

Climate Change and the Kyoto Protocol: Practical Domestic Legal Issues

*John Taberner**

SUMMARY

This paper explores the legal issues related to the possible emergence of a national or international greenhouse gas emissions trading regime. The paper begins with an overview of Australia's international obligations in relation to climate change and the Australian government's current response. Closer examination of the provisions relating to emissions trading found in the Kyoto Protocol reveals a general lack of detail. Further negotiations will be necessary in order to establish an international emissions trading regime. However, such negotiations have stalled. Private trading in "carbon credits" has nevertheless commenced both internationally and within Australia. However, it is asserted that in the absence of a statutory trading regime, a carbon credit is not property and cannot be assigned. Until a statutory regime is introduced, all that is being traded is the benefit of contractual promises concerning a commodity which may come into existence at a later date. Entities engaging in trading of carbon credits should therefore be aware that such trading is highly speculative. The paper concludes with an update on developments toward a domestic scheme for emissions trading in Australia and an analysis of the potential elements of a domestic scheme.

INTRODUCTION¹

Particularly since the Third Conference of the Parties to the Framework Convention on Climate Change in Kyoto in December 1997, there has been continuing attention to the issue of a regime or regimes for trading in greenhouse gas (GHG) emissions.

The practical obstacles, both international and domestic, to the emergence of a successful GHG trading regime are very substantial. On the other hand, commercial pressures for such a regime appear to

* MA (Hons), LLB, LLM (Geo Wash), Partner, Freehill Hollingdale & Page.

¹ The author gratefully acknowledges the assistance of Philip Freeman, solicitor at Freehill Hollingdale & Page, in preparing this paper.

be equally substantial.

The Kyoto Protocol provides the basis on which any international scheme for GHG trading will emerge. Any domestic scheme which wishes to conform to that international regime must be compatible with the scheme in the Kyoto Protocol. A great deal of work remains to be done before the outline of the Kyoto Protocol scheme is sufficiently clear to allow the confident development of domestic schemes. Indeed, there is still a significant body of opinion which argues that the approach of the Kyoto Protocol is misplaced, and that a scheme more likely to succeed internationally is one based on a carbon tax.²

Set out below is a brief overview of the features of the Kyoto Protocol which are most salient to the emergence of a domestic regime in Australia and a discussion of some of the central domestic legal issues raised.

CLIMATE CHANGE – AUSTRALIA’S INTERNATIONAL OBLIGATIONS

The build-up to Kyoto

In 1992, the *United Nations Framework Convention on Climate Change* (FCCC) was negotiated in New York. The Convention was opened for signature at the Rio “Earth Summit” and has now been ratified by 174 countries. It contains a series of general principles and commitments, including the overall reduction of GHG emissions to 1990 levels by the year 2000.³ At the first Conference of the Parties (COP) to the FCCC in April 1995 in Berlin, it was decided to strengthen Parties’ commitments and that “quantified limitation and reduction objectives with specified time frames, such as 2005, 2010, and 2020” must be set by 1997.⁴ At the second COP in July 1996 in Geneva, it was decided to accelerate negotiations on the text of a *legally binding protocol or another legal instrument* for adoption at the third COP in Kyoto in December 1997.⁵

² See R N Cooper, “Toward a Real Global Warming Treaty” (1998) *Foreign Affairs* 66-79 (March/April).

³ Article 4.2(a) and (b) of the Framework Convention on Climate Control, Kyoto, December 1997.

⁴ The first of the decisions taken at the first Conference of the Parties in Berlin has come to be known as the *Berlin Mandate*.

⁵ See the Ministerial Declaration adopted in Geneva (the *Geneva Declaration*). Importantly, the *Geneva Declaration* endorses the *Second Assessment Report* on climate change and notes the conclusion of the Report that the balance of evidence suggests a discernible human influence on climate change and that projected changes in climate will result in significant, and often adverse, impacts on ecological systems and socio-economic sectors.

The Kyoto Protocol: Adoption

More than 150 States were represented at the Kyoto COP. After intense negotiations over many contentious issues, the Kyoto Protocol to the United Nations Framework Convention on Climate Change was adopted on 11 December 1997.⁶

The Kyoto Protocol: Entry into force?

The Protocol has not yet entered into force as an international treaty. Due to the Protocol's stringent requirements for entry into force, it is probable that Protocol will not become legally binding on States for quite some time.

In order for the Protocol to enter into force, two *cumulative* conditions must be met. These are set out in Art 24.1 of the treaty:

1. The ratification of at least 55 Parties is required. At last report, there had been only 36 ratifications.
2. Among the ratifying Parties, there must be included Annex I Countries (the group of industrialised nations which agreed to lead the practical implementation of the climate change regime) which, in aggregate, account for at least 55 per cent of the total carbon dioxide emissions in 1990. Until the United States ratifies the Protocol, the 55 per cent entry into force requirement will not be met. Under the US Constitution, a two-thirds majority vote of the Congress is required in order to ratify an international instrument such as the Kyoto Protocol. The US Senate indicated last year that it would not ratify an agreement which did not include any mandatory reduction of GHG emissions for developing countries.⁷ In light of the Senate position, President Clinton has stated that he will not submit the Protocol to the Senate without meaningful participation from key developing countries. Because the developing countries maintain that the developed world must lead any greenhouse initiative, it is widely recognised that the Clinton administration will not see the Protocol ratified. Thus the Protocol is unlikely to enter into force until at least 2001.

Delayed entry into force means that the many significant implications of the Protocol will have effect over the mid- to long-term rather than the short-term. Nevertheless, it is certain that within at least some States, significant precautionary, anticipatory or preparatory measures will be taken at domestic level prior to the Protocol coming into force. Also it is clear that a good deal of

⁶ The Kyoto Protocol will be open for signature by States at United Nations Headquarters in New York from 16 March 1998 to 15 March 1999 and open for accession thereafter: see Art 23.1 of the Protocol.

⁷ See the US Senate resolution, "Expressing the sense of the Senate regarding the conditions for the United States becoming a signatory to any international agreement on greenhouse gas emissions" (S Resol 98, 12 June 1997).

commercial activity in relation to trading in GHGs is already occurring.

The Kyoto Protocol: International obligations

The Protocol places binding limits on combined emissions of six principal categories of GHGs: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), sulphur hexafluoride (SF₆), perfluorocarbons (PFCs) and hydrofluorocarbons (HFCs). These limits apply to the 38 so-called Annex I Countries, which are the industrialised countries defined to include Russia, Ukraine and most East European countries.⁸

Emission targets agreed to at Kyoto

The Annex I Countries are under a general obligation to reduce their emissions of GHGs by at least 5 per cent below “baseline” levels during the period 2008 to 2012.⁹ Each Annex I Country’s baseline is its 1990 emissions of CO₂, CH₄ and N₂O, and its choice of 1990 or 1995 levels of the three other categories of gases.

- However, specific (that is differentiated) emission reduction commitments for each Annex I Party are set out in Annex B of the Protocol. The commitments include for example:
 - for Japan, a reduction of 6 per cent from baseline levels;
 - for the United States, a reduction of 7 per cent from baseline levels;
 - for the European Union countries as a whole, a reduction of 8 per cent from baseline levels.¹⁰

Australia is one of the three countries actually allowed to *increase* its emissions:¹¹ Australia’s target is to limit any increase of emissions to 8 per cent from baseline levels, averaged over the period 2008-2012.

It is important to note that the Protocol allows Annex I Parties to include in their calculation of net changes in overall emissions, removals of GHGs by “sinks” but limited to afforestation, reforestation and deforestation since 1990.¹²

⁸ Annex I Parties include all developed countries and some countries that are undergoing the process of transition to a market economy.

⁹ Article 3.1 of the Kyoto Protocol states that: “Parties included in Annex I shall, individually or jointly, ensure [compliance with emission targets] with a view to reducing their overall emissions ... by at least 5 per cent below 1990 levels during the commitment period 2008 to 2012.”

¹⁰ This allows for the possibility of different targets for each of the 15 member states of the EU separately.

¹¹ The other countries allowed to increase their emissions are Norway and Iceland. They are allowed to increase their emissions respectively by 1 per cent and 10 per cent from 1990 levels. The Netherlands, New Zealand, Russia and Ukraine also have a lower level of commitment when compared with other countries, as they only have to *stabilise* their emissions at 1990 levels by 2012.

¹² See Article 3.3 of the Kyoto Protocol. Article 3.7 also specifies that GHG emissions from land use change may be included in Annex I Parties’ calculation of emissions for the 1990 base year.

THE COMMONWEALTH GREENHOUSE PROGRAM

In response to these developments, the Australian government has taken the following steps.

National Greenhouse Strategy

In 1992, Australia announced its *National Greenhouse Response Strategy*. The *Strategy* outlined a series of measures for energy supply, household energy use, industrial and commercial energy use, transport, and agriculture aimed at reducing greenhouse emissions by 20 per cent by the year 2000. The stated goal of the *Strategy* was "to contribute towards effective global action to limit GHG emissions and enhance GHG sinks; to improve knowledge and understanding of the enhanced greenhouse effect; and to prepare for potential impacts of climate change in Australia". However this goal was specifically subject to Australia not implementing responsive measures that would have net adverse economic impacts nationally or on Australia's international competitiveness, in the absence of similar action by major greenhouse producing countries.

A newly revised *National Greenhouse Strategy*, which includes recognition of Australia's position under the Protocol, was due for release in June 1998, but has been held up and is currently being considered by Cabinet.

The Greenhouse Challenge

In 1995, the Australian government launched its *Greenhouse Challenge Program*. The *Greenhouse Challenge* is a co-operative program between government and industry and aims to reduce GHG emissions through voluntary action by industry. Since its launch in 1995, companies which collectively emit 45 per cent of Australia's industrial GHG emissions have joined the program. The 13 mining companies currently in the *Greenhouse Challenge* intend to reduce their emissions to 1990 levels by the year 2000. Similarly, the Australian aluminium industry has committed itself to reduce emissions per tonne of production by 7 per cent by 2000.

In 1997, an additional \$27.1 million was allocated to extend the program to smaller companies under the *Greenhouse Allies Program*¹³ and to increase the number of agreements with medium and large enterprises from 240 to 500 by the year 2000 and to more than 1000 by the year 2005.

¹³ The program envisions that larger companies and industry associations will act as "partners" in mentoring and assisting groups of smaller businesses to develop abatement plans.

The Greenhouse Package

In November 1997, immediately prior to the Kyoto Conference, the Australian government announced a five-year \$180 million *Greenhouse Package*. The package included the following measures:

1. *Renewable Energy*: The *Greenhouse Package* announced a mandatory target for electricity retailers to source an additional 2 per cent of their electricity from renewable sources by 2010. Currently renewable forms of energy contribute only 6 per cent of Australia's energy needs. The OECD average for energy sourced from renewable sources is currently 6.4 per cent.
2. *Energy Market Reform*: The *Greenhouse Package* announced that the Australian government is to work with the States and industry to develop and implement efficiency standards for fossil fuel electricity generation by the year 2000, including for brown and black coal and gas-fired plants. The standards are to be applied to both new and existing electricity generation.
3. *Codes and Standards*: The *Greenhouse Package* announced the development of energy performance standards for housing and commercial buildings, domestic appliances and equipment.
4. *Australian Greenhouse Office (AGO)*: The *Greenhouse Package* announced the establishment of the AGO, to oversee co-ordination of domestic climate change policy and delivery of greenhouse response programs. The AGO plans to take the lead in assessing and developing options for a domestic GHG emissions trading scheme.¹⁴

The *Greenhouse Package* was based on the assumption that, without intervention, by 2010 Australia's GHG emissions would increase by 28 per cent from 1990 levels. The measures announced in the *Greenhouse Package* aimed to reduce the increase to 18 per cent of 1990 levels.

Therefore there is still much to be done if Australia is to meet its Kyoto obligation of limiting any increase in GHG emissions to 8 per cent from baseline levels. There is a broadening consensus that an emissions trading regime for GHGs can provide the most economically efficient means of achieving the required additional reduction in emissions. The remainder of this paper will examine the international and domestic implications of an emissions trading regime.

¹⁴ See Gwen Andrews, Chief Executive of AGO, speech to CEDA/Sydney Futures Exchange *Greenhouse Gas Emissions Trading Conference*, 7 April 1998.

EMISSIONS TRADING UNDER THE KYOTO PROTOCOL

The Protocol provides the basis upon which any international scheme for emissions trading will emerge. A general emissions trading regime was established under Article 17 of the Protocol. In addition, two types of project-based emissions trading regimes were established under Articles 6 and 12 of the Protocol.

General emissions trading

Emissions trading can be defined¹⁵ as the facility for Parties (and private entities under their jurisdictions) either to buy or sell “credits” obtained by reducing emissions below a set target, or to buy and sell “allowances” given, up to a “capped” level.¹⁶

Article 17 of the Kyoto Protocol states that Parties included in Annex B to the Protocol “may participate in emissions trading for the purpose of fulfilling their emission targets”. Article 3.10 and Article 3.11 of the Protocol confirm that emission reduction units acquired or transferred by such Parties will be respectively added and subtracted to their assigned emissions levels.

Article 17 emphasises, however, that the details of such a regime are yet to be determined. Indeed, it provides that “the Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading”. It is also stated in the Article that such trading

¹⁵ See F Mullins, R Baron, *International GHG Emission Trading, Policies and Measures for Common Action*, Working Paper 9, Expert Group on the UNFCCC, supported by the OECD and the International Energy Agency (March 1997); *Proceedings of Controlling Carbon and Sulfur International Investment and Trading Initiatives*, (RIIA-BIIE-IAEE), December 1996; R Raufer, “Market-based Pollution Control Regulation: Implementing Economic Theory in the Real World” (1996) 26(4) *Environmental Policy and Law* 177-184. See also *The Economic Impact of International Climate Change Policy*, ABARE Research Report 97.4, p 65: “In a tradeable quota system, an environmental goal is set determining the number of quotas to be issued and emitters are required to hold a certificate or quota for each unit of emissions. If participants have quotas they cannot use profitably, they can sell them to other participants who need extra quotas to cover excess emissions requirements (above their limit). Through trading, a market price for the quota emerges, equal to the marginal cost of pollution reduction in the regions included in the trading regime.”

¹⁶ The difference between an “allowances” system and a “credits” system is as follows. An “allowances” system sets a “cap” on emissions for a specified time period. “Allowances” are the quantities of emissions that a participant is allowed to emit over the time period. Participants can trade any allowances they have not used over that period or that they do not plan to use. A “credits” system sets a “baseline” from which emission reductions are measured. “Credits” correspond to the (negative) difference between the baseline and actual emissions; they may hence be defined as “avoided or reduced emissions”. See J Morlot, “Emission Trading Design Options and Environmental Performance”, in *Proceedings of Controlling Carbon and Sulfur International Investment and Trading Initiatives* (RIIA-BIIE-IAEE) December 1996, p 171; B McClean., “Evolution of Marketable Permits, The US Experience with Sulphur Dioxide Allowance Trading”, in *Proceedings of Controlling Carbon and Sulfur International Investment and Trading Initiatives*, pp 142-143.

must be supplementary to domestic actions aimed at reducing emissions to the levels specified in the Protocol.

Project-based emissions trading – Joint Implementation

Joint implementation is expressly contemplated by the FCCC, which contains a commitment by Annex I Parties to implement measures for GHG reduction, and contemplates that those measures may be implemented jointly with other Parties.¹⁷ “Criteria for joint implementation” were adopted at the first COP in April 1995 in Berlin. Similarly, Decision 5 of the second COP defined specific criteria for projects undertaken offshore with the aim of reducing GHG emissions.¹⁸

According to a report to the second COP in July 1996 in Geneva, several countries had already put in place pilot programs for joint implementation. They included the United States, Germany, the Netherlands, Norway and Canada.¹⁹ Some countries had enacted or proposed domestic legislation or programs for “domestic reward” of activities implemented jointly.²⁰

The Protocol gives additional operation to the concept of “joint implementation” by allowing for emission reduction units gained from “joint implementation” projects to be used by Parties in their calculations regarding their emissions targets.²¹

Articles 6 and 12 of the Protocol establish two different types of project-based emissions trading which are direct successors to the concept of “joint implementation”. Articles 6 and 12 are clearly distinguishable from (but related to) Article 17, the more general provision of the Protocol concerning emissions trading. The first

¹⁷ Article 4.2(a) of the Framework Convention on Climate Control.

¹⁸ Most of these criteria are reproduced in the Protocol.

¹⁹ The report to the second COP refers to a long list of US joint implementation projects. They include: a project to help preserve an endangered tropical forest in Belize known as the Rio Bravo Carbon Sequestration Pilot Project, led by Wisconsin Electric Power Co, Detroit Edison Co, Cinergy Corp and Pacific Corp of Oregon; and a biomass power project in Honduras led by Nations Energy Corp, an affiliate of Tucson Electric Power and a Honduran partner.

²⁰ The World Resources Institute suggests that without a domestic reward system, joint implementation is not attractive to private companies. The World Resources Institute refers subsequently to (i) the Final Report of the National Round Table on the Environment and the Economy in 1993 in Ottawa (Canada) known as *Achieving Atmospheric Quality Objectives through the Use of Economic Instruments*; (ii) the *World Bank Group Collaborative Program on AIJ* (see also the paper prepared by the Global Climate Change Unit of the World Bank entitled *The Carbon Offset Investment Business and the Role of the World Bank Group*); (iii) “joint implementation securities” and the proposed (now in place) *Costa Rica Program on Certified Transferable Offsets (CTO)* and the proposed *Panama Climate Action Investment Fund*. Finally, it appears that some Joint Implementation projects undertaken by US companies have been able to benefit from a “crediting” system: for example, Arizona Public Service Company agreed to trade 25,000 SO₂ emissions allowances for 1.75 million tons of CO₂ emissions reductions from Niagara Mohawk Power Corporation. Quoted by R Raufer, “Market-based Pollution Control Regulation: Implementing Economic Theory in the Real World” (1996) 26(4) *Environmental Policy and Law* 183.

²¹ This was not the case in Decision 5 of the COP.

regime, contained in Art 6, concerns Annex I Parties only. The second regime, contained in Art 12, includes both Annex I and non-Annex I Parties.

Article 6 of the Protocol: Project-based emissions trading between developed countries

Article 6 of the Protocol provides that “for the purpose of meeting its emission targets, any Annex I Party may transfer to, or acquire from, any other Annex I Party emission reduction units resulting from projects aimed at reducing greenhouse gas emissions”. These projects may reduce emissions at their source, by way for instance of energy efficient technology, or they may enhance the absorption of GHGs,²² for example, through the planting of forests.

It is important to note that in order to claim an emissions credit under Article 6, the specified project must provide a reduction in emissions that is “*additional* to any (reduction) that would otherwise occur”.²³ Other conditions include: the (not necessarily prior) approval of the project by the Parties involved; the compliance by Parties with measurement and monitoring requirements set out in the Protocol; and that any acquisition of emission reduction units shall be supplementary to domestic measures. The COP may elaborate further guidelines for implementation of Article 6, including for verification and reporting.²⁴

Article 12 of the Protocol: The “clean development mechanism” – Project-based emissions trading between developed and developing countries

Article 12 of the Protocol establishes a “clean development mechanism”, the purpose of which is “to assist non-Annex I Parties in achieving sustainable development and contributing to the ultimate objective of the Convention, and to assist Annex I Parties in achieving compliance” with their emission targets. The mechanism provides that Annex I Parties may use certified emission reductions gained from project activities which benefit non-Annex I Parties to contribute to *part* of their emission reduction commitment.²⁵

Strict conditions apply to the operation of Article 12. In particular, emissions reductions resulting from each project activity must be certified by operational entities designated by the COP.

²² That is, “anthropogenic removals by sink”.

²³ Article 6(1)(b) of the Protocol.

²⁴ Article 6 of the Framework Convention.

²⁵ Article 12.3 of the Protocol.

Participation in international emissions trading

An important consideration with regard to emissions trading at the international level is whether the regime will be limited to trading between nation States, or whether private entities (that is corporations) will be allowed to trade emissions permits in an internationally open market.

Article 17 contemplates that only the "Parties in Annex B may participate in emissions trading". However it does not explicitly state that private entities should not be involved. Article 6.3 provides that a Party in Annex 1 may "authorise legal entities to participate, under its responsibility, in actions leading to the generation, transfer or acquisition ... of emission reduction units". Article 12.9 specifies that participation under the clean development mechanism may involve *private* and/or public entities.²⁶

Thus it would appear that there is scope under the Protocol for the extension of any future international emissions trading regime to include private entities. The details for involvement of private entities should become clearer via future COPs.

UPDATE ON INTERNATIONAL DEVELOPMENTS SINCE KYOTO

At the recent Bonn meeting of subsidiary bodies (in preparation for the Buenos Aires fourth COP set for November 1998) Australia joined the newly formed "umbrella" group of countries which is pushing for the rapid development of an international system of emissions trading. Other countries in the group are Canada, Iceland, Japan, New Zealand, Norway, Russia, Ukraine and the USA.

However, key issues remain unresolved, and according to the Department of Foreign Affairs there is little chance of progress towards a basic regime for international emissions trading at the forthcoming COP in Buenos Aires.²⁷

One may conclude that it is probable that domestic regimes of emissions trading will be put in place before an international emissions trading regime is established. Nevertheless, there is a possibility that a *pilot* program will be put in place at the international level in the relatively near future, in anticipation of a more mature and complete trading regime. This is proposed in particular by UNCTAD, which is currently working on several models.²⁸

²⁶ Article 12.9 of the Protocol.

²⁷ *Report on Bonn Meeting*, obtainable from the Department of Foreign Affairs and Trading on request.

²⁸ See F Joshua, "Design and Implementation of Pilot Systems for Greenhouse Gas Emissions Trading: Lessons from UNCTAD's CHG Research and Development Project" in *Proceedings of Controlling Carbon and Sulphur International Investment and Trading Initiatives*, (RIIA-BIEE-IAEE), December 1996, pp 161-166.

EMISSIONS TRADING – PRIVATE TRADING AND DOMESTIC OUTLOOK

Commencement of private trading

Private companies have begun to purchase and sell “carbon credits”, in spite of the fact that neither an international nor a domestic scheme for the trading of GHG emissions credits has yet emerged. Private trade in carbon credits is occurring both within Australia and overseas. The current market price for trades is believed to be between US\$5 and US\$20 per tonne.

In Australia, Pacific Power recently bought the “carbon rights” to 1000 hectares of State Forest in NSW for one year, which will provide a sink for 2,400 tonnes of carbon or 8,800 tonnes of carbon dioxide emissions.²⁹ A second trade between the same parties was made for 10 years worth of sequestration of another 1,000 hectares of eucalypt plantation. In other Australian developments, Delta Electricity and Toyota have both established timber plantations to use as carbon credits against their greenhouse emissions.³⁰ Small businesses are being set up, such as CO₂ Forest Sinks Pty Ltd in the ACT, to broker deals involving carbon credits.

In North America, Niagara Mohawk (a US NYSE listed power corporation) and Suncor Energy Inc (a Canadian oil and gas company) entered into a ground-breaking *international* emissions trade in March 1998. Suncor has agreed to make an initial purchase of 100,000 tonnes of GHG emission reductions from Niagara Mohawk, with an option to buy up to an additional 10 million tonnes of reductions over a 10-year period.³¹ The agreement has a potential value of US\$6 million. In order to implement the agreement, Niagara Mohawk’s emission reductions will be documented and deposited into an account administered by the Environmental Resources Trust, a non-profit environmental organisation founded by the Environmental Defense Fund.

In December of 1996, Niagara Mohawk had already finalised an agreement with the Arizona Public Service Company under which 2.5 million tonnes of carbon dioxide reduction achieved by Niagara Mohawk through its emission reduction activities were transferred to APS. The US Department of Energy agreed to recognise the trade as applicable toward commitments made by APS in a Participation Accord with the Department.

²⁹ S Washington, “Deal opens way for carbon credit trade”, *Australian Financial Review*, 5 June 1998.

³⁰ Department of Conservation and Land Management, *Greenhouse Gas Emissions Trading: Carbon Credits – Legal Issues Paper*.

³¹ Further information is available at <http://148.183.56.20/whatsnew/emission.htm>.

Finally, British Petroleum has set up a pilot emissions trading scheme among a selected number of its businesses located in 10 different countries.

Risk associated with trading prior to the existence of a statutory regime

At this stage, early moves into emissions trading should be treated with caution. In the absence of a statutory framework, there is a high degree of commercial risk in trading carbon credits. This risk extends to the *legal nature of what is being traded*.

The crucial question is whether a carbon credit can be classified as "property". If a carbon credit is not property, it is a mere *non-transferable* personal interest. For most lawyers, "property" is a difficult, ambiguous and elusive concept. In the author's opinion, in the absence of a statutory framework, a carbon credit *is not* something that the law would recognise as property. Until a carbon credit is created by statute, a carbon credit is *not* something which is capable of being assigned because it is not "property".

It has been argued that a carbon credit can be classified under Australian law as "chattels personal", namely a "chose in action" (incorporeal property) that can be claimed or enforced by legal, statutory or equitable action.³² The author disagrees that this classification is open *at present*.

It is essential to distinguish between the benefit of a contractual promise to do (or not to do) something if and when a proprietary interest known as a carbon credit comes into existence and the credit itself. Until the credit exists under a statutory regime affording it the status of a proprietary interest, it is *not* a proprietary interest, even though the benefit of contractual promises concerning it *are* proprietary interests. *At the moment*, all that one is buying or selling under a carbon credits contract is the benefit of contractual promises concerning the carbon credit *if and when* it comes into existence: one is not buying or selling the credit itself.

Until statutory assistance is available, any legal rights with respect to a carbon credit will depend entirely on the particular circumstances of a particular contract, and will be limited to the benefit and burden of enforceable rights and obligations as contained in the particular contract.³³

In light of the above uncertainties, it would be prudent to include in any carbon credits contract a provision that attracts, to the subject matter of the contract, any proprietary status subsequently afforded to a "carbon credit" by a statutory trading regime.

³² A Bennett, *Carbon Emission Trading: A legal perspective* (KPMG Solicitors).

³³ Department of Conservation and Land Management, *Greenhouse Gas Emissions Trading: Carbon Credits - Legal Issues Paper*.

Even assuming that a statutory regime comes into effect, the ownership of a carbon credit may be subject to competing claims. Ownership is particularly uncertain with respect to carbon credits derived from sinks. For example, if carbon credits are being derived from a forest, the absorptive capacity of that forest could be divided into different pools, including trees and roots, soil (up to 50 per cent of absorption) and other vegetation such as bushes and shrubs. Ownership of the forest and of any attached carbon rights might be divided between the owner of the land and the owner of any profit a prendre with regard to the timber on that land. Where potential for competing interests exists, it would be prudent to ensure that enforceable documentary arrangements are included in any contract to avoid future argument about ownership.

Finally, the risk associated with pre-regime trading extends to the *value* of what is being traded. Uncertainty as to value is largely derived from uncertainty as to legal nature. Uncertainty as to value is not necessarily a negative factor for speculative ventures.

Despite the above uncertainties and associated commercial risk, there is no prohibition under domestic law or international law which would prevent anyone from trading "carbon credits", subject of course to the normal domestic and international laws governing business transactions.

Those private entities that are willing to take commercial risks may eventually be rewarded by windfall gains (or penalised by windfall losses) when a statutory regime is introduced. By keeping fully informed of developments toward an international or domestic regime for emissions trading and thereby anticipating the shape of any such regime, private entities can minimise the commercial risk associated with pre-regime transactions.

THE FUTURE SHAPE OF A DOMESTIC EMISSIONS TRADING REGIME

Update on domestic developments

Since international developments appear to have stalled, it is likely that domestic emission trading regimes will be put into place in various jurisdictions *prior* to any international regime. In Australia, the House of Representatives Standing Committee on Environment, Recreation and the Arts has commenced an Inquiry into the Regulatory Arrangements for Trading in Greenhouse Gas Emissions. The Committee completed hearings and submissions in early July and plans to table an interim report in Parliament in September 1998. Meanwhile, the AGO has been given approval to commence public consultation and develop discussion papers on the development of an emissions trading strategy. The AGO anticipates that it will be at least

two years before a domestic trading regime is put in place in Australia.

It is also worth noting that British Columbia, a province of Canada, will be launching an emissions trading pilot project that allows firms, governments or other organisations to create, buy or sell emission reductions. However, seeing that proposals for the scheme are being accepted until December 1999, it is unlikely that the scheme will come into operation until at least early 2000.

In New South Wales, there is currently a proposal to introduce a voluntary GHG emission trading scheme to cover the State's electricity retailers. This program may pilot a national emission trading scheme based, at least initially, on the energy sector.³⁴

Connected to this proposal is the requirement in the *Electricity Supply Act 1995 (NSW)* for electricity retailers to develop strategies for reducing GHG emissions from electricity supplied to NSW customers.³⁵ The Act requires the NSW Energy Minister, when issuing a retail supplier's licence, to include in the licence conditions requiring the licensee to develop GHG reduction strategies in accordance with the *National Greenhouse Strategy* of 1992 and the *Inter-Governmental Agreement on the Environment* of that year, or as determined by COAG. The strategies must be determined in negotiation with the Minister and must include independent verification of emissions. Three-yearly auditing by the NSW EPA of the success of the strategy is also required, as is publication of annual reports in relation to emissions of CO₂. Nothing in these requirements, however, expressly contemplates or gives details of an emissions trading regime.

Also in New South Wales, the recently enacted (but not yet proclaimed) *Protection of the Environment Operations Act 1997* contemplates pollution control licences being granted on conditions implementing or otherwise relating to tradeable emission schemes.³⁶ The Act states that a tradeable emission scheme may include any or all of the following elements:³⁷

- (a) the determination of aggregate limits on any form of pollution (whether or not in a particular locality);
- (b) monitoring and reporting levels of pollution and emission of pollutants;
- (c) the creation of tradeable emission permits or credits (and their cancellation);
- (d) the rights and duties of holders of tradeable emission permits or credits;
- (e) the initial sale or allocation and further sale or allocation of tradeable emission permits or credits.

However, nothing in these provisions gives details of an emissions

³⁴ See *Environmental Economics Series: Tradeable Credits Scheme for Greenhouse Gases – NSW Electricity Sector* (NSW Environmental Protection Authority, March 1998).

³⁵ See *Electricity Supply Act 1995 (NSW)*, s 14 and Sch 2 cl 6(4)(a) and (6).

³⁶ See *Protection of the Environment Operations Act 1997 (NSW)*, s 69(a).

³⁷ *Ibid*, s 294.

trading regime sufficient to allow private commercial trading (rather than speculation) to emerge and continue.

The attraction of emissions trading

Under the Kyoto Protocol, Australia must ensure that by 2008-2012 any increase in its GHG emissions is capped at 8 per cent of 1990 levels. Emissions trading is an attractive means of minimising the cost of achieving this goal. Analysis of the submissions to the House of Representatives Standing Committee Inquiry reveals widespread support for emissions trading as the lowest cost means of meeting our Kyoto Protocol commitments.³⁸

In the USA, the sulphur dioxide trading program has proved particularly successful, with high participation, reduced emissions and reduced ambient concentrations. The costs of reducing emission have been considerably lower than originally forecast. Emission permit prices are currently at around \$100 per tonne of sulphur dioxide emission, considerably lower than the early estimates of \$250 to \$400 per tonne.

Elements of a successful trading regime

Based on the US experience of emissions trading, in particular the "Sulphur Dioxide Allowance Program",³⁹ there are several preconditions to the success of any emissions trading regime. These are principally:

- (a) the need for a suitable large number of participants in the market;
- (b) the need for measurable and verifiable emissions;⁴⁰
- (c) the need for adequate certification of emissions reductions by competent authorities; and
- (d) the need to avoid excessive changes in the number of participants or in the types of gas included, as such changes may lead to extreme fluctuations in the price of emissions permits.

It should also be recognised that an emissions market is unlikely to begin in a comprehensive form and with complex structures. It is far more likely that the development of an emissions trading scheme will be a gradual, stage-by-stage process of evolution, beginning with a relatively simple and limited "pilot" market.

³⁸ Speech by Dr David Harrison, Special Adviser - Emissions Trading, AGO, June 1998.

³⁹ Lessons to be gained from the US Sulphur Dioxide Allowance Program have been analysed for example by the Director of the Acid Rain Division of the US EPA: see B McLean, "The US SO₂ Allowance Program" (1997) 1 *Global Greenhouse Emissions Trader* 3-6 (April); see also D Adams, *Greenhouse Gas Controls, The Future of Tradeable Permits* (Financial Times Energy Publishing, 1997).

⁴⁰ The measurement is feasible for CO₂ but much more difficult for methane for example. To monitor the emissions of sulphur dioxide within the US SO₂ Allowance Program, the US has put in place a "Continuous Emissions Monitoring Systems" (CEMS), which provides the EPA with an hourly monitoring system.

Definition of the commodity

It is likely that a "carbon credit" (a variety of names have been proposed, including the "Assigned Amount Unit" or AAU) would offer the right to emit one metric tonne of carbon dioxide (or equivalent GHG) within a given period. Each permit would have both a vintage and a unique serial number to facilitate reporting and verification systems. It is envisaged that permits and credits would be traded on the Australian Stock Exchange and the Sydney Futures Exchange. Because CO₂ is not the only GHG, a weighting index would translate the other GHGs into carbon dioxide equivalent units for trading.

Alternatively, trading could be limited to CO₂, particularly in the initial stages of any scheme. CO₂ is the major GHG, making up over 71 per cent of Australia's total GHG (equivalent) emissions in 1995.⁴¹ CO₂ emissions are easier to monitor than other GHGs and transactions would be easier to administer. In comparison, sources and sinks for the other GHGs, particularly methane and nitrous oxides, are as yet poorly understood. We may see the introduction of a less comprehensive scheme in which participants are limited to trading of CO₂, with trading in other GHGs delayed until their emission and removal can be adequately monitored and understood.⁴²

Because the relationship between consumption of fossil fuels and CO₂ emissions is well understood, if an emission trading scheme were to cover only CO₂, it is possible that permits could be based on quantities of fossil fuel consumed (and their related carbon contents) rather than gas emissions. Fossil fuel consumption may prove easier and cheaper to monitor than CO₂ emissions. On the other hand, it may be difficult to later expand a permit scheme based on fossil fuel consumption to include the other GHGs.

A further consideration in defining the commodity is *duration* – the frequency with which permits expire. A permit could be valid for only a specific year, or remain valid for a period of several years, or remain valid indefinitely. The specified duration must achieve a balance between the need to allow the designated central authority sufficient control over the desired total amount of emissions in any one year, and the need to provide flexibility to participants in reducing their emissions over a period of years.

⁴¹ *National Greenhouse Gas Inventory 1995* (Commonwealth of Australia, Environment Australia, Canberra, 1997).

⁴² Cornwell, Travis & Gunasekera, *Framework for Greenhouse Emission Trading in Australia* (Industry Commission, December 1997).

Incorporating carbon sequestration (absorption)

The net amount of carbon absorbed by carbon sinks can be increased by:

- (a) reducing land clearing;
- (b) increasing the amount of vegetation; and
- (c) improving land management techniques to reduce the amount of carbon released from soils.

Incorporating carbon sequestration activities into an emission trading scheme would provide an additional avenue by which participants could obtain emission permits. Key issues here are:

- (i) defining the activities for which emission permits may be earned;
- (ii) defining the number of permits to be earned from each activity. For example, whilst a new plantation absorbs a net amount of CO₂ in the set-up phase, a mature plantation has on average a zero net effect on the level of CO₂ in the atmosphere.

In order to resolve these issues, it will be necessary to improve methods of verifying the amount of CO₂ sequestered by a particular activity.

Definition of the market

Compulsory participants are entities that are required by legislation to hold permits to cover their emissions of GHGs. In theory, it would be ideal to target all emitters of GHGs. However, this would involve every person in the community. It would not be technologically or administratively practicable to monitor the emissions of such a large and diverse number of entities.

Therefore, the permit market will, at least initially, have to be restricted to larger emission sources.⁴³ The challenge will be to achieve the correct balance between a higher number of participants (and associated administrative costs) and a lower number of participants (which would reduce trading opportunities).

Energy-related CO₂ emissions (basically emissions from fuel combustion) are the easiest greenhouse emissions to measure and monitor. Thus it is possible that compulsory participation will initially be limited to energy producers and suppliers, namely electricity generators, petroleum refineries, oil and gas suppliers and other fuel transformers.⁴⁴ Energy-related emissions account for approximately 60 per cent of total measured GHG emissions in Australia.⁴⁵

⁴³ Ibid.

⁴⁴ The NSW proposal to introduce a voluntary GHG emission trading scheme is limited to the State's electricity retailers. This program could pilot a national emission trading scheme based, at least initially on the energy sector, op cit n 34.

⁴⁵ *National Greenhouse Gas Inventory 1995*, op cit n 41.

Emissions from fuel combustion can be split into emissions from stationary sources (approximately 45 per cent of total GHG emissions in Australia) and emissions from transport (approximately 15 per cent of total emissions). Emissions from stationary sources can be measured and monitored relatively easily, cheaply and reliably because the main emitters are relatively large and easily identifiable and because by far their most significant type of emission is CO₂. Emissions from fuel combusted by the transport sector are more difficult to measure and monitor because they come from a large number of small individual emitters. A permit scheme targeting every emitter in the transport sector would be costly and administratively complex. The solution may be to indirectly cover emissions from transport by requiring "upstream" retailers or refiners of fuels to hold permits on behalf of their "downstream" consumers in the transport sector.

It is likely that a trading scheme will permit voluntary participation in the permit market. Entities which might wish to participate voluntarily include:

- (a) relatively low cost emitters who are not initially involved compulsorily;
- (b) brokers facilitating the trading of permits;
- (c) investors wishing to purchase and hold permits for future sale;
- (d) public interest and environmental groups wishing to purchase and "retire" permits in order to reduce the total level of GHG emissions.

Initial allocation of permits

The two favoured methods for allocation of permits are auction or a free of charge allocation according to certain criteria. A combination of the two could be used.

Auction would ensure that the initial allocation of permits is closely aligned with relative abatement costs. However, current emitters are likely to oppose the use of auction and support an initial allocation which is free of charge (or low cost) and based on existing emissions. In that case, auction could still play an important role in making available, on a regular basis, extra permits to stimulate trade. Under the USA's SO₂ emission trading scheme, around 3 per cent of total permits are held for auction each year.⁴⁶

Issuing permits *free of charge* explicitly recognises the property rights which emitters have held in the past. Permits could be issued by reference to: historic emissions (grandfathering); the marginal cost of abatement for each participant; or the level of emissions if 'best available technology' were in use.

⁴⁶ Cornwell, Travis & Gunasekera, op cit n 42.

Administering the scheme

A designated central authority would be needed to administer the emissions trading scheme. The authority would be responsible for tracking permits, monitoring emissions, and enforcing compliance.

Strict penalties would need to be applied to ensure that private entities do not exceed their permitted emissions, thereby causing Australia exceed its emissions cap and breach its commitments under the Kyoto Protocol. Under the US SO₂ emission trading scheme, the fine for a non-permitted emissions is approximately 20-30 times the market price for a permit.⁴⁷

The interface with an international trading scheme

As noted earlier, there is scope under the Protocol for the extension of international emissions trading beyond national governments. This would allow the emergence of an open market in emission permits similar to existing commodity markets operating on major international exchanges, with a freely quoted market price and high volume sales levels.⁴⁸

How would an international system for emissions trading mesh with our domestic scheme? The preferred scenario would be for the international system to be set up first, and for complementary domestic schemes to then be set up in various nations, including Australia. However at this stage, it seems likely that a domestic scheme for emission trading will instead precede any international system. In such circumstances, it will be important for participants in any prior domestic scheme to keep abreast of subsequent developments in emissions trading at the international level.

CONCLUSION

Internationally and domestically within Australia, legal structures for commercial GHG trading are slowly emerging. No structure has emerged to the point, internationally or domestically, which establishes proprietary rights of any kind in "GHG credits". Until such a structure emerges, GHG trading remains speculative. The only proprietary substance of any current GHG trading contract is the benefit of whatever specific promises there are in the contract. There is no legal prohibition on such contracts, but their nature needs to be carefully examined, particularly due to the risks associated with speculative trade in commodities which are yet to come into existence.

⁴⁷ Department of Foreign Affairs and Trading, *Australia and Climate Change Negotiations: An Issues Paper* (Commonwealth of Australia, Canberra, 1997).

⁴⁸ Cornwell, Travis & Gunasekera, op cit n 42.