

Reconstructing Climate Policy

Richard B. Stewart and Jonathan B. Wiener

I. Introduction and Summary

As of mid-2002, global climate policy appeared to be in an awkward spot. The Kyoto Protocol had been ratified by the EU and its member states and by Japan, and ratification seemed likely (though not guaranteed) by Canada, the Russian Federation, and Poland and other industrialized countries with economies in transition (EIT). If all of these countries ratify Kyoto, it will enter into force. Even if Kyoto enters into force, however, it would cover less than half of global GHG emissions. The United States, responsible for about a quarter of all greenhouse gas (GHG) emissions, remains on the sidelines, with no present intention of ratifying the Protocol and few signs of engaging in global climate policy efforts. Although President Bush has proposed a set of tax credits and voluntary measures intended to reduce future emissions intensity (emissions per dollar of GDP), he has repudiated regulatory limitations on emissions. Further, the Kyoto Protocol includes no emissions limitations on developing countries, whose GHG emissions are increasing rapidly and will surpass those of the industrialized countries by 2020 or so; China's emissions alone already account for over 13% of the world total CO₂ emissions. Developing countries have staunchly opposed any limitations obligations, asserting (with considerable justification) that the current buildup of GHGs in the earth's atmosphere is largely the responsibility of the wealthy countries, who have emitted much larger amounts of GHG in the course of industrialization and who currently maintain far more GHG-intensive lifestyles.

But without the participation of the U.S. and major emitting developing countries, which further account for over half of global GHG emissions, Kyoto (or any other international effort to address the risks of climate change by curbing GHG emissions) is doomed to fail. Ratification of Kyoto will be a largely symbolic victory unless all major GHG emitting countries join in some form of effective international GHG regulatory regime in the relatively near future. In addition to Kyoto's limited coverage, its design, while embodying several salutary elements, has significant flaws – most notably the failure to set regulatory targets in accordance with emissions pathways that appropriately balance relevant costs and benefits. Adverse effects from climate change are a serious enough prospect to warrant some well-designed, cost-effective regulatory measures. Accordingly, ways must be found to build a new and more inclusive architecture for global climate policy, through fundamental modification of the current Kyoto structure, by developing alternatives outside the Kyoto structure, or both.

We examine how the present situation in climate policy arose and the potential steps forward from the current impasse. We summarize the current state of information

regarding the extent of warming that would be caused by increasing uncontrolled GHG emissions, the impacts of warming, and the costs of GHG emissions limitations. We explain why participation by all major GHG emitting countries is essential in order to curb future GHG emissions, and also note the significant obstacles to obtaining such participation. We argue that it is in the national interest of the U.S. to participate in such a regime, provided that it is well-designed. We then discuss the elements of sound climate regulatory design, including maximum use of economic incentives, the comprehensive approach, and other flexibility mechanisms; participation by all major emitting countries including developing countries; regulatory targets based on longer-term emissions pathways set to maximize net societal benefits; and effective arrangements to assure compliance with regulatory obligations by nations and sources. We evaluate the successes and failures of Kyoto in light of these elements. Finally, we propose a series of U.S. initiatives at the international and domestic levels, with the aim of engaging the U.S. and major developing country emitters such as China in the global GHG regulatory effort and correcting the remaining defects in the Kyoto design. Although several alternatives to the current Kyoto regime have been proposed, we argue that the best approach for surmounting the current global climate policy impasse is a new strategy that would lead, sooner or later, to simultaneous accession by the U.S. and China (and other major developing country emitters) to a modified and improved version of the Kyoto agreement.

GHGs are generated globally by many different human activities in many different sectors through the use of more or less deeply embedded technologies and practices. Although some substantial limitations in GHG emissions may be achieved in the near term at low (or perhaps even negative) cost, significant limitations will require major changes in production and consumption technologies, investments, and practices; these structural changes can only be accomplished over a longer time scale. The transition from a high- to a low-GHG economy will not be a free lunch. But if the transition is managed wisely, enlisting all major emitting countries and using the most cost-effective and efficient means (including comprehensive coverage, sinks, and global emissions trading) to achieve sound targets over appropriate time scales, there should be no significant adverse effect on overall prosperity in either the developed or the developing countries. Successful technological innovations and institutional reconstruction will allow high standards of lifestyles to be maintained. Over the longer term prosperity does not require ever expanding use of fossil fuels and ever rising GHG emissions. Indeed if the adverse effects of climate change are or may be large, then intelligent climate policy along the lines we advocate will *enhance* overall prosperity by avoiding significant climate damages at low cost.

A. Climate Policy Today

Following the entry into force of the 1992 Framework Convention on Climate Change (FCCC), the Kyoto Protocol to the FCCC was negotiated in December 1997. Responding to a 95-to-0 vote in the U.S. Senate against ratifying any climate treaty lacking meaningful participation by developing countries, the Clinton administration, which had signed Kyoto, never submitted it to the Senate. Further multilateral negotiations on implementing Kyoto hit a stalemate at The Hague in late 2000. In March

2001, President Bush announced that the U.S. would no longer pursue the Kyoto Protocol; so far, he has not proposed an alternative. By June 2001, many informed observers expected the Kyoto process to fall apart. Yet it did not. At the 2001 negotiating sessions in Bonn and Marrakech, the other countries of the world reached a compromise to enable implementation of the Kyoto regime, without U.S. participation and without emissions limitations on developing countries. In February 2002, President Bush reiterated his decision to stay out of the Kyoto Protocol, and not to seek any domestic limitations on U.S. GHG emissions. What should the U.S., and the world, do now?

Ironically, the agreements reached at Bonn and Marrakech in 2001 to implement the 1997 Kyoto Protocol were in important respects a victory for U.S. climate policy; the U.S. delegation was a wallflower at its own victory party. For both environmental and economic reasons, the U.S. has long advocated two key elements: a comprehensive approach to limiting net GHG emissions (including methane and all other major GHGs, not just CO₂, and also sinks such as forests); and international GHG emissions trading. These two ideas were formulated and proposed in the first Bush administration and championed in the Clinton administration, often against opposition from Europe. At U.S. insistence, the FCCC and the Kyoto Protocol adopted both of these ideas, and in Bonn and Marrakech the participating countries agreed on rules to implement them (subject to certain restrictions) despite U.S. rejection of the Protocol as a whole. So why would the U.S. not sign on? Although further liberalization of emissions trading and wider authorization for sink credits are important, the major stumbling blocks to U.S. participation have been the absence of any emissions limitations obligations for major developing countries, and the arbitrary character of the Kyoto emissions limitation targets. In this article we propose steps to solve these defects and thereby to enable accession by the U.S. and major developing countries to an efficient cap-and-trade regime with sensible regulatory rights.

Since the Bush administration abandoned the Kyoto process in early 2001, there have been a number of U.S. domestic developments which suggest possible future movement on climate policy. In 2001, a National Academy of Sciences panel convened at the request of President Bush issued a report confirming that projected increases in unregulated GHG emissions would likely cause significant warming. In February 2002, President Bush proposed a package of climate measures that announced a voluntary program for limiting GHG emissions based on a national goal of reducing GHG intensity by 18% by 2012 (versus a projected 14% reduction by that year based on current trends). He proposed to strengthen current arrangements for voluntary registration of GHG reductions with the possibility of tradable credits against future regulatory requirements for businesses that achieve demonstrated real reductions, and proposed tax and other non-regulatory incentives and measures to reduce GHG emissions. ***

It thus remains unclear where the U.S. will go in the climate policy arena in the years ahead. We suggest that two most frequently heard options – join Kyoto in essentially its current form now, or stay out of any international agreement for the indefinite future – are both unsatisfying. Instead we suggest a proactive but alternative approach: the U.S. should engage China (and other major developing countries) in a parallel regime, and

then seek to enter a suitably modified version of Kyoto together. The modifications to Kyoto should include the participation of developing countries on appropriate terms, the removal of unjustified restrictions on the comprehensive approach and international emissions trading, and the adoption of emissions limitation pathways based on maximizing net societal benefits. These measures would be good for the U.S. and for the world.

B. Kyoto's Persisting Flaws

As originally negotiated in 1997, the Kyoto treaty contained several salutary features, including emissions trading and a comprehensive approach, but also three basic flaws: it set emissions limitations for the industrialized countries without clarifying the means for achieving them; it failed to provide any emissions limitation obligations for developing countries, even in principle, now or later; and the limitations that it established for the industrialized countries were short-term and arbitrary. The negotiations at Bonn and Marrakech have substantially remedied the first flaw, but the second two flaws remain and must be addressed in order to build a sound global climate regime.

First, Kyoto established emissions limits without clarifying the means (and hence the costs) of compliance, including the role of sinks and the scope of emissions trading. For example, Kyoto Article 17 authorized emissions trading in two short sentences that left many open questions. In the post-Kyoto negotiations, countries and interest groups who opposed these flexibility mechanisms sought to block their elaboration, deriding every attempt to implement flexibility as a “loophole” or a “weakening” of the treaty. If the flexibility mechanisms had been well defined at the outset, such obstructionism would have been deflected, and countries would have been better able to forecast the actual costs of agreeing to targets. Explicitly authorizing wide use of the flexibility mechanisms would have assured significant reductions in the costs of compliance, thereby attracting participation. European opposition to U.S. advocacy of sinks and emissions trading was the main reason for the deadlock in the talks at The Hague, after which the U.S. was understandably dubious about joining Kyoto.

Surprisingly, however, at Bonn in July 2001 (with the U.S. on the sidelines) the EU and developing countries gave Japan and Canada much of what they had refused to give the U.S. at The Hague: broader use of sinks (although subject to quantitative restrictions) and of emissions trading (with no quantitative restriction on “supplementarity,” but with a new “reserve requirement” on sellers). In October 2001, the EU proposed to create its own GHG emissions trading system. And at Marrakech in November 2001, the EU agreed to give Russia almost twice as large a quantity limit on credit for sinks as Russia had requested in Bonn. What explains the EU's shift toward accepting sinks and trading? Does it reflect a newfound appreciation for flexibility, or does it reveal a consistent symbolic politics of using the climate issue to shame the U.S. – first criticizing U.S. advocacy of flexibility as a loophole, and then quietly embracing cost-saving flexibility once the U.S. could be denounced for staying out of the treaty altogether? Whatever the explanation for belated European openness to flexibility, it bears reminding that the Bonn/Marrakech accords still retain some restrictions on both sinks and trading. These restrictions should be significantly eased or eliminated. Work should begin now on

actually implementing emissions trading on the international level through a comprehensive approach.

Bonn and Marrakech failed to address the second basic flaw in Kyoto: the omission of developing country participation in emissions limits and trading. The U.S. has long sought to include major developing countries in the global emissions limitations regime, for important environmental and economic reasons. All major emitting countries must participate for the treaty to address climate change effectively and avoid shifting emissions from participants to non-participants. The full cost savings to be gained from international emissions trading also depend on the inclusion of major developing countries such as China. Further, competitiveness concerns in U.S. politics – the fear that U.S. firms subject to emissions limitations will be undercut by developing country firms not subject to any controls – make meaningful participation by China and other major developing countries a prerequisite to U.S. treaty ratification. Yet, in an abrupt departure from prior global environmental agreements, Kyoto provides no regulatory obligations for developing countries, now or in the future. Marrakech agreed only to consider in a year's time how to frame the issue for discussion a year after that. Worse, the U.S. is now out as well. Thus, Kyoto now omits the U.S. and China – the world's two largest GHG emitters -- as well as other major developing countries. As a result, Kyoto now omits more than half of global GHG emissions, and this omission will worsen over time because it omits the countries whose emissions are growing fastest. If these omissions are not repaired, Kyoto will prove a costly environmental failure. Accordingly, it is imperative to create incentives to engage participation by major developing countries and, correlatively, to engage the U.S.

Third, Kyoto adopted, and Bonn/Marrakech accepted, a single, short-term set of emissions limitation targets established on an essentially arbitrary basis. The treaty calls for industrialized countries to reduce their aggregate emissions by the first commitment period (2008-2012) to an average of 5.2% below their levels in 1990, the base year selected in the 1992 FCCC. These Kyoto arrangements do not represent sound target setting or equitable burden sharing. As a result of economic growth, emissions in many industrialized countries, especially the U.S., have grown rapidly since 1990, even though GHG intensity (GHG emissions per unit of GDP) has generally declined. “Business as usual” (BAU) emissions (emissions in the absence of regulatory controls) are projected to continue to grow substantially between now and 2010 (and much more for some countries than for others). As a result, various studies estimate that the Kyoto targets would require industrialized countries, as a group, to cut their aggregate emissions by between 16 and 24% below BAU in 2010. Some individual countries, including in particular the U.S., would be required to make even greater reductions. These very sharp reductions were not based on and cannot be justified by an analysis of the socially desirable pathway of emissions controls. As discussed below, they are significantly more stringent than either the restrictions implied by the least-cost path to stabilize global GHG concentrations at various plausible levels, or the restrictions implied by an emissions limitations pathway that balances regulatory costs and benefits and seeks to maximize net benefits to society.

The EU has nonetheless accepted the Kyoto targets, in part because of the availability of unrestricted internal EU emissions trading and the fact that the UK and Germany have experienced dramatic reductions in CO₂ emissions since 1990 for non-environmental reasons: changes in UK energy policies and the economic rationalization of the Eastern sector of Germany following reunification. Thus, relative to BAU, the EU faces much lower emission reduction burdens than those imposed on the U.S. and a number of other industrialized countries under the Kyoto targets. For example, the U.S., whose Kyoto target is 7% below its 1990 level by 2008-12 (seemingly only slightly more stringent than the average required reduction of 5.2% below 1990 for all industrialized countries as a group), has experienced and is predicted to continue high emissions growth over 1990-2010. This growth is due to economic growth (the U.S. also has admittedly done little to curb GHG emissions, but so have most other countries). As a result, the U.S. would be required to reduce its emissions below BAU in 2010 by a whopping 31 to 33%. The U.S. share of all of the industrialized countries' reductions required under Kyoto would be between 50 to 80%. This high relative burden, and concerns about its impact on the competitiveness of U.S. industry, helps explain U.S. resistance to joining Kyoto. Although the use of a comprehensive approach and international emissions trading would greatly reduce the costs of meeting the Kyoto targets for all nations, the U.S. would still be saddled with a heavily disproportionate burden. Further, the Kyoto Protocol says nothing about developing country emissions.

A better approach would be to endorse the principle of setting emissions limitations based on maximizing the net social benefits of climate regulation (balancing costs and benefits). This principle would then be used to develop and refine appropriate time paths of global emissions over several decades, starting gradually and tightening over time, and adopting and adjusting regulatory targets in relation to those pathways and new information. These targets might be expressed in emissions intensity as well as emissions.

C. Moving Forward: A U.S.-China Strategy

The flaws in Kyoto do not justify refusal to face up to the risks of climate change. Yet instead of proposing an alternative to Kyoto, the present Bush administration seems to have embraced a strategy of benign neglect, hoping perhaps that Kyoto will collapse when the time comes to implement it, or that the climate change issue will just go away. It won't. ***

Much attention has focused on two starkly opposed options: America could stay out of the Kyoto regime altogether, thereby thwarting any effective global climate policy. Or America could join Kyoto/Bonn/Marrakech as currently drafted, and then work within the treaty group to promote developing country participation and better-reasoned target-setting as well as to remove restrictions on the comprehensive approach and trading. The first option is contrary to the interests of the U.S. as well as those of the world. The second option is unrealistic; it would require an unlikely about-face by the Bush administration (but might be pursued by his successor). It is also unlikely to result in developing country participation any time soon or to bring about any fundamental change in the existing Kyoto targets and structures. The U.S. is likely to have greater leverage

by first seeking to develop an alternative international GHG regulatory initiative outside of the Kyoto framework and later accomplishing changes in the Kyoto arrangements when they are merged into a new and more inclusive global climate regime.

Accordingly, we urge a third option: that the U.S. stay out of Kyoto for now; take significant domestic actions to prepare to join an international cap-and-trade regime; insist that it will only join a regime that allows full emissions trading under a comprehensive approach, sets regulatory requirements based on sensible emissions limitations pathways, and involves developing countries; *and seek to engage major developing countries in an international cap and trade regime, a regime initially separate from Kyoto.* The U.S. could implement this strategy by reaching an agreement with China for joint entry into a cap-and-trade regime, possibly bringing in other developing countries as well. China already emits 13% of global GHGs; other major developing country GHG emitters include India (5%), Brazil (1.5%) and Indonesia (1%). The U.S., China, and possibly other developing countries could initially establish one or more separate cap and trade systems, independent of Kyoto. Economic and environmental logic would sooner or later likely lead to a merger of such system(s) with a modified version of Kyoto. A virtue of this approach is that it would allow for a few nations to experiment with alternative approaches to international climate regulation, including approaches geared to the needs and interests of developing countries, and avoid the need immediately to begin a fundamental renegotiation of Kyoto that would involve scores of nations. Or, after developing a joint alternative regime, the U.S., China, and others could negotiate together for direct joint accession to a modified version of Kyoto.

By one or another of these means, the U.S., China and other major developing countries could, perhaps within a decade or less, together join an expanded global emissions limitation and trading regime. Neither the U.S. nor China would likely join without the other. China's accession would satisfy domestic U.S. political requirements of meaningful participation by developing countries (especially if other developing countries follow China's lead), improve environmental effectiveness, and reduce global costs through wider participation and expanded emissions trading. When coupled with the other improvements to Kyoto that we propose, this step would meet the stated U.S. objections to Kyoto in its present form and politically enable the Bush administration (or successor) to join the international GHG regulatory effort. At the same time, China, by joining alongside the U.S. (with an assignment of "headroom" GHG emissions allowances substantially in excess of its current emissions), would gain a large market for lucrative allowance sales, additional sources of foreign investment and technology transfer, and additional prestige similar to that attending its recent entry into the WTO.

Further, we argue that the Kyoto Parties would want the U.S. and China to join some version of Kyoto together, and would oppose either one joining on its own. The entry of the U.S. alone would drive up GHG emissions allowance prices sharply, to the detriment of the OECD parties to Kyoto. The entry of China alone would flood the allowance market and depress prices, harming Russia and the Ukraine, the principal sellers under Kyoto. The joint accession of a major buyer (the US) and a major seller or sellers (China and possibly additional developing countries) would ensure a degree of continuing price stability in the allowance market.

As we envision the process, the U.S. might initially approach China alone; if the prospects were favorable, the effort might engage other major developing countries such as India, Brazil and Indonesia. Other OECD countries that are not parties to Kyoto, such as Australia and perhaps Canada, might join in this regime. The EU, Japan, Russia, and other Kyoto parties would be consulted. It is important to note that the inclusion of the U.S. and major developing countries (whether after an initial period of experience under one or more independent trading systems or directly) and the other improvements that we propose could be accommodated within the basic framework of the FCCC and the Kyoto Protocol. Thus, we propose that Kyoto be improved through an evolutionary strategy, rather than scrapped and replaced with something entirely different.

Because it would require a number of years of negotiation and lead time before the U.S. and China (plus others) could together join a successor to Kyoto together (either after initial participation in one or more separate trading systems, or directly), our scenario would mean that the U.S. could not be held to its Kyoto limitations targets for the First Commitment Period in 2008-2012; they would have to be relaxed or postponed, with the U.S. and China joining the cap-and-trade regime under Second Commitment Period targets and beyond. European officials and environmental advocacy groups might resist and denounce such “special treatment” for a “laggard” U.S., but our approach would be far more environmentally progressive than the current posture of permanent U.S. non-participation and no obligations for developing countries. In the end the environmental, economic, and competitiveness advantages of joint accession by the U.S. and China would likely be so overwhelming as to carry the day. Indeed, in our view, the EU has made a strategic error over the last several years insofar as it has been focusing its efforts on cajoling the U.S. into joining Kyoto while leaving China and other major developing countries out, when it was clear that the U.S. would not join Kyoto without significant developing country participation. The EU should have been working (harder) to attract China and other major developing countries, and thereby to engage the U.S.

China, however, may well perceive only costs from joining, not only because abatement obligations would be perceived as costly but also because many forecasts of the impacts of global warming suggest that China would on balance benefit from a warmer world. If so, China will have to be “paid to play.”¹ The most cost-effective way to attract China to join the abatement regime will be through assignments of “headroom” allowances that China can then sell to industrialized countries – just as was done in Kyoto, Bonn and Marrakech to engage Russia and the Ukraine. We believe that, with China’s accession to the WTO and its continued development of a market-based economy, together with the economic benefits that it could reap from selling allowances in return for foreign investments, the prospect for China’s participation are good.

¹ For a more detailed discussion of the design of cost-effective side payments to engage participation in an effective multilateral climate change treaty, see Jonathan Baert Wiener, “Global Environmental Regulation: Instrument Choice in Legal Context,” 108 Yale L.J. 677 (1999).

If China joins there will be both political precedent and strong economic incentives for other major developing countries to join. Because emissions limitations may, for similar reasons, also impose significant social costs on these countries, and provide only modest benefits, they will also probably have to be “paid to play” via headroom allowance allocations.

The issuance of headroom allowances to China and other developing countries poses potential political problems on several fronts. Environmental interests may decry the legitimization of large increases in GHG emissions in these countries. The current Kyoto Protocol, however, condones unlimited increases in developing country emissions; our approach would imply at least some upward limit, while also compensating developing countries for their abatement efforts. Some critics may also oppose the expanded opportunities for firms in industrialized countries to avoid costly domestic emissions limitations by resorting to international emissions trading, but by doing so these firms would be accomplishing equal or greater emissions abatement at lower global cost (and thereby enabling their governments to join or effectively implement the treaty). Other constituencies may resist the significant resource transfers to developing countries that are involved, yet the alternatives are either far more costly domestic abatement, far more costly methods of financing abatement in developing countries (for example through massive infusions of official development assistance), or else abandonment of any effective international GHG limitations effort to manage the risks of climate change. Many are skeptical that a system of international emissions trading, especially one involving developing countries, could be made to work. The challenges to securing agreement on and then successfully implementing any form of broadly inclusive global GHG regulatory regime are indeed formidable. Domestic experience, especially in the U.S., has however demonstrated that emissions trading can work and deliver tremendous environmental and economic benefits. On a global scale, it is far superior to the alternatives in delivering cost savings and attracting developing country participation.