

**Submission to the House of Representatives Standing Committee on Environment,
Recreation and the Arts:**

Inquiry into the regulatory arrangements for trading in greenhouse gas emissions

This submission outlines relevant developments in the international negotiations on climate change for a domestic trading system and issues raised by the introduction of an international emission trading system.

A. International Negotiations on Climate Change

The Framework Convention on Climate Change entered into force in March 1994 and, in December 1997, its Third Conference of the Parties adopted the Kyoto Protocol to that Convention. As part of the Kyoto Protocol, international agreement has been reached on a range of issues which would have a bearing on the design of a domestic emission trading system, including the emission commitment period and establishment of specific emission commitments for individual countries. Sufficient ratifications for the Kyoto Protocol to enter into force, however, are not expected for several years. In part this is because international negotiations are continuing on some implementation issues which could have important implications for individual countries and the outcomes of these negotiations are not yet clear. The Kyoto Protocol will enter into force once it has been ratified by 55 Parties to the Convention, incorporating Parties which accounted for at least 55% of carbon dioxide emissions of Annex I Parties (essentially OECD and Eastern European countries) in 1990.

The UN Framework Convention on Climate Change

Australia's international obligations are defined by the Framework Convention on Climate Change, which Australia ratified in December 1992. The Convention is a framework treaty. The ultimate objective of the Convention is to stabilise concentrations of greenhouse gases at a level that would prevent dangerous anthropogenic interference with the climate system. However, this level is not specified in the Convention. The Convention contains an implicit emission target for Annex I Parties, of aiming to return their emissions to 1990 levels by 2000, but subject to a range of considerations relating to differences in national circumstances.

Parties to the Convention also undertook to implement a range of general commitments. These commitments included the adoption of national programs for mitigating climate change; the development of adaptation strategies; the promotion of sustainable management and conservation of sinks (which is essentially the absorption of carbon from the atmosphere by the growing of trees); and a commitment to take climate change into account when setting policies and international cooperation in technical, scientific and educational matters.

The text of the Convention leaves many of the details of how to implement the Convention to be determined by the Conference of the Parties. The First Conference of the Parties took place in Berlin in March-April 1995 and agreed a negotiating mandate (the 'Berlin Mandate') to strengthen Annex I Party commitments for the period beyond the year 2000. The Berlin Mandate negotiations concluded with the adoption of the Kyoto Protocol at the Third Conference of the Parties in December 1997.

The Kyoto Protocol

The following outlines the Kyoto Protocol's key features of relevance to consideration of emissions trading:

- a collective target for Annex I countries of 5.2% reductions in emissions from 1990 levels by 2008-2012; this is estimated to be 30 per cent below business as usual projections (Article 3.1);

- differentiated greenhouse gas emission targets for countries listed in Annex B of the Protocol reflecting their individual circumstances: these 2008-2012 targets are based on 1990 emission levels (with some qualifications for certain Eastern European countries), with the headline targets ranging from a -8% target for the EU, -7% for the US and -6% for Japan to +8% for Australia and +10% for Iceland (Articles 3.1, 3.7 and Annex B);
- comprehensive coverage of all six greenhouse gases. Parties have the option to use 1990 or 1995 as the base year for the three synthetic greenhouse gases (Hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF6)) (Articles 3.7, 3.8 and Annex A);
- inclusion of the land use change and forestry sector. Agreement to treat net emissions from the land use change and forestry sector the same as from other sectors, such as the energy sector, allowing countries to count:
 - carbon dioxide removals from the atmosphere (or sink activity) resulting from tree-planting activities commenced since 1990 (Article 3.3); and
 - changes in net emissions from the land clearing sector (Article 3.7).
- commitment periods: the first commitment period will apply from 2008 to 2012 - this range of years for the emission commitment introduces additional flexibility for countries compared with a single year target, such as 2010. In particular, it enables better comparison of performance relative to the relevant emission commitment for those countries with highly variable emission levels (Article 3.1);
- policies and measures: the agreement lists a number of general policies and measures that countries may implement or further elaborate in accordance with each country's circumstances (Article 2); and
- agreement to international trading of individual country allowances. 'The Parties in Annex B may participate in emissions trading for the purposes of fulfilling their commitments' (Article 17).

Outstanding issues

While the Protocol represents a landmark in the development of international cooperation on climate change, some critical issues remain to be negotiated.

With respect to international emission trading, the right of Parties to participate in international emissions trading for the purpose of fulfilling their emission commitments is enshrined in the Protocol and is not dependent on any further action or decision by the Parties. However, the 'principles, modalities, rules and guidelines, in particular for verification, reporting and accountability' for an international emission trading scheme remain to be negotiated.

Other issues being negotiated which will have a bearing on the operation of an international emission trading scheme include Joint Implementation, the Clean Development Mechanism, further consideration of activities under the land use change and forestry sector and arrangements for monitoring, verification and compliance.

Joint implementation refers to the sharing of credits from emission reductions achieved from single projects undertaken jointly by entities from two or more countries within Annex I. Typically, a host Annex I country and a foreign partner would institute a joint venture investment project in which the foreign partner may provide capital and technology in return for a share of the emission reduction credits generated by the investment. An example of a joint implementation project might be investment in improving the thermal efficiency of a fossil-fuel based power station - with the credit from the emission reductions generated being the quantity of tonnes by which emissions from that power station were reduced relative to the level that they would have been in the absence of that investment.

A Party which acquires the credits from emission reductions from a specific project - termed an emission reduction unit in the Protocol - would be able to increase its own allowed emission level in the emission commitment period. A Party transferring emission reduction units to another Party would have a consequent reduction in their allowed emission level in the emission commitment period. That is, joint implementation enables Parties to acquire or sell the right to emit a certain quantity of emissions and would act as an alternative mechanism to the international emission trading system for achieving these outcomes.

A critical issue for the viability of joint implementation processes is the quantification and verification of the emission reduction units. This is a difficult issue, since it relies on an assessment of the level that emissions would have been in the absence of the investment. The guidelines for this will be subject to negotiation. The Protocol states that the Conference of the Parties (to the Protocol) will further elaborate guidelines for the implementation of joint implementation, including verification and reporting. The Conference of the Parties (to the Protocol) will meet for the first time following the entry into force of the Protocol.

The Clean Development Mechanism (CDM) is limited to projects in developing countries and will produce a more centralised and regulated approach than for Joint Implementation. Details on the CDM remain unclear and elaboration will be through negotiation. As currently envisaged, the CDM, functioning under the authority and guidance of the Conference of the Parties, will facilitate the funding of specific investment projects in developing countries and certify resulting emission reduction credits. Like joint implementation, the formulation of rules and guidelines covering the estimation of emission baselines (that is, the level of emissions the project would have generated in the absence of CDM investment) and other matters will require further elaboration and will need to be agreed by the Conference of the Parties (to the Protocol).

The CDM will enable Annex I countries in total to acquire the right to increase emissions in the first emission commitment period and, unlike joint implementation, will increase the aggregate level of emissions which those countries may generate in total.

The CDM will be different to joint implementation in another important respect in that it provides for early action. Emission reductions from CDM investments in projects that take place between 2000 and 2008, that is prior to the first emission commitment period, can be acquired and used to increase the emissions allowed in the first emission commitment period.

The Conference of the Parties to the Framework Convention on Climate Change will also give consideration this year to expanding the number of activities included within emission commitments under the land use change and forestry sector. The Protocol specifies that emissions and sinks from afforestation, reforestation and deforestation activities shall be used to meet emission commitments. Additional activities may be added to this list, possibly including the treatment of harvested wood products, the inclusion of additional forestry activities and agricultural practices which could be used to sequester carbon. Any additional activities agreed internationally will apply to the second emission commitment period, although such additional activities may be included for the first commitment period if individual Parties so choose.

The likelihood or otherwise of future participation of developing countries in the list of individual countries with emission commitments is also likely to be an important consideration in the development of an international emission trading scheme. The Protocol, however, does not provide a clear process for advanced developing countries to voluntarily undertake their own target commitments. Agreement could not be reached in Kyoto on a process involving timetables and deadlines for developing countries to negotiate target commitments for the second commitment period e.g. 2013-2017.

Details of a compliance mechanism have also been left for post-Kyoto negotiations. Any binding international penalties for non-compliance can be adopted only by amendment to the Protocol.

Some of outstanding issues listed above are on the agenda for this year, including the modalities of emissions trading, elaborating the Clean Development Mechanism and joint implementation guidelines and the activities to be accounted for in the land use change and forestry sector. Some important decisions on these issues are scheduled to be taken at the next Conference of the Parties to be held in Buenos Aires in November 1998. Some other issues, such as the details of a compliance mechanism, are scheduled to be considered by the first Meeting of the Parties acting as the Conference of the Parties of the Protocol. There is no clear timeline for this meeting since it depends on the entry into force of the Protocol.

Signature, Ratification and entry into force

The commitments set out in the Kyoto Protocol will come into force internationally when it is ratified by 55 Parties to the Convention, incorporating Parties which accounted for at least 55% of carbon dioxide emissions of Annex I Parties in 1990. The second condition was designed to ensure that several (although not necessarily all) of the major emitting countries in the OECD and Eastern Europe must ratify before the Protocol would enter into force. Regardless of what other major Parties do, decisions by the United States on whether to ratify the Protocol and, if so, the timing of that ratification will be an important factor in the timing of the entry into force of the Protocol since the United States accounts for 36% of Annex I emissions.

For Australia, becoming a Party to the Kyoto Protocol, like most other major multilateral treaties, is a two step process. The first step is signature. Signature means that states are not bound by the Protocol, but they do assume a general duty to refrain from acts which would defeat its object and purpose. The Kyoto Protocol opened for signature on 16 March 1998.

The second step is ratification. Signing the Protocol does not create a legal obligation to ratify it. If Australia later wished to consider becoming a Party to the Protocol by ratification or accession, the Government's international treaty processes would need to be undertaken, including the preparation of a detailed National Interest Analysis (NIA).

B. Issues in the theory of emission trading

The development of a system of trading in emission permits is potentially a cost-effective approach to greenhouse gas emission abatement. A trading scheme could theoretically create a system of economic incentives so that the same overall level of emission reduction is achieved at the lowest cost to the community.

In practice, however, the advantages of trading in terms of improved cost effectiveness would be heavily influenced by the resolution of a range of methodological and technical issues relating to the development of the market.

There are a number of institutional arrangements underpinning any trading system that have the potential to affect efficiency. These relate to:

- . the number of participants;
- . the method and cost of measurement and verification of emission levels;
- . establishment and administration of regulations to enforce compliance; and
- . the scope for use of market power by large participants.

At a minimum, individual participants in a trading system would have to adopt monitoring and reporting requirements. As an example of what may be needed to operate a trading scheme, some of the requirements for participants in the US market in sulphur dioxide permits, established in the early 1990s to address acid rain pollution, are listed in the Box below. US utilities were required to install continuous monitoring systems and record sulphur dioxide emissions for every hour of every day. Utilities must report these recordings

to the US EPA every quarter and at the end of each year a reconciliation process is undertaken between the recorded emissions and the permits held by utilities. Utilities have a grace period of 30 days in which to ensure that they are in compliance. For those that do not comply, utilities are subject to an enforcement regime which includes both monetary and emission permit penalties.

Box: The US sulphur dioxide (SO₂) scheme

The major elements of the US sulphur dioxide scheme include:

- the scheme is limited to US electricity utilities only (they account for around 65 per cent of total sulphur dioxide emissions);
- there is a strict cap on the national or 'collective' emission level;
- the scheme includes a headline 'global quota' of 9 Mt but also a set of additional, well specified allowances and special reserves;
- 30 years' worth of emission allowances were allocated to utilities;
- each allowance has been given a commencement date - for example, a 1997 issue can be used either in 1997 or, if not required, in later years. It cannot be used in earlier years (i.e., there is banking but not borrowing);
- allocations to individual units were differentiated - 29 different allocation rules were used;
- additional allocations went to utilities with an expectation of increasing capacity utilisation, in states experiencing fast population growth, for utilities using lignite, for utilities installing scrubbers to remove emissions and for coal mines in high-sulphur coal producing states;
- utilities were required to adopt continuous monitoring of emissions (including emissions of both sulphur dioxide and carbon dioxide);
- utilities were required to install monitoring equipment (at a cost of around \$US 120 000 per smokestack);
- emissions are recorded hourly, and reported on a quarterly basis to the US EPA;
- there is an annual reconciliation of recorded emissions and each units level of emission allowances held in EPA accounts (by 30 January each year);
- trading procedures mainly involve notification to the US EPA of a change of ownership of emission rights through a transfer form;
- penalties for non-compliance are about 20-30 times the market price; and
- annual auctions are held of allowances released by the EPA (even 7-year advance auctions which add around 2 per cent each year to the total available stock of allowances).

In the case of a trading system covering greenhouse gases, fossil fuel combustion industries would have greater capacity to install similar monitoring systems and would be more likely to achieve emission monitoring with a high level of accuracy. Other sources of emissions, such as methane from livestock, however, are less able to accommodate such continuous monitoring systems. To implement a system with broad coverage of gases, sources and sinks, systems other than the type demonstrated in the US sulphur dioxide trading example

would need to be implemented to ensure unbiased and accurate emissions measurement and transparency for verification purposes in these sectors.

Consideration would also need to be given to the initial allocation of permits in any domestic trading system. This could be done at either the State, company or individual level. There are three major options for the allocations:

- 'grandfathering,' which is a system where existing producers would be allocated emissions permits determined by emissions in an historical period (e.g. in 1990);
- an open market for emission permits in which all producers, whether existing or new, would bid for permits in an auction; and
- differentiated allocations taking into account the differences in the future energy consumption requirements and growth rates in greenhouse gas emissions of various producers.

Differences also exist between industries and within industries. Such differences are very similar in microcosm to the differences that exist between Annex B countries and which formed the basis of Australia's arguments for international differentiation of abatement targets. Accounting for such considerations proved necessary in the establishment of the US sulphur dioxide trading scheme where permits were allocated to individual companies, but based on state-wide economic considerations. There was substantial differentiation of the initial allocations to utilities, with 29 different rules operating.

C. Issues arising from the development of an international trading system

International negotiations will be conducted in the coming year on an international trading system which will develop the 'principles, rules, guidelines and modalities' to govern international emission trading. The timeframe for the conclusion of these negotiations is possibly within this calendar year, although there is no guarantee that these negotiations will be finalised this year. While any country could establish a domestic emission trading regime regardless of progress on negotiations for international emission trading there would, nevertheless, be important links between the establishment of any operational international regime and the domestic regime.

The presence of an international trading regime could potentially have implications for the market outcomes for a domestic trading system. For a domestic market which is not linked to markets in other countries, domestic demand and supply conditions would determine the market price of traded permits. In the context of a domestic market being open to an international market, international supply and demand conditions would become the principal determinant of permit prices on the domestic market. In particular, domestic permit prices would depend on the number of major emitting Parties participating in the international market and on the level of domestic emission abatement in countries such as the United States, Russia and the European Union. An important issue which then arises is to what extent would market outcomes differ between a domestic trading system which is open to international conditions and one which is not.

The institutional features of an international trading system would also affect domestic markets. The most important questions on the design of the international emission trading regime include the issues of: - what is the unit of permits that should be traded? - who would be authorised to trade? - what penalties for non-compliance would be agreed? - and what would be the relationship between the international emission trading market and other flexibility mechanisms such as joint implementation and the Clean Development Mechanism?

With respect to who would be authorised to trade internationally, one option would be for trading to be restricted to national governments. A second option would be to allow international trading at either a company or individual level. With time, with a large number

of players in the international market, it is possible that this approach would lead to a market in emission permits similar to existing commodity markets operating on major international exchanges with a freely quoted market price, low per unit transactions costs and high-volume sales levels. A third option, would be for a mixture of governments and private participants to trade internationally.

Opportunities for investing in the CDM and joint implementation with other Annex I countries could also be important for a domestic trading system. These mechanisms would provide opportunities for domestic participants to seek low abatement cost options in other countries and, if freely used, could affect domestic market prices.

Additional international issues which could affect the operation of a domestic trading system include:

- the frequency and scope for future negotiations on emission targets which have flow-ons to domestic participants: frequent re-negotiation of targets could affect the confidence of participants to trade at certain times;
- the entry of new participants into the international market over time (through the involvement of developing countries) with either large demands or large supplies of permits: this also could affect the confidence of participants to trade;
- the scope for use of market power internationally by large players (some governments in particular could be expected to be dominant sellers of emission rights internationally); and
- the extent to which national governments could distort international market outcomes through border taxes, subsidies and regulations.

Although these latter issues may primarily have a bearing on the efficiency of an international emissions trading market, consideration may need to be given as to how these issues could affect the design of a domestic trading system.

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