Re: carbon pricing

Having been continuously involved in the economics of greenhouse gas emission abatement for over twenty years, NIEIR can speak with authority on abatement policies. Two major studies – for the (then) Electricity Supply Association of Australia in 1994 and for the Australian Conservation Foundation and the Australian Council of Trade Unions in 2009 – came to essentially similar conclusions. Emission abatement entails a costly investment process, which requires carbon pricing for guidance and validation but which will not take place with anything like the required speed in the absence of supportive non-price measures.

A very wide variety of supportive measures has been suggested for emission abatement, ranging from highly macroeconomic (shifting the economy away from energy-intensive activities to low-emission production, such as education and health services) to highly specific, such as efficiency ratings for white goods. Many of the supportive measures have important side-benefits – efficiency standards reduce household and industry operating costs; measures to reduce emissions from imported fuels have balance of payments benefits. The response to changing energy prices can also be considerably sped by provision of complementary infrastructure: for example investments in the electricity bulk transmission system to accommodate renewable generation and investments in transport infrastructure to accommodate cycling, walking and public transport. Supportive measures are also likely to be required for sectors where carbon pricing is impractical. NIEIR advocates the development of an abatement policy package, including open-ended opportunities for state, local and non-government action, with policies under continuous assessment taking side-benefits into account.

Though carbon pricing may be expected to have a small direct effect on consumer and producer behaviour, major abatement requires the replacement of high-emission with low-emission equipment – most obviously the replacement of coal-fired power stations with gas or renewables (or their retrofit for sequestration) and the replacement of high-emission transport equipment with low-emission. A process of investment is therefore required. For the carbon price to perform its fundamental role as an investment signal, it is highly desirable that its trajectory should be known with as much certainty as possible for at least the half-life of the typical investments concerned – that is, a decade or more. This means that the price should not be determined by short-period demand and supply, either on the domestic market or internationally (though there could be advantages in joint action with other countries which wish to guarantee a similar carbon price trajectory). It also means that the price should not be determined by any particular target or cap. In the event of over-achievement of targeted abatement, the price should be allowed to stand in order to validate the investments made with the price in mind. The over-achievement should instead be corrected by easing-off the related non-price measures. Similarly, and more likely, in the event of target abatement not being reached, the price should not be raised except for the more distant future, but complementary measures should be strengthened.

Within Australia it is often argued that domestic investment in emission abatement can be avoided by importing emission permits. NIEIR is strongly critical of this view, on the following grounds.

- Given its balance of payments position, additional imports are the last thing Australia needs.
- The supply of internationally-acceptable importable permits is highly uncertain and therefore risky.
- Private trade in permits is unlikely to be compatible with the requirement for a stable and predictable domestic carbon price.

If there is to be any trade in permits, it should therefore be solely on government account, without any requirement that world and domestic prices be equalised. There are strong arguments for such limited trade to be administered in conjunction with Australia's foreign aid budget.

The requirements for carbon pricing suggest a flat-rate carbon (carbon equivalent) tax, as broad-based as practicable, with rates guaranteed into the future. The alternative in terms of tradable permits would be permits issued at a fixed price, without cap and with zero or very limited bankability. The chief advantage of such permits over a carbon tax is that it would be easier to include sequestration as a source of permits – the permit-issuing authority could be given power to assess that sequestration has taken place and the business which has arranged the sequestration could then be rewarded with a permit which it could sell at the fixed price. The equivalent under carbon taxation would be to pay a bounty for each tonne of carbon sequestrated – not impossible, but less readily arranged given the conventions of government accounting.

The most serious problems in carbon pricing arise as a result of trade and trade agreements.

The OPEC countries have shown that it is possible for resource-rich countries, acting in concert, to raise the price of energy minerals – in today's language, to impose 'carbon taxes' at the point of production of energy resources. From the point of view of such countries, it is far preferable that such taxes should be imposed at this point rather than at the point of consumption, since the revenue then goes to the producing country. Should carbon pricing become common across the world while Australia is still a major energy exporter, it will be in Australia's interests to collect as much as possible of the carbon price before its minerals are exported. The obvious mechanism is an increase in royalties – not in resources rents, which will tend to be depressed as importing countries attempt to foist the incidence of their carbon taxes onto energy exporters.

In the absence of an international agreement which recognises carbon pricing imposed by exporters, the presumption will be that international trade is conducted at carbon-free prices. Under this convention it should theoretically be possible for each country to impose carbon pricing domestically, with full exemption of exports and full taxation of imports. However, there are two problems with the full taxation of the carbon content of imports:

- The carbon content of imports is difficult to determine. Importing countries are likely to make arbitrary and frequently protective determinations.
- The necessary equalisation taxes on imports will most probably run foul of the WTO and the various free trade agreements.

- Tax exemption for exports is more likely to be WTO-compliant, but could still lead to anti-dumping cases.

This area is certain to become a hotspot of international trade negotiations, with a strong probability that, as important countries impose carbon pricing, trade agreements will be modified to accommodate it. This could be construed as arguing for a wait and see approach, but given the investment lags in adjustment to a carbon-priced world it would be prudent to adopt the investment signal now, in advance of international agreement.

Finally, a word of warning. At the macroeconomic level, recent Australian literature on the effect of carbon pricing has been dominated by assessments using Computable General Equilibrium (CGE) models. The Senate should be aware that such modelling is highly abstract. Four serious shortcomings should be noted.

- The modelling makes no allowance for the energy efficiency benefits of abatement policies. (These are simply assumed away, despite the evidence of energy efficiency audits.)
- Similarly, there is no allowance for the balance of payments benefits. (These are assumed away, but as we have seen there is no evidence that the exchange rate performs the required equilibriation.)

These two shortcomings mean that CGE modelling over-estimates the cost of carbon pricing. The two other shortcomings operate in the opposite direction.

- CGE modelling tends to exaggerate the effectiveness of price responses unaccompanied by complementary measures to accelerate the price response.
- CGE models discount the investment required to replace high-emission equipment with low-emission equipment. Even if premature scrapping is avoided, low-emission equipment tends to embody higher capital-output ratios than low-emission equipment, hence the need for an investment campaign.

The balance between these factors depend on the circumstances of the time and on policy details, but in general the tendency would be for CGE to under-state net abatement costs in the short run and over-state them in the long run.

To summarise, NIEIR believes that carbon pricing should be accompanied by policies to encourage energy efficiency and to release funds to finance investment in energy-efficient equipment. The stress should be on the carbon price as an investment signal – hence the need for certainty in carbon pricing.

For more detail, see the report *Complementary policies for greenhouse gas emission abatement and their national and regional employment consequences* completed in May 2010, attached.