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Why Climate Change Can't Be Stopped

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Environmental advocates have finally managed to put the issue of global warming at the top of the world's agenda. But the scientific, economic, and political realities may mean that their efforts are too little, too late.



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Plan B: Saving the world's most fragile places may require a new approach.

As the world's leaders gather in New York this week to discuss climate change, you're going to hear a lot of well-intentioned talk about how to stop global warming. From the United Nations, Bill Clinton, and even the Bush administration, you'll hear about how certain mechanisms—cap-and-trade systems for greenhouse gas emissions, carbon taxes, and research and development plans for new energy technologies—can fit into some sort of global emissions reduction agreement to stop climate change. Many of these ideas will be innovative and necessary; some of them will be poorly thought out. But one thing binds them together: They all come much too late.

For understandable reasons, environmental advocates don't like to concede this point. Eager to force deep cuts in greenhouse gas emissions, many of them hype the consequences of climate change—in some cases, well beyond what is supported by the facts—to build political support. Their expensive policy preferences are attractive if they are able to convince voters that if they make economic sacrifices for the environment, they have a reasonable chance of halting, or at least considerably slowing, climate change. But this case is becoming harder, if not impossible, to make.

To be sure, scientific studies and news reports make it clear that climate change is already happening, with greenhouse gas emissions as a significant driver of this change. Arctic ice has now melted sufficiently to open up the fabled Northwest Passage, provoking public jockeying between Russian and Canadian officials over potential oil and gas deposits. At the same time, the U.S. Department of Interior is considering placing polar bears on the endangered species list as a result of global warming. Extreme weather events have become more common, such as flooding in Africa and forest fires in the western United States.

New emissions limits in the United States and other major emitters such as Europe's key economies and Japan may slow the processes driving these events. But the mounting scientific evidence, coupled along with economic and political realities, increasingly suggests that humanity's opportunity to prevent, stop, or reverse the long-term impacts of climate change has slipped away. In fact, while greenhouse gas intensity (emissions per unit of gross domestic product) of both developed and developing economies has decreased significantly over the past decade as a result of greater efficiency measures, overall greenhouse gas emissions have nevertheless continued to rise. That's because as economies grow, they consume more energy and produce more carbon dioxide. And, obviously, each country wants its own economy to grow.

While some might argue that great reductions can be made in greenhouse gas emissions using current technologies (particularly by increasing efficiency), this is still debated within the scientific community. This argument assumes, among other things, that companies replace their current capital stock with the most efficient available today—something that is not likely to occur in the near future even in developed countries due to its considerable cost. For this reason, even if the Bush administration has been slow to publicly admit that human-induced climate change is real, it has been fundamentally right to focus on developing new technologies that might sever the relationship between energy consumption and emissions.

Unfortunately, given the scale and complexity of modern economies and the time required for new technologies to displace older ones, only a stunning technological breakthrough will allow for reductions in emissions that are sufficiently deep to stop climate change. According to Britain's Stern report, stabilizing greenhouse gas concentrations in the atmosphere at 550 parts per million—twice pre-industrial levels, a level at which most believe there is already a higher probability of major climate disruptions—would require stopping the global growth in emissions by 2020 and reducing emissions by 2.5 percent per year after that. The longer it takes to stop the growth in emissions, the deeper the eventual cuts need to be.

And while the United States leads the world in investment in new energy technologies, spending nearly \$3 billion in 2007, it would be irresponsible for us to count on an energy technology miracle to save the day. Excitement over increasingly "green" business practices is likewise misplaced; companies will do what they need to do to increase their profits and—when the cost is modest—to improve their images. This has reduced emissions and will continue to do so. But without meaningful international agreements that create both unrealistically tight limits and market mechanisms, the cuts will ultimately be marginal rather than decisive.

Without a technological or economic miracle, it would take a political miracle to reach an international agreement that would mandate the necessary emissions cuts to reverse the momentum behind our evolving global climate system. But once again, realities get in the way. The U.S. Congress is too divided

to pass legislation sufficiently tough to make a major difference. And although some hope that regional or state-level cap-and trade systems could sharply reduce U.S. emissions in the absence of federal action, this is also unlikely because states face many of the same problems that challenge national governments. First and foremost, any states that impose emissions limits that are too tight in comparison with its neighbors' are likely to simply export their emissions without it resulting in a major overall reduction.

The international political environment also makes truly significant emissions cuts very unlikely. In 2010, according to the U.S. Energy Information Administration, developing countries will emit nearly 20 percent more CO₂ emissions than developed countries. Indeed, only in China (and perhaps India) would emissions limits or cuts make more of a difference than in the United States. By one estimate, China has already surpassed America in emissions to become the world's leader and, with sustained high growth rates, will open the gap even further. In fact, if China grows at 8 percent for the next nine years, its economy will double in size—and its greenhouse gas emissions can be expected roughly to double as well. Moreover, as China's economy expands, it is turning increasingly to carbon-laden coal for electricity. And although China's energy intensity (energy consumed per unit of economic output) has decreased by nearly 5 percent per year for the last two decades as a result of greater efficiency, it is still nearly seven times that of the United States, according to the World Bank. At this rate, China's growth trajectory could add the equivalent pollution of another present-day United States to the climate system in a little more than a decade.

Dollar for dollar, the most efficient way to cut global greenhouse gas emissions would be, in theory, to invest hundreds of billions of dollars to improve China's energy efficiency. But Congress would never support such an approach. After all, which members of Congress would vote to undercut the competitiveness of U.S. companies, especially in the face of a weak domestic economy, public anger over outsourcing, China's currency value, and the U.S. trade deficit with China? More broadly, how long will voters in Europe and Japan, which have done the most to limit emissions, be prepared to make sacrifices for the global climate if they believe they are alone in doing so?

A realistic look at climate change suggests that it is time to change the debate. In 2005, a paper published by the U.N. Environment Program put average global economic losses due to "great weather disasters" at \$100 billion per year, and projected that it was increasing at about 6 percent per year—enough to double every twelve years, and to total \$2 trillion for the period from 2007 to 2020. Policy makers in the United States and elsewhere must start hedging their bets and prepare us to live in this new world. This emphatically does not mean giving up on efforts to slow climate change, which could still measurably reduce the costs of protecting the people and infrastructure most vulnerable to higher temperatures and new weather patterns. Nor should it suggest that the task of adaptation will be easy or cheap. World leaders will face many of the same dilemmas that complicate the current debate: Developed countries, which have produced most of the human-origin carbon dioxide in the air, will be in the best position to cope with climate change and developing countries will want them to bear a disproportionate financial burden for its consequences.

Still, we do have some of the tools we will need already. International lenders like the World Bank have only begun to invest in projects that reduce greenhouse gas emissions; they need to give greater emphasis to projects that limit developing countries' vulnerabilities to climate change. The scientific community will need to do a much better job of predicting climate impacts at a regional and local scale. Governments will need to support this process, to collect and assess the information that results, and

develop their own plans. Riding out the consequences of a warming world will be difficult, and we need to prepare now.

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