

Domestic and International carbon offsets under the Carbon Pollution Reduction Scheme: what prospects?

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This article assesses the prospects for liable entities under Australia's Carbon Pollution Reduction Scheme (CPRS) to rely on international and domestic offset credits. This is crucially important for liable entities as, under the CPRS, they must surrender a permit for every tonne of carbon dioxide equivalent emitted. The only alternatives to surrendering permits are to purchase and surrender allowable offset credits, or undertake verified abatement action. From a liable entity's perspective, much will depend on the price of permits, the price of offset credits and the cost of abatement action. Those entities which have the least opportunities for abatement will be in the market to purchase permits or offset credits. Treasury has recommended a permit price in 2010 of A\$23/t CO₂-e in the context of a global agreement to stabilise greenhouse gas concentrations at 550 ppm. Stabilising concentrations at lower concentration levels, such as 450 ppm, requires faster cuts in global emissions and higher emission prices. To achieve 510 ppm, the starting price would need to be 40 per cent higher and 110 per cent higher to achieve 450 ppm.¹ So if a liable entity is able to secure offset credits cheaper than the fixed permit price under the CPRS, it may do so, subject to any limits which the government intends to impose.

Although some preliminary comments on the prospects for reliance on offsets credits can be made, they are necessarily speculative in the sense that much hangs on the outcome of the international negotiations that will occur under the auspices of the Fifteenth Conference of the Parties (COP 15) to the *United Nations Framework Convention on Climate Change* in Copenhagen in December 2009. Also it is difficult to ascertain the impact of the current global financial crisis on the price of carbon although, as discussed at the conclusion of this article, there are some early indications that it is having an effect.

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¹ See: http://www.treasury.gov.au/lowpollutionfuture/factSheets/html/Emission_Prices_Fact_Sheet.asp (viewed 24 November 2008).

Be that as it may, the Carbon Pollution Reduction Scheme (CPRS) White Paper² proposes that only offset credits³ generated from *Kyoto Protocol*⁴ compliant Clean Development Mechanism (CDM), Joint Implementation (JI), and from Land Use, Land Use Change and Forestry (LULUCF) projects will be recognised under the Scheme.⁵ Before the release of the White Paper it was anticipated that offset credits might be generated by the uncovered sectors such as forestry and agriculture.⁶ However, the White Paper proposes introducing agriculture into the CPRS perhaps by 2015, with a final decision being made in 2013. Also, the forestry sector is encouraged to 'opt-in' to the Scheme. In addition, there is a clear reluctance on the part of the government to encourage offset schemes in these sectors because they are administratively complex. Considerable judgment is required to determine baselines⁷ which, in the government's view, are inherently subjective, posing a resultant risk that emissions trading schemes might fail to achieve genuine abatement.

What are carbon offsets?

An 'offset' allows a liable entity to offset greenhouse gas (GHG) emissions and derive GHG reduction credits from activities such as carbon sequestration, renewable energy projects or energy efficiency measures. An offset credit can be surrendered to make up the difference between the total allowable emissions by a liable entity and the number of permits that it holds at the end of a compliance period.⁸ It is generally

² Available at

<<http://www.climatechange.gov.au/whitepaper/report/pubs/pdf/V100fPolicyDecisionsSummary.pdf>> (viewed 26 February 2009).

³ An offset credit, generated from various emissions reduction activities, can be surrendered to make up the difference between the total allowable emissions by a liable party and the number of permits that it holds at the end of a compliance period.

⁴ Available at <<http://unfccc.int/resource/docs/convkp/kpeng.pdf>> (viewed 31 August 2008).

⁵ See Policy Position 11, above n 2 at lxix-lxxiii.

⁶ See, for example, *Abatement incentives prior to the commencement of the Australian Emissions Trading Scheme*, released by the Department of Prime Minister and Cabinet in September 2007 and the *Report of the Task Group on Emissions Trading* (Prime Minister and Cabinet: 2007) (The Task Group Report) commissioned by the former Prime Minister, John Howard available at <<http://pandora.nla.gov.au/tep/72614>> (viewed 24 November 2008).

⁷ Offset credits can only be generated for emissions below the 'baseline', ie GHG emissions reduction that would have occurred even in the absence of a project.

⁸ National Emissions Task Force Report, National Emissions Trading Taskforce, *Possible Design for a National Greenhouse Gas Emissions Trading Scheme* (2006) at 62: available at:

<http://thecabinetoffice.clients.squiz.net/_data/assets/pdf_file/0011/2018/Discussion_Paper_-_Preliminaries.pdf> (viewed 1 September 2008). This report was prepared on behalf of the State and Territory governments in Australia to assist them with

accepted that limits should be set on the extent to which domestic offsets can be used to satisfy liability under an emissions trading scheme. Otherwise liable entities would invest heavily in offsets rather than engage in meaningful emissions abatement strategies. Under the Regional Greenhouse Gas Initiative in the United States, for example, up to 3% of total emissions can be offset under projects including natural gas end-use efficiency, landfill gas recovery, reforestation and methane capture from farming facilities.⁹ In a useful paper published by the Australia Institute, entitled *Carbon Offsets: Saviour or Cop-out?*,¹⁰ the many difficulties associated with offsets are explored. Renewable energy generation is identified as the most legitimate form of offsets, while energy efficiency projects, such as installing energy efficient light bulbs, struggle to prove 'additionality'.¹¹ In other words, credits should only be generated if it can be shown that, but for the energy efficiency initiative, the light bulbs would not have been installed.

According to the Australia Institute, forestry offsets, including afforestation¹² and reforestation,¹³ are the most popular, yet controversial, type of offsets. This is because there is doubt about whether forestry projects can store carbon permanently, and, in the case of avoided deforestation, whether it can be proved that a forest would have been cleared but for the ability to generate credits by avoiding clearing – the problem of 'additionality'. To make matters worse, the international community has yet to agree on an offset standard that will be adopted for forestry offsets in mandatory and voluntary markets. Internationally, standards have been developed under the Joint Implementation/Clean

designing an inter-jurisdictional emissions trading scheme in the absence of federal regulation in this regard.

- ⁹ Regional Greenhouse Gas Initiative Model Rules available at <http://www.rggi.org/modelrule.htm> Subpart XX-1 (viewed 24 November 2008); see also R. Lyster 'Chasing down the climate change footprint of the public and private sectors – Part II' (2007) 24(6) *Environmental Planning and Law Journal* 450.
- ¹⁰ C. Downie *Carbon Offsets: Saviour or Cop-out*, Research Paper No. 48 (The Australia Institute: 2007) available at <http://www.tai.org.au/documents/downloads/WP107.pdf> (viewed 2 September 2007).
- ¹¹ 'Additionality' refers to the assessment of the extent to which a project that reduces greenhouse gases is over and above (or is additional to) business as usual practices; see Greenhouse Friendly™* Additionality Factsheet available at <http://www.climatechange.gov.au/greenhousefriendly/publications/pubs/additionality-fs.pdf> (viewed 24 November 2008).
- ¹² Afforestation is the artificial establishment of forests by planting or seeding in an area of non- forest land.
- ¹³ Reforestation is the restocking of existing forests and woodlands which have been depleted, with native tree stock.

Development Mechanism rules,¹⁴ the European Union Emissions Trading Scheme,¹⁵ the US Regional Greenhouse Gas Initiative,¹⁶ and the Gold Standard,¹⁷ while a Voluntary Carbon Standard was released in November 2007.¹⁸

Where an emissions trading scheme allows liable entities to rely on *Kyoto*-compliant offset credits, derived under the flexibility mechanisms (discussed in detail below), they are under an obligation to limit reliance on them. This is because the Marrakech Accords to the *Kyoto Protocol* require that domestic actions (as opposed to use of the *Kyoto* flexibility mechanisms) constitute a 'significant element' of the efforts made by each Annex I Parties to meet their target. While the Accords do not set a quantified proportion that is to be met through domestic action, the Protocol requires that Annex I Parties provide information in their national communications under the Protocol to demonstrate that their use of the mechanisms is 'supplemental to domestic action' to achieve their targets.¹⁹ So, for example, under the European Union Emissions Trading Scheme (EU ETS) offsets derived from Joint Implementation and Clean Development Mechanisms projects are allowed up to a limit imposed by Member States.²⁰

¹⁴ Under these rules, forestry offsets are limited to afforestation and are only permitted until 2012. All forestry projects must be guaranteed for a minimum of 5 years to a maximum of 60 years depending on the project and all credits generated from projects must be replaced with credits from other projects when they expire.

¹⁵ Forestry offset projects are excluded as allowable offsets.

¹⁶ Forestry offset projects are excluded as allowable offsets.

¹⁷ Only includes JI/CDM registered renewable energy and energy efficiency projects. Project must be 'additional' while forestry projects are excluded.

¹⁸ Available at <http://www.v-c-s.org/about.html> (viewed 2 September 2008). The VCS Program provides the standards and framework for independent validation and verification of GHG emission reductions and removals based on ISO 14064-2:2006 and ISO 14064-3:2006.

¹⁹ *Ibid.*

²⁰ See Art. 5 Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms (the EU ETS Linking Directive); available at <http://eur-lex.europa.eu/LexUriServ/site/en/oj/2004/l_338/l_33820041113en00180023.pdf> (viewed 5 September 2007); see also Lyster, above n 8.

Limited ability to rely on domestic offsets credits under CPRS

Given the proposed broad coverage of the CPRS,²¹ the opportunities for liable entities to rely on domestic offsets are limited. The government's preferred position is to only recognise offsets where it is not possible to include a sector in the Scheme.²² While the agricultural sector might have been expected to provide a ready market of offset credits, the government's preferred position is to cover this sector by 2015, although a final decision will need to be made by 2013. The CPRS is likely to apply obligations off-farm rather than attempt to cover emissions from all farms that meet a threshold. This means that the CPRS is likely to cover points in the supply chain such as fertiliser suppliers, abattoirs, dairies and beef exporters.²³ Given the considerable amount of work that still needs to be done to measure emissions from the agriculture sector in order to generate offsets credits, the government will not recognise offset credits from this sector until such time that the decision has been made in 2013 as to whether or not it will be covered by the CPRS.²⁴

With respect to offsets from the forestry sector, the White Paper proposes allowing the forestry sector to opt-in to the CPRS. Reforestation, as defined under the first commitment period of the *Protocol*,²⁵ could be covered by the Scheme. Forest landholders, including Indigenous land managers, would have an incentive to voluntarily include their forests in the scheme, with the greatest benefits accruing to owners of new forests who intend to maintain them as carbon sequestration sinks.²⁶ For the purposes of *Kyoto Protocol* accounting procedures, a forest is a minimum area of 0.2 hectares, with tree crown cover of 20% and tree height of two metres. Forest landholders would receive permits for the net sequestration benefits provided by their forests so crediting increments in forest carbon. This would also create an incentive to establish new forests.²⁷ The technicalities of accrediting reforestation activities could be minimised by the existing carbon accounting systems provided by the National Carbon

²¹ The covered sectors include: stationary energy; transport (by covering upstream fuel supplies); fugitive emissions (for example, from leakages from gas pipelines and methane emissions from mining of black coal); and industrial processes. The threshold for liability is the direct emission of 25,000 tonnes of carbon dioxide equivalent per annum. Synthetic greenhouse gases and the waste sector will also be covered but the threshold for these sectors is still to be determined: see Policy Position 6, above note 2 at liii-lviii.

²² Ibid 6-62.

²³ Ibid 6-44.

²⁴ Ibid 6-64.

²⁵ For the first commitment period, reforestation activities will be limited to reforestation occurring on those lands that did not contain forest on 31 December 1989.

²⁶ Above n 2 at 6-28.

²⁷ Ibid 6-48.

Accounting System and the National Carbon Accounting Toolbox.²⁸ The White Paper states that it is administratively simpler to allow forests to opt into the CPRS than it is to develop a system for forestry offset credits. For this reason offsets from reforestation activities will not be recognised under the Scheme. However, those forest landholders that have opted into the Scheme will be able to sell their sequestration-linked permits to liable parties under the scheme, effectively generating offset credits. Finally, the government will consult with Indigenous Australian land managers with a view to potentially recognising offset credits from reductions in savannah burning, and forestry opportunities, under the Scheme.²⁹

Recognition of Kyoto-compliant offsets under the CPRS

The Australian government accepts that participation in the international trade in emissions units derived from *Kyoto*-compliant offset projects represents a 'least cost' approach and that any attempt to achieve emissions reduction targets through domestic abatement alone would be more costly. For this reason *Kyoto*-compliant offsets are recognised under the CPRS. However, as mentioned above the principle of supplementarity will require the Australian government to limit a liable entity's reliance on such offsets. Aside from the issue of supplementarity, the reason for wanting to limit reliance on *Kyoto* credits is that the government wants to shield the domestic market, in the early years of the Scheme, from any price volatility in the international markets. Price volatility could arise due to the considerable uncertainty that currently exists in the market leading up to Fifteenth Conference of the Parties in December 2009, and, even if only in the short-term, the current global financial crisis. Limits are likely to be defined as a maximum allowable percentage of an entity's obligation that could be satisfied using *Kyoto* credits. This policy position is intended to minimise in the short term any implementation risks in the early years of the Scheme.³⁰

Rules for participating in flexibility mechanisms

To participate in the flexibility mechanisms, Annex I Parties must meet the following eligibility requirements: they must have ratified the *Kyoto Protocol*; they must have calculated their assigned amount in terms of tonnes of CO₂-equivalent emissions;³¹ they must have in place a national system for estimating emissions and removals of GHGs within their territory; they must have in place a national registry to record and track

²⁸ See <<http://www.climatechange.gov.au/ncas/index.html>> (viewed 1 September 2008).

²⁹ Ibid 6-64.

³⁰ See Green Paper at 233-4; available at:

<<http://www.climatechange.gov.au/greenpaper/index.html>> (viewed 26 February 2009).

³¹ Above n 4, Arts. 3.7 and 3.8 and Annex B.

the creation and movement of emission reduction units (ERUs), certified emission reductions (CERs), assigned amount units (AAUs) and removal units (RMUs) and must annually report such information to the secretariat; and they must annually report information on emissions and removals to the secretariat.³² The Parties must also have established a 'commitment period reserve.'³³

To establish eligibility each Annex I Party must submit a report on the above information to the Secretariat, at the latest by 1 January 2007 (or a year after becoming a Party to the Protocol, whichever is later). This report will be reviewed, and any questions arising will be dealt with by the Enforcement Branch of the Compliance Committee within 16 months of submission through a set of expedited procedures. A Party, which is found to not meet the eligibility requirements, may seek reinstatement of eligibility through a further expedited procedure.³⁴ As discussed above, the 'supplementarity' principle is an important aspect of relying on the flexibility mechanisms.

What types of credits are recognised under the Kyoto Protocol?

A very innovative aspect of the *Kyoto Protocol* is that Parties are allowed to achieve their emission reduction targets by relying on the 'flexibility mechanisms' or 'least cost abatement measures'. These include joint implementation (JI)³⁵ the clean development mechanism (CDM),³⁶ and emissions trading.³⁷ Joint implementation means that developed countries can invest in projects in other developed countries to acquire credits to assist in meeting assigned amounts, if generated in the first commitment period 2008-2012. Participation in JI projects must be voluntary and is open to public and private entities. A JI project must be one that would not normally be undertaken by the receiving Party, and must, in this sense, be 'additional'.³⁸ The acquisition of emission reduction units

³² FCCC/CP/2001/13/Add.2 available at

<<http://unfccc.int/resource/docs/cop7/13a02.pdf#page=2>> (viewed 31 August 2008).

³³ At the Bonn negotiations, it was agreed that each Party be required to hold a minimum level of emission reduction units (ERUs), certified emission reductions (CERs), assigned amount units (AAUs) and removal units (RMUs) in its national registry. This is known as the 'commitment period reserve'. This reserve is calculated as the lower of the following: 90% of the Party's assigned amount, as defined in Articles 3.7 and 3.8 of the Protocol, or the level of national emissions indicated in the Party's most recent emissions inventory (multiplied by five, for the five years of the commitment period); see <<http://unfccc.int/resource/docs/2005/cmp1/eng/08a02.pdf#page=17>> (viewed 1 September 2008).

³⁴ Above n 33.

³⁵ Above n 4, Art. 6.

³⁶ Ibid Art. 12.

³⁷ Ibid Art 17.

³⁸ Ibid Art. 6(b).

(ERUs), derived from a JI project, by a Party must be 'supplemental' to domestic actions for the purposes of meeting its emission reduction target.³⁹

The Clean Development Mechanism (CDM) allows developed countries to invest in emissions reducing projects in developing countries, and to obtain certified emission reductions (CERs) towards meeting their targets under the *Protocol*. This allows developed countries not only to meet their emission reduction targets outside of their own jurisdictions, but also to find a ready export market for their sustainable energy technologies. Emission reductions resulting from each project activity must be certified by designated operational entities (DOEs) on the basis of: voluntary participation approved by each Party involved; real, measurable, and long-term benefits related to the mitigation of climate change; and reductions in emissions that are 'additional' to any that would occur in the absence of the certified project activity.⁴⁰ Participation may involve public and private entities.⁴¹ The Letter of Approval (LOA) has become the instrument of choice for Parties to the *Protocol* to authorise the private sector to engage in CDM projects. In practice, almost all sellers and the majority of buyers of CERs are from the private sector. Without the appropriate LoA, there can be no issuance and transfer of CERs. CERs obtained between 2000 and 2008 may be used to achieve compliance in the first commitment period.⁴² There was also considerable concern about the appropriate regulation of CDM projects being 'exported' to developing countries. It was agreed by the Parties to the *Protocol* that an Executive Board of the Clean Development Mechanism (CDM) should be established.⁴³ This Board is now established and has released the Modalities and Procedures of the CDM: Role of the Executive Board.⁴⁴

Under Article 3.3 of the *Kyoto Protocol*, reductions in greenhouse gas emissions resulting from forestry activities, limited to afforestation, reforestation and deforestation since 1990, may be used to meet the commitments of each Party. It was also agreed that, in addition to these, human-induced activities relating to revegetation, forest management, cropland management, grazing land management could be counted toward commitments in the second and subsequent commitment periods

³⁹ Ibid Art. 6(d).

⁴⁰ Ibid Art. 12(5).

⁴¹ Ibid Art. 12(9).

⁴² Ibid Art. 12(10).

⁴³ Decision 15/CP.7, available at <http://cdm.unfccc.int/EB/rules/modproced.html#CEB> (viewed 1 September 2008).

⁴⁴ Available at <http://cdm.unfccc.int/Reference/COPMOP/08a01.pdf#page=7> (viewed 1 September 2008).

(LULUCF).⁴⁵ However, a Party may choose to have them counted for its first commitment period (2008-2012), provided that the activities have taken place since 1990. Carbon credits arising out of these LULUCF activities are known as Removal Units.

Types of Kyoto credits recognised under CPRS

The types of credits that will be recognised under the CPRS are Emission Reduction Units (ERUs) generated from Joint Implementation projects, Removal Units (RMUs) issued by another *Kyoto* party on the basis of land use, land-use change and forestry activities under Articles 3.3 and 3.4 of the *Protocol*, and Certified Emissions Reductions (CERs) generated from Clean Development Mechanisms projects. However, each of these requires further elucidation.

Emissions reduction units (ERUs)

It is proposed that ERUs would be recognised for compliance purposes under the CPRS (for the period 2010–11 to 2012–13). However, as the Green Paper notes, the scope for allowing liable entities to participate in Joint Implementation (JI) projects is directly linked with whether domestic offsets will be a feature of the Australian scheme. If reliance on domestic offsets is limited, the market for undertaking JI offset projects in another developed country is also limited. As discussed above, domestic offsets are unlikely to play a significant role under the CPRS given the broad coverage of the Scheme. It is also important to note that since the government will not include domestic offsets from agricultural emissions, prior to a decision being taken in 2013 whether or not to include that sector in 2015, no JI projects undertaken in another developed country will be approved in that sector. Australia will not host Joint Implementation projects in sectors that are covered under the CPRS.⁴⁶

Certified emissions reductions (CERs)

The Green Paper indicates that the government has serious concerns about reliance on, and the future of, the Clean Development Mechanism even though CERs generated from CDM projects will also be acceptable under the CPRS. The government is not alone in its scepticism about the Clean Development Mechanism as highlighted elsewhere in this article. Suffice it to say at this point, that the Green Paper raises a general

⁴⁵ See the Report of the Conference of the Parties on the Second Part of its Sixth Session, held at Bonn from 16 to 27 July 2001 at 10 available at <<http://unfccc.int/resource/docs/cop6secpart/05a02.pdf>> (last visited 16 November 2004). This provision is included in Article 3.4, also known as the 'Australia clause', as it was a concession proposed, and won, by the Australian government in Bonn. The Australian government successfully persuaded the international community to allow a more generous accounting of emissions reductions resulting from halting broad scale land clearing.

⁴⁶ Above n 2, 11-32.

concern about Clean Development Mechanism projects which is that Certified Emissions Reductions (CERs) are issued based on the difference between an estimated baseline and actual emissions. The baseline is defined as emissions which are expected under a 'business as usual' scenario. Projects which take emissions below this baseline are entitled to generate credits. Consequently, rather than resulting in additional global abatement, Clean Development Mechanism projects allow Parties to increase their emissions while submitting CERs as 'offset' credits. Thus, although it is a 'least cost' abatement measure, doubt is cast over whether or not it results in real global GHG abatement.⁴⁷

Another problem with the Clean Development Mechanism is that it entails no limit on emissions in developing countries. In fact, as the discussion below indicates, it might encourage an escalation in emissions in order to generate CERs. In addition, project proponents must also indicate that their projects are 'additional' to any abatement measures that would have occurred in country in the absence of the project. As the Green Paper notes, this entails a significant degree of judgment.⁴⁸

Given these concerns about the Clean Development Mechanism, there is some doubt as to whether, and in what form, it will survive in the post-2012 era.⁴⁹ This is currently the topic of much debate and will only be resolved at COP 15. This is another reason why reliance on the Clean Development Mechanism introduces an element of instability into domestic emissions trading schemes.

With respect to particular types of Clean Development Mechanism projects, the White Paper rejects temporary CERs (tCERs), generated from afforestation and reforestation activities, because with a life span of between 20-60 years, the government would be required to replace these credits when they expire. Long-term CERs from forestry based projects are also rejected. The preferred position of the government, then, is to allow other types of CERs to be surrendered for compliance purposes in 2012-2013, and beyond subject to any rules for the Clean Development Mechanism that will be negotiated at COP15.

Removal Units (RMUs)

The Green Paper devotes very little attention to Removal Units (RMUs) other than by stating that few countries are likely to be in a position to generate RMUs, so the potential for trade in RMUs is likely to be limited.

⁴⁷ Ibid 11-12.

⁴⁸ Above n 30, 238.

⁴⁹ Above n 2, 11-12.

Consequently they are acceptable for compliance purposes in the period 2010-2011 to 2012-2013.⁵⁰

Non-Kyoto credits

The White Paper acknowledges the role of the voluntary carbon market but, while the government has committed to establishing a standard for voluntary offsets, they will not be accepted for compliance under the CPRS. This position will be reviewed in light of any development in international negotiations, particularly with respect to avoided deforestation credits, discussed more comprehensively below. The government has also committed itself to assisting with the development of 'robust internationally accepted methodologies for reductions from avoided deforestation.'⁵¹

Critiques of, and prospects for, a Clean Development Mechanism market post-2012

Recent research has shed light on some of the unanticipated and undesirable aspects of the Clean Development Mechanism. This is in spite of what appears to be a rigorous Clean Development Mechanism project cycle. At the outset, a Clean Development Mechanism project proponent must submit a Project Design Document (PDD) to the Clean Development Mechanism Executive Board either showing that the project falls within the scope of a methodology approved by it, or applying for such approval. The PDD must give proof of 'additionality' and must include an environmental impact assessment. The proponent is obliged to engage in a local and international stakeholder consultation procedure. The PDD, the Letter of Approval of the host country, and affirmation that money used by an Annex I country for project is not a diversion of the country's Official Development Assistance, must be submitted to a Designated Operational Entity (DOE) for validation. The Clean Development Mechanism project is then registered by Clean Development Mechanism Executive Board after which the DOE verifies in writing the amount of emissions reductions. Finally, the Executive Board issues the CERs.

One of the most significant papers to critique the Clean Development Mechanism is that written by environmental law professor, Michael Wara, from Stanford University.⁵² Wara goes so far as to state that 'the CDM is an excessive subsidy that represents a massive waste of developed world resources' and that, rather than producing real reductions in GHGs, the CDM rules 'have animated accounting tricks

⁵⁰ Ibid 11-20.

⁵¹ Ibid 11-22.

⁵² MW Wara 'The Performance and Potential of the Clean Development Mechanism' available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1086242> (viewed 1 September 2008).

that allow participants to manufacture GHG credits at little or no cost beyond the payment of consultants necessary to surmount the regulatory hurdles.' Given this critique, Wara asserts that the financial resources currently devoted to the CDM architecture might be more efficaciously allocated in the post- 2012 period. Wara relies on two case studies to support his criticisms of the CDM: the HCFC-23 capture projects established at HCFC-22 production facilities; and combined cycle gas technology projects in China.

The HCFC-23 projects

HCFC-22⁵³ is used primarily as a refrigerant and for every 100 tonnes of HCFC-22 produced, between 1.5 and 4 tonnes of HCFC-23 is produced. According to Wara, HCFC-23 projects count for almost one third of all CDM projects in the project pipelines. Referring to the perverse subsidy provided by the CDM he notes that a developing world producer of HCFC-22 is able to earn twice as much from selling CDM credits as it can from the sale of its primary product. In addition, there is a strong incentive on producers of HCFC-22 to create extra HCFC-23 specifically for the purpose of capturing it, destroying it and generating CERs. Aware of this problem, the CDM Executive Board has ruled that only those HCFC-22 plants that have production data for at least three years in the 2000-2004 period are eligible. So no new plants are allowed to generate CER credits. Even so, it seems that HCFC-22 manufacturers have artificially inflated their data given that the average of all reported baseline data at the 19 participating plants is 2.99% which is very close to the maximum allowable value. Furthermore, some of the HCFC-22 plants seem to have ramped up their production during the baseline period, way beyond the anticipated 15% growth per annum for the sector.

Wara calculates that to abate all HCFC-23 emissions in developing countries would cost \$31 million per annum. Instead, as a result of HCFC-23 CDM projects, Annex B nations will pay between €250-750 million to abate 2005 Non-Annex B HCFC-23 emissions.

Combined cycle gas turbine technology (CCGT) in China

By the end of 2007, Chinese CCGT project developers evinced an intention to create CERs for all 24 CCGT projects (representing all power plants actually being built in China as opposed to those planned). It is

⁵³ HCFCs were developed as alternative refrigerant compounds following the ban on the use of CFCs under the *Montreal Protocol*. However, HCFCs are now referred to as 'synthetic greenhouse gases' due to their global warming potential; see *IPCC Special Report on Safeguarding the Ozone Layer and the Global Climate System Issues related to Hydrofluorocarbons and Perfluorocarbons* (2005) available at: <http://arch.rivm.nl/env/int/ipcc/pages_media/SROC-final/SROC_SPM.pdf> (viewed 24 November 2008).

argued that the reason they are entitled to generate credits is that they are 'additional', that is, that they would not have been built in China but for the CDM.⁵⁴ As Wara notes, the additionality of a project is calculated by comparing the financial costs of CCGT with alternative options and by analysing whether the project is common practice. The problem with the financial analysis is that it treats the projects as if they were operating in a privatised, competitive energy generation sector, instead of reflecting the reality that in China the power sector is state-owned or, at least, only partially deregulated. Also, given the predominance of coal generation in China it is too easy to argue that CCGT is not common practice. However, the relevant national priorities for energy development that have been set by the Chinese government are not taken into account. Thus, CCGT projects may be approved as CDM projects simply because the right questions are not being asked.

What are China's national priorities for energy development?

At a press conference on June 4, 2007, Ma Kai, chairman of National Development and Reform Commission, briefed the press on China's latest approach to addressing climate change.⁵⁵ This has been translated into China's National Climate Change Program.⁵⁶ It was made clear that key areas for GHG mitigation in China include energy production and transformation; energy efficiency improvement and energy conservation; and the development of clean production within the industrial sector. With respect to energy production and transformation, the enactment of laws and regulations relating to greenhouse gas mitigation will be expedited. To this end, in March 2008, a national Energy Law of the People's Republic of China was enacted. Ma Kai committed China to amending the Law on the Coal Industry and Electric Power of the People's Republic of China and developing preferential policies for clean and low carbon energy. National medium- and long-term energy strategies, as well as special programs for coal, electricity, oil and natural gas, nuclear energy, renewable energy and oil will be prepared. The 2006 Renewable Energy Law of the People's Republic of China will be implemented in a comprehensive manner, while China's institutional reform in the energy sector will be pursued.⁵⁷ The government will use

⁵⁴ See 'Methodology for Grid-Connected Electricity Generation Plants using Natural Gas' available at:

<http://cdm.unfccc.int/UserManagement/FileStorage/CDMWf_AM_15YH7UTNQ40J8MGMVX62CGNE0K49Y0> (viewed 1 September 2008).

⁵⁵ Available at: <http://english.gov.cn/2007-06/04/content_636052.htm> (viewed 9 June 2007).

⁵⁶ Available at: <<http://www.china.org.cn/english/environment/213624.htm>> (viewed 24 November 2008).

⁵⁷ See Wang Mingyuan 'Prospects for the Renewable Energy Industry in China: Legal Perspectives' (2007) 1&2 *Asia Pacific Journal of Environmental Law* 7.

market mechanisms to optimise China's energy mix and promote energy price reform while placing a price on carbon. Given the frequent reference in China's Energy Law to 'low carbon energy', it is arguable that Wara's concerns about the 'additionality' of CCGT projects in China are justified and that such claims deserve greater scrutiny.

Two tracks for reform

The two tracks for reform proposed by Wara are to strengthen the administrative procedures within the CDM to ensure that projects are truly 'additional'. The other would be to discard the market-based approach of the CDM and move towards the establishment of a climate fund such as the Multilateral Fund of the *Montreal Protocol*. Under the fund, developed countries would pay any additional costs incurred by developing country state-run sectors as they transition away from GHG emissions. Alternatively the fund could be used wholesale for all developing country carbon credits.

Current state of CDM market and future prospects

The World Bank's *State and Trends of the Carbon Market 2008*⁵⁸ indicates that in 2007 the world carbon market increased from US\$30 billion in 2006 to US\$50 billion reflecting almost entirely the trade in European Union Phase II allowances.⁵⁹ CERs generated from CDM projects were valued in 2007 at US\$7.4 billion, representing mainly private sector buyers in the European Union (EU) but also EU governments and Japan.⁶⁰ The report notes that the major risk with a CDM project is the non-delivery or under delivery of CERs. The lifespan of a project and the uncertainty over project registration with the CDM Executive Board, and the verification of CERs, mean that primary CERs will trade at a lower price than EUAs-II in December 2008.⁶¹ Projects at an early stage command US\$10.40-12.40, while registered project transactions command an amount close to US\$14.7. A secondary market (derivatives) has emerged for CERs largely consisting of portfolios of guaranteed CERs offered by investment-grade sellers to deliver CERs (or if not, an equivalent instrument valid for European Union Emissions

⁵⁸ Available at:

<http://carbonfinance.org/docs/State__Trends--formatted_06_May_10pm.pdf> (viewed 1 September 2008).

⁵⁹ These are allowance recognised in the second phase of the European Union Emissions Trading Scheme between 2008-2012. See *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003* (EU ETS Directive) available at <http://eur-lex.europa.eu/LexUriServ/site/en/oj/2003/l_275/l_27520031025en00320046.pdf> (viewed 1 September 2008).

⁶⁰ Above n 58, 2.

⁶¹ *Ibid* 21.

Trading Scheme (EU ETS) Phase II compliance), with most if not all delivery risk assigned to the seller. The secondary market is maturing, as evidenced by the increased standardisation of contracts. European and other buyers are utilising the secondary markets for compliance, hedging and arbitrage purposes.⁶²

Carbon contracts from clean energy projects (energy efficiency and renewable energy) accounted for nearly two-thirds of the transacted CDM market in 2008, resulting in CER issuances that are expected to yield between 70-90% of expected Project Design Document (PDD) volumes, based on current expectations. This explains why they are being targeted by buyers, now that the known industrial gas project types, discussed by Wara, have been more or less contracted.⁶³

The World Bank reports that at the end of March 2008, there were 3,188 proposed CDM projects, of which approximately one-third are registered (978), or in the process of registration (188) while roughly two-thirds are at validation stage (2,022). However, obtaining timely CER issuance proved challenging in 2007 with market infrastructure and institutions as well as regulators are struggling to keep pace with the huge momentum of CDM supply. As well, the CDM Executive Board increased its scrutiny of CDM projects, resulting in requests for review of projects, and the rejection of projects at a record rate. This contributed to further delays. Consequently, it can take between one and two years for a project to progress from validation to registration, to which must be added the six months that it is required to secure the services of a Designated Operational Entity. Such delays can place elements of the financing package of projects in jeopardy since payment for CERs is linked to delivery. This, in turn, impacts on the expected delivery schedule, while potentially dampening the enthusiasm for further innovation. For these reasons, the World Bank analysts believe that clearing bottlenecks and accelerating the procedural aspects of the CDM has become a priority challenge.⁶⁴

With respect to the near terms prospects for growth of CDM market, it seems that the unfettered and consistent growth of the primary CER market in the next two years is uncertain, given the likely competition from a new supply of JI credits/ERUs from Russia, Ukraine, Poland, Latvia. This is regardless of the eventual number of CERs delivered by 2012. According to the analysts, the remaining compliance market demand for CDM and JI is, at best, about 600-800MtCO₂e of additional demand from all sources combined, i.e. the EU ETS, EU governments,

⁶² Ibid 48.

⁶³ Ibid 2.

⁶⁴ Ibid 21.

Japan and minor demand from small Annex I Parties. To put this in perspective it must be remembered that in 2007 the total volume transacted was 634 MtCO₂e. Consequently, beyond 2008, the outlook for project-based primary credits is unclear. This poses a major risk to the continuity of the CDM and JI markets. Although demand from voluntary markets is growing rapidly this is insufficient to continue the momentum created by project-based activities. Markets for pre-compliance assets for various proposed emissions trading schemes are developing slowly but without strong, clear regulatory signals about their acceptability, these are unlikely to sustain projects much longer beyond 2008.⁶⁵

Garnaut on international sectoral agreements and CDMs

In addition to the views of analysts at the World Bank about future prospects for the CDM, Garnaut's⁶⁶ views on how developing countries should be brought into an international climate change agreement post-2012 are salutary. Garnaut's approach may also have a bearing on prospects for liable entities to rely on CDM projects under the CPRS should they gain any traction at the Fifteen Conference of the Parties in December 2009. Garnaut believes that the capacities of developing countries to reduce their greenhouse gas emissions should be differentiated. He divides developing countries⁶⁷ into: the poorest, least developed economies; middle-income countries such as South Africa and Brazil; and China⁶⁸ and other high-income countries.⁶⁹ Garnaut then provides transitional arrangements for these countries prior to the achievement of a sound 'multi-decade international approach'.⁷⁰

Poorest countries

Garnaut states that the poorest countries cannot be expected to adopt a national approach to GHG reductions. They could, however, contribute to mitigation efforts by becoming involved in a strengthened CDM scheme and in international sectoral agreements (see below). By 2020, these countries should take on one-sided/non-binding targets (see below).

⁶⁵ Ibid 24-28.

⁶⁶ Garnaut Climate Change Review *Draft Report* (July 2008) available at <<http://www.garnautreview.org.au/CA25734E0016A131/pages/draft-report>> (viewed 18 July 2008).

⁶⁷ Ibid 297.

⁶⁸ Ibid 299.

⁶⁹ A high-income country is defined by Garnaut as one meeting the World Bank per capita income threshold of US\$11,000; *ibid* 299.

⁷⁰ *Ibid* 299.

Middle-income countries

In Garnaut's view most developing countries cannot be expected to adopt binding targets which would require them to buy emissions rights from other countries where emissions budgets are exceeded. Rather, these countries should adopt one-sided targets.⁷¹ The benefit of these is that where countries perform better than their targets they could sell the emission rights into the international emissions trading market, without acquiring any obligation to purchase these rights if they fell below their targets.⁷² Although Garnaut recognises that there will be doubt as to whether or not these non-binding targets will be met, binding targets are not an option for most developing countries. Non-binding targets should be taken up immediately and used as a transitional measure until 2020. Thereafter, middle income countries should accept binding targets. By definition, these targets will be calculated as below-business-as-usual targets.⁷³

China and other high-income countries

According to Garnaut, no global agreement would be effective unless China accepted binding targets which, according to its fiscal and technological profile, it is capable of doing.⁷⁴ However, given its lower income status, China should not be expected to take on targets which are as stringent as developed countries.

Principles for allocating emissions entitlements across countries

Garnaut proposes that emissions limits for the purposes of setting binding and non-binding targets for developing countries should be based on the principle of 'contraction and convergence' i.e. per capita emissions levels.⁷⁵ Under this approach, each country would begin with emissions entitlements equal to its current emissions levels which would converge over time to equal per capita entitlements, while the overall global GHG budget contracts to accommodate the stabilisation objective.⁷⁶ Where countries, like China, have per capita emissions which already reflect the global per capital average, they would have to be provided with 'headroom'. This would allow these countries to make a more gradual adjustment without immediately needing to buy emissions entitlements

⁷¹ Also referred to as opt-out or non-binding targets; see Garnaut, *ibid* 297.

⁷² *Ibid* 297.

⁷³ *Ibid* 298.

⁷⁴ *Ibid* 299.

⁷⁵ *Ibid* 302.

⁷⁶ *Ibid* 302.

from other countries.⁷⁷ For example, annual permit allocations could be allowed to increase at half the rate of GDP growth.⁷⁸

International sectoral agreements

Mention was made earlier of the poorest developing countries adopting international sectoral agreements. The idea here is that, if such agreements were adopted internationally, the problem of 'carbon leakage' would be avoided. As a consequence, there would be no need for countries adopting emissions trading schemes to artificially compensate Emissions Intensive Trade Exposed industries. Countries participating in such agreements would impose a carbon tax on main producers in each high emissions industry. Although producers are part of a global market and multinational ownership is widespread, domestic governments would keep the revenue from the tax. Also access to global climate funds for developing countries could be made conditional on their participation in sectoral agreements.⁷⁹

According to Garnaut, only a small number of countries which produce iron and steel, aluminium, chemicals, cement and paper and pulp would be involved. To cover 80% of developing country emissions in these sectors only three would need to be involved in an iron and steel agreement; only four each in aluminium smelting and paper and pulp; seven in cement production; and nine in chemical and petrochemicals. Price-based agreements would require agreement about the tax rate for countries that were not operating under UN-compliant economy-wide commitments. In some industries, indirect emissions in generating electricity would need to be taken into account.⁸⁰ Sectoral agreements should commence in 2013.

Continuing role of the offsets market?

Given Garnaut's preference for most developing countries to be covered by either binding or one-sided emissions reduction targets, a smaller role for international offsets, like CDMs, is envisaged. This is also because of the inherent flaws in the design of offsets.⁸¹ Garnaut points to the fact that the future role of CDMs is being considered by the UN process such as allowing whole sectors of developing countries' economies to produce offsets. However, Garnaut reiterates his preference for one-sided targets

⁷⁷ Ibid 303.

⁷⁸ Ibid 305.

⁷⁹ Ibid 322.

⁸⁰ Ibid 322.

⁸¹ Ibid 378.

over CDMs, stating that CDMs should only have a role in developing countries which have not accepted a one-sided target.⁸²

Offset credits from reducing deforestation and degradation in developing countries (RED(D))

While the debate surrounding the future of CDMs will continue until it is resolved at the Fifteenth Conference of the Parties, another issue which is expected to be resolved at the Conference is whether or not offset credits from reducing deforestation and degradation in developing countries (RED(D)) will enter the international emissions trading regime. This is a very significant issue given that standing forests are the most important reservoir of carbon dioxide. Deforestation, especially in the tropics, contributes around 20% of annual GHG emissions and, in the case of Indonesia, amounts to 85% of its annual emissions from human activities.⁸³ There is a growing consensus that reducing emissions from deforestation (and degradation) (RED(D)) must be a priority in negotiations on a successor to the *Kyoto Protocol*.

Although the White Paper has made it clear that at present offset credits from RED(D) projects will not be recognised under the CPRS, given that they are not yet recognised under the CDM, the government has indicated that it is awaiting further international developments in this regard at COP 15.⁸⁴ Australia will continue, however, to support the development of robust internationally accepted methodologies for RED(D).⁸⁵ As well, the Australian government has launched the International Forest Partnership, with agreements being signed with Indonesia and Papua New Guinea.⁸⁶ To support the accounting of emissions from RED(D) the Australian government is also working with the Clinton Climate Initiative to extend Australia's National Carbon Accounting System into the international arena for the global monitoring of carbon emissions.⁸⁷ Given this, it is instructive to analyse the policy positions which are being discussed at the international level.

⁸² Ibid 320.

⁸³ Agus P. Sari, Martha Maulidya, Ria N. Bhutarbar, Rizka E. Sari, Wisnu Rusmanto *Executive Summary: Indonesia and Climate Change* (March 2007) p. 3.

⁸⁴ Above n 2, 11-22.

⁸⁵ Ibid.

⁸⁶ See <<http://www.climatechange.gov.au/international/publications/pubs/fs-ifci.pdf>> (viewed 1 September 2008).

⁸⁷ See <<http://www.climatechange.gov.au/ncas/factsheets/fs-gcms.html>> (viewed 1 September 2008).

It is also worth noting that the White Paper diverges from the Task Group Report,⁸⁸ commissioned by John Howard which regarded offsets provided by avoided deforestation as an important element of international emissions trading, especially given the then Commonwealth government's 'Global Initiative on Forests and Climate'.⁸⁹ Such offsets were also recognised as activities that could generate early abatement credits under a policy document released by the Howard government entitled *Abatement incentives prior to the commencement of the Australian Emissions Trading Scheme*.⁹⁰

Meanwhile, the Garnaut Climate Change Review supports the establishing of a regional carbon trading market between Australia, New Zealand, Papua New Guinea and other Southwest Pacific countries, and Indonesia. Garnaut recognises the large volumes of low-cost abatement opportunities which PNG and Indonesia could provide from avoided deforestation and improved land and forest management.⁹¹

Future scope for RED(D) credits

Under the Bali Action Plan,⁹² negotiated at the thirteenth Conference of the Parties to the *United Nations Framework Convention on Climate Change*⁹³ (COP13), the parties decided to begin a process immediately to allow them to adopt a decision at COP15 in 2009 on a shared vision for long-term cooperative action on climate change. This vision will include a long-term global goal for emission reductions, based on the principle of common but differentiated responsibilities. Significantly, the Action Plan requires 'enhanced consideration of policy approaches and positive incentives on issues relating to reducing emissions from deforestation and

⁸⁸ See *Report of the Task Group on Emissions Trading* (Prime Minister and Cabinet: 2007) (The Task Group Report); available at <<http://pandora.nla.gov.au/tep/72614>> (viewed 24 July 2008).

⁸⁹ On 29 March 2007 the former Australian Government launched a \$200 million Global Initiative on Forests and Climate to advance the global effort to tackle climate change and protect the world's forests.

⁹⁰ Available at:
http://www.dpmc.gov.au/consultation/docs/early_action_discussion_paper.pdf (viewed 2 August 2008); see also Lyster above note 8.

⁹¹ Garnaut Climate Change Review *Emissions Trading Scheme Discussion Paper* (March 2008) available at
 <[http://www.garnautreview.org.au/CA25734E0016A131/WebObj/D0836448ETSpaper-FINAL-fullcolour/\\$File/D08%2036448%20%20ETS%20paper%20-%20FINAL%20-%20full%20colour.pdf](http://www.garnautreview.org.au/CA25734E0016A131/WebObj/D0836448ETSpaper-FINAL-fullcolour/$File/D08%2036448%20%20ETS%20paper%20-%20FINAL%20-%20full%20colour.pdf)> (viewed 2 August 2008).

⁹² Available at
 <http://unfccc.int/files/meetings/cop_13/application/pdf/cp_bali_action.pdf> (viewed 1 September 2008).

⁹³ *United Nations Framework Convention on Climate Change*, opened for signature June 20, 1992, 31 ILM 848 (1992) (entered into force 21 March 1994).

forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries.⁹⁴ This builds on a decision taken at COP11, in December 2005, to establish a two-year review of relevant scientific and methodological issues, and to consider policy approaches and incentives for reducing emissions from deforestation in developing countries.⁹⁵

The incorporation of RED(D) in the Bali Action Plan is highly significant as prior to this there has been no mention of it in international agreements. Under Art. 3.3 of the *Kyoto Protocol*, Annex I Parties⁹⁶ may rely on *domestic* reductions in GHG emissions resulting from forestry activities, limited to afforestation⁹⁷ and reforestation⁹⁸ since 1990, to meet their emissions reduction targets under the *Protocol*.⁹⁹ Similarly, as mentioned above, afforestation and reforestation projects undertaken by Annex I Parties in developing countries may be relied upon, under the CDM, to satisfy their *Kyoto* commitments. However, to date, RED(D) projects are not recognised as eligible CDM projects.

There are a number of reasons why RED(D) has been excluded from the project-based CDM under the *Kyoto Protocol*. These include concerns about: the risk of leakage;¹⁰⁰ non-permanence;¹⁰¹ establishing baselines;¹⁰² additionality;¹⁰³ and difficulties associated with monitoring

⁹⁴ Above n 92, Art. 1(b)(iii).

⁹⁵ As part of this process, a number of workshops have been organised under the auspices of the Subsidiary Body of Scientific and Technical Advice of the UNFCCC including in Italy in September 2006, in Australia in March 2007, in Bonn in May 2007 and in Bali in December 2007; see for example

<<http://www.rainforestcoalition.org/documents/UNFCCCSBSTA2007110.pdf>> (viewed 31 January 2008).

⁹⁶ These are developed countries with emissions reduction targets under the *Kyoto Protocol*.

⁹⁷ Afforestation is the artificial establishment of forests by planting or seeding in an area of non-forest land.

⁹⁸ Reforestation is the restocking of existing forests and woodlands which have been depleted, with native tree stock.

⁹⁹ Although reliance on this is limited in accordance with the Marrakesh Accords negotiated at COP7 in 2001; see Decision 11/CP.7 available at

<http://unfccc.int/files/meetings/workshops/other_meetings/application/pdf/11cp7.pdf> (viewed 31 January 2008).

¹⁰⁰ 'Leakage' refers to greenhouse gas emissions which occur outside the project boundary but which are nevertheless attributable to its activities.

¹⁰¹ 'Permanence' refers to the possibility that carbon is released into the atmosphere as a result of fire, illegal logging or a change in government.

¹⁰² Credits can only be generated for emissions below the 'baseline' i.e. GHG emissions reduction that would have occurred even in the absence of a CDM project.

and measurement. However, during the two-year review of RED(D) established at COP11, considerable advances have been made in addressing these problems, particularly with respect to monitoring and measurement.¹⁰⁴ It should be noted also, that many of the problems relating to RED(D) also arise with respect to afforestation and reforestation CDM projects. For this reason, the CDM Executive Board has developed unique rules governing these types of projects.¹⁰⁵ This indicates that once the concerns about RED(D), mentioned above, have been allayed, it is possible for special rules to be devised by the Board so as to bring RED(D) within the auspices of the CDM.

If RED(D) projects were to be incorporated into the post-*Kyoto* framework, it should be remembered that RED(D) projects have the potential to deliver far more than carbon sequestration services. Forests also provide valuable local, regional and global ecosystem services ranging from water quality, flood control, soil stability and biodiversity.¹⁰⁶ If properly implemented, RED(D) projects also have the potential to contribute to the protection of forest livelihoods amongst forest dependant populations.¹⁰⁷

Emerging policy responses

There are currently two global policy responses to RED(D) which are emerging: (1) public funding schemes through which industrialised countries directly compensate developing countries for avoided deforestation; and (2) market-oriented proposals for carbon emissions reduction credits to be generated from RED(D) which are then traded on global markets.

¹⁰³ It must be demonstrated that the carbon sequestration would not have occurred without the incentives provided by the project.

¹⁰⁴ See, for example, the 2006 IPCC Guidelines for National Greenhouse Gas Inventories – Agriculture, Forestry and Other Land Use, available at <<http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol4.htm>> (viewed 30 January 2008) and GOFG-GOLD REDD Sourcebook which uses remote sensing to monitor and measure greenhouse gas emissions from forests, available at <<http://www.gofc-gold.uni-jena.de/redd/>> (viewed 31 January 2008).

¹⁰⁵ See http://cdm.unfccc.int/methodologies/ARmethodologies/approved_ar.html (viewed 8 February 2008) and C. Streck et al. 'The role of forests in global climate change: whence we come and where we go' (2006) 82(5) *International Affairs*, 868.

¹⁰⁶ K. Karousakis 'Initial Review of Policies and Incentives to reduce GHG emissions from Deforestation' (Organisation for Economic Co-operation and Development (OECD): October 2006) at 8. See also K Karousakis and J Corfee-Morlot 'Financing Mechanisms to Reduce Emissions from Deforestation: Issues in Design and Implementation' (OECD and IEA: December 2007).

¹⁰⁷ L. Peskett et al. 'Can payments for avoided deforestation to tackle climate change also benefit the poor?' (Overseas Development Institute: November 2006) 1.

Both policy responses hold out significant financial incentives to developing countries, like Indonesia, and are essentially market-based instruments for RED(D) as they rely on providing financial incentives to landholders to conserve forests. In addition, the carbon sequestration services provided by forests are inevitably linked to the broader ecosystem, or environmental, services provided by forests.¹⁰⁸

Public funding schemes

An example of a public funding scheme is the Forest Carbon Partnership Facility¹⁰⁹ launched at COP13 by the World Bank in response to a request by developing and industrialised countries to explore a framework for piloting RED(D) activities. Two separate mechanisms have been established: the readiness mechanism and the carbon finance mechanism. The readiness mechanism will assist up to 20 developing countries to calculate a credible estimate of their national forest carbon stocks and sources of forest emissions, as well as assisting the country in identifying its reference scenario based on past emission rates for future emissions estimates. Technical assistance will be offered in calculating the opportunity costs of possible RED(D) schemes, and designing an adapted RED(D) strategy that takes into account country priorities and constraints.¹¹⁰

Under the carbon finance mechanism, a few countries will be selected to participate in pilot incentive programs for RED(D) based on a system of compensated reductions. The selected countries: (a) must have demonstrated a commitment to RED(D) and have adequate monitoring capacity; (b) must have established a credible reference scenario and options for reducing emissions; and (c) will receive payments for reducing emissions below the reference scenario. Payments will only be made to countries that achieve measurable and verifiable emission reductions.¹¹¹ The World Bank believes that fears about the future supply of carbon credits could be allayed by ensuring that RED(D) CDMs are incorporated into the post-2012 regime.¹¹²

¹⁰⁸ See R Lyster '(De)regulating the rural environment' (2002) *Environmental Planning and Law Journal* 34 and G. Heal, G. C. Daily, P. R. Ehrlich, J. Salzman, C. Boggs, J. Hellmann, J. Hughes, C. Kremen, T. Ricketts, "Protecting Natural Capital Through Ecosystem Service Districts" (2001) 30 *Stanford Environmental Law Journal* 333 at 336.

¹⁰⁹ Available at <http://carbonfinance.org/docs/FCPF_Booklet_English_Revised.pdf> (viewed 31 January 2008).

¹¹⁰ See <<http://carbonfinance.org/Router.cfm?Page=FCPF&FID=34267&ItemID=34267&ft=About>> (viewed 31 January 2008).

¹¹¹ Ibid.

¹¹² See *Point Carbon*, 10 September, available at:

Clearly, where developing countries receive international funding for RED(D) projects, governments will have to devise schemes whereby financial incentives to preserve forests are passed on to those who own, or control, the land on which the forests are situated. Land tenure, property rights and the contractual arrangements between government and landholders have emerged as crucial legal issue in this regard.¹¹³

RED(D) carbon credits

It has been suggested that to remedy the missing or incomplete market for forest ecosystem services, a market-based instrument to capture the carbon, and other, values of forests should be developed.¹¹⁴ A market-based instrument sanctioned under the *United Nations Framework Convention on Climate Change (UNFCCC)* would provide incentives for RED(D) in the form of carbon credits issued to developing countries to protect forests and discourage forest clearance for other uses. These credits could subsequently be sold to Annex I countries, or private industry organisations, wishing to purchase carbon offsets. The credits may subsequently be traded either within the international emissions trading scheme envisaged under the *Kyoto Protocol*,¹¹⁵ or the burgeoning voluntary carbon markets.¹¹⁶ Market advocates maintain that public funding schemes will not be sufficient to generate the required volume of funds to provide attractive and sustained economic incentives for RED(D).¹¹⁷

A number of proposals have been put forward for developing a market in RED(D) carbon credits.¹¹⁸ These have implications at the international

<<http://www.pointcarbon.com/Home/News/All%20news/CDM%20&%20JI/article24413-470.html>> (viewed 13 October 2007).

¹¹³ See Karousakis, above note 106; T. Griffiths *Seeing 'RED'? Avoided deforestation and the rights of Indigenous Peoples and local communities* (Forest Peoples Programme: 2007); R. Haverfield 'Hak Ulayat and the State: Land Reform in Indonesia' and D Fitzpatrick 'Beyond Dualism: Land Acquisition and Law in Indonesia' in T. Lindsey (ed) *Indonesia: Land and Society* (Federation Press: 1999).

¹¹⁴ Karousakis, above n 106.

¹¹⁵ Art. 17.

¹¹⁶ See Lyster, above n 9.

¹¹⁷ Griffiths, above n 113, 6.

¹¹⁸ M. Ogonowski et al. *Reducing Emissions from Deforestation and Degradation: The Dual Markets Approach* (Centre for Clean Air Policy: August 2007); B. Schlamadinger, et al. *Should we include avoidance of deforestation in the international response to climate change? Tropical Deforestation and Climate Change* (IPAM, Instituto de Pesquisa Ambiental de Amazônia; Belém, Pará (Brazil)); P.M. Fearnside 'Mitigation of climatic change in the Amazon' in W.F. Laurance & C.A. Peres (Eds.) *Emerging Threats to Tropical Forests* (University of Chicago Press, Chicago, Illinois) 353; L. Pedroni et al. *Mobilizing Public and Private Resources for the Protection of Tropical Rainforests* (CATIE Tropical Agricultural Research and Higher Education Center); K. Karousakis *Incentives to reduce GHG emissions from deforestation:*

and the national level. At the international level, it is proposed that a separate RED(D) instrument be incorporated into the post-2012 climate change regime by way of a new Protocol,¹¹⁹ and under which the ability of Annex I Parties to rely on RED(D) credits is restricted.¹²⁰ Here, the Conference of the Parties would set a maximum on the percentage of emissions reductions Annex I Parties can achieve through overseas RED(D). This satisfies the principle of 'supplementarity' as well as the inherent concerns about RED(D) programs, mentioned above. Also, it avoids the prospect of an oversupply of RED(D) credits disrupting a well established carbon market¹²¹ and lowering carbon prices in the post 2012 era. In essence, this approach 'keeps separate an emerging market (RED(D)) from the more mature carbon market until questions of volatility have been resolved.'¹²²

Irrespective of how a RED(D) carbon credit approach is integrated into the international climate change regime, the more fundamental question is whether credits should be granted to national governments, or whether a project-based/CDM type approach should be adopted. Under a national approach, credits could be distributed/auctioned to Annex I Parties by developing countries which accept nationally binding caps, or deforestation targets. Under a CDM type approach, private or public entities would be authorised to engage in RED(D) activities at the project level, irrespective of whether or not a host country has negotiated a national emissions reference level.¹²³ The rationale for a CDM type approach is that developing countries with capacity constraints to implement forest protection measures, may not be able to implement the necessary policy, legal and institutional reforms nationwide to meet a RED(D) target. It is unlikely that the private sector would participate in a RED(D) mechanism that links investment risk to government performance.¹²⁴ In this regard, the temporary Certified Emissions Reductions (tCERs) arising from afforestation and reforestation CDM (A/R CDMs) projects has been suggested as a basis for a CDM approach to RED(D).¹²⁵

Lessons learned from Costa Rica and Mexico (Organisation for Economic Co-operation and Development (OECD): 2007).

¹¹⁹ See Karousakis, above n 106, 30-32.

¹²⁰ Ogonowski et al, above note 118 at i.

¹²¹ See World Bank *State of Carbon Market 2006* available at <<http://carbonfinance.org/docs/StateoftheCarbonMarket2006.pdf>> (viewed 10 March 2008).

¹²² Ibid

¹²³ Fearnside, above n 118, 3.

¹²⁴ Ibid.

¹²⁵ Streck, above n 105, 868.

However, there is a view that a project-based approach would not provide for national coverage and would be more likely to cause 'leakage'. Here 'leakage' might counteract any emissions reduction in the project area so participants might find it difficult to claim the expected carbon credits. In practice then, because it is virtually impossible for project-based mechanisms to guarantee an overall reduction of emissions from a country's forests, it may ultimately be unsuitable as a RED(D) instrument. For this reason, it has been suggested that perhaps a national approach is preferable to a project approach, although it should also be acknowledged that the national approach does not solve the problem of leakage from one country to another.¹²⁶

The market jumps ahead of international regulation

It is clear, that despite the fact that negotiations regarding the acceptability of RED(D) schemes under the UNFCCC, will be progressed at Copenhagen in December 2009, corporate investors and investment banks are already investing in RED(D) projects in developing countries.¹²⁷ For example, on 7 April 2008, Marriott International signed the first RED(D) agreement in the Brazilian state of Amazonas committing \$2 million, with an additional \$4 million to be added over three years. This is indicative of a pipeline of new projects, which incorporate sustainable development and biodiversity benefits, seeking certification under the Climate, Community and Biodiversity Project Design Standard.¹²⁸

In another development, US Investment Bank, Merrill Lynch, has signed a six-year \$9 million agreement with Carbon Conservation, an Australian-based project developer, and UK-based NGO Flora and Fauna International (FFI) to buy voluntary emissions reductions (VERs) from a RED(D) project in Indonesia's Aceh province. Merrill Lynch has the option to expand the deal to \$400 million. The project, which is regarded as the largest carbon offset project in the world, seeks to avoid the emission of 100 million tonnes of CO₂ over 30 years. Named Aceh Green, the project hopes to achieve: avoided deforestation, improved

¹²⁶ D Mollicone et al 'Elements for the expected mechanisms on 'reduced emissions from deforestation and degradation, REDD' under UNFCCC' (2007) 2 *Environmental Research Letters* (IOP Publishing) at 5.

¹²⁷ See J Speckman, 'REDD under way' (2008) *Environmental Finance* 56.

¹²⁸ The Climate, Community and Biodiversity Project Design Standards identify land-based projects that can deliver climate, biodiversity and community benefits simultaneously but are primarily designed for climate change mitigation projects. The Standards were developed by the Climate, Community & Biodiversity Alliance (CCBA) which is a global partnership of research institutions, corporations and environmental groups, with a mission to develop and promote voluntary standards for multiple-benefit land-use projects; see <<http://climate-standards.org/images/pdf/CCBStandards.pdf>> (viewed 2 August 2008).

forestry management, small-holder estate crop development and land reform, the development of public infrastructure, and 'green' soft commodity production marketed with Aceh Green branding.¹²⁹

On 24 June 2008, Australia's Macquarie Group and Fauna & Flora International (FFI) announced the formation of a task force to invest in the management of tropical forests and generate carbon credits for sale. During the next 3 years, the partnership will work with local communities and governments to protect six forests at risk from deforestation in South East Asia, South America and Africa. The drivers of deforestation will be addressed by developing new economic opportunities for forest-dependent communities. Capital and financial services for the forest projects will be provided by Macquarie Group which will also take responsibility for ensuring compliance with carbon standards. Macquarie has reserved the right to sell the carbon credits internationally. FFI will draw on its conservation experience to work with local governments and communities to implement the projects.¹³⁰

Conclusion

As mentioned at the outset, there is much about the ability of liable entities under the CPRS to rely on offset credits that is speculative at this stage. Important decisions about the future of the CDM and RED(D) projects will be taken at the Fifteenth Conference of the Parties in December 2009, which may affect the government's current thinking on the use of offset credits from these projects. Finally, it will not be until 2013 that a final decision is taken on whether agriculture will be a covered sector under the CPRS, and there is no indication whether the forestry sector will opt-in to the CPRS and supply offset credits.

Suffice it to say, that the government has adopted a conservative position on recognising offset credits under the CPRS in order to protect the integrity of the Scheme and to shelter it from price volatility. However, it is important to recognise at the same time that the proposed CPRS is very comprehensive in terms of its coverage, far more so than the existing European Union Emissions Trading Scheme and the various Schemes proposed for the United States.¹³¹ Broad coverage necessarily limits the availability of offsets in uncovered sectors.

As mentioned at the outset, one of the key determinants for anticipating whether liable entities will want to rely on carbon offsets is price. Given that Treasury has recommended a starting permit price of A\$23/t CO₂-e

¹²⁹ Speckman, above n 127, 58.

¹³⁰ See <http://www.fauna-flora.org/docs/macquarie_media_release.pdf> (viewed 2 August 2008).

¹³¹ See Lyster, above note 9.

so as to avoid price volatility in the early stages of the CPRS, it is illuminating to observe the recent price volatility in the carbon markets resulting from the global financial crisis. In May 2008, the World Bank reported that European Union Allowances (EUAs), under the European Emissions Trading Scheme, have durably traded in the €20-25 price band since May 2007 for delivery in December 2008.¹³² It also reported that for the CER market, the average price for primary forward contracts was €10 in 2007.¹³³ However, according to more recent sources, in November 2008 EUAs plunged to a 19-month low of €14.80 on the European Climate Exchange amid tumbling stock markets. Several traders are expecting the price to drop to between €10.00 and €14.00.¹³⁴ By distinction, CERs in the secondary market on 20 November 2008 were valued at €14.40, showing an increase in price since the World Bank reported earlier in the year.¹³⁵ At the time of writing, this equates to a price of A\$28 making it unlikely that a liable entity would prefer to rely on CERs rather than purchase permits under the CPRS. Given the analysis provided in this article about prospects for relying on domestic and international offset credits, it will be very interesting to observe the behaviour of liable entities in this regard as the CPRS, and international market rules, develop and mature.

¹³² State and Trends of the Carbon Market above n 58, 7.

¹³³ For further explanation of the operation of the forward carbon market see Lyster above note 9; see also State and Trends of the Carbon Market above n 59, 3.

¹³⁴ See <<http://www.pointcarbon.com/news/1.1007934>> (accessed 24 November 2008).

¹³⁵ See <<http://www.pointcarbon.com/news/1.1007780>> (accessed 24 November 2008).