Time to ditch Kyoto: the sequel

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On 25 October 2007, Professor Steve Rayner of the University of Oxford and I jointly published an essay entitled 'Time to ditch Kyoto' (*Nature* **449**, 973-75, 2007). The argument of this essay was that - as a matter of fact - the Kyoto Protocol had failed to produce even the extremely modest, watered down reductions in emissions that were agreed at the time of Russia's accession to the Protocol (2% on 1990 levels by 2012). Instead, we observed that the actual emissions of the European Union, the leading proponent of this instrument, had risen conservatively 10%. The figures could only be massaged into compliance with the so-called 'Kyoto target' by sharp accounting of British and German reductions for entirely unrelated reasons and by including off-sets purchased under the UN Clean Development Mechanism (CDM): off-sets that were not real and, in many cases, fraudulent. We noted the most well-documented of these, namely the purchasing of the destruction of CFC-23 in China, which had been manufactured in order to be destroyed to sell the permits for the destruction to the Europeans and the Japanese. The effect of such offsets is in any case footling: Professor Roger Pielke Jr of the University of Colorado has calculated that the total effect of the CDM will be to delay by 6.5 *days* the cumulative carbon dioxide emissions expected by 2012. Furthermore, we argued, the Kyoto Protocol had not only failed as a specific policy but was doomed to fail - as was any such regime based on similar principles - because this form of control by international treaty, setting output targets, will never work for the solution of a 'wicked' problem such as the deeply complex and open system of the climate.

'Time to ditch Kyoto' elicited considerable public and professional reaction, as did the underpinning study in which we documented its central claims (*The Wrong Trousers: radically rethinking climate policy*, James Martin Institute, University of Oxford/Mackinder Centre, London School of Economics, November 2007 – available at the relevant websites). Last year, our position was seen by some to be heretical. Today, outside the circle of those officials, carbon traders, think-tankers, journalists and academics professionally involved in the promotion of the Kyoto approach, that is no longer so. Last year, we suggested that the objective of the Bali Conference in December 2007 should be to switch tracks to a radically different type of climate policy which might have a hope of producing real changes in the real world of emissions reductions. Has that in fact happened?

It has not. We enter the Poznan conference with the European Union's climate policy holed and sinking, but with the emergence elsewhere than in Europe of the principles of what a viable climate policy might actually look like. The challenge of Poznan is therefore the same as the challenge of Bali: namely to find a path from the 'Kyoto Road' to a new road based on a deal which has a chance of working. Such a deal will not involve the leading instruments of the current conventional wisdom among the expert community of climate policymakers. So what has happened between Bali and Poznan?

Four things happened at Bali which set the terms for 2008. First, there was a strong policy drive that was prominently supported by the UNFCCC Secretariat, by former Vice President Gore, by the European Union delegation and by the British New Labour government, which called for a bigger and better Kyoto, meaning new, tighter, declared and binding CO_2 output targets attached to timetables. That position was defeated. Secondly, the main outcome of the Bali Climate Conference was that the geopolitical centre of gravity for future climate policy moved decisively from Europe to the Pacific.

Japan declared its position early in the conference. As possessor of the revered and ancient name of 'Kyoto', it would not see it hitched to a failed diplomatic strategy. So it stated explicitly that a Kyoto follow-on must be based on different principles. That position attracted the adherence of significant countries, notably Canada and India. Therefore, thirdly, it is plain in retrospect that, despite the much televised booing and hissing, the United States was *not* isolated on substance at Bali. So the future of climate policy is now positioned to be shaped not in or by Europe but by the dynamics between the four corners of the Pacific: China, India, Japan and the United States.

The consequence of Bali was that *de facto* the centre of gravity for forward-looking discussion moved to the Major Emitters/Economies Meetings (MEM). The UNFCCC may serve a future purpose of legitimation; but it was not and cannot be the negotiating forum in which fundamental work can be done, especially not work that involves the arduous reconfiguration that is now urgently required.

Such work is especially difficult because the motivations of those who support the 'Kyoto Road' are multiple. They include a sort of 'policy fundamentalism' and a deep-seated anti-Americanism often found in the current European policy elite. Money is a driver too. It is uncomfortable but necessary to note that many of the leading advocates of a Kyoto-like approach now have financial stakes in carbon companies and markets closely tied to the existing regime and therefore a stake in its continuance, whether it succeeds or not. These characteristics make their negotiating position brittle because it is inflexible; and that fact touches a second feature of 2008.

There has been a rapidly deepening gulf between the view of climate policy held in that expert community and broader opinion across the industrial world where the evidence is of a general public switch-off. Opinion polling in the United Kingdom, conducted before the financial crash, showed that substantial majorities of the public were concerned about the general issue but were not prepared to change their

lifestyles materially. They viewed green taxation, and other measures that would increase the daily cost of living, as merely surrogates for general taxation by stealth. These findings are replicated elsewhere.

The reaction of much of the expert community to such evidence has been to regret the state of false consciousness into which the general public has fallen and to insist that it must change its mind. But the rubber hit the road in Canada this month. The significance of the failure of the Canadian Liberal Party's 'Green Shift' policy to introduce carbon taxation (specifically, a form of cap and dividend) and to promote generally the Kyoto instruments, has wider resonance. It should be a warning that, in democracies, there is little hope of success in pursuing policies which do not command public support.

The same lesson is taught in America. Recollect that the starting point for this type of legislation was the 95-0 Senate vote of 1997 not to proceed to ratification of the Kyoto Protocol. So it should have been no surprise that there were so few votes canvassed (as few as 30 and perhaps less), which would support the Liebermann-Warner bill as a road to a national American climate policy based on a national "Cap and trade" arrangement. The promoters decided not to proceed. The lesson of this is important because it reminds us that within the American political system, climate policy is less likely to be produced by presidential or congressional leadership; more likely to arise from state and local initiatives; and indeed there is now evidence that this is happening.

It is important that it should do so because in April 2008 another article appeared in *Nature* (R Pielke, T Wigley and C Green, 'Dangerous assumptions' (*Nature*, **452**, 531-32, 2008) which documented that the steady reduction in the energy intensity of industrial societies, which has been a feature of much of the last 100 years, and which is relied upon as a major dynamic delivering lower emissions, seems to have stopped and may even have reversed. This finding makes two points for the participants in the Poznan conference. First, it shows how urgent it is now finally to 'ditch Kyoto' and the flawed assumptions upon which it is based, because the challenge of emissions reductions is incontrovertibly much larger than acknowledged. Secondly, it shows how any policy that hopes to achieve real reductions in emissions has to shift to the supply side and has to focus in the first instance upon the sectors which are the largest users of energy in the largest economies.

The spike in oil and gas prices during 2008 served to stimulate further the increasing use of coal as a primary fuel in major economies, detailed in the 2008 BP Statistical Survey. This general trend is possibly the most important component in that reversal in the decline in energy intensity. The degree to which the continuing industrialization of China depends on coal is commonplace knowledge; and it was an important reason why the United States did not and would never ratify the Kyoto Protocol; because any arrangement that does not deal with the issue of coal burning, and therefore does not involve the Chinese and, in the same context, the Indians, is not worth having. But the question of coal is not only a Chinese question.

In unravelling the reason why there might have been the reversal in the decline in carbon intensity in the United Kingdom, the UK National Rail Review provides a

specific pointer from one developed country. As rail travel has become less energy intensive (reductions in total electricity and fuel consumption as passenger and freight miles increased), the total carbon emissions from rail nonetheless *increased* due to the re-emergence of coal as a source of electricity at a time when the price of gas was soaring. But in this relatively small example there was an element of choice; whereas in the other case crucial to the future of climate policy, there is none.

Against the background of the tempestuous year just reviewed, the European Union's climate policy steamed serenely on, like the *Titanic* towards the iceberg. Having achieved its political goal of stating a 'target' of a 20% reduction by 2020, the European Commission increased speed, adding a third 20% (of the proportion of energy to be generated by 'renewable' sources) – the 20/20/20 target – regardless of the evidence of public mistrust and disinterest that was becoming plainer during the year and regardless too of the increasingly blunt warnings of disinvestment from major European corporations. The Commission package to introduce compulsory auctioning of permits within the EU and to attempt to force external parties to purchase such permits was presented to the European Parliament in the summer. There it encountered intensive doubts and amendments in the Environment Committee. But in the end, the Irish rapporteur ignored a 56-6 vote against her within her own EPP fraction and sent the Commission's package forward for consideration virtually unchanged. Predictably, the result was the ship hitting the iceberg in the European Council, which forms the background to the Poznan meeting.

Coal was an important part of the reason for the collision. Poland depends for 90% on coal for its energy. It has very large reserves of coal and, therefore, it has one of the highest degrees of energy security of any European country. But to agree to the EU's targets, it would be required to cease using its own coal and to move to the use of Russian gas on an enormous scale – this at a time after the August crisis over the Caucasus when eastern European and Baltic states urgently signalled the dangers associated with Mr Putin's form of reasserted Russian nationalism to their other western allies. Polish Prime Minister Tusk said at the Council, 'we don't say to the French that they have to close down their nuclear power industry and build windmills. Nobody can tell us the equivalent.' Then in late October, further fears materialised. Russia is beginning to assemble a gas exporter's cartel with Iran and Qatar (60% of global production). And the global recession deepens.

Thus, the EU strategy is vulnerable to a veto by Poland and other eastern European nations on old-fashioned geopolitical grounds which supersede any concerns for the climate at this time. These countries are backed by a wider group concerned to shield their industries facing recession. The Italians have already made their vote conditional upon a root and branch review (that meets their criteria) of cost implications. This will - at the least - delay action on the current EC 'package' until the time of the September 2009 Post-Kyoto conference in Copenhagen and may actually cause it to fall with the ending of the current mandate period.

All this, therefore, raises a practical question for global climate policy. If it is not possible to produce a working strategy in Europe, where the political elite at least expresses enthusiasm and political will, then where in the world will it be possible to

produce such a policy? The flawed EC 'package' may yet be rammed through. There seem to be three possibilities for the officials to deal with the Polish and eastern European opposition. The first is to do as was done at the October Council, namely to kick the issue down the road by making aspirational statements without any formal substance: the substance to be determined in an always future negotiation. Secondly there is bribery: buying a Polish vote by offering Poland and its voting block some sort of cost certainty which would basically carve these countries out of EU policy. But that will cost a great deal; and the German paymasters are in no mood to pay. Thirdly, the Poles could be promised a gift of carbon capture and storage with which to go on burning their coal, thus finally tying EU policy to the supply side, a place where it should have been years ago.

This third option is for every reason the most attractive, The first is pusillanimous and the second, immoral. The third option also links with the central thrust of the alternative to the failed Kyoto Road, which was laid out by the Japanese at the July G8 summit near Hokkaido: the 'Hokkaido Road'. The Japanese are world leaders in energy efficiency, running the world's second largest economy as its most energy efficient. They have done this for historical reasons because their islands are so poor in raw materials and in energy sources. Since the time of the Meiji Restoration, Japan has made a habit of grasping every marginal improvement in energy efficiency. So the first stage of the 'Hokkaido Road' is to generalize that Japanese approach and to introduce much faster capital replacement cycles for the heaviest energy using technologies, such as in the power generating, aluminium smelting, iron and steel and cement-manufacturing areas.

But in the long term, it is clear that coal will be used and, if there is to be any hope of reducing the carbon burden in the atmosphere from the use of that coal, then the suite of technologies which compose carbon capture and storage have to be integrated and proven, rapidly.

Therefore, the President of the Royal Society, Lord Rees of Ludlow, coordinated the learned societies of the G8 countries at the time of the G8 in demanding that there should be funding to accelerate CCS demonstrators which had been placed in abeyance. A start was made on this with a Japanese lead commitment. To bring forward the deployment of viable CCS is probably the single most effective practical step that could be taken to reduce anthropogenic emissions of carbon in the medium term.

Integral to the 'Hokkaido Road' as well as the improvement in existing energy technologies is the need for an investment programme equivalent to the Green Revolution, but focused on developing the primary energy sources for the 21st century in the way that each previous era of industrial history has been marked by a switch in the prime energy source: from wood to coal, from coal to oil, from oil now to whatever will be the suite of power sources (and, on the demand side, linked power uses) of the future. Lord Rees often writes of a new Manhattan Project. This revolution has the contingent benefit of containing within it important opportunities both for new investment and for new jobs at a time of worldwide economic recession and possibly slump; and since it could have the effect of making clean energy cheaper than dirtier

energy – the target which is suggested by the Breakthrough Institute of California – then there is a chance of winning public support in the democracies: because people will see action on climate policy not as just another clutch of stealth taxes but as something that is positively in their financial, as well as in their other interests.

Poznan has an opportunity to recognize these inconvenient truths and, once they are recognized, then quickly to put in place the foundations and essential architecture for a radically re-engineered climate policy for adoption at the Copenhagen meeting next year based on the Hokkaido, not the Kyoto road. That architecture will not depend upon carbon trading in the present form; it will not lead with emissions targets tied to specific dates (although benchmarks are part of the sectoral strategy for reducing energy intensity); it will not focus upon international legal agreements that are dubiously enforceable, if at all. It has to start from a frank recognition of the failure to date in order to build the principles of a success in the future.

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