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The Alternative to Kyoto

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President Bush's statement yesterday on the administration's ongoing review of climate-change policy offers a wise departure from the current debate over the Kyoto Protocol and a welcome emphasis on science, the environment and economics. As the president observed, a sound policy requires a global effort to protect the earth from long-term climate damage while simultaneously avoiding short-term economic damage.

But this is a hard problem: We do not know how much long-term climate change will result from our ever-expanding economic activity -- primarily from the burning of fossil fuels -- or how much climate change is "safe." From an economic perspective, this suggests a flexible, measured approach: one that continues to research the consequences of climate change and how we can avoid damage in the future; that establishes a policy architecture that sends appropriate signals to businesses and consumers in order to spur climate-saving innovations; and that engages other nations -- both rich and poor -- in similar, cost-effective activities to reduce the threat of climate change throughout the world.


This measured approach stands in sharp contrast to the Kyoto Protocol. Kyoto did little to encourage basic research on climate change, imposed a binding limit on greenhouse-gas emissions in wealthier countries with unknown -- and unbounded -- economic costs, and failed to encourage complementary opportunities in developing countries in a meaningful way.

Strict adherence to the Kyoto agreement would require that the United States reduce its emissions by more than 30% from expected levels. This would result in the premature and expensive retirement of capital stock, costing the economy tens of billions of dollars. A U.S. commitment to such a policy when economic costs are both uncertain and potentially quite large would be irresponsible. Moreover, it is unclear whether the Kyoto Protocol would achieve the desired environmental results absent the participation of developing countries.

Good environmental policy relies upon good science. Some parts of the science surrounding climate change are clear. We know that the surface temperature of the earth is warming and that the concentration of greenhouse gases, particularly carbon dioxide, has increased significantly since the Industrial Revolution. We know that the increase in this concentration is due in part to human activity.

Other parts of the science are more ambiguous: With a little bit of global warming, there are natural responses that could either amplify or dampen the warming effect. This means that estimates of the likely temperature and climate changes over the next century span a fairly wide range. The potential effects on people and ecosystems are even more uncertain.

Despite the uncertainty, most serious students of climate change believe that the likelihood of adverse climate change is sufficiently great to warrant taking action. But what action? Just as a household or business makes plans to reduce the potential damage from uncertain events, the U.S. and other countries need to address the damaging -- if uncertain -- consequences of global warming. But near-term actions should not impose greater risks than the problem they seek to address.

 MIT economist Richard Schmalensee poses the helpful analogy of what to do when you smell smoke in your house: "If you smell smoke at home, it would be silly to do nothing until you actually see flames, but you also should not hose down the house after one whiff of what might be smoke." For the global warming debate, uncertainty justifies neither inaction nor overreaction.

The smoke analogy suggests that the U.S. should pursue a moderate policy that can be adjusted as we learn more about the threat of climate change. A good policy should be immediately to increase basic research in order to gain this knowledge more quickly, and to work with other nations -- nations that similarly smell smoke -- toward a greater collective effort.

The president's emphasis on basic research, measured policy changes, market incentives for technological innovation, and the need to work toward greater global participation, follows this common-sense approach. Not coincidentally, this approach matches a rigorous economic view of good climate-change policy.

An effective climate-change policy requires an investment in basic research: the development of competitive alternatives to carbon-dioxide emitting fossil fuels, focusing on nuclear power, solar power, hydrogen fuels from fossil fuels, and other carbon-free technologies. Without these technologies, emissions will continue to rise as developing countries adopt existing fossil-fuel energy programs.

Furthermore, if the more pessimistic predictions of climate change turn out to be true, any future decision to substantially reduce emissions will be more expensive without viable alternatives to current fossil-fuel technologies. The benefits of this research can be realized not only in the U.S. and other industrial countries, but also in the developing world.

A vital element is the development of institutions for promoting and measuring efficient emission reductions and international cooperation. The institutional structure should be designed to find the lowest-cost abatement opportunities -- wherever they are in the world. Developing these international institutions is a tall order. However, it need not happen right away.

Under a measured approach, the conversation among nations would become broader and deeper over time, much like the 50-year effort for the General Agreement on Tariffs and Trade/World Trade Organization. What is important in the short run is that these institutions have a forward-looking design that encourages both efficiency and cooperation.

Attaining a goal that eventually stabilizes greenhouse gas concentrations requires world-wide participation. That is, a workable climate agreement must include the developing world as well as the industrialized world. The agreement must provide a mechanism for developing countries gradually to assume responsibility for controlling emissions, and to provide incentives for reducing more emissions as their capacity to do so grows.

The president's statement combines common sense and sound economics. His commitment to increasing support for basic research and for the development and spread of new technologies is an important step towards tackling the problem of climate change. The further commitment to consider measured policy responses adds an important breath of economic fresh air to the climate-change debate.

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