



“The success of any climate treaty actually depends on the actions of only a relatively small group of nations, perhaps 20 or fewer.”

International Cooperation in a Post-Kyoto World

BRYAN K. MIGNONE

On September 28, 2007, four days after United Nations Secretary General Ban Ki-moon implored diplomats to “confront climate change within a global framework . . . that guarantees the highest level of international cooperation,” US President George W. Bush offered a qualified endorsement of this proposition. At a White House–sponsored “climate summit,” he declared that major economies must “lead the world to produce fewer greenhouse gas emissions,” but that they must do so “in a way that does not undermine economic growth.”

Many participants at the summit, representing 16 of the world’s largest economies, applauded the president’s personal involvement with an issue he had previously dismissed, yet still left Washington at the end of an unseasonably warm September visibly underwhelmed. Reflecting the ambivalence of his peers, German Environment Minister Sigmar Gabriel bluntly characterized the event as “a great step for the Americans and a small step for mankind.” And if the reception from Bush’s international colleagues was lukewarm, the reaction from his domestic critics was positively frigid. David Doniger, speaking on behalf of the Natural Resources Defense Council, echoed the sentiments of many on the environmental left when he called the president’s plan an “ineffective, voluntary, bake-sale approach to the global warming challenge.”

Although the president has avoided taking jabs at the science of climate change in recent years (he summarized it briefly, but accurately, in his speech to the conference), some fear that the US administration is merely shifting to a more creative and potentially more dangerous strategy of procrastination. Certainly the White House continues to

characterize binding constraints on greenhouse gas emissions as the shortest path between general economic prosperity and self-imposed recession.

Procrastination at home tends, of course, to undermine the larger and more fragile process of international negotiation. Aware of this fact at a time when transatlantic relations are ostensibly on the mend, the US administration has tried to dispel any notion that its policies are designed to derail the current UN process for addressing global warming. Indeed, President Bush himself has gone out of his way—in words, if not actions—to support the existing institutional framework. He has suggested, for example, that one consequence of his climate conference would be to “advance negotiations under the United Nations Framework Convention on Climate Change” and that continued high-level diplomacy will be necessary to “reach a global consensus at the UN in 2009.”

How does one reconcile statements in support of the UN process with the administration’s longstanding aversion to binding international commitments? Part of the answer may lie in the fact that the objective of the Framework Convention is distinct from the means by which that objective is to be achieved. The first step in the UN process implied in the Convention—and the only part actively endorsed by the Bush administration—requires nations to collectively decide on a single, long-term environmental goal.

Because this long-term goal is meaningful only to the extent that it can steer near-term policy, the second, more difficult step in the process requires nations to agree on the best path to the shared endpoint. This, in turn, requires them to determine how commitments to reduce emissions should be distributed, in a way that is both equitable and stable, among sovereign states facing vastly different national circumstances. This sort

BRYAN K. MIGNONE is a nonresident fellow in the foreign policy studies program at the Brookings Institution.





of “top-down” approach, in which a schedule of national commitments is derived from a single, collectively rational objective, makes sense in principle, but it has been notoriously difficult to implement in practice.

On the surface, the plan advocated by Bush at his conference appears to be yet another variation of the top-down approach, in the sense that it begins with a diplomatic process aimed at reaching consensus on a long-term environmental goal. But because the administration encourages nations to pursue nonbinding, individually rational policies (such as technology development) to achieve this end, there is in fact no guarantee that the collectively rational objective would ever be realized. As such, the US approach would be more aptly characterized as “bottom-up.”

The division of international climate-policy architectures into either top-down or bottom-up approaches is a convenient analytic tool. The danger of such a taxonomy, however, is that it presents decision makers with a false choice—between agreements in which political constraints are subordinate to environmental goals and agreements in which environmental goals are subordinate to political constraints. Neither of these approaches is likely to yield a sensible climate change agreement in the long run.

With a conventional top-down approach, the environmental objective is decided without regard for what sorts of sharing arrangements are politically viable. As a result, top-down approaches tend to suffer from participation and compliance problems. To many, the Kyoto Protocol perfectly exemplifies the shortcomings of this type of strategy. A bottom-up approach, on the other hand, because it lacks any binding environmental objective, is really nothing more than a fancy way to sanction the status quo. The real challenge for the international community is to steer a path between these two extremes in a way that incorporates the best elements of each.

REVISITING RIO

For more than 15 years, the universally recognized foundation for all international climate policy has been the UN Framework Convention on Climate Change (UNFCCC), a treaty negotiated at the Rio de Janeiro “Earth Summit” in 1992 and

subsequently ratified by 191 nations, including the United States under the first President Bush. Stated simply, the objective, according to Article 2 of the Convention, is “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”

The ambiguity of this objective was partly intentional (it was designed primarily to secure broad participation) and partly unavoidable (the science available at the time was insufficient to translate global warming impacts into quantitative emissions targets). Even so, the interpretive flexibility of Article 2 has often been used to excuse inaction or delay. For example, in withdrawing all US support for the Kyoto Protocol to the UNFCCC shortly after taking office in 2001, President Bush rationalized his decision by noting that “no one can say with any certainty what constitutes dangerous anthropo-

genic interference and therefore what levels of warming must be avoided.”

Such inaction is increasingly difficult to justify today. In February of this year,

the Intergovernmental Panel on Climate Change (IPCC), an international body of scientists and climate change researchers, released a long-awaited report, which concluded “with high confidence that anthropogenic warming over the last three decades has had a discernable influence on many physical and biological systems.” This conclusion—or rather the confidence with which the conclusion was asserted—caught some policy makers by surprise. Before the release of the report, many had mistakenly assumed that the effects of climate change would not be observable with any certainty for at least another generation.

Looking ahead, it is widely known that the impacts of global warming will not be distributed uniformly. In part, such differences result from accidents of geography; in part, they depend on a region’s human capacity to adapt. Taken together, these two factors imply that Africa—whose climate and social institutions are fragile even in the absence of warming—will bear a disproportionate share of the global burden. Indeed, the IPCC projects that by 2020, between 75 and 250 million Africans will be exposed to an increase in water stress because of climate change. Water scarcity, a major problem in itself, will exacerbate other prob-

*Any treaty that neglects rapidly
growing economies in the developing
world is effectively doomed from the start.*



lems, like food security. The IPCC report projects that in some African countries, yields from rain-fed agriculture could decline by up to 50 percent by 2020.

Even robust projections of climate change effects, however, will not eliminate the ambiguity inherent in Article 2 of the Framework Convention. Problems of interpretation arise precisely from the fact that human impacts, however well they might be quantified, will not be felt uniformly around the globe. Russia, for example, may experience a longer growing season (a net benefit for food production), while Bangladesh will probably experience severe flooding, leading to the displacement of millions of people. So, in order to achieve consensus on the concept of “dangerous anthropogenic interference with the climate system,” individual nations must realize that impacts in one region are not wholly separable from impacts in another. In other words, they must come to terms with the fact that instability in one region often leads to insecurity in another.

Fortunately, this seems to be happening. A week after the IPCC released its most recent conclusions, the not-for-profit CNA Corporation published a study, backed by a panel of 11 retired three- and four-star admirals and generals, tying the impacts of climate change directly to security and stability. The authors of the report cautioned that climate change could act as a “threat multiplier” in some of the most volatile regions of the world. They argued that many of the impacts projected by the IPCC (including decreased food production, greater incidence of disease, and water stress) could perturb fragile societies in ways that would enhance the potential for internal conflict, extremism, and authoritarianism. These concerns have since fueled new legislation in the United States requiring the impacts of climate change to be considered in future National Intelligence Estimates. Such legislation implicitly acknowledges that the effects of global warming are likely to be much more diffuse than they first appear.

In light of these and other projections, German Chancellor Angela Merkel and other European leaders have called for a 2°C ceiling on allowable global warming, a proposal that President Bush has offered to “consider seriously” at future meetings. While arbitrary, this target is nonetheless reason-

able. There is growing evidence that a number of fragile systems—ice sheets among them—will respond irreversibly to temperature increases above this threshold.

Moreover, if the target is shown to be too stringent as new science is made available, it can be amended accordingly. This sort of iterative review process has some precedent both internationally (in the context of the Montreal Protocol, which has successfully phased out ozone-depleting substances) and domestically in the United States (in the context of air and water quality regulation). Notably, in almost all cases, new knowledge has led over time to the tightening—not relaxation—of standards.

LEARNING FROM KYOTO

Because the Framework Convention itself does not contain binding provisions, parties to the treaty must negotiate individual emissions reductions at regular high-level meetings (called Conferences

of the Parties or “COPs”). The 1997 Kyoto Protocol, arguably the most well-known international treaty in force today, was the

product of the third such meeting (COP-3). To date, 175 parties have ratified the protocol; of these, 36 (and the European Union) are required under the terms of the treaty to reduce greenhouse gas emissions by specified amounts below 1990 levels during the first commitment period, which spans the five years between 2008 and 2012.

The Convention envisioned an implementation process whereby industrialized nations would take the lead in reducing emissions. This “common but differentiated” strategy was codified in the so-called Berlin Mandate of 1995 (a product of COP-1), which effectively exempted all developing countries from the Kyoto Protocol. Fearing a potentially significant transfer of jobs overseas, US lawmakers countered with the 1997 Byrd-Hagel resolution. It expressed the overwhelming sense of the Senate (the vote was 95-0) that US participation in any binding treaty should be contingent on active participation from the developing world. President Bill Clinton, facing dim prospects for ratification of the Kyoto Protocol, never submitted it to the Senate; President Bush, shortly after taking office, withdrew US support for the treaty altogether. As a result, both the United States and

The most favorable environmental outcomes may also be the most difficult to implement politically.



China, the top two emitters of greenhouse gases worldwide, conspicuously lack obligations under the Kyoto Protocol.

In retrospect, at least three lessons can be drawn from this experience. The first is that, despite the obvious benefits of universal participation, large groups are difficult to manage—and the success of any climate treaty actually depends on the actions of only a relatively small group of nations, perhaps 20 or fewer. The second lesson is that concern over economic “leakage”—the tendency of industrial activity to migrate to regions with less stringent environmental regulations—strongly constrains the set of sustainable cooperative arrangements available to negotiators. The third and arguably least obvious lesson, though it is considerably clearer in hindsight, is that domestic legislative support must precede executive consent, particularly in the United States.

The first lesson, in addition to highlighting an obvious behavioral fact, draws attention to the strong coupling between economic production and emissions of the carbon dioxide that helps to trap heat in the atmosphere.

Today, the same 15 countries that account for four-fifths of global economic output also produce four-fifths of global greenhouse gas emissions. These emissions are divided between developed and developing countries, and while most of the carbon dioxide already added to the atmosphere on account of human activities can be traced to developed countries, the greater share of future emissions is expected to come from the developing world. This implies that, even though universal participation is not necessary (and should be avoided for managerial reasons), participation by developing countries is essential. Any treaty that neglects rapidly growing economies in the developing world is effectively doomed from the start.

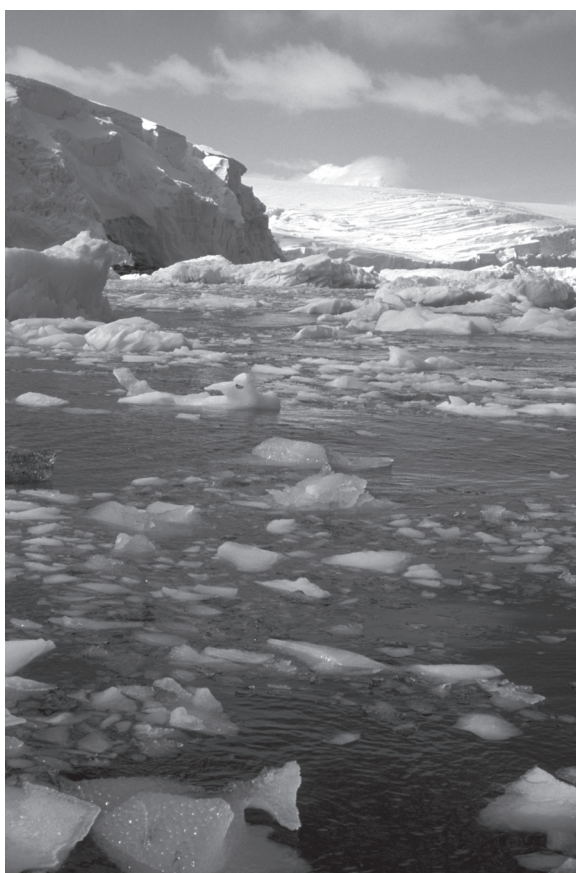
Because universal participation would seem to be the most obvious way to avoid economic leakage, the second lesson appears to contradict the first. But in reality, political concern over leakage tends to exceed its actual economic impact. This political concern, moreover, is directed primarily toward major emerging economies (above all, China and India). Taken together, the first two lessons imply that smaller negotiating frame-

works that allow for targeted participation from both the developed and the developing world are most likely to mitigate political resistance while advancing the desired environmental outcome.

A number of such smaller frameworks have been suggested—from former Canadian Prime Minister Paul Martin’s idea of an “L20,” designed to promote informal discussion at the leadership level, to some calls for a “G8+5,” in which top emitters from the developing world (for example, China, India, Brazil, Mexico, and South Africa) would be combined with the existing group of leading industrialized nations to work out an agreement. President Bush’s idea to bring together the major economies of the world (a “top

16,” for lack of a better term), which he originally proposed at the most recent Group of Eight meeting in June, certainly makes as much sense as any of the others. That said, the success of any framework will ultimately be judged by its results, not by the process that inspired it.

Perhaps by accident, the United States seems to have internalized the third lesson along with the other two. Throughout the 1990s, domestic programs to mandate carbon emissions reductions in the United States never seemed seriously viable. For a variety of reasons—ranging from better science to better publicity to enhanced business interest to new state-level mandates—the prospects for binding domestic legislation do not



Breaking the Ice

Rapid melting is apparent near Antarctica’s Marr Glacier.





seem nearly so bleak today. As a result, President Bush, in supporting relatively weak measures, finds himself effectively in a position opposite to that of his predecessor, who advocated strong measures despite an overwhelming lack of enthusiasm on Capitol Hill.

Today, one of the key unresolved questions of Kyoto is whether the current international system can support (and enforce) binding emissions reductions. The failure of Kyoto to involve two of the most important economies has led some (President Bush among them) to advocate nonbinding, bottom-up strategies over traditional, top-down strategies with targets and timetables. Most of the president's international peers, however, remain unconvinced that this approach is suited to the magnitude of the task at hand.

A NEW WASHINGTON CONSENSUS?

Technology has always been the centerpiece of the Bush administration's approach to climate change, and it has remained so even as the diplomatic strategy has shifted in recent months. Speaking at the White House-sponsored summit, Secretary of State Condoleezza Rice enthusiastically marketed this approach, calling on participants to "cut the Gordian Knot of fossil fuels, carbon emissions, and economic activity . . . through a revolution in energy technology." She encouraged nations to reject the choice between economic growth and environmental protection by advancing "new energy technologies that not only pose no risk to economic growth, but can actually accelerate it."

Unfortunately, the key ingredients of such an energy revolution are never revealed. In his speech at the summit, the president announced plans for a new international clean technology fund aimed at financing energy projects in the developing world. Most of his remarks, however, were simply designed to enhance support for several existing domestic initiatives, such as ones aimed at increasing energy generation from nuclear, clean coal, and renewable power sources.

Such a patchwork of relatively weak policies will almost certainly fail to generate significant transformation, particularly since the very newest technologies will not be deployed in the marketplace without additional incentives. For example, the cost of advanced technology to capture and store carbon from coal-burning power plants might be lowered through government-funded research, but such support will still not make the technology

competitive with conventional coal plants, in the absence of direct regulation.

The largely voluntary approach advocated by the Bush administration can be contrasted with various mandatory cap-and-trade programs currently making their way through Congress, where a renewed push to advance legislation is expected this fall. All of these bills would cap total emissions of carbon dioxide in the economy during a given year, then permits would be issued to regulated entities (like power plants or oil refineries), which would be allowed to trade permits among themselves in order to minimize the overall cost of compliance. These proposals are essentially the mirror image of the president's plan, in the sense that they contain stiff, mandatory targets, but few concrete technological recipes to assist in implementation.

Under this type of plan, mandated emissions reductions can be achieved in one of two principal ways—either by making economic activity more efficient (reducing energy demand) so that less energy is required per unit of economic output, or by decarbonizing energy supply so that less carbon is released per unit of energy consumed. The cost of any such reduction program tends to rise with the stringency of the environmental target. This is because more dramatic reductions require greater technological substitution (away from cheap, carbon-intensive energy supply toward more expensive, carbon-free forms of supply) as well as economic substitution (away from energy altogether as the price rises or as the existing low-carbon energy supply falls short of meeting demand). It follows from this that the most favorable environmental outcomes may also be the most difficult to implement politically.

Together, these considerations suggest that neither technology policy by itself nor regulatory policy on its own is sufficient to achieve an ambitious objective when it comes to stabilizing greenhouse gas concentrations and avoiding the worst-case scenarios of climate change. On one hand, mandatory emissions caps imposed without an accompanying technology strategy are prone to problems with participation and compliance because the implied implementation costs undermine political support. On the other hand, a technology strategy without an accompanying set of regulatory mandates is unlikely to adequately prepare energy markets to accept new technology. Only by combining regulation with a serious technology strategy can climate change objectives





be achieved in an economically—and thus politically—viable way.

BEIJING'S DILEMMA

These lessons apply as well in the international arena as they do in the United States. In fact, because technology is so unevenly distributed around the globe, a technological road map is even more critical in the context of an international cap-and-trade regime. Rapidly growing countries may have trouble reaching targets in an economically sensible way if the gap between projected and policy-prescribed emissions is very large.

For example, to provide the energy necessary for its industrial activities—not to mention its rapidly growing, urbanizing middle class—China is currently building the equivalent of one coal-fired power plant each week. The implied rate of emissions growth from such expansion is staggering; some estimates suggest that China has already surpassed the United States as the largest emitter of carbon dioxide in the world. This means that if China is forced to start reducing its emissions in the near term, it will need to find a way to replace the energy that it now produces from coal. Of course, the same holds for oil, which the Chinese economy demands in ever larger quantities. The United States and other developed countries would face similar challenges under future carbon constraints, but these challenges would be quantitatively less extreme because growth rates in the developed world are much lower.

One way to make up for less carbon-based energy is to consume less energy in the first place. This is the goal of programs to improve energy efficiency. A recent report by the McKinsey Global Institute estimates that the growth in global energy demand could be cut in half over the next 15 years simply by deploying existing technologies that exhibit a return on investment of 10 percent or more. In theory, even greater reductions in energy use could be achieved with technologies that provide lower rates of return. Many such opportunities to improve energy efficiency abound in the developing world, and these should be viewed as necessary components of any comprehensive international technology strategy.

Of course, new energy supply technologies are also key elements of any solution. In China, new

technologies to scrub carbon from the smokestacks of coal-fired power plants, if they could be deployed inexpensively, would have tremendous potential to mitigate the environmental consequences of that country's recent growth. The Chinese, meanwhile, have made vehicle fuel efficiency a national priority, yet new technologies that could revolutionize transport have not yet made it to market. If these sorts of solutions remain economically out of reach, then any strict mandatory control regime would jeopardize the economic growth to which the Chinese leadership remains firmly committed.

In this case, targets may need to be adjusted, or they will simply not be heeded. One solution would be to allow regulated entities to purchase emissions permits at a specified price—a familiar cost-control feature in domestic regulatory programs known as “safety valves.” In effect, these mechanisms ensure that abatement activities will

never exceed a certain marginal cost threshold (in domestic proposals, the threshold often rises with time). An advantage of such proposals is that they reduce the need to

determine up front whether existing (or expected future) technology will be sufficient to achieve the mandated emissions reductions.

A permit trading system and similar mechanisms also have the advantage of potentially generating revenue that could be earmarked for international energy research and development. These sorts of pooled efforts are worth considering even when revenue generation is not part of the international agreement. Other successful R&D initiatives in the larger science and technology realm could serve as models for programs aimed at developing new and more efficient energy technologies.

BALI AND BEYOND

Many environmentalists dismissed the president's climate change summit early on as an attempt to stall or derail the existing UN process. Still, it is difficult to avoid imparting some symbolic significance to an event sandwiched between two major UN climate meetings—talks held in Vienna earlier this year and the 13th Conference of the Parties to the UNFCCC, scheduled for December in Bali, Indonesia. With only a year to go in an administration that is stumbling on many key issues, is it possible that climate change is one area

At this point, those bargaining with the United States can afford to be bold.





in which President Bush believes he can still secure a positive foreign policy legacy?

If so, it is ironic that the largest barrier to progress on this issue is probably the president himself. In the minds of congressional Democrats, large swaths of the general public, and many world leaders, an earnest attempt to address such a major global problem after seven years of neglect is simply hard to take seriously. Domestically, many of Bush's detractors would not be wholly disappointed if one of his last major foreign policy initiatives ended in public failure. In the international arena, with all signs pointing toward a Democratic advantage at the polls in America's 2008 presidential election, many heads of state may hold back at future meetings, preferring to deal with a potentially more diplomatically minded US administration in 2009.

That said, next year marks the start of the first commitment period of the Kyoto Protocol, essentially the beginning of the end for this treaty. Thirty-six nations have accepted binding agreements to reduce emissions below 1990 levels by the first commitment period (2008–2012). If additional emissions-reductions targets cannot be established soon, a gap in the UN Framework Convention could emerge, slowing progress on future commitments and making it more likely that inertia, not international cooperation, will prevail. This is precisely why a "wait-and-see" attitude toward the 2008 US election is a risky strategy. Political success in repudiating the president and his suspect motives could yield a dramatic failure in climate change policy.

Of course, engaging the Bush administration on its own terms is perceived to be equally risky and, for many, even more distasteful. But it need not be so. At this point, those bargaining with the United States can afford to be bold. When 180 representatives from around the world meet in Bali this December, they should consider the possibility that the administration badly wants a diplomatic success. At the talks in Vienna earlier this year, parties to the Kyoto Protocol agreed to consider emissions reductions 25 percent to 40 percent below 1990 levels in an attempt to hold the global temperature increase below 2°C. In addition, members of the European Union have already announced plans to pursue a 20 percent reduction from 1990 emissions levels by 2020, which could be increased to 30 percent if others follow suit. All this gives the Europeans bargaining leverage.

Many seem to implicitly accept one component of the Bush approach touted at his summit—the idea of a sub-global agreement composed of key developed and developing countries—while rejecting another component, the notion of purely voluntary or "aspirational" goals. There will be several more opportunities to advance discussions among a small subset of major economies. If the president leaves office empty-handed because of his unwillingness to consider binding targets, he may have squandered an important opportunity to salvage his legacy. On the other hand, if other participants come away empty-handed, they will assume they can simply come back in 2009 to secure a more favorable deal. The pressing question, though, is not how long they can wait: It is how long the climate can wait. ■

