



At Buenos Aires and Beyond

by *J.W. Anderson, Richard D. Morgenstern, and Michael A. Toman*

RFF analysts pinpoint where the latest round of international negotiations leaves us in the world's politically tinged efforts to cope with climate change.

When several thousand diplomats, politicians, and lobbyists from nearly every country on earth met in Buenos Aires last November to talk about climate, they were pursuing a process of negotiations that had begun in the late 1980s. In 1992 that process led to the Framework Convention on Climate Change. The convention sought to avoid “dangerous interference” with the world’s climate, albeit without specific atmospheric goals or mandatory emissions limits. In late 1997 negotiators agreed on the Kyoto Protocol to the Framework Convention. If it goes into effect, Kyoto will set legally binding emissions targets for the industrialized countries, to be met in the period 2008 to 2012.

But the protocol omits, or leaves vague, a number of important points. These include the nature of commitments by developing countries, specification of mechanisms for international emissions trading, and terms for making qualified emissions-reducing investments in developing countries (the so-called Clean Development Mechanism). More broadly, the fate of any binding agreement on climate change hinges on a number of issues that, at least up to this point, have stayed below the diplomatic radar.

One is the issue of equity between rich countries whose emissions are high and poor countries whose emissions are low but rapidly growing. Other issues involve the high cost of quickly reducing emissions to meet Kyoto’s fairly demanding targets, which would begin less than nine years from now. A number of experts who readily acknowledge the virtue of taking actions to restrict greenhouse gas emissions also worry that the Kyoto targets may be too much, too soon, and too rigid.

In this article we first review the status of some of the main issues discussed at Buenos Aires and that remain part of the ongoing international dialogue on climate policy. We then turn to other issues that have received less public attention but are likely to loom at least as large in determining the ultimate fate of the Kyoto process.

Emissions Trading and the Clean Development Mechanism

The United States continues to press hard for free and open trading in greenhouse gas emissions rights, relying in part on its own very successful experience with cost-reducing sulfur-dioxide trading by utilities under its acid rain control program. The Clinton administration has used figures implying that the United States could buy from other countries as much as 85 percent of the emissions reductions it needs to meet its Kyoto obligations, permitting substantial expansion of domestic emissions. These purchases could include a large quantity of low-cost surplus emissions permits that might be supplied by Russia. Other countries, especially several European nations, have denounced the U.S. strategy on several grounds. These include fears of lost competitiveness vis-à-vis the United States, doubts about the long-term U.S. commitment to reducing greenhouse gases at home, concerns about the integrity of Russian emissions permits, and beliefs that international equity requires domestic sacrifice by all developed countries. Critics of the U.S. view have demanded stringent limits on the number of permits that any country can buy abroad, which the United States has strongly resisted.

The Clean Development Mechanism could allow developing countries to be beneficially engaged in greenhouse gas limitation investments. Under the CDM, for example, a firm in an industrial country wishing to expand emissions at home might finance a facility such as a highly efficient power station in a developing country, reducing that country's emissions and providing emissions credits for the industrial-country investor. But the concept raises a number of questions that negotiators have not yet adequately addressed.

One is whether the CDM will require new institutions to facilitate and vouch for international trades. The CDM might be conceived as a centralized agency playing a role in screening, selecting, financing, and assisting in project implementation. But experience suggests that many of those functions could be carried out more effectively by the private sector. The CDM would also require some mechanism to measure, monitor, and verify the claimed reductions of emissions. No agreement exists on who would do that work, or how.

Further, the protocol says that a "share" of the proceeds from CDM projects is to be used to help particularly vulnerable countries meet the costs of adapting to climate change. There is no consensus on the size of this fee, or the administrative machinery for allocating and spending the money. Nor have the negotiators confronted the reality of who is to bear the burden of this fee. It will not be international investors who can choose from a diverse menu of competitive investment options. Rather, host countries will receive a lower net return on the projects.

The CDM remains a work in progress. Yet there is little time to spare in settling these questions since, under the protocol, credit for early emissions could begin in the year 2000.

International Equity Debates

Progress on the Kyoto Protocol is slow not solely because of the technical, administrative, and political disputes on the current negotiating agenda, important though many of them certainly are. The lack of momentum is due also to a growing sense that larger questions must be cleared up before governments can confidently commit themselves to a treaty with enormous implications for their economic life.

A basic issue of equity underlies the tension

between some of the industrial countries, led by the United States, and most of the developing countries, led by China and India. The issue can be summarized by observing that in 1995 the United States emitted 20 metric tons of carbon dioxide per capita, compared with about 2.5 tons in China and just under 1 ton in India. Why, these and other developing countries ask, should we take control actions now when the rich countries have contributed so much more to the problem?

What is a fair solution to that disparity? There has been some discussion of formulae for national emissions limits that would eventually bring about equality in per-capita emissions between developed and developing countries at some point in the future. However, the viability of this approach is open to question, at least for a number of years. A per-capita emissions target for rich countries down near China's and India's current emissions levels would require the developed world to make draconian emissions cuts or gigantic payments to poorer countries for extra emissions rights. A target up near the United States' current level of emissions per capita implies such an immense increase in worldwide emissions that the whole treaty becomes futile. Any agreement on emissions "convergence" would have to occur well into the future to be acceptable to all the parties. Sufficient progress in developing nonfossil energy sources would also have to occur so that the convergence would meet longer-term climate protection goals without being seen as excessively burdensome by rich or poor.

In the meantime, other avenues exist through which to approach equity in ways that build on the self-interests of different countries. In the shorter term, for instance, leaders of some developing countries may agree to modest limits on the growth of their greenhouse gas emissions in order to reap collateral benefits at home—such as improved economic efficiency and reduced conventional air pollutants, which damage the health of their own citizens—as well as to increase the availability of international investment through the CDM or other channels. But for such activities to succeed, they must be seen as beneficial by developing as well as developed countries. The climate negotiations have only begun the difficult exercise of deciding what concepts of fairness can attract such agreement.

Abatement Costs and Policy Design

The cost of emissions controls has figured prominently in domestic policy disputes, but has been much less significant in the international negotiations. Article 3.3 of the Framework Convention observes that “policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.” But this observation does not speak to the more fundamental question of what costs are seen as acceptable to bear in exchange for reducing the long-term risks of climate change.

The Clinton administration argues that the United States can achieve compliance with the Kyoto requirements for less than \$25 per ton of carbon avoided, assuming an idealized system of international participation in carbon control through emissions trading. Other estimates, some based on comparably pessimistic assumptions, go much higher, into the range of \$300 a ton. These figures are all produced by technically competent models. The differences arise from their varying assumptions about international emissions trading, and cost-effective opportunities for carbon abatement, among other factors.

The higher estimates have figured in the opposition within the U.S. Senate to ratifying the Kyoto Protocol. This deadlock over the cost figures is unlikely to be resolved until there is more information about abatement costs from actual experience. But the protocol does not allow for small-scale experiments. Instead, it would commit most of the industrial countries to substantial emissions cuts in the near future. The U.S. Energy Department estimates that, if nothing is done, emissions will be more than 30 percent above 1990 levels by the year 2010. Thus, U.S. compliance with the Kyoto Protocol—which would entail a 7-percent reduction below 1990 levels—would require cutting emissions by more than one-third below business-as-usual, and doing it in little more than a decade. This prospect raises another central question, this one about basic economic strategy.

Given the large uncertainties about the cost of reducing greenhouse gases, what is the best way to proceed? One option is to introduce more flexibility regarding the emissions target to be achieved. This flexibility could take the form of a ceiling on the cost of compliance. In the context of an emissions trading program the cost ceiling could be implemented by the

government standing ready to sell additional permits at a prespecified price. The price ceiling could start at a relatively modest level and escalate gradually over time, causing a corresponding drop in the total quantity of emissions.

Proponents of the Kyoto target may be correct in asserting that the costs are not that large—either because the economic models are underestimating the quantity of cheap reductions available or because international markets for greenhouse gas trading would flourish with developing country participation. If so, then additional permits offered by the government would not be needed to meet the Kyoto target. If the higher cost estimates are right, however, and firms did purchase additional permits, the emissions reduction would be less. But the burden on the economy would be limited to a predictable level.

Policy can set either price or quantity targets with some assurance, but not both. If the objective is to cap the cost of control, the amount of emissions actually eliminated cannot be guaranteed. If on the other hand the objective is to cut emissions by a certain amount, the cost of doing so cannot be predetermined, either. Environmentalists prefer the certainty of quantity over the certainty of cost. However, this preference does not give full weight to the fundamental differences between climate change and most other environmental problems. The uncertain and potentially large size of greenhouse gas abatement costs argues for a price ceiling to start the process, with the possibility of converting to a fixed-quantity approach once more information is available on the true costs of emissions reductions and agreed-upon mechanisms are established to better monitor international activities.

Long-Term Timing of Emissions Control

Changes in the earth's climate, and thus the risks of climate change, are affected by the long-term concentration of greenhouse gases in the atmosphere, not simply by year-to-year increases in emissions. This reality highlights the need for a long-term focus in setting policy targets, in contrast to the Kyoto approach of setting one relatively near-term set of targets and leaving future targets open for negotiation.

A substantial body of economic analysis has developed since the start of the climate negotiations, which suggests that the lowest-cost path to any plausible longer-term target for greenhouse gas concentrations in

the atmosphere would start with relatively modest cuts in emissions, restricting them more severely in later decades. In this kind of scenario the price of emissions control would start at a low level, giving people time to learn the new rules and develop reliable data on strategies for operating in a low-emissions regime. Over time, the price would be increased as needed to keep the concentrations within the target.

One important reason for this gradual acceleration approach is that a faster turnover of capital equipment, like electric generating plants, might be very expensive. Another reason is that a more gradual approach allows greater opportunities for taking advantage of future developments in technology. There is a need to promote development of new technological options. This promotion could be enhanced through increased support for R&D as well as through the gradual but inexorable effect of rising energy prices.

Where Do We Go from Here?

As we noted at the outset, a number of policy issues within the scope of the Kyoto Protocol remain to be worked out. On international trading mechanisms, while there is room for compromise, we believe that the positions held by the United States and its allies in the debate are basically sound. In practice, achieving the Kyoto targets requires the kind of extremely flexible and cost-effective policy mechanisms that the United States advocates. The private sector can play the lead role in developing the necessary market mechanisms for trading. We further believe such mechanisms can be developed without compromising the integrity of emissions targets through development of appropriate international capacities for monitoring

and compliance evaluation. The results will not be perfect but, to cite a tired Washington cliché, perfection should not be the enemy of the good in international climate policy.

Yet, these efforts will not address some of the more fundamental concerns we have raised about the path on which the world has embarked to restrict greenhouse gases, concerns related to cost, timing, and economic uncertainty. The kinds of policies we have described above provide a long-term approach to a long-term risk, and they reduce short-term uncertainty about costs. Of course, a long-term approach cannot be carved in stone today, since our current analyses require assumptions that, in many cases, are little more than educated guesses. However, some concrete first steps along the lines we have discussed could provide opportunities for experimentation and learning in an area in which we believe policy cannot wait for complete scientific and economic certainty.

Issues of equity, cost, and long-term strategy are only partially on the climate negotiators' agenda. But it seems unlikely that an effective international agreement on greenhouse gases will go into effect until these concerns are seriously addressed. Some of the policies we have discussed are inconsistent with the Kyoto Protocol. They nonetheless should remain part of the policy debate, since international climate policy is a work in progress.

J.W. Anderson is RFF's Journalist in Residence. Richard D. Morgenstern is a visiting scholar in RFF's Quality of the Environment Division. Michael A. Toman directs the Energy and Natural Resources Division.