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Greenhouse gas emissions trading:  
a way forward

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The climate change conference held in The Hague last November was supposed to remove uncertainties about whether or not Australia, together with other industrialised countries, would be obliged to take decisive action to limit emissions of greenhouse gases. This was to have been achieved via agreement on detailed rules specifying precisely:

- what types of activities are to be classed as anthropogenic (human induced) emissions,
- what types of activity are to be allowed to offset emissions (so-called sinks or sequestration), and
- to what extent countries should be allowed to offset their own emissions increases by reductions in emissions (credits) purchased from other countries.

At the end of two weeks some point of difference about each of these matters remained unresolved, and so agreement was reached on none of them. Substantial uncertainties therefore remain about how Australia should respond to the commitments, made three years ago in Kyoto, to limit emissions of greenhouse gases over the period 2008-12. For Australia, this commitment becomes binding if and when Australia ratifies the Kyoto Protocol, and the Protocol comes into force, neither of which have yet occurred.

It is generally believed that achieving these commitments will require going beyond so-called no regrets actions. That is, it will be necessary to take actions which impose real costs on national economies, which will be offset by a lessening of the costs caused in future years by climate change. This creates a condition of considerable policy uncertainty for all the countries with emission reduction commitments (termed Annex 1 countries), and all businesses operating within those countries. Should they or should they not ratify the Protocol? Should they act in anticipation of the Protocol being ratified? This is the central uncertainty which remains unresolved, and which remains the context for ongoing discussions about greenhouse gas emissions trading.

In FY 1998 Australia's greenhouse gas emissions from all activities except land clearing (emissions from which are large but highly uncertain) were 66 million tonnes carbon dioxide equivalent, or 17%, higher than in 1990. Australia's Kyoto commitment was that emissions in 2008-12 should be no more than 8% higher than in 1990. All but 3 million tonnes of this increase came from sources related to the production, processing and use of energy, and no less than 39 million tonnes – 60% – from the generation of electricity alone. Contrary to widely expressed views, this was not mainly because of an increase in the output of energy intensive export commodities. It was because consumption of electricity grew rapidly across all sectors, doubtless stimulated by the fall in real prices resulting from electricity industry restructuring, and because coal fired power stations increased their share of total generation at the expense of less emissions intensive gas fired generation.

However, prospects for the next decade present a different picture. Highly prospective export projects in such industries as liquefied natural gas (LNG), direct reduced iron and magnesium metal, will, if they proceed, significantly increase Australia's greenhouse gas emissions. This is a doubly ironic situation. Not only will these projects be largely based on the use of natural gas, the least emissions intensive of all fossil fuels, but most of them will help the countries to which they are exported to hold their emissions to lower levels than would otherwise have been possible. (By contrast, exporting coal has little impact on

Australia's emissions, since coal mining is not particularly emissions intensive, but using coal has a big impact on the emissions of the importing country.)

Clearly, to both encourage these industries and commit to emissions limitation presents a significant policy dilemma for Australia. However, an escape may be provided by use of the so-called flexibility mechanisms under the Kyoto Protocol. These mechanisms are means by which countries may transfer between themselves some of their obligations to restrain the levels of their emissions. There are three flexibility mechanisms.

- The Clean Development Mechanism (CDM) allows an Annex 1 country to undertake emission reducing projects in non-Annex 1 countries, i.e. developing countries, and to use the resultant emission reductions as offsets, i.e. "credits", against its emission limitation commitment. Credits earned from activities prior to 2008 may be "banked" and used to offset emissions during the 2008-12 commitment period.
- Joint Implementation (JI) provides for one Annex 1 country to undertake an emission reducing project in another Annex 1 country, and for the two countries to share the reductions, i.e. for some of the credits to be transferred from the "host" to the "investor" country.
- Emissions trading on an international basis is much less precisely defined in the Protocol, the main condition being that trading can only occur between two Annex 1 countries.

There are three points about the flexibility mechanisms which are important to appreciate.

How much will governments be involved? Each JI and CDM projects will require individual approval by governments within an overall framework also agreed between governments. Emissions trading will not require individual approval in this way, but the process of establishing the framework of rules, which must be agreed by governments, will be much more complex (and undoubtedly protracted).

Who will do the "trading"? Governments are ultimately responsible for the validity of the projects and also have the ultimate responsibility to achieve the agreed level of emission limitation under the Protocol. However, it is business which will actually make the investments and undertake the projects and other activities, within the agreed regulatory framework agreed between

What will be "traded"? CDM and JI involve transferring "credits", which are measured on a project by project basis, as the difference between the level of emissions when the project is undertaken and the level of emissions which would have occurred without the project. Emissions trading, by contrast, involves transferring some form of permit to emit. Permits would not be linked to a particular project, but would be defined in terms of a "cap", i.e. a limitation, on the total number of permits on issues, combined with a requirement on emitters to hold permits and to acquit them against their measured level of emissions at regular intervals.

On the whole, most people expect that the more complex regulatory framework required by emissions trading means that it will be some time until international emissions trading comes into force – quite possibly not until the start of the commitment period in 2008.

By contrast it was hoped that agreement at The Hague would lead to a definite, and short, timetable for JI and CDM to come into place. That has been delayed. However, it is important to understand, contrary to the impression which may have been gained from much of the reporting, that there was no disagreement over any of these mechanisms in principle. The disagreement was over, firstly, what proportion of a country's total emissions could be offset by these mechanisms and, secondly, whether forestry and other sinks activities should be included. Everyone agrees that projects involving energy efficiency, fuel switching (e.g. coal to gas conversion), renewable energy, and the capture of methane leaking from gas pipelines and waste dumps should be included.

It is these kinds of projects which have accounted for the overwhelming majority of projects undertaken over the past three years, through a trial, termed the Activities Implemented Jointly (AIJ) pilot phase, has been underway around the world. Businesses from Western Europe, North America, Japan and Australia have initiated several hundred projects in the countries of Eastern Europe and the developing world. The experience has been that there are many opportunities for highly cost effective projects. There can be no doubt that, if the Kyoto commitments do become binding, these flexibility mechanisms will be available to offset emissions, and that appropriate energy and waste projects will be eligible to earn credits.

Seven Australian AIJ projects have been undertaken so far by Australian businesses, with financial assistance from the Commonwealth Government, which is intended to meet the unavoidably higher costs of obtaining approval for AIJ status while the approval process itself is gradually being developed. Unfortunately, six of the seven Australian projects are too small (a few thousand tonnes CO<sub>2</sub>-e or less) to have any appreciable value in helping Australia meet its commitment, and the level of interest in undertaking projects has been generally low. Why should this be so?

The main reason is undoubtedly that businesses with high levels of emissions within Australia, and thus the highest potential need to find offsets do not have either the experience, skills, technologies or established commercial links needed to successfully undertake overseas projects to reduce emissions. A glance at the list of Australian businesses which are undertaking AIJ projects suggests that the converse is certainly the case: all of them do in Australia the same sorts of things that they are doing overseas, which means that none of them would have significant net emissions in Australia. This points to a serious policy impasse. Businesses which need emissions credits do not have the ability to earn credits on their own behalf, while businesses which do know how to earn credits have no need of them.

Two ways out of the dilemma suggest themselves. One is for the government to continue or to increase the currently modest level of subsidy going to businesses which undertake JI or CDM projects. The credits earned would then be "owned" by Australia and thus, if there were enough of them, allow new projects to start up in Australia without placing the emissions limitation commitment in jeopardy. Just such an approach is being tried by the Dutch Government, which last year invited companies to tender for the supply of credits

from JI projects in Eastern Europe during the 2008-12 commitment period. There has been no suggestion that Australia should follow this example, which is equivalent to the government becoming the monopoly buyer of credits. (Interestingly, however, the Commonwealth's Greenhouse Gas Abatement Program effectively calls tenders for the supply of similar project based emissions reductions within Australia.)

An alternative approach would be for the government to create the conditions needed for credits earned overseas by Australian businesses undertaking JI and CDM projects to become fully fungible when repatriated to Australia, so that project developers could realise the value of the credits. The simplest way to do this would be to establish a domestic emission trading system, within which JI and CDM and credits could be traded alongside permits (which would be the principal trading instrument). In such a system, a business, which held insufficient permits to acquit the emissions arising from its activities in Australia, could either buy permits from another business which had more than it needed or it could buy credits earned by an Australian business overseas.

Unfortunately, in August 2000 the Commonwealth ruled out the early establishment of domestic emissions trading in Australia, by announcing that it would not be introduced until:

- the Kyoto Protocol has been ratified by Australia;
- the Kyoto Protocol has entered into force; and
- an established international trading regime is in place.

This decision represents a severe setback for Australia's capacity to achieve emission reductions in a timely and least cost manner.

- It will largely eliminate the incentive for Australian companies to become involved in JI and CDM projects and thus cut Australia off from a potentially large source of low cost credits.
- If any other actions are taken to reduce emissions, going beyond no regrets, these actions will be more costly, per tonne of CO<sub>2</sub>-e abated than they need be or would be if emissions trading were in place, since emissions trading is the least cost policy instrument for achieving any given level of emissions limitation.
- If and when international emissions trading is implemented, Australia will be disadvantaged relative to countries which have accumulated experience through domestic emissions trading.

It is hard to understand how such a decision could have been undertaken by a government which has consistently argued that rules under the Framework Convention to maximise access to international emissions abatement opportunities and that the flexibility mechanisms should be used to the fullest possible extent, in order to minimise the overall costs of emissions limitation. It is also a government which has generally shown strong support for market based policy approaches.

The only plausible explanation is a profound confusion in policy between the act of establishing an emissions trading system and the act of setting the total number of emissions permits available (the cap level). The two actions are quite separate. The

connection between the two is that the level of the cap is one factor which determines the scarcity value of permits and hence their price. (It is not the only factor; the cost and availability of emissions abatement opportunities will also be important.) It appears that many of the parties which lobbied so hard against domestic emissions trading believed, or made others believe, that having emissions trading also meant limiting total national emissions to the level of the Kyoto Protocol commitment, which is simply not the case at present.

Of course, the higher the price of permits, the greater will be the incentive to trade and the rewards from doing so successfully. From a national policy perspective, however, there is much to be said for introducing emissions trading gradually by first setting the cap at a high level, only a little below the expected level of emissions in the absence of emissions trading. There would be many benefits to such an approach.

- It would be less daunting to find an acceptable means of initially allocating permits, which is probably the hardest part of setting up emissions trading, since the value of the assets (permits) being allocated would be relatively small.
- Firms would be able to gain experience in emissions trading in advance of the introduction of an international scheme.
- It would stimulate a process of price discovery in relation to domestic emission abatement opportunities, thereby enabling subsequent policy decisions to be better informed.
- It would promote access to potential low cost international emission abatement opportunities through JI and CDM.
- It would increase the cost of emissions, and hence of energy consumption, but do so in a way which guaranteed that the higher costs would not be subsequently reversed. This would provide the certainty needed to spur innovation and investment in ways to increase efficiency and reduce emissions. There is growing evidence that such investments often lead to other efficiencies and cost reductions, sufficient to largely offset the initial cost increase.

Ideally, a domestic emissions trading system would incorporate the widest possible range of emission sources, consistent with keeping the costs of monitoring and verification, and the level of certainty which can be attached to emission measurements, within acceptable limits. (This would mean excluding some emission sources, such as those associated with agricultural activities, which are very difficult and costly to measure. Most energy related sources, by contrast, can be measured quite readily with a high degree of accuracy.) Such a scheme would operate under rules set by government, possibly through legislation. Government would set the level of the overall emissions cap, would determine the basis on which permits were to be allocated within this cap, and would have ultimate responsibility for enforcing compliance with permit acquittal obligations.

However, it would be equally possible for a group of businesses to join in establishing a private trading scheme between themselves, without any government involvement. Some international corporates, BP-Amoco being the best known example, have already

established intra-company emissions trading. Expanding such schemes to a group of companies is in many ways a logical next step. Allowing the purchase of credits earned by approved JI and CDM projects would also be logical and would provide a valuable market test of the relative costs of international and domestic abatement opportunities.

Under such a scheme, participating businesses could reduce their permit costs in a number of ways:

- reducing the emissions from their own activities,
- buying permits from other businesses which have reduced their own emissions to the point where they have surplus permits to sell,
- investing in or with other businesses to reduce emissions, in exchange for the permits thereby made available,
- buying CDM and JI credits, the vendors of which would not themselves have to be participants in the trading scheme.

Setting up a private trading system will not be costless and will not be attractive to businesses which believe (or hope) that they will never have to do anything about their greenhouse gas emissions. But for those who do see the need to act decisively, it could prove an attractive way to resolve the current policy impasse. They may well find, as a number of European and US corporations are doing, that reducing emissions reduces costs or increases revenues in other areas of their business, largely offsetting the direct cost of reducing emissions. It would certainly help to make it easier for Australia to meet its emission limitation commitment, while also providing opportunities for the establishment of new, emissions intensive industries.