

## COMMENTARY

# Time to ditch Kyoto

Climate policy after 2012, when the Kyoto treaty expires, needs a radical rethink. More of the same won't do, argue **Gwyn Prins** and **Steve Rayner**.

The Kyoto Protocol is a symbolically important expression of governments' concern about climate change. But as an instrument for achieving emissions reductions, it has failed<sup>1</sup>. It has produced no demonstrable reductions in emissions or even in anticipated emissions growth. And it pays no more than token attention to the needs of societies to adapt to existing climate change. The impending United Nations Climate Change Conference being held in Bali in December — to decide international policy after 2012 — needs to radically rethink climate policy.

Kyoto's supporters often blame non-signatory governments, especially the United States and Australia, for its woes. But the Kyoto Protocol was always the wrong tool for the nature of the job. Kyoto was constructed by quickly borrowing from past treaty regimes dealing with stratospheric ozone depletion, acid rain from sulphur emissions and nuclear weapons. Drawing on these plausible but partial analogies, Kyoto's architects assumed that climate change would be best attacked directly through global emissions controls, treating tonnes of carbon dioxide like stockpiles of nuclear weapons to be reduced via mutually verifiable targets and timetables. Unfortunately, this borrowing simply failed to accommodate the complexity of the climate-change issue<sup>2</sup>.

Kyoto has failed in several ways, not just in its lack of success in slowing global warming, but also because it has stifled discussion of alternative policy approaches that could both combat climate change and adapt to its unavoidable consequences. As Kyoto became a litmus test of political correctness, those who were concerned about climate change, but sceptical of the top-down approach adopted by the protocol were sternly admonished that "Kyoto is the only game in town". We are anxious that the same mistake is not repeated in the current round of negotiations.

Already, in the post-Kyoto discussions, we are witnessing that well-documented human response to failure, especially where political or emotional capital is involved, which is to insist on more of what is not working: in this case more stringent targets and timetables, involving more countries. The next round of negotiations

needs to open up new approaches, not to close them down as Kyoto did.

Economic theory recognizes the futility of throwing good money after bad. In politics, however, sunk costs are often seen as political capital or as an investment of reputation and status. So we acknowledge that those advocating the Kyoto regime will be reluctant to embrace alternatives because it means admitting that their chosen climate policy has and will continue to fail. But the rational thing to do in the face of a bad investment is to cut your losses and try something different.

## No silver bullet

Influenced by three major policy initiatives of the 1980s, the Kyoto strategy is elegant but misguided. Ozone depletion, acid rain and nuclear arms control are difficult problems, but compared to climate change they are relatively simple. Ozone depletion could be prevented by controlling a small suite of artificial gases, for which technical substitutes could be found. Acid rain was mainly caused by a single activity in a single industrial sector

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(power generation) and nuclear arms reductions were achieved by governments agreeing to a timetable for mutually verifiable reductions in warheads. None of this applies to global warming.

In practice, Kyoto depends on the top-down creation of a global market in carbon dioxide by allowing countries to buy and sell their agreed allowances of emissions. But there is little sign of a stable global carbon price emerging in the next 5–10 years. Even if such a price were to be established, it is likely to be modest — sufficient only to stimulate efficiency gains<sup>3</sup>. Without a significant increase in publicly funded research and



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development (R&D) for clean energy technology and changes to innovation policies, there will be considerable delay before innovation catches up with this modest price signal.

On present trends, for another 20 years, the world will continue installing carbon-intensive infrastructure, such as coal power plants, with a 50-year lifetime. If climate change is as serious a threat to planetary well-being as we have long believed it to be, it is time to interrupt this cycle.

Climate change is not amenable to an elegant solution because it is not a discrete problem. It is better understood as a symptom of a particular development path and its globally interlaced supply-system of fossil energy. Together they form a complex nexus of mutually reinforcing, intertwined patterns of human behaviour, physical materials and the resulting technology. It is impossible to change such complex systems in desired ways by focusing on just one thing.

Social scientists understand how path-dependent systems arise<sup>4</sup>; but no one has yet determined how to deliberately unlock them. When change does occur it is usually initiated by quite unexpected factors. When single-shot solutions such as Kyoto are attempted, they often produce quite unintended, often negative consequences. The many loopholes that have enabled profiteers to make money from the Clean Development Mechanism, without materially affecting emissions, are examples<sup>5</sup>. Therefore, there can be no silver bullet — in this case the top-down creation of a global carbon market — to bring about the desired end.

But could there be silver buckshot? Could we assemble a portfolio of approaches that would move us in the right direction, even though we cannot predict which specific ones might stimulate the necessary fundamental change? If so, what would such a portfolio look like? We believe that a radical rethink of climate policy should possess at least five central elements.

### Focus mitigation efforts on the big emitters

The notion that emissions mitigation is a global commons problem, requiring consensus among more than 170 countries, lies at the heart of the Kyoto approach. Engaging all of the world's governments has the ring of idealistic symmetry (matching global threat with universal response), but the more parties there are to any negotiation, the lower the common denominator for agreement — as has been the case under Kyoto.

The G8+5 Climate Change Dialogue, established in 2006 to convene the leaders of the top 13 polluters, was a belated recognition of the error of involving too many parties, each with dramatically different stakes and agendas. In September, the United States convened the top 16 polluters. Such initiatives are summarily dismissed by Kyoto's true believers, who see them as diversions rather than necessary first



The treaty negotiated at Kyoto in 1997 has been ratified by 172 nations. Has it made a difference?

steps. However, these approaches begin to recognize the reality that fewer than 20 countries are responsible for about 80% of the world's emissions. In the early stages of emissions mitigation policy, the other 150 countries only get in the way.

### Allow genuine emissions markets to evolve from the bottom up

Theoretically, the simplest way to establish a price signal would be through a carbon tax. However, past experience with Britain's fuel price escalator (1993–99) and US President Bill Clinton's attempt to introduce a modest 4.3-cent-per-gallon hike in gasoline tax, shows there are serious political obstacles to establishing a level of tax sufficiently high to encourage energy efficiency, let alone to stimulate serious investments in innovation.

An alternative price-based approach to market failure is cap-and-trade. But to work, such schemes must be built — like all genuine markets — from the bottom up. The cap shapes the market by signalling the social goal as simply as possible: in this case, reduction of anthropogenic impact on the environment. The market does the rest. But, in trying to introduce, from the top down, a global market in all greenhouse gases and all sources and sinks, the Kyoto approach tries to do too much, too soon, especially in the absence of binding legal frameworks to enforce contracts among parties who are not bound by other strong ties.

There is no precedent for imposing a global trading system from above. First, lessons need to be learned from regional experiments with trading. The European Union Emission Trading Scheme confined itself to trading only in

carbon, but then made the fatal error of allowing governments unrestricted powers to allocate allowances instead of auctioning a limited supply, leading to a collapse in the price. The Chicago Climate Exchange is successfully trading a basket of gases, but participation is voluntary. Eventually, different trading systems could evolve and link up as sensible standard practices emerge, giving rise to a global market. But in the final analysis, cap-and-trade cannot deliver the escape velocity required to get investment in technological innovation into orbit, in time. That calls for something else.

### Put public investment in energy R&D on a wartime footing

We stare at stark divergences of trends. On the one hand, the International Energy Agency predicts a doubling of global energy demand from present levels in the next 25 years. On the other, since 1980 there has been a worldwide reduction of 40% in government budgets for energy R&D<sup>6</sup>. Without huge investment in R&D, the technologies upon which a viable emissions reduction strategy depends will not be available in time to disrupt a new cycle of carbon-intensive infrastructure.

So investment in energy R&D should be placed on a wartime footing. This is a cause that embraces the political spectrum, including Kyoto supporters. In 1992 former US Vice-President Al Gore called for a 'strategic environment initiative' as part of his vision for a 'global Marshall Plan'. The conservative American Enterprise Institute in Washington DC also supports primary research on sustainable new energy technologies. In 2006, Lord Rees, the president of Britain's Royal Society suggested that major public investment in R&D should be kick-started by a global investment in energy technologies research on the scale of the Manhattan Project<sup>7</sup>.

It seems reasonable to expect the world's leading economies and emitters to devote as

much money to this challenge as they currently spend on military research — in the case of the United States, about \$80 billion per year. Such investment would provide a more promising foundation for decarbonization of the global energy system than the current approach.

### Increase spending on adaptation

For the best part of a decade, discussion of adaptation was regarded by most participants in climate policy-making as tantamount to betrayal<sup>8</sup>. Even though it was widely recognized by the end of the 1980s that the existing stock of atmospheric greenhouse gases was likely to lead to some inevitable warming, the policy community suppressed discussion of adaptation out of fear that it would blunt the arguments for greenhouse-gas mitigation.

Today, although the taboo on discussing adaptation is lifting, the allocation of effort remains skewed. The (unmet) commitment of international resources to the multilateral Adaptation Fund under the United Nations Climate Change Convention is \$1.5 billion, derived in part from a tax on the Clean Development Mechanism. Funds for mitigation, however, come from many sources and total at least \$19 billion. We believe that global adaptation efforts need to be funded at comparable scales to those we advocate for investment in technology R&D.

Many climate activists seem to assume that slowing greenhouse-gas emissions has logical and ethical priority over adapting to climate impacts. But the ethical issues cut both ways. Current emissions reductions will mainly benefit future generations, whereas the momentum already in the climate system drives the near-term. Faced with imminent warming, adaptation has a faster response time, a closer coupling with innovation and incentive structures, and thereby confers more protection more quickly to more people. It is not clear to us that the interests of millions of people in poorer countries who depend on marginal ecosystems are best served by an exclusive preoccupation

with mitigation. Indeed, such a narrow focus is likely to be a fatal error. Mitigation and adaptation must go hand in hand.

### Work the problem at appropriate scales

Climate change is a multi-level governance problem. Some commentators recognized early on that it is not just, or even primarily, a matter for negotiation among nation states<sup>9</sup>. However, national governments have been slow to recognize this. Global responses to climate policy can learn from the US system of federalism that encourages small-scale policy experiments at the state or local-government levels as well as with the philanthropic and private sectors. When state or local policies succeed, such experiments can be implemented at the federal level, and often with the enthusiastic support of national politicians.

David Victor at the Council on Foreign Relations and his colleagues have proposed exactly this approach to climate policy, suggesting that a “global federalism of climate policy” is emerging from the rubble of the Kyoto Protocol. Rather than the top-down universalism embodied in Kyoto, countries would choose policies that suit their particular circumstances. Ironically, this ‘policies and measures’ approach was being pursued before the emergence of the Kyoto regime<sup>10</sup>. However, it has been largely neglected in the post-Kyoto process. Although a bottom-up approach may seem painfully slow and sprawling, it may be the only way to build credible institutions that markets endorse. The agenda for the Bali conference should focus on this and on the scale-up of energy R&D rather than on drafting a ‘bigger and better’ version of Kyoto.

### The silver buckshot approach

Sometimes the best line of attack is not head-on. Indirect measures can deliver much more: these range from informational instruments,

such as labelling of consumer products; market instruments, such as emissions trading; and market stimuli, such as procurement programmes for clean technologies; to a few command-and-control mechanisms, such as technology standards<sup>11</sup>. The benefit of this approach is that it focuses on what governments, firms and households actually do to reduce their emissions, in contrast to the directive target setting that has characterized international discussions since the late 1980s.

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Because no one can know beforehand the exact consequences of any portfolio of policy measures, with a bottom-up approach, governments would focus on navigation, on

maintaining course and momentum towards the goal of fundamental technological change, rather than on compliance with precise targets for emissions reductions. The flexibility of this inelegant approach would allow early mitigation efforts to serve as policy experiments from which lessons could be learned about what works, when and where<sup>12</sup>. Thus cooperation, competition and control could all be brought to bear on the problem.

Does the Kyoto bandwagon have too much political momentum? We hope not. It will take courage for a policy community that has invested much in boosting Kyoto to radically rethink climate policy and adopt a bottom-up ‘social learning’ approach. But finding a face-saving way to do so is imperative. Not least, this is because today there is strong public support for climate action; but continued policy failure ‘spun’ as a story of success could lead to public withdrawal of trust and consent for action, whatever form it takes. ■

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Climate villains? Protesters have called for the United States and Australia to ratify the Kyoto Protocol.

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