit creation) is measured, not as an absolute reduction in energy use, but as a reduction relative to output, and so increased demand for the product can create certificates while increasing energy use and emissions;
- The rebound effect means that cost-effective reductions in energy use free up money to be spent on other activities that then increase energy use; and
- Energy efficiency measures increase the level of energy service rather than reduce energy use eg. house insulation increasing comfort levels rather than reducing fuel use.

¹⁷ More information on Gold Standard can be found at <http://www.cdmgoldstandard.org/>.

Gold Standard certified international credits make up a minority of those available, and the international credits used to meet CPRS liabilities are likely to have lower abatement additionality.

3 Options for voluntary action for Australia

The discussion paper states that “credible offsets for Australian entities include voluntary surrender of Scheme carbon pollution permits, Kyoto units, other international offset credits and domestic offsets from uncovered emissions sources”.

3.1 CPRS carbon pollution permits

These represent a questionable basis for voluntary actions that are motivated by concerns to improve environmental outcomes. Voluntary schemes based on the surrender of EU ETS allowances in the first phase of the EU ETS proved a debacle when it was finally revealed that Governments had given too many free allowances to industry. Environmentally concerned members of the public paid good money for what turned out to be worthless allowances.

Given the poor governance and lack of credibility evident in the proposed CPRS design, parties considering voluntary action might not wish to be reliant on the CPRS actually being effective at reducing emissions. Furthermore, there is no guarantee of driving local emission reductions – liable parties are able to buy certain international Kyoto units to meet their obligations. As discussed above, such units may not be truly additional and hence result in the absolute reductions in emissions necessary to maintain the integrity of a physical cap within the CPRS.

There are also major issues of equity involved. For example, parties might well find themselves buying permits from large emitters that were given these permits for free. More generally, the highly abstract nature of retiring emissions permits is likely to make such voluntary actions less attractive than tangible activities such as installing renewable energy systems or undertaking greater energy efficiency efforts.

Again, the example of charitable giving highlights the inadequacy of this argument. The purchase and voluntary retirement of CPRS compliant units has parallels with people wishing to donate to charitable causes only being able to do so by giving money to the Government. While the Government commits to spending this additional money on charitable causes the person has no control over where this spending actually occurs. In practice, a significant amount of charitable giving is targeted to particular causes because of the belief that Government priorities are inappropriate. One can imagine considerable frustration and loss of motivation if a person making a donation on the basis that they'd like to see increased foreign aid were to discover that the Government was spending the donation on something else such as a program to fund chaplains for every school.

3.2 Kyoto Units

Some Kyoto Units represent possible options for reducing global emissions, if not Australian emissions. As discussed above, the credibility of some is highly

questionable –for example ‘hot air’ AAUs from Russia and other States of the former USSR. Others such as Certified Emissions Reductions (CERs) from the CDM have varied credibility according to the project generating the credits. This approach also remains highly reliant on a credible set of targets and ongoing reform of the CDM rules following the Kyoto first commitment period.

Of all these credits, those that are Gold Standard certified are most likely to result in an absolute reduction in emissions and so could be suitable for the National Carbon Offset Standard, however, even they would seem to need to be assessed on a case by case basis.

3.3 Domestic offsets in non-CPRS covered sectors

As noted in the Discussion Paper, there are likely to be only relatively limited opportunities for such types of projects given the wide coverage of the CPRS. Furthermore, the limited policy efforts in these sectors to date raise the question of what additional (beyond policy) efforts might entail into the future. The starting point for sensibly assessing the role of voluntary offsets is a coherent and comprehensive set of policies and these are not yet in place. Should project credits be permitted to be used to meet CPRS liabilities the issue of additionality is complex.

The Discussion Paper states that “... if AAUs were cancelled for voluntary activity occurring within the Kyoto accounts this would either increase the burden on entities within the Scheme (through a tighter cap) or increase the short cost to domestic taxpayers if Australia needs to purchase international units to make up the shortfall.” If the domestic offset projects are truly additional (given that they have been accredited under the National Carbon Offset Standard) then it is unclear why the burden on others need increase.

There is a need, however, for voluntary efforts in non-CPRS covered sectors to drive emissions reductions further than would otherwise have occurred with such policies in place given the weak national targets currently proposed. Having the Government not cancel AAUs would mean that these voluntary actions don’t reduce Australian or global emissions at all but, instead, just subsidise other parties or the Government in meeting the national targets. To enable such offsets to be fully additional and so result in absolute abatement beyond either CPRS or Kyoto requirements, as discussed in Section 3.4.1 below, an international permit that corresponds to an absolute reduction in emissions would need to be cancelled. Note that if project activities do not fall within the Kyoto accounts then any lack of additionality will not be captured by either the CPRS or Kyoto targets.

3.4 Project-based reductions within CPRS covered sectors

This represents the missing piece of Australia’s proposed framework for voluntary actions. There are many opportunities to undertake ‘additional’ energy efficiency , renewable energy and lower-emission fossil fuel projects that support transition to a low carbon Australian energy future but would not happen without voluntary efforts.

As noted previously, the CPRS is a ‘cap and trade’ scheme while offset schemes inherently require a project-based ‘baseline and credit’ approach. Such project-based credit creation can occur both inside and outside other schemes – this is

purely a design choice. There is no reason that abatement projects cannot occur within covered sectors of the CPRS. An obvious example of an abatement scheme operating within the CPRS is the expanded Renewable Energy Target. While not reducing emissions (except to the extent that domestic emission reductions may then require less use of potentially non-additional international credits) such policies can help achieve other objectives while supporting transition of the Australian energy sector.

Facilitating voluntary actions to achieve their full potential will require that the Government ensures such actions can reduce Australian and global emissions beyond mandated requirements. The principles are well understood as evident, for example, in Accredited GreenPower offerings within Australia. Voluntary interest in supporting additional renewable generation in Australia had to be made compatible with the Mandatory Renewable Energy Target. There was a clear risk that parties buying GreenPower products might merely assist retailers in meeting mandatory obligations and hence subsidise energy consumers who didn't purchase GreenPower while not achieving any greater use of renewable energy. This risk was addressed through Accredited GreenPower. Purchasers of these products are assured that their additional payments go towards renewable projects beyond mandatory requirements.¹⁸

The situation is considerably more complex within the CPRS. As noted previously voluntary action is difficult to define, let alone measure in the context of emissions trading. Some types of voluntary action might be argued to represent activities that sit on the marginal abatement cost curve above the current carbon price. Voluntary funding can move these activities down the cost curve to where they represent 'economically' efficient abatement. Driving such activities, as has been widely noted, won't reduce emissions below the cap because they will merely displace the marginal activity. Still, it might be argued that the voluntary funding contribution is only sufficient to change the relative attractiveness of different abatement options rather than actually driving emissions reductions. On the other hand, these voluntary actions are reducing the costs of setting more ambitious targets by freeing up low-cost abatement. There are other activities where it might be expected that market failures within the CPRS mean that voluntary funding and effort will actually drive actions that will, indeed, subsidise other emitters without reducing emissions – a perverse outcome.

In all cases, appropriate types of voluntary action see private money and effort contributing to making Australia's task of taking on greater emission reductions easier than it otherwise would be. As such, the Federal Government should be seeking a means to facilitate such actions and allow them to contribute towards stronger targets. Again, the example of charitable giving is relevant. The Government supports donations to approved charities through tax deductibility on the basis that such donations represent a private contribution to the public good that deserves some public support.

One option that has been proposed is for the government to retire CPRS permits and AAUs for the estimated abatement associated with accredited voluntary action in

¹⁸ See www.greenpower.nsw.gov.au for more information.

CPRS covered sectors. As well as the additionality problems noted above (where the cancellation of an AAU most likely means that another international credit - with associated additionality problems - will be purchased), a simple risk weighted additionality test for domestic actions will not properly capture the level of voluntary support that is being made for different types of activities. Considerable work will be required to find an appropriate framework. It will likely need to involve the establishment of a 'positive' list of certified abatement activities. Permits might be held available for government retirement following such voluntary action through the use of a 'reserve' similar in some regards to the 'new entrant' allowance reserves established by national governments within the EU ETS.

Note that there should be an option for 'additional' policy efforts at State and local Government levels to also ensure additional emissions reductions. State Government policy efforts played an important role in driving policy innovation and emissions reductions during the period of the previous Federal Government. There is considerable risk associated with having just one level of government able to set *maximum* levels of effort to reduce Australia's emissions.

By taking advantage of voluntary willingness to financially support particular types of emission reductions projects, the strict economic efficiency of the CPRS can actually be enhanced. There are inherent motivations for government's to ensure the additionality of such projects. Inadequate additionality will indeed impose additional costs on emitters yet the physical CPRS cap will be ensured.

3.4.1 Domestic project-based activities can result in additional abatement

As discussed in the CPRS White paper, it is most likely that international credits will be used to meet CPRS and Kyoto liabilities (White Paper, 2008). The following assumes this to be the case. It is also possible that the price of Australian permits will remain below that of international credits and so no international credits will be used. In this case, the CPRS should indeed cap emissions, voluntary activities alone will not result in additional abatement and the cancellation of a CPRS permit will.

Assuming that international credits are used to meet CPRS liabilities, a direct result of them not being 100% additional, is that domestic activities in Australia that reduce their purchase, can result in additional abatement. The following explains why this is the case, and applies both to sectors that are covered by the CPRS as well as to sectors that are not.¹⁹

Once the CPRS permit price increases to the price of international credits, such credits would be expected to be bought in preference. In this way, the price of international credits sets a ceiling for the price of CPRS permits (the additional purchase of international credits driven by the CPRS is unlikely to have a significant impact on their price compared with other drivers such as the post-2012 international framework or legislative changes in potentially very large markets. Unless the price of CPRS permits stays below the price of international credits or the credit price rises to

¹⁹ Offsets in sectors not covered by the CPRS can reduce demand for international credits where international credits are used to meet Australia's Kyoto obligations at the margin in these sectors, or, to the extent that anticipation of emission reductions in these sectors results in the CPRS targets being increased (and so reduces the need for international credits to meet CPRS obligations).

the CPRS penalty price,²⁰ then international credits will be used at the margin to meet the CPRS target. This means that domestic activities that reduce Australia's emissions,²¹ will reduce the need to buy international credits (which, as discussed above, may not correspond to an absolute reduction in emissions), and so can reduce global emissions. This is explained in the following example which is also illustrated in Figure 1.

- Assuming that the average international credit is only 70% additional, and so in fact corresponds to 0.7 tonnes CO₂-e avoided, for each international credit used, 'CPRS emissions'²² will go over the CPRS target by 0.3 tonnes CO₂-e.
- To the extent that domestic actions²³ reduce Australian emissions by a tonne of CO₂-e, and so avoid the purchase of an international credit, they will reduce CPRS emissions by 0.3 tonnes CO₂-e. Note that as shown in Figure 1, this reduction is not an absolute reduction with respect to the CPRS target, but is with respect to the degree to which the CPRS target would have been exceeded, thus bringing emissions back down towards the CPRS target.

If AAUs were then cancelled by the Commonwealth, this would actually result in the purchase of an additional international permit because they are used at the margin to meet the CPRS target. Again assuming the average international permit is only 70% additional, this would result in 0.7 tonnes CO₂-e avoided (again see Figure 1). When added to the 0.3 tonnes CO₂-e emission reduction in the above example, this would result in emissions being reduced by a full tonne CO₂-e. Again, this tonne CO₂-e reduction is not below the CPRS target, but is with respect to the degree to which the CPRS target would have been exceeded. Thus, in the example in Figure 1, emissions would be reduced below the CPRS target by only 0.7 tonnes CO₂-e.²⁴ Thus, to achieve an absolute reduction in emissions below the CPRS cap, for every abatement credit created, an international permit that corresponds to an absolute reduction in emissions would need to be cancelled.

In the situation where the price of international credits is greater than the price cap set by the Commonwealth for the period 2010/11 to 2014/15, the Commonwealth will apply a penalty and, presumably purchase international credits sufficient to meet the national targets. This does not change the outcomes in Figure 1, it just means that the Commonwealth, rather than liable parties, is purchasing the international permits.

²⁰ This could happen if, for example, the CPRS abatement task was much easier than anticipated, or if the value of the AUD dropped significantly.

²¹ This must be an absolute reduction, not a relative reduction, otherwise they wouldn't reduce the need to buy international credits.

²² Here, consistent with the use of international credits to meet CPRS targets, 'CPRS emissions' refers to both the emissions in Australian CPRS sectors, as well as those covered by the CPRS credits.

²³ These are assumed to comply to the National Carbon Offset Standard and so be 100% additional.

²⁴ Note that this example assumes that the avoided international credits have the same level of additionality as the international credits bought as a result of the Commonwealth extinguishing a CPRS permit.

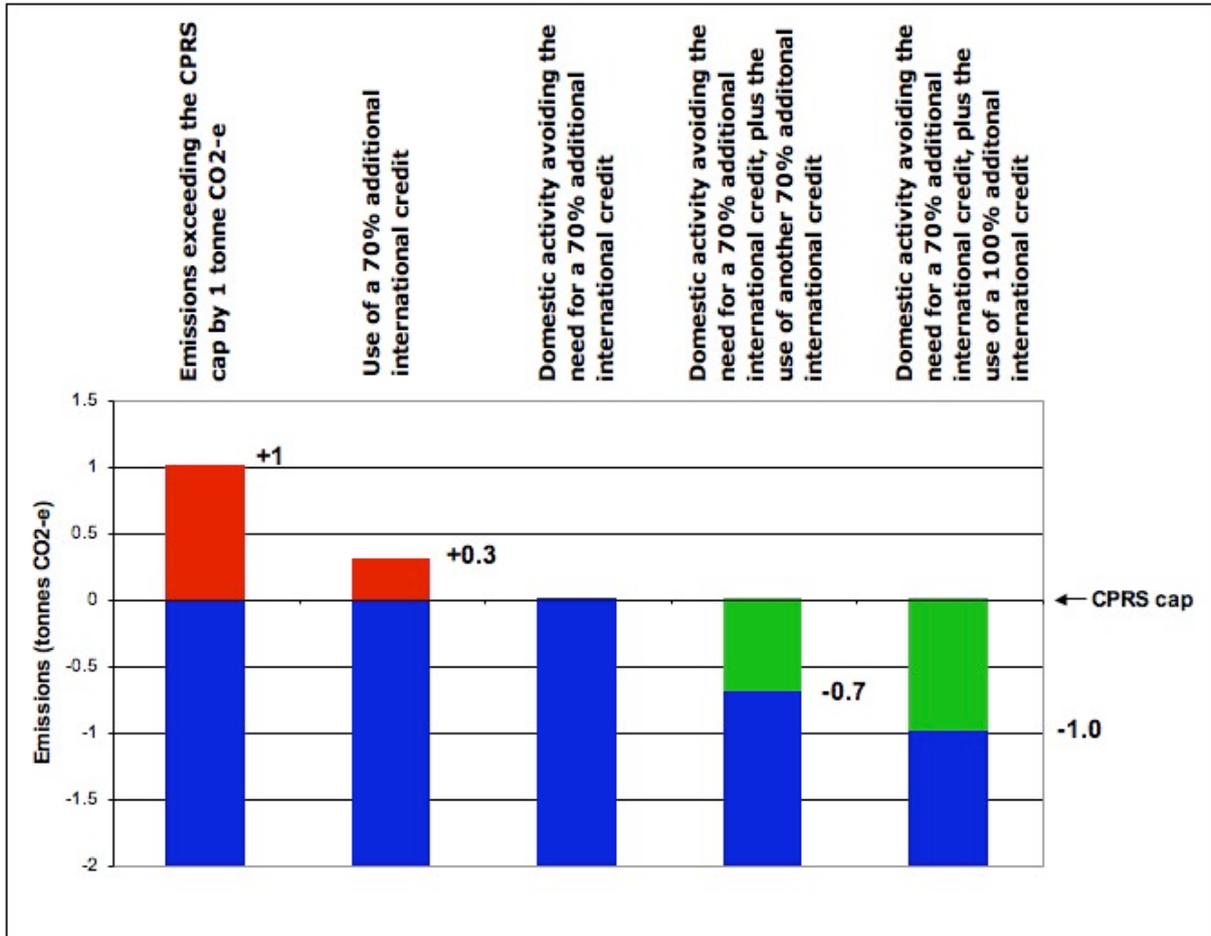


Figure 1 Example of possible abatement impacts of different types of activities

4 Questions from the Discussion Paper

Is the term 'carbon neutrality' still meaningful in the context of a cap and trade scheme?

Yes. Despite the existence of a cap and trade scheme its definition is unchanged. It still means there is no net emissions. Note this is different to the claim that there is no net *increase* in emissions (see Section 1.5).

Rather than 'carbon neutrality' would another concept such as 'additional voluntary action' be more appropriate to recognise voluntary activity?

As above, the term carbon neutrality is still valid, despite potential confusion about its meaning. 'Additional voluntary action' has a separate meaning, where a cap and trade scheme can, depending on its environmental integrity, influence the abatement additionality of that voluntary action (see Section 2 above).

If all an entity's emissions were covered by the Scheme, would it be sufficient for the entity to participate in the Scheme to be considered carbon neutral?

No. Carbon neutral means there are no net emissions. It doesn't mean there is no *increase* in emissions (see Section 1.5).

Should calculation of a carbon footprint be based only on emissions from uncovered sources or should it be based on an individual activity's entire emissions?

The carbon footprint should be based on an individual activity's entire emissions. Basing a carbon footprint only on sources not covered by the CPRS assumes that all source covered by the CPRS are already carbon neutral. As explained above, this is not true (see Section 1.5).

What types of international offset credits should be eligible under the standard?

As discussed above (see Section 2), only international offset credits that are Gold Standard certified are likely to result in an absolute reduction in emissions and so could be suitable for the National Carbon Offset Standard. However, even they would need to be assessed on a case by case basis.

Should domestic offsets from uncovered sources contribute to Australia's Kyoto obligations or should an Assigned Amount Unit be cancelled to provide additionality beyond the Kyoto obligations?

Domestic offsets can certainly be created in sectors that are not covered by the CPRS but are covered by Kyoto. Such offsets will not reduce Australia's Kyoto emissions (because they free up permits for use elsewhere) but they may help reduce compliance costs.²⁵ This arrangement is, of course, not conducive to encouraging voluntary efforts.

²⁵ For the businesses that provide such offsets to remain financially viable, the offset project should have occurred at lower cost than the marginal abatement cost as represented by the certificate price, and so should reduce scheme costs overall.

For such offsets to reduce emissions beyond Australia's Kyoto obligations, an international permit that corresponds to an absolute reduction in emissions would need to be cancelled. Simply cancelling an AAU just means that an additional international credit, with associated additionality concerns as described in Section 2, would be bought.

How should reforestation be treated under the standard?

Given that reforestation is already covered as a project-based opt-in by the CPRS, there seems little reason for an additional mechanism.

Should domestic offset products other than carbon pollution reduction permits surrender be eligible under the standard? If so, from which sources?

CPRS permits should ideally not be eligible under the standard because, as discussed in the CPRS White paper, their removal most likely means an international credit (with associated additionality concerns) is used instead. Ideally, the only permit that should be used is one that corresponds to an absolute reduction in emissions.

Are these appropriate principles for credible offsets under a national carbon offset standard?

No, see all the above.