Climate Change Policy After Kyoto

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The Kyoto climate agreement signals a new level of international attention to limiting "greenhouse gas" emissions. But many important issues remain to be resolved before ratification by the U.S. Senate and implementation.

On December 10, 1997, 160 nations reached agreement in Kyoto, Japan on limiting emissions of carbon dioxide and other "greenhouse gases." The Kyoto Protocol is a significant victory for advocates who have sought to convince world leaders to address climate change. It is intended to signal to governments, businesses, and households that limits will be placed on future emissions of greenhouse gases, and that now is the time to begin developing the necessary technologies. Advocates also express the hope that acceptance by industrialized countries of binding emissions limits would make developing countries more willing to take emissions-limiting actions appropriate to their own circumstances.

As we discuss in the balance of the article, however, the protocol itself has significant gaps; the costs of meeting the stipulated targets are not tremendous but not trivial either; and there is still a great deal to settle with respect to the domestic policy agenda.

A protocol that is both workable in practice and capable of being ratified by the Senate must come to grips with three basic questions. First, does it represent a sound framework for attaining long-term global emissions-reduction goals, and is it clear enough to serve as a sort of international contract to which parties can commit?

Second, how costly are the targets and timetables for greenhouse gas reduction agreed to by the United States and other Annex I countries—are they as affordable as the administration says, or as burdensome as the fossil fuel industry has asserted? Third, what measures would the United States deploy in order to achieve the goals laid out in the protocol?

Refining the Protocol

The negotiators deferred action on several important but controversial elements to a subsequent meeting scheduled for Buenos Aires in the fall of 1998. President Clinton has indicated that he will not send the protocol to the U.S. Senate for ratification until more progress is made on these issues. We believe that, at a minimum, the following must be accomplished before ratification and implementation can occur.

The rules and institutions that will govern international trading of greenhouse gas emissions among Annex I countries must be better established. Article 6 of the protocol provides for emissions trading, but only in the vaguest of terms. How the trading program is carried out will greatly affect the capacity to hold down compliance costs. A program that establishes a freely functioning, largely private market in emissions permits, where private entities may execute trades with minimal bureaucratic red tape, will be the most efficient and will lead to the greatest cost savings. In contrast, a market permitting only trades by governments, or a market where private trades are hamstrung by overly restrictive rules, will sap the cost savings.

The rules and institutions governing joint implementation (the so-called Clean Development Mechanism) must be developed in detail. Under Article 12, Annex I countries can jointly undertake projects with developing countries to reduce emissions in the latter countries and count those reductions toward compliance with their own commitments where it is possible to establish meaningful baselines against which reductions can be measured.

Again, however, the protocol does not address how such projects can be undertaken. A well-supervised but freely functioning market combined with credible

certification and enforcement of reductions would yield real greenhouse gas reductions at lower cost. An overly restrictive and bureaucratic system would sap possible gains.

The criteria used to judge compliance, and any penalties for noncompliance, must be clearly articulated. The protocol contains a number of technical provisions for assessing national performance in measuring emissions and meeting emissions control objectives. These provisions build on previous efforts under the United Nations Framework Convention on Climate Change but are complicated by the more comprehensive nature of the new protocol. Beyond these technical questions, the fundamental issue is what actions, if any, would be taken if a country were found not to be in compliance. The emissions goals of Annex I countries are taken to be binding under international law, but the protocol itself contains no stipulations for sanctions in the event of noncompliance.

A binding agreement on the part of the major developing countries to limit their emissions at some specified point in the future must be obtained. The Framework Convention clearly states that developing countries do not bear the same obligations as developed nations for emissions control in the short term. Nevertheless, the protocol could and should contain commitments from developing countries to limit their emissions *growth*. Developing countries could achieve such limits through "no regrets" measures that would be prudent to take in any case and through agreements to eventually cap emissions as their economic circumstances improve in exchange for assistance in adopting clean technologies.

The lack of any early commitment by developing countries not only aggravates short-term concerns in the United States and other industrial countries about international competitiveness but also raises the specter of developing countries' becoming "locked in" to more fossil-fuel-intensive technologies.

To make longer-term objectives more credible, moderate but specific near-term goals should be set for Annex I countries and these countries should be able to use early emissions reductions to meet longer-term requirements. Other than a passing reference in Article 3 to the need for "demonstrable progress" in achieving commitments by 2005, the protocol is silent on interim measures. Yet without interim targets, prospects for achieving more ambitious longer-term goals become problematic and the incentives to engage in long-term investments in new capital and technology are undercut. Incentives for cost-effective reductions before 2008 to meet long-term requirements also are limited since the protocol makes no provision for emitters to "bank" such reductions.

The Kyoto Protocol

The Kyoto Protocol calls for the industrialized nations—the so-called Annex I countries—to reduce their average national emissions over the period 2008–2012 to about 5 percent below 1990 levels. The United States pledge is 7 percent below the 1990 level, slightly less than the European Union's pledge and slightly more than Japan's. None of the developing countries is required to set any limits.

The protocol includes all the major greenhouse gases and takes into account changes in emissions resulting from changes in forest and land use patterns. The protocol also contains the elements of a program for international trading of greenhouse gas emissions. Such trading would employ market incentives to help ensure that the lowest-cost opportunities for reductions are pursued.

Implementing the Protocol

In the runup to Kyoto, a number of experts pointed out that both the environment and the economy might be served by following a slower path to emissions control than the protocol stipulates while developing the technologies for more aggressive and affordable emissions reductions later. Others disputed this view. In any event, the agreement reached in Kyoto sets the stage for discussion and for future debate in the Senate.

Some have claimed that meeting the protocol's targets ultimately will be inexpensive or even free because there is a large untapped reservoir of cheap energy-efficiency opportunities available today and new technologies will materialize in the near future. Others predict economic collapse.

In our judgment, neither extreme view is correct. The likelihood is substantial, however, that the proposed target and timetable will impose significant costs on the United States and the global economy, even after accounting for new technology stimulated by domestic policies. The limit agreed to by the United States implies a reduction of about one-third compared with what the U.S. Department of Energy estimates carbon dioxide emissions will be by the end of the next decade.

Even with the flexibility to reduce emissions of other gases, achieving emissions reductions of such

magnitudes in fifteen years at most will lead to higher energy prices and thus costs that will be borne throughout the economy.

These costs in turn will give rise to serious debates about fairness. Recent public opinion polling indicates increased concern about climate change and some willingness to shoulder burdens to curb greenhouse gas emissions, but there is no compelling evidence that the public is ready to accept significant increases in energy prices or other costs. In light of these costs, it is an open question whether the Senate is willing to ratify the target and timetable stipulated in the protocol.

An important first step in fostering a productive debate nationally and in the Senate over the protocol is better understanding of its benefits and costs. Advocates should dispense with the pretense that emissions reductions of the scale and speed proposed can be achieved at negligible or even negative cost, or that reductions necessarily doom the economy. To shine a brighter light on the costs and consequences of the protocol requires an investment in better and more inclusive analysis and review of estimates, so that competing claims can be adjudicated and new ideas introduced.

Even after questions about the protocol itself are settled, domestic policy options for achieving the targets and timetables require more thorough consideration. The United States deserves credit for advancing some specific measures. Still, the proposal the administration offered in October—$5 billion in incentives for new technology—will not be enough to move the economy from where it is today to where it needs to be to meet the Kyoto goals.

Ultimately, if the United States is to even approach the Kyoto goals, energy prices must rise enough—especially for coal, the most carbon-rich fossil fuel—to induce enough conservation, energy efficiency, fuel switching, and development and deployment of new technologies and energy forms. How large this price rise will have to be depends on what domestic policies are used. No agreement yet exists on this policy menu. Even if an efficient mechanism like emissions trading is used within the United States, important questions of who gains and loses from the policy remain to be settled.

To cut U.S. emissions as cost-effectively as possible, Congress and the administration should commit to the use of incentive-based policies for emissions control. Well-intentioned but costly proposals to mandate energy efficiency through rigid command-and-control measures must be avoided. In addition, policies aimed at encouraging the development and dissemination of low-emissions technology need careful scrutiny to avoid waste (for example, through an ill-focused subsidy policy).

The institution of some modest interim measures to limit greenhouse gases is important for establishing the credibility of longer-term reduction goals. A domestic emissions trading program with looser controls than the protocol requires is one example. Such a program could be combined with a “safety valve” to cap the price of a tradable emissions permit at some prespecified level that would rise over time, with the government offering additional emissions permits as needed to maintain the price caps.

Such an approach would complement the policies the administration already has announced and provide valuable information about how emissions control policies work, as well as their costs to the economy. It also would offer such near-term benefits as improved air quality from reduced conventional air pollutants and encouragement for the development of lower-emissions technologies. Even stronger incentives for early demonstrable progress would be provided if any early emissions reductions below an established baseline (for example, actual 1997 emissions levels) could be banked to meet subsequent constraints.

Necessary Actions

To enhance the prospects for an effective climate policy, U.S. negotiators at Buenos Aires must take the lead in establishing the basis for well-functioning emissions trading and joint implementation. They must also take the lead in developing an approach for truly meaningful participation by developing countries. To enhance the credibility of the longer-term goals in the protocol, the United States needs to work to establish cost-effective and affordable interim measures. These initiatives need to be combined with a renewed effort to better gauge the costs and benefits of the protocol obligations and a search for effective and innovative domestic policy tools. Last but not least, the American public needs to better engage in debating this complex, long-term issue.

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