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The political economy of FCCC: Who wins? Who loses?

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Liberal theories of international relations might suggest that the threat of climate change makes a consideration of national interests somewhat redundant — that global interests in the face of a common threat override the realist focus on the interests of states (Malik 1995; Bull 1977; Keohane and Nye 1977).

Such a belief can be seen as being at least partly responsible for the widespread disappointment with the results of environmental policy-making at the international level which was so much in evidence at the recent Rio+5 UNGASS. The challenge is no longer to conclude multilateral environmental agreements (MEAs), but to conclude those which are going to deliver positive environmental outcomes. Too often, MEAs have been developed in considerable ignorance of important national interests by delegations to international negotiating meetings on which environment agencies and interests are represented but those of industry and trade are not. It is not surprising that commitments are not honoured in ratification and implementation — domestic policy processes in which those less influential at the international level are able to extract redress — Lindblom's (1977) 'privileged position of business' — at the expense of reducing MEAs to mere symbolic gestures (Kellow 1997a).

International environmental policy requires states to assume responsibilities, and to undertake actions to give effect to those policies. Unlike domestic policy, new requirements cannot generally be imposed upon agents contributing to the causes of problems, and — unlike 'high politics' — international environmental regulation requires substantial action at the domestic level to have effect. Policy adopted in ignorance of significant national interests and important sectoral interests is thus almost certainly doomed to failure, and policy to deal with the risk of a rate of climate change which will tax the adaptive capacities of human and natural systems (the problem at hand, since *some* climate change is the inevitable norm) is no exception.

In a political sense, the most significant winners and losers in relation to climate change policy are perhaps those affected by the policy rather than the risk of accelerated change, although it is important to bear in mind that the assessment of the risk posed by accelerated climate change depends crucially upon the circumstances of national and sectoral actors. One's risk assessment differs substantially depending on whether one lives in a low-lying island state (or one with substantial low-lying land such as Bangladesh or the Netherlands) or in an elevated inland state (Adams 1995). Risk assessment cannot be based upon science alone. It inevitably reflects differing national circumstances and subjective factors. Indeed, one of the problems with the IPCC process is that it seeks in many ways to make a risk assessment which the scientists involved are not qualified to make, and which should be left to the policy-makers. For example, the controversy over attribution of past observed climatic change to human agency reflects differences between the need to produce a scientific consensus and those who have interests in disputing that consensus.



The view that a consensus must be produced — rather than allowed to emerge from traditional scientific controversy (as was the case with CFCs) — presupposes that action will not be taken unless a consensus is manufactured, and thus presupposes that action is needed. Climate science based on models which include only the first two of the 14 orders of magnitude in the global climate system is unlikely to resolve definitively the controversy, so a risk assessment performed by the IPCC is likely to continue to be contested by those with different interests in the causes, effects, and solutions (see Kerr 1997). The point to be made is, this is not only unavoidable — it is desirable. The key policy questions are about what costs we should accept to attempt to mitigate how much climate change, and on the basis of what degree of scientific certainty. Science alone cannot provide the answer, and neither can the precautionary principle, since it cannot tell us how much precaution we should exercise. Such questions are inescapably political, and inextricably bound up with questions of ethics and interests.

To assume that interests do not matter, that the imperative of the IPCC scientific consensus and a common threat will produce an effective and workable international instrument to deal with the threat of climate change is to risk the whole ability of the international system to respond to the problem. Any policy instrument will affect national and sectional interests, and to ignore them is to invite retreat from commitments entered into when it comes to implementation, especially if those commitments turn out to be unfair by advantaging some and disadvantaging others. Diverging risk assessments — since where you sit determines where you stand (and, perhaps, whether you sink or swim) — are then likely to take over, at the cost not only of the loss of effective response to the risk of climate change, but an even further loss of faith in international processes and institutions.

This requires that we understand who are the winners and losers and try to develop a policy response which takes account of the political economy of the FCCC. Otherwise, agreement is less likely to emerge at Kyoto, and commitment to what is agreed upon is unlikely to be sufficient to result in the required actions at the domestic level. Who, then, are some of the winners and loser — both national and sectoral — of the Framework Convention on Climate Change and some of the proposals for Kyoto?

Identifying climate interests

We need to bear in mind that some effects of higher levels atmospheric CO₂ will be beneficial for some — CO₂ fertilisation and warmer temperatures (particularly overnight minima) will enhance agricultural productivity for some, although such changes will reduce productivity where plant species require vernalisation. The uncertainty over these effects in itself poses a cost which is reflected in the concerns of the insurance industry, which is sensitive about exposure to events which might differ in frequency from those assumptions upon which its policies were written. The IPCC Second Assessment Report



found no evidence of more extreme weather patterns, but there is a greater value of assets exposed to natural hazards, and the insurance industry has an obvious interest the issue and any public policy response to it. The uncertainty costs must be considered, but they are perhaps less important than the question of the overall distribution of costs (Houghton et al. 1996).

A basic difficulty in identifying interests at stake in the FCCC is that the interests are confused by a moral cloak of equality which — ironically — is grossly unequal. One of the fundamental flaws with the FCCC, one of the injustices with which Australia is taking issue, and which threatens to weaken commitment, is the very egalitarian appeal which made agreement in Rio de Janeiro possible — the notion of stabilisation of emissions at 1990 levels for Annex I nations. Both the egalitarianism of that commitment — continued in the calls for uniform reductions in emissions from the European Union and Alliance of Small Island States for Kyoto — and the use of 1990 as a base year are so unjust as to jeopardise any delivery on future commitments, just as they have done with Rio commitments thus far.

It was Anatole France who wrote of the ‘majestic egalitarianism of the law, which forbids rich and poor alike to sleep under bridges, to beg in the streets, and to steal bread.’ Uniform commitments have a similar appearance of fairness, and assist with the development of consensus in international decision-making, but are so unfair as to jeopardise delivery on commitments. Nations have vastly different circumstances: different levels of wealth; different rates of population growth; different rates of economic growth; different energy-intensiveness of their economies; different requirements for transport, heating and cooling; different energy sources available as the result of natural resource endowments and past investment decisions. Any requirement which ignores these differences in the interests of a quick consensus-generating appeal to equality is doomed to fail — as the Rio commitments have.

Australia’s future is affected by the climate change issue in ways markedly different from that of other nations. The details of this are increasingly well known, but our 94 per cent fossil fuel dependence and ability to further develop our resources mark us out as very different from France at 61 per cent or Sweden at 39 per cent, both of whom have a heavy reliance upon nuclear, but which have different plans for nuclear in the future.

A uniform cuts approach has the added injustice of punishing precisely those who should be rewarded. The Japanese, who have made considerable strides to make their economy more energy efficient in response to their dependence on imported energy and the 1970s oil shocks will find it much more difficult and costly to achieve any uniform targets. The former Soviet Union and other economies in transition are rewarded for their past gross



inefficiencies, since they have plenty of ‘low-hanging fruit’ and countries like Japan are much closer to the area of diminishing marginal returns in seeking energy efficiency gains.

This problem is especially marked with the United Kingdom and Germany, and forms the self-interested basis for the EU position. The privatisation of the UK electricity sector in 1990 and the demise of the coal mining industry resulted in a ‘dash-for-gas’ which has made any reductions in CO₂ emissions much less difficult for them, since gas produces fewer emissions per unit of electricity generated, and new combined cycle generation lifts conversion efficiencies from the order of 40 per cent to around 50 per cent, reducing CO₂ emissions by 60 per cent compared with coal. It should be noted that the dash for gas was also made possible by the relaxation in 1990 of a 1974 EU Directive prohibiting the use of gas (as a premium fuel) for electricity generation, and by the need for the UK to limit SO₂ emissions. (A similar ‘premium fuel’ policy in Victoria can be seen to have ensured that state installed 6000 MW of 25 per cent efficient brown coal plant over the past decade.) UK gas plant capacity and generation now accounts for about 20 per cent of all fossil fuel capacity and generation (Bantock and Longhurst 1995), resulting in a windfall emissions reduction *not* related to climate change policies of about 12 per cent in the electricity sector since 1990.

Germany is particularly advantaged by both the uniform targets approach and by the selection of 1990 as the base year since German reunification occurred in October 1990. Over the next year, economic activity in the former DDR contracted by 23 per cent and TPE declined by around 30 per cent (Boehmer-Christiansen et al. 1993). Ironically, some European nations such as the Netherlands and Denmark are disadvantaged by the selection of 1990 as a base year, because climatic conditions that year gave them an abnormally low level of energy use and thus greenhouse gas emissions as a target.

The ‘European bubble’ allows the serendipitous gains of Germany and the UK to be offset against the excesses of Greece and Portugal, which are likely to increase their emissions by around 30 and 40 per cent respectively. Luxembourg will reduce theirs by 30 per cent, but then they can import energy — as can much of Western Europe. But the point about the European embrace of differentiated responses within the EU is not only that it is unjust that they should be allowed to differentiate and the rest should not, nor that to expect this is at all hypocritical, but that the European experience raises a practical question about international action. The question is this: if political agreement within an economic integration organisation such as the European Union (which has a single market and is adopting a single currency) required recognition to be given to the different national circumstances of member states, what real prospect is there of worthwhile multilateral agreement being secured *without* differentiation?



There is an additional factor behind Germany's support for strong action generally and uniform cuts in particular, support which is reflected both in its actions and in its provision of extrabudgetary funds to support the FCCC process. This is the desire to protect the heavy investment Germany made in the early 1980s in 'Green Keynesianism', using the concept of *vorsorge* (or preventative action) which was later exported as the precautionary principle. This investment was made in response to the 1970s oil price shocks, and was severely threatened by the collapse in energy prices in 1986, and the emergence of the climate change issue since then has offered the convenient hope of protection for an environmental services sector domestically which employs almost as many workers as the automobile industry and a world environmental services market which has been estimated at \$250 billion pa and growing at 8 per cent pa. Uniform cuts will thus not only not harm the German economy, they will protect its domestic market in environmental services while opening up export opportunities in an area in which has made strategic investment and is well-placed to compete (Boehmer-Christiansen 1994).

Many of those opportunities are in nuclear energy. While there has not been an order for a new nuclear plant in the US for 20 years, there are active nuclear expansion programs in France and Japan, and the market is expanding in Asia, Central and Eastern Europe. In Eastern Europe alone there are 37 unfinished reactors, and the upgrade-and-refurbishment market is worth US\$50 billion. In addition, some governments are looking to replace older Soviet-built reactors. Romania, for example, is in the process of commissioning five CANDU reactors. Slovakia has signed a US\$856 million deal with a consortium headed by Siemens AG and Framatome SA for reactor upgrades. Westinghouse is installing new control systems in reactors in the Czech Republic. In addition to further expansion of coal-fired generation capacity, China is planning to commission 12–14 reactors by 2010 — about 20 000 MW of capacity (for details, see Kellow 1997b). Climate change also provides a political counter domestically to nuclear opposition in countries such as Germany and especially Sweden, which derives 37 per cent of its TPE from nuclear sources and will soon be required to act upon or retreat from the 1979 referendum decision to phase out nuclear energy. It will be interesting to see how Sweden does this while cutting greenhouse gas emissions.

Unlike nations such as Germany, Canada and the US, Australia will not gain from the expansion of construction activity in the nuclear industry which is occurring in the face of restrictions on fossil fuel combustion, but it is already benefiting as a leading supplier of cheap uranium, with expansion of the Roxby Downs mine already occurring and others planned with the end of the 'three mines' policy by the present government. It is important to note these benefits for Australia because, while we might lose more from restrictions on coal burning for electricity generation, these losses will be partially offset by expansion of uranium exports and the buoyant market for gas, which is also a significant export item.



It should be noted that the fillip for the nuclear and gas sectors by far outweighs (at least for the immediate future) the benefit for the renewables sector, although the boost for the latter is relatively important because it is coming off such a low base. The world wind turbine market (of which Denmark has 60 per cent) was estimated in 1995 at only about 600 MW pa. (The national windmill program commenced in 1979 but still supplies only about 5 per cent of Denmark's electricity.) While solar water heating is viable (and much underutilised in Australia), solar electricity generation is competitive only in remote locations, and the world solar cell market is currently only about 81 MW. Low oil and natural gas prices have also been bad news for the alternative energy industry in the US, where 13 of California's biomass power plants have shut down and California wind power companies have been laying off staff.

The sectoral interests are very difficult to track in this area. Environmentalists made much of the withdrawal of BP from the Global Climate Change Coalition in the US, claiming it as an important political victory for their side. But BP is one of the leading manufacturers of photovoltaic cells, and stands to gain from President Clinton's promise to put solar panels on 1 million homes while not facing any realistic immediate threat to its oil sales.

While the alternative energy industry will receive a boost from action on climate change, it is likely to remain of marginal importance in the overall scheme of things in the short run, despite the enthusiasm of those who are attracted to the technology. Indeed, drastic action is perhaps more likely to force governments to look at 'one hit' solutions involving centralised generation options if they are required to abandon fossil fuels at a rate faster than can readily be met by expanding renewables. While the renewables sector will grow, investment in nuclear technology and fossil fuel generation in non-Annex I countries is likely to be of more immediate significance.

That is not the case with energy efficiency, both with energy production and energy utilisation. The next generation of coal-fired power stations is likely to employ gasification and combined cycle technology to achieve an increase in conversion efficiency from 40 to 50 per cent. This is likely to make a significant reduction in Australia's emissions in the longer term, and it is in Australia's interests to develop technological advantage in this area, since such technology will yield both direct benefits as well as assisting our export customers limit their emissions without fuel switching. Those developing technologies for utilising coal seam methane are also likely to be advantaged — not only can such generation displace coal, but it consumes a much more serious greenhouse gas in the process.

There are also sizable gains to be made in efficiency of energy application, not so much in energy-intensive industry such as minerals processing, where Australia tends to have a modern plant mix chosen to reflect the significance of energy as a component of production



costs, but in industry more generally where cost considerations have not yet led business to look closely at energy use and a general lack of government action has not encouraged it to do so. The Sustainable Energy Development Authority in New South Wales is providing some good examples of just how beneficial ‘no-regrets’ actions can be.

Given these potential sectoral gains which could be captured by Australia, it is surprising that it has not been as vigorous in developing these areas as it has been in protecting its more obvious (and albeit larger) interests in international negotiations — if only to hedge against the outcome of that process. Recent actions such as the cutting of funding for energy research and development in the 1997 Budget not only inhibit our ability to capture such advantages, they diminish our credibility as a player which is generally concerned about the issues in those negotiations (although we should note expenditure in Cooperative Research Centres on coal-burning technology).

Australia could — and should — do more in the area of energy efficiency, but even if it were to do so, it would still be disadvantaged by uniform cuts. Much of the basis for Australia’s opposition to uniform targets stems from its concern over the impact of such cuts on *future* opportunities, with their impact on our ability to make the best of future opportunities selling energy embodied in exports to the booming economies of the Asia-Pacific region. We can continue to sell the energy itself (and minerals), since many of these economies belong to non-Annex I members and are thus far exempt from requirements to even avoid energy inefficiency as they expand, but such ‘carbon leakage’ will represent lost value-added for Australia and lost jobs for Australians, and global outcomes which are possibly worse than if processing occurred in Australia.

If Australian coal is burned in less efficient power stations than those it would have been in Australia, carbon leakage will mean economic losses for Australia for negative greenhouse gas outcomes, especially when energy consumed in transport is added. And the beneficiaries would not all be in need of such assistance. While India and China are understandably the focus of concern over nations exempted from commitments, South Korea is also not an Annex I member yet is now an OECD member and has an economy which is rapidly expanding and has a strong demand for fossil fuels.

Combining equity and efficiency

The fact that expansion of the economies of non-Annex I countries is likely to render even the deepest cuts suggested futile points to the flawed basis of the FCCC. Unless nations consider Kyoto outcomes to be fair and effective they are not likely to deliver on them any more than they have done on existing commitments. Most will conceive of fairness in terms of economic costs and benefits, rather than in terms of carbon dioxide emissions,



but this is not a bad thing. Collectively, we all have an interest in mitigating emissions at the least cost and producing an outcome which will produce the highest net benefit.

Ironically, the least-cost avoidable CO₂ emissions (and hence lowest marginal costs of abatement) are probably to be found in those countries which are currently exempt from any action. Best available technology for electricity generation (combined cycle technology) offers conversion efficiencies close to 50 per cent, and CO₂ emissions 60 per cent below those of the worst technology. Our cheapest mitigation options lie in vigorous pursuit of no regrets options where conversion efficiencies are low and in making sure future expansion and replacement of existing plant is at the most efficient level. The best way of achieving this is to ensure the cost of CO₂ emissions are signalled to those making these investment decisions.

Emission taxes are one way of achieving this, but taxes are politically difficult, if not impossible to have adopted. For this reason, some form of tradeable emission permits seems inevitable. The problem with such measures is how to allocate them in a way which will be considered sufficiently fair so as to ensure compliance. Per capita allocations will produce wealth transfers so large that they too are not likely to be adopted. And allocations on the basis of 1990 emissions will reward the serendipitous performers and the inefficient.

One proposal is to establish tradeable emission permits at the national level only, with an initial distribution based on 1990 emissions and additional allocations set at an internationally-determined price (McKibbin and Wilcoxon 1977). While the national basis for trading avoids politically-difficult wealth transfers, the adherence to a 1990 base is still problematic. It is this feature which makes the selling of additional permits necessary, and which makes it sufficiently similar to a tax so as to engender opposition. An otherwise attractive measure is thus weakened by political opposition to its attempt to remedy the problem of the base year.

Perhaps the time has come to discard 1990 as the base year for the climate change policy, to recognise that — while well-intentioned — it is fundamentally flawed. Not only are those nations which have lacked the opportunities of having ‘low-hanging fruit’ so far past 1990 levels that the targets have lost all semblance of realism, but the sense of injustice will only increase as 1990 retreats further into the past.

If we accept the IPCC assessments, substantial accelerated climate change is inevitable in the next century even if Annex I countries were to deliver on their past commitments. It is time we recognised that those commitments, inasmuch as they ignored the distribution of interests at stake (and thus the inevitability of differing risk perceptions), were to a flawed policy instrument which is not likely to produce a response adequate to the problem. It is vital that it be replaced with an instrument which is at once capable of securing



commitment by all governments to implementation and capable of responding to our evolving understanding of the risks.

Some kind of tradeable permit system seems the best option, and confining it to the national level would appear to address most of the distributional consequences which would prevent politically the adoption of an international system. What matters most of all is that the right system is put in place, and that some value reflecting the scarcity of the sink function of the atmosphere is signalled, so that those making decisions where the marginal costs of abatement are least will opt for efficiency. The mechanism is probably more important than getting the number of permits issued right first time, since this can be adjusted as our risk evaluation changes.

The key question remaining is how such permits should be allocated. The best prospects would appear to be for the abandonment of 1990 in favour of a current or future base, ideally an average of three or more years to remove the element of climatic fluctuation. And securing commitment would appear to require some kind of differentiation depending on national circumstances (economic and other). National trading would then allow appropriate decisions to be made as economies make an appropriate transition over the intermediate term with no sudden windfall winners and losers.

The extension of such a system to developing nations would also produce better outcomes as they industrialise. As long as some cap were placed at any time on the total number of permits, trading would still produce results, even if that cap was adjusted upwards over the longer term, since *any* limitation would yield a price for emitting CO₂ which would help bring about adjustment without fundamentally limiting the development aspirations of these nations.

There would, of course, be many details for the economists to work out, and there are doubtless other possible solutions. But unless one can be fashioned which takes into account the differing interests at stake, and thus gets genuine commitment and action from FCCC member nations, any Kyoto commitments are likely to be about as successful in producing effective outcomes as those entered into at Rio and Berlin. Unless we fashion an instrument which takes into account questions of who wins and who loses, we all stand to lose.



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