# A Changing Climate: The Road Ahead for the United States

What a difference a decade makes. In December 1997, when sleepless negotiators agreed to the Kyoto Protocol, the Senate was already on record 95-0 against the accord, the American public and media were largely uninterested, and policymakers outside the environmental community paid the issue little heed. Now, the cultural landscape is dotted with cover articles in major magazines, front-page press stories on shrinking polar ice, stronger hurricanes, 100-year storms, disappearing species, and Al Gore's *An Inconvenient Truth* and Nobel Peace Prize.

Governors and mayors are taking bold steps to combat climate change, major companies are calling for tough measures that would have been laughed at a few years ago, venture capitalists are pouring money into alternative energy, national security and military specialists are absorbed by the global security dangers of climate change, and Congress is drafting a flurry of bills to slash greenhouse gas emissions. Global warming, after many years as an also-ran, has arrived at center stage, not only as an environmental issue but also increasingly as a major concern of economics and national security.

All this has occurred despite the open skepticism of a White House that walked away from the Kyoto Protocol, muzzled its own scientists, and clung to modest voluntary policies at home and abroad that fall far short of what is needed.

With a nation ready to be led on this issue and an international community waiting for the United States to finally stand up, the next president has a pivotal opportunity to shift course and take bold, broad action. His or her first mission

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must be to implement a serious, mandatory climate program at home, not only because the United States is a dominant producer of heat-trapping greenhouse gases, but also because it will have no international credibility unless and until it acts decisively at home. At the same time, the president should pursue a layered diplomacy centered on a core group of major emitters; active engagement with key bilateral partners, especially China; and the multilateral UN Framework Convention on Climate Change (UNFCCC).

The risks inherent in failing to act decisively are simply too great. The warming that has occurred to date has contributed to extreme weather events, such as floods, droughts, and heat waves; unprecedented melting of Arctic ice and glaciers; and an increased incidence of Category 4 and 5 hurricanes, among many other things. If we stay on our current warming path, the world's climate scientists predict that rising sea levels will threaten coastal cities from Hong Kong to Amsterdam, Bangkok, Calcutta, and Charleston. As many as 1–2 billion people will face increased water scarcity; thawing permafrost will destabilize building foundations and other structures; declining crop yields will lead to increased hunger in the dry tropics, including vast regions of Africa; and 20–30 percent of global plant and animal life will face extinction.<sup>1</sup>

The scale of the global response needed to contain this problem is immense. In their noted "wedges" analysis, Robert Socolow and Stephen Pacala of Princeton University describe a set of 15 major energy policies, any seven of which would allow us to bring global emissions down to an acceptable level during the next 50 years and all of which are formidable.<sup>2</sup> They include increasing the fuel efficiency of the world's auto fleet from 30 miles per gallon (mpg) to 60 mpg, increasing the efficiency of coal-fired power plants by 50 percent, improving the efficiency of buildings and appliances enough to cut their carbon dioxide (CO<sub>2</sub>) emissions by 25 percent, and capturing and sequestering the CO<sub>2</sub> from the equivalent of 1,600 large (500-megawatt) power plants.

From the outset, the new president should make clear that the climate and energy challenge is a top presidential priority. The challenge and opportunity ahead is enormous, nothing less than transforming the energy foundation of the world economy. The United States can succeed only with the president's fully committed leadership to establish the right rules and incentives and to marshal vigorous public and political support.

## **The Home Front**

The starting point for constructing a strong, credible domestic climate program is to identify a science-based objective. After taking office, the new president should request that the National Academy of Sciences (NAS) report back promptly with its view on an acceptable range of warming and greenhouse gas concentration limits. Many leading climate scientists have already expressed views on these matters. In February 2007, for example, John Holdren, a leading science policy expert at Harvard University, said in a statement to UN secretary-general Ban Ki-moon that "[i]f the build-up of greenhouse gases pushes the global average surface temperature past 2°C–2.5°C [3.6°F–4.5°F] above the preindustrial level, the danger of intolerable and unmanageable impacts of

climate change on human well-being becomes very high."<sup>3</sup> Right now, the average global surface temperature is approximately 0.8°C (1.4°F) above preindustrial levels.

Establishing political consensus in the United States on the tough measures necessary is critical and will depend on public understanding that the president's program is based on science and is essential to insure against grave, even catastrophic danger. The NAS should be he U.S. will have no international credibility until it acts decisively at home.

requested to review its conclusions every few years in light of new facts on the ground and the ever-improving capacity of science to project climate trends.

To keep warming at safe levels will require a huge effort. In its most recent report, the Intergovernmental Panel on Climate Change (IPCC), a body of more than 2,000 scientists acting under the auspices of the United Nations, estimates that, to hold average global temperature to  $2^{\circ}C-2.4^{\circ}C$  ( $3.6^{\circ}F-4.3^{\circ}F$ ) above preindustrial levels by the end of this century, the concentration of greenhouse gases in the atmosphere would need to stay in the range of 400 parts per million (ppm) of CO<sub>2</sub>. The current CO<sub>2</sub> concentration is approximately 380 ppm. Staying close to the target would require global emissions in 2050 to be 50–85 percent below 2000 levels. To hold temperature increase to a range of  $2.4^{\circ}C-2.8^{\circ}C$  ( $4.5^{\circ}F-5^{\circ}F$ ), the IPCC estimates that global emissions in 2050 would need to be 30–60 percent below 2000 levels.

To achieve goals at that order of magnitude, a domestic program to limit  $\rm CO_2$  emissions should include a broad-based mechanism, such as an aggressive cap-and-trade program, which would limit carbon emissions across the entire economy and establish a price on carbon, as well as a far-reaching set of complementary policies, such as efficiency standards, consumer and production tax credits, and steeply ramped up research and development (R&D) to bring existing technologies to market and to pursue longer-range, game-changing innovations. The complementary policies should focus above all on transportation, a sector powered almost entirely by oil, and on electricity, for which burning coal produces 50 percent of the power generated but more than 80 percent of  $\rm CO_2$  emissions.<sup>4</sup> These two sectors produce more than 70 percent of U.S.  $\rm CO_2$  emissions from energy.

A cap-and-trade plan would set a national limit on emissions, decreasing over time, which would be subdivided among carbon-emitting entities such as oil refineries, power plants, and energy-intensive industries. In any given year, the government would either allocate emissions rights or auction them, and companies would then buy and sell the rights among themselves, depending on whether they had more or fewer permits than they needed to meet their obligations. Auctioning most permits is the better approach. Auction revenue could be used to offset higher energy costs for low- and moderate-income people, ease the transition for businesses and workers hurt by low-carbon policies, and finance clean energy investments. Allocating more than roughly 15 percent of the permits would result in a windfall for companies because they will pass on their higher costs to consumers in any event. As a result of the program, carbon would finally have a price, which would spur businesses and families to use more energy-efficient products and low-carbon fuels.

A carbon tax would accomplish much the same thing with less administrative complexity. Cap and trade, however, more clearly sets an emissions limit and would be more politically appealing both because raising taxes is always difficult and because cap and trade has an excellent track record, solving the U.S. acid rain problem at around one-fourth of the projected cost.<sup>5</sup>

To reduce emissions from electric power generation, several additional steps are necessary, including establishing high-efficiency standards for buildings and appliances; reversing utility incentives so that utilities profit from the kilowatts saved, not just the kilowatts used; bringing to scale the clean coal technology that will allow utilities to capture  $CO_2$  emissions and store them in geologic sites; and dramatically expanding the use of renewable energy through purchasing mandates for utilities, R&D investments, and tax credits.

Reducing oil emissions requires a sharp boost to fuel economy standards, which have stalled for more than 20 years, and robust tax incentives to consumers and domestic manufacturers to move hybrid cars rapidly into the fleet. Low-carbon fuels should be pushed into the market through stronger renewable fuel standards, increased R&D, and policies to ensure that service stations are equipped to offer low-carbon fuel to their customers.

## A Layered Diplomatic Approach

Although a vigorous domestic program is absolutely necessary, it is not sufficient. The United States produces around 20 percent of global emissions, which is a huge amount, but that still leaves 80 percent produced elsewhere. Thus, a global response to climate change is essential. To date, that response has been shaped above all by the Kyoto Protocol, an accord that marked the moment when the international community first agreed on specific policiesbinding emissions cuts for industrialized countries in the 2008–2012 period—to slow the pace of global warming.

Yet, the Kyoto Protocol has also underscored the difficulties of fashioning a global solution. Most famously, President George W. Bush declared the treaty "dead," but it is highly unlikely that the Senate would have ratified it even under a Gore administration. Australia has also rejected the protocol, and Canada has backed off from implementing plans it had once put on the table. The Kyoto accord also exempted developing coun-

tries from making commitments. This action was appropriate in light of the industrialized world's much greater historic responsibility for producing emissions and its much greater wealth. That exemption, however, is no longer sustainable for the more advanced developing countries, such as China and India, in light of current emissions trends.

The United States can succeed only with the president's fully committed leadership.

The Kyoto Protocol parties are now look-

ing to begin negotiations on a second round of emissions cuts, covering the next commitment period. Many of them hope to agree on ambitious terms for such a negotiation at the Bali climate meeting in December 2007 and to reach a new post–Kyoto Protocol agreement at the 2009 climate meeting in Copenhagen. This scenario, however, faces real hurdles. Consensus is required for terms to be accepted in Bali, and there is no basis for believing that the Bush administration will accept the kind of strong mandate that the other key parties want. It is also unlikely that developing countries such as China and India will show any willingness to accept mandatory commitments.

Against this backdrop, the next U.S. president should pursue a layered diplomacy: seeking consensus on ambitious commitments and policies with a group of core countries, developing a special bilateral strategy for engaging China, and encouraging wider, deeper participation at the global level.

First, as is true domestically, the global community should be guided by a scientifically grounded understanding of long-term temperature and concentration targets. Unless the publics of relevant countries believe that strong policies to contain global warming are critical, the effort will fail. Scientists, not politicians or diplomats, should be relied on to speak to these questions. The IPCC, joint winner of the 2007 Nobel Peace Prize, should be asked to spell out its view about the temperature increase and greenhouse gas concentration level that need to be avoided, and it should update this conclusion every few years. The diplomatic process could then take note of these objectives and use them to guide the nature, timing, and vigor of the commitments that countries negotiate.

Second, throughout this process, the order of the day for a new president must be to do what works: secure international commitments; engage in large-scale, concrete action; and seek practical progress. This is no time to indulge in orthodoxies or in the kind of overextended discussion that marked too much of the six-year Kyoto Protocol negotiation. As the United Kingdom's climate envoy, John Ashton, said recently, "We now need to stop talking about talking and start deciding about doing."<sup>6</sup> The next president should approach this issue the way President Franklin Roosevelt approached the Great Depression: in a spirit of restless experimentation.

#### THE ANCHOR: A CORE-COUNTRY CONSENSUS

The United States should anchor its climate change diplomacy in a core group of key countries. The half-true cliché about climate change is that it is a global problem that requires a global solution. Climate change is certainly a global challenge; one ton of  $CO_2$  emitted in India has the same affect on the atmosphere as the ton emitted in Indiana. Yet, a core group of countries accounts for the lion's share of global emissions.

Elsewhere, to address critical ecological dangers, we have proposed creation of a group of eight key developed and developing countries, an E-8, to meet annually at the head-of-state level.<sup>7</sup> An E-8 would consist of Brazil, China, the European Union, India, Japan, Russia, South Africa, and the United States, a group that represents the key economies in each region of the world. Such a group would account for more than 70 percent of global emissions. Although global environmental issues have typically been addressed in broad UN conventions—there are 191 members of the UNFCCC—the process is often maddeningly cumbersome, riven by competing blocs of countries and slowed by unconstructive demands. The negotiating is typically done by technical-level bureaucrats not empowered to make the necessary compromises, with highlevel officials often contributing too little too late.

The strength of a small forum patterned after the Group of Eight is that it can force high-level engagement and create a kind of global board of directors able to operate in a streamlined manner outside the bureaucracy and politics of the UN. It would be small enough to facilitate informal, productive dialogue but have a large enough environmental footprint that concrete agreements among its members could have an important global impact.

The core group would have a dual mission. First, it could seek to develop and agree on ideas for the post–Kyoto Protocol global regime. Second, it could push ahead with specific actions within the group itself. For example, the core group could seek agreement on meeting aggressive targets to sharply boost energy efficiency, bring clean coal technology into full-scale commercial use, rapidly increase the number of hybrid vehicles on the roads, significantly raise the percentage of renewable energy used to produce electricity and fuel, and prevent deforestation, which currently accounts for 20 percent of global  $CO_2$  emissions.

Such agreements would not obviate the need for broader targets and timetables, but they could promote real, cooperative action and make broader

targets more achievable. Bush's Major Emitters forum could have served as this core group had the president been prepared to push for robust commitments backed up by a mandatory U.S. program. As he was not, this group is destined not to accomplish much.

The starting point is to identify a sciencebased objective.

# A CRITICAL PARTNERSHIP: CHINA

Without China's concerted engagement, the world cannot contain global warming. China's coal-powered economic engine is staggering. In 2005, China produced 35 percent of the world's steel, up from 13 percent in 1996.<sup>8</sup> It produces one-half of the world's cement and flat glass and one-third of global aluminum. Between 2000 and 2030, China is expected to erect one-half of the world's new buildings.

Moreover, its energy use is inefficient. Chinese steel producers use 20 percent more energy per ton than the international average, and cement makers use 45 percent more. China uses seven times the resources to produce \$10,000 worth of goods as Japan does, six times as much as the United States, and almost three times as much as India. Its buildings are two-and-a-half times less efficient than those of Germany, and 95 percent of new buildings fail to meet its own codes for energy efficiency.

China and the United States together will account for some 40 percent of global emissions in 2007. By the end of 2007, Fatih Birol, chief economist for the International Energy Agency, projects that China will surpass the United States as the world's largest emitter of  $CO_2$ , two years faster than experts were predicting even a year ago.<sup>9</sup> Moreover, if it stays on its business-as-usual path, he warns that, in 25 years, emissions from China will be growing twice as fast as emissions from the entire 30-member Organization for Economic Cooperation and Development.<sup>10</sup>

How then should the United States approach China? It should start by seeing China as a partner. The United States and China are the two 800pound gorillas in the room and have a profound common interest in working together. Energy and environment should become an area of constructive cooperation in a relationship that will inevitably have its share of friction. Such a partnership will require treating these issues as a top priority. If they are relegated to their traditional place in the second tier of mutual concerns, Beijing and Washington will not succeed.

Next, the United States needs to draw a clear linkage between addressing climate change and advancing the development agenda that absorbs China's

Eight countries account for more than 70 percent of global emissions. leadership. Chinese officials see climate change as important, but they are more urgently focused on environmental degradation, which is so serious that it could upend their economic juggernaut. In the words of Pan Yue, a vice minister of the State Environmental Protection Administration, "The [economic] miracle will end soon because the environment can no longer keep pace."<sup>11</sup>

Sixteen of the world's 20 most polluted cities are in China, particulate pollution in Beijing is six times higher than in New York, and premature deaths from respiratory disease are estimated in a joint World Bank/China research project at 750,000 per year.<sup>12</sup> Water pollution is just as bad. Ninety percent of the aquifers in China's cities are polluted, and more than 75 percent of river water in urban areas is unsuitable for drinking or fishing. This is not just China's problem. On any given day, 25 percent of the particulate pollution in Los Angeles is made in China, as is the acid rain problem in Japan and Korea.

The same policies that China desperately needs to implement to clean up its environmental act, in particular, large cuts in its coal emissions, will mitigate its climate change problem as well. Washington needs to frame its partnership with Beijing as a mission to achieve these twin goals. China could focus on any number of sectors to great effect, such as achieving much greater energy efficiency in factories and buildings, substituting more natural gas for coal, deploying clean coal technology, or making a much greater push toward renewable energy.

Yet, as Elizabeth Economy recently described, China needs much more than investment and technology to shift toward clean energy.<sup>13</sup> It needs a serious reform of its regulatory system and incentive structure. Although many environmental laws are on the books, enforcement is very weak and left to local officials who are rewarded more for economic growth than for protecting the environment. The United States, preferably in concert with partners from Europe and Japan, could offer much in terms of environmental technology and the capacity to mobilize investment, but the Chinese have a pivotal role in creating the incentives and enforcement structures essential to effecting real change. A partnership of that kind, whether focused on coal, energy efficiency, or renewable energy, could bring profound environmental benefits to China and the world as well as economic benefits to U.S. technology companies.

# **Beyond Kyoto**

Overall, the United States must pursue robust commitments from all major countries but should be flexible about the nature of these commitments. In principle, the most desirable policy option remains the core tenet of the Kyoto Protocol—binding emissions targets—agreed to by developed countries and as many advanced developing countries as possible. Targets set a clear, measurable objective for the parties, allow for maximum flexibility for countries to choose their own policies to meet their target, and set the stage for emissions trading between countries, which can substantially reduce the cost of compliance.

This time around, these should be relatively long-term targets that decline over time, both so that they provide a useful basis for planning by governments as well as businesses and so that they can be more vividly understood as part of a long-range plan to contain global warming. One of the defects of the protocol was that the targets appeared to be both difficult and ineffective, in part because they were limited to a single five-year time period and did not link up to a longer-range, scientifically based understanding of how to solve the problem. The new agreement should include a built-in review to allow the next period's targets to be adjusted as necessary in light of new facts and science.

## DIFFERENTIATE DEVELOPING COUNTRIES

To make this regime work, key developing countries, including but not limited to the special case of China, will have to accept genuine commitments. After all, developing countries are going to be the driving force in the growth of global emissions going forward. They already account for roughly an equal quantity of emissions as developed countries and, based on current projections, will account for more than 75 percent of emissions growth in the next 25 years.<sup>14</sup> Their deep concerns about equity and about their right to lift their citizens out of poverty are manifestly fair. Yet, unless they follow a cleaner path to development than was followed in the nineteenth and twentieth centuries, global warming will become a catastrophe.

Thus, the historic developing country bloc—the so-called Group of 77 (G-77)—must be treated differentially. Large numbers of developing countries are still so poor and contribute to global warming still so minimally that they should continue to be exempt from climate change commitments. The U.S. mission with regard to those countries should be to help them build

the capacity to adapt to climate change, monitor emissions, and introduce lower-carbon methods of producing energy. Yet, more-advanced developing countries, such as Argentina, Brazil, Chile, China, India, Indonesia, Mexico, South Africa, Thailand, and others, should also make their own kind of solid commitments.

Those commitments would need to be targets, albeit less stringent than those of the industrialized countries, or policy undertakings by sector—such as building and appliance efficiency, hybrid cars, clean coal, renewable energy, or forest preservation—or on an economy-wide basis, such as a cap-and-trade plan or a carbon tax. The key to working with these advanced developing countries, whose per capita income and emissions are still relatively low, will be to help them link the task of reducing emissions to other national development priorities, whether they be environmental protection, job creation, public health, or other needs.

That policies such as these may be pursued by countries without an overall target does not imply any lack of weight. The McKinsey Global Institute has written that a concerted effort to boost energy efficiency could produce "spectacular" results, cutting the growth in global energy demand by more than one-half in 15 years.<sup>15</sup> Additionally, as noted, the Socolow and Pacala wedge analysis describes sectoral policies that would have large-scale impact in reducing emissions.

#### A SUPPLEMENTAL APPROACH

However appealing a new protocol built around declining targets and robust policies might be, that approach cannot be the only tool in the diplomatic kit. The effort to agree on such a treaty could fall short for any number of reasons. It is by no means clear, for example, that critical developing countries, such as China and India, will make any significant commitments that they perceive as being imposed by the UNFCCC. Nor will this reluctance necessarily disappear just because the United States enacts its own mandatory domestic climate program. Moreover, the parties could find themselves tripped up by demands from the Organization of the Petroleum Exporting Countries for payments to compensate them for declining petroleum sales in a lower-carbon world. This scenario is not far-fetched; demands for compensation are a perennial feature of UNFCCC negotiations.

The United States' own ratification process meanwhile presents special challenges. Ratifying a treaty is much tougher than passing domestic legislation, both because the Senate is classically hostile to requirements imposed by outside bodies such as the UN and because it requires 67 votes rather than the 51 required for domestic legislation or even the 60 required to break a

filibuster. Even if a U.S. domestic cap-and-trade system were enacted, ratifying a treaty could be difficult, especially if the treaty required changes to elements of the domestic system, as it well might.

Mindful of these hurdles, the United States should also explore a more bottom-up form of targets and trading, in which countries attracted by the cost-saving benefits of emissions trading could pass their own domestic cap-

and-trade legislation and then agree to link their systems. This kind of approach, self-enforcing because countries choose it to get a benefit, was embodied in the General Agreement on Tariffs and Trade (GATT), the forerunner to the World Trade Organization. GATT originally was concluded in 1947 as part of the post–World War II economic arrangements that included the World Bank and the International Monetary Fund. Initially, a more ambitious

The U.S. should start by seeing China as a partner on climate change.

trade body, the International Trade Organization, was proposed, but the Senate refused to ratify it out of concern that sensitive decisions on trade would be handed over to an international entity. GATT, as a nontreaty agreement, did not require ratification. For nearly 50 years, each GATT member pledged to cut tariffs and other trade barriers in a coordinated way. Because they benefited from lower tariffs, they had a built-in incentive to stay in the agreement. If a country was found not to have lived up to its promises, it could either come into compliance or allow retaliatory tariffs.

This model of building targets from the bottom up could be thought of as a General Agreement on Reducing Emissions (GARE). GARE would be led by a small number of countries, such as the industrialized members of an E-8, in the same way that the GATT talks were spearheaded by a core group from Canada, five European countries, Japan, and the United States—the famous "Quad." The Quad drove the initial negotiations, and a relatively small group of 15 other countries signed on to the original agreement.

Under a GARE, countries that wanted the benefit of trading emissions permits would have to establish their own domestic cap, which would set the baseline for trading. If they cut emissions below the target, they would have permits to sell; if they missed the target, they would need to buy permits. The task of deciding whether a country seeking to join had proposed a strong enough target could fall either to other countries in the GARE individually—they could decide to recognize permits traded from the new country or not—or to a joint review panel established by GARE countries. If a country failed to meet its target through reducing its emissions or buying permits, it would forfeit the right to continue in the GARE.

#### MULTILATERAL INCENTIVES TO PARTICIPATE

The United States should also actively explore the use of additional levers to expand global participation in combating climate change. Here again, the global trading system provides a potential mechanism to ensure the fair pricing of carbon-intensive goods. A version of this idea is set forth in a provision

Even if a U.S. capand-trade system were enacted, ratifying a treaty could be difficult. of the climate change bill sponsored by Senators Jeff Bingaman (D-N.M.) and Arlen Specter (R-Pa.) currently pending in the Senate. That provision is unilateral as drafted and for that reason highly problematic. The provision would permit the United States to impose, in effect, a border tariff on the goods of countries that, in the president's judgment, lacked an adequate climate change program.

This might be good domestic politics, especially with regard to China, but it would be a

major mistake. Even though this tariff would not take effect for 10 years, it would be announced soon, and its unilateral nature would be profoundly alienating. After watching the United States disengage from climate talks for the past six years and pursue a unilateral course across a range of national security issues, its international partners are likely to react with scorn to a proposal allowing the United States to tax other countries for insufficient vigor in the fight against global warming. Indeed, they might well single out aspects of the U.S. system they see as inimical to reducing emissions, such as various kinds of subsidies, and tag those for tariffs of their own. This is a prescription for mutual recrimination, not progress.

Considered in a multilateral context, however, the idea embodied in the Bingaman-Specter provision is more interesting. Today, the carbon content of goods is not captured in their price. Economists call those social costs in pollution, health consequences, and the like, "externalities." Yet, if the premise of a climate regime were that countries must capture these social costs by putting a price on carbon, whether by means of a cap-and-trade program, a carbon tax, or equivalent policies to cut emissions, tariffs could then be imposed on the exported products of any country that lacked such policies. The primary purpose would be to eliminate the unfair pricing advantage that those products would otherwise have. Yet, such a tariff would also act as a strong incentive for countries to implement their own carbon policies.

There would be difficult questions of implementation, in particular, how to equilibrate between different emissions-reduction efforts to decide whether or how much tariff is owed and who would make those decisions. In addition, trade experts are generally loathe to use trade mechanisms for nontrade purposes, such as environmental protection, with good reason. The tariff here, however, would genuinely be designed to assure fair pricing, which is an economic good. Nor would this be the only time that trade sanctions were used at least in part for environmental purposes; the Montreal Protocol to protect the ozone layer is a case in point.

Another lever to promote global participation would condition the right to take part in the project-by-project market to sell carbon offsets. This right under the Kyoto Protocol has already been quite lucrative for some developing countries, including China, and is likely to become more so in the future. For example, if a company from the developed world partners with a developing country on a project that reduces emissions compared to what they would have been, the developing country gets the benefit of added investment and income while the company earns credits it can use back home. The right for more-advanced developing countries to participate in this market could be conditioned on their taking significant action to reduce greenhouse gas emissions.

The next president should explore these kinds of tools. Once again, the president must be prepared to be creative and to pursue a variety of options. The hallmark must be doing what works. The last thing an administration needs to support is a new treaty that either is fatally undermined by unwise compromises or is unratifiable in the Senate.

# A Time of Peril and Opportunity

Climate change presents a unique combination of peril and opportunity. These daunting risks should impel us to take aggressive action to insure the world against grave harm. Yet, the opportunity is also remarkable. With the right policies and rules in place, this can be a time of explosive innovation and economic growth. None of this will happen, however, without bold, committed leadership. Above all, that is what the next president must bring to the White House.

#### Notes

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