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## **Press Release with Key Points**

For immediate release: \_\_\_\_\_

### **Reconstructing Climate Policy: Beyond Kyoto**

by Richard B. Stewart and Jonathan B. Wiener

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Global climate change policy has reached a stalemate. Europe, Japan, and other major countries have joined the Kyoto Protocol, but the U.S. has stayed out, and China and other developing countries are not subject to emissions limitations under Kyoto. The U.S. and China are the world's largest emitters of greenhouse gases. The result of the current stalemate will be a climate regime that is largely ineffective and unduly costly. In *Reconstructing Climate Policy: Beyond Kyoto*, Richard B. Stewart and Jonathan B. Wiener examine the reasons for this failure, and present steps to redress it. They recommend that the US pursue agreements with China and other major developing countries to limit and trade greenhouse gas emissions, as a first step toward establishing a new global climate regulatory system that cures the defects of Kyoto.

Stewart and Wiener critique both of the options typically posed for American policy: either join Europe in the Kyoto Protocol now, or else stay out and do nothing. They find some sound design elements in the Kyoto treaty, but also significant flaws, including restrictions on international emissions trading and the use of greenhouse gas sinks; the omission of limits on developing countries' future emissions; and arbitrary targets and timetables. Further, there is little prospect in the near term that the Kyoto parties can be persuaded to make the changes needed to cure these defects.

On the other hand, the authors find that U.S. participation in a global climate regulatory regime is justified, provided that it is soundly designed. They conclude that climate change, even given its many uncertainties, warrants prudent regulatory action to prevent damaging overuse of the open-access atmosphere. Drawing on a wide range of studies, they find that the expected long-term net benefits of the Kyoto Protocol would be quite low. But they find that the application of innovative regulatory design features -- including full international emissions trading; fully comprehensive inclusion of all greenhouse gases, sources and sinks; targets set on sensible paths to maximize net benefits; and participation by major developing countries -- would reduce the costs dramatically and increase the benefits substantially. The use of these design features would yield a climate regime that generates appreciable net benefits for both the world and the U.S.

Stewart and Wiener do not, however, conclude that the U.S. should join the Kyoto Protocol now. Doing so would sacrifice U.S. leverage to insist on reforms, while doing little to engage China and other developing countries. Instead the authors argue that the United States should engage China and other major developing country emitters in a new regime that makes full use of the innovative design features needed to correct Kyoto's flaws. This new regime would operate in parallel to the Kyoto regime. Eventually the two could merge to a new global regime employing the design features just noted.

The authors argue that such a scenario would be superior to joining Kyoto or doing nothing, superior to alternative policy options such as global greenhouse taxes, and attractive to the U.S., China, and even Europe. The U.S. would not join a climate regime without China, as evidenced by the unanimous opposition in the U.S. Senate to ratifying Kyoto. China would not join an emissions limitation regime without the U.S., partly for concerns about fairness but also because China's main inducement to join would be the prospect of selling tradable emissions allowances to U.S. purchasers. At the same time, Europe, Japan and Russia would prefer the U.S. and China (and other developing countries) to join together rather than alone. If the U.S. (a large net demander of allowances) joins alone, allowance prices will rise, displeasing Europe and Japan. If China (a large net supplier of allowances) joins alone, allowance prices will fall, displeasing Russia. Joint accession by the U.S. and China would contribute to allowance price stability.

Thus, the current stalemate over Kyoto could pave the way for an unexpected bonus: joint accession by the U.S. and China, with reforms to Kyoto that remove restrictions on flexibility, maximize cost-effectiveness, set sensible targets, and involve developing countries. Without the U.S. and China, Kyoto will amount to little.

The real difficulty in implementing this scenario will not be the U.S., but China. The U.S. faces both costs and benefits from joining. But China may well perceive only costs, because many forecasts of the impacts of global warming suggest that China would benefit somewhat from a warmer world. Thus China will have to be attracted to participate. Stewart and Wiener argue that the most cost-effective way attract China to join the abatement regime will be through assignments of "headroom" allowances that China can then sell -- just as was done in the Kyoto Protocol to engage Russia. This approach promises net gains to China from participating, while reducing the costs to the U.S. compared to domestic abatement.

Through such a new approach, Stewart and Wiener show how the current stalemate over climate policy can be surmounted. Their design points to an effective and efficient climate policy that maximizes net benefits for both the U.S. and the world.

## **Key Points**

- The Kyoto Protocol, as currently structured, will be ineffective. It omits developing countries, restricts flexibility mechanisms, and sets arbitrary targets. Studies indicate that joining Kyoto now would yield net costs to the U.S.

- Climate change is a serious problem, despite its many uncertainties. Prudent regulation is needed to avoid a tragedy of the commons in the open-access atmosphere. The U.S. has important environmental, economic, and strategic interests in joining a sound climate regime.
- Innovative regulatory design can reduce the costs and increase benefits. International emissions trading, and comprehensive coverage of gases and sinks, can together reduce the costs of emissions limitations by over 90 percent, compared to domestic restrictions on energy-sector carbon dioxide emissions. More sensible emissions targets (less stringent than in Kyoto, but more than inaction) would further reduce costs. Engaging developing countries would increase benefits and reduce costs. Together, these design features would yield a climate regime that offers net benefits to the U.S. and the world.
- The U.S. should not join Kyoto now. Prompt accession would undermine U.S. leverage to fix Kyoto's design flaws. And it would do little to engage developing countries.
- The United States should engage China and other major developing country emitters in a new regime that makes full use of international emissions trading, is fully comprehensive in its coverage of greenhouse gases, sinks, and economic sectors, and sets gradual emissions limitations pathways that maximize net benefits. This new regime would operate in parallel to the Kyoto regime. Eventually the two could merge to a new global regime.
- Such a new regime would be superior to the alternatives, including the U.S. joining now, the U.S. staying out, and global greenhouse taxes. The U.S. would not join a climate regime without China, and China would not join an emissions limitation regime without the U.S. Meanwhile, even Europe, Japan and Russia would prefer the U.S. and China (and other developing countries) to join together rather than alone, because of the impact of accession on allowance price stability.
- The most cost-effective way attract China to join the abatement regime will be through assignments of "headroom" allowances that China can then sell -- just as was done in the Kyoto Protocol to engage Russia.

## Book Summary

### Reconstructing Climate Policy: Beyond Kyoto

By Richard B. Stewart and Jonathan B. Wiener

*Global climate change policy has reached a stalemate. This book examines the reasons for this failure of law and policy, and where to go from here. It critiques both of the options typically posed for American policy – either join Europe in the Kyoto Protocol, or else stay out and do nothing -- and instead proposes a new approach that is both sensible and creative. The authors argue that the United States should engage China and other major developing country emitters in a new regime that cures the defects of Kyoto by making full use of market-based incentives such as international emissions trading; ensuring fully comprehensive coverage of greenhouse gases, sinks, and economic sectors; and setting gradual emissions limitations pathways that maximize net benefits. This new regime would operate in parallel to the Kyoto regime; eventually the two would merge. The authors argue that such a scenario would be superior to the alternatives and would be attractive to the U.S., China, and even Europe.*

*Stewart and Wiener were closely involved in the development of the U.S. position on climate policy during the 1989-1993 administration of George H. W. Bush. Wiener also worked on climate policy in the first Clinton administration. Their article in the first volume of the American Enterprise magazine, “A Comprehensive Approach to Climate Change: Using the Market to Protect the Environment” (November 1990) set forth the basic elements of sound climate policy design -- elements that were championed by both the Bush and Clinton administrations. They have continued to research and publish on climate policy, extending their earlier analysis to examine how best to engage major developing countries in an efficient and equitable global climate policy.*

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*A summary of the book follows.*

The United Nations Framework Convention on Climate Change was adopted in 1992, and its Kyoto Protocol was signed in 1997. After the impasse in climate treaty negotiations at The Hague in late 2000, and President Bush’s repudiation of the Kyoto Protocol in early 2001, many informed observers expected the Kyoto process to fall apart. Yet it has not. At Bonn and

Marrakech in 2001, the other countries of the world agreed on the details of implementing the Kyoto regime, and the treaty will enter into force if and when Russia ratifies it later in 2003. What should the U.S., and the world, do now?

Some argue that the U.S. should join Europe and others in ratifying the Kyoto Protocol. Others say that the U.S. should do little or nothing about climate change. This book evaluates both of these positions, and weighs the benefits and costs of climate policy options (both for the world and for the U.S.). It analyzes the impact of innovative regulatory designs on these benefits and costs. The book concludes that neither of the two conventional options is desirable, and that a new third option would be superior: a regime parallel to Kyoto in which the U.S., China, and other major developing country emitters set sensible targets and make full use of cost-saving flexibility mechanisms. This path could yield an unexpected benefit: the Kyoto regime and the parallel regime could eventually merge, bringing the U.S. and major developing countries into a global climate policy that is better than Kyoto and also better than inaction. Further, this third option is essential to a global, effective and efficient regime. The U.S. and China will not join a serious climate regime without each other. Joint accession by the U.S. and China (and other developing countries) would provide the bargaining leverage necessary to remedy the flaws in Kyoto. And, the book argues, Europe, Russia and Japan would actually prefer the U.S. and China to accede jointly rather than alone.

### Kyoto's Flaws

Those who urge prompt U.S. ratification of Kyoto emphasize the environmental, economic and strategic risks of unabated climate change, and call for leadership by the U.S. – which contributes about a quarter of world emissions -- to address this global challenge. They note that the Bonn/Marrakech accords were in some respects a victory for U.S. climate policy, which on both environmental and economic grounds has long favored a comprehensive approach to limiting net greenhouse gas (GHG) emissions, including all GHGs (not just CO<sub>2</sub>) and sinks such as forests; and unrestricted international GHG emissions trading. And they argue that whatever the flaws of Kyoto may be, they can best be ameliorated over time via U.S. pressure for reform from within.

The book agrees that climate change is a serious problem (despite its many uncertainties) that warrants sensible global regulatory action. But despite its sound adoption of the comprehensive approach and international emissions trading, the Kyoto regime remains flawed in three important ways. First, it established obligations without clarifying the means (and hence the costs) of compliance, including the role of sinks and the scope for emissions trading. Although at Bonn, the EU and developing countries gave Japan and Canada much of what they had refused to give the U.S. at The Hague, the Bonn accord still maintains restrictions on both sinks and trading. Moreover, Kyoto omits the major developing countries from the emissions trading system. These restrictions will increase the costs and reduce the benefits of climate policy.

Second, Bonn failed to solve another basic flaw in Kyoto: the omission of developing country participation. Developing country participation is essential on both environmental and economic grounds. All major emitting countries must participate for the treaty to address climate change

effectively. Developing countries will soon emit more GHGs than industrialized countries. Moreover, restricting emissions only in some countries will induce emitting activities to shift or “leak” to unrestricted countries, accelerating the growth in the latter’s emissions. The mere fear of such leakage has been sufficient to move the U.S. Senate to vote unanimously not to ratify any climate treaty that does not ensure meaningful participation by developing countries. And developing country participation in international emissions trading would enable global emissions abatement to be achieved at much lower costs, while also providing developing countries with a valuable flow of resources and technology. Yet contrary to prior global environmental agreements, Kyoto provides no regulatory obligations for developing countries, now or in the future. Bonn failed to redress this deficiency. Worse, the U.S. is now out as well. Thus, Kyoto/Bonn now omits the U.S. and China -- the world’s first and second largest GHG emitters -- as well as other major developing countries. (One prominent alternative to Kyoto, a global system of taxes on greenhouse gas emissions, would also fail to engage action by developing countries.) If these omissions are not repaired, Kyoto will prove a costly environmental failure.

Third, the Kyoto regime set arbitrary and excessively costly targets. It did not address the degree or rate of climate change worth preventing; nor the optimal overall concentrations of GHGs in the atmosphere needed to avoid such climate change; nor the optimal limitation on the flow of emissions needed to achieve such concentrations. Instead it set targets as percentage reductions below 1990 emissions. These targets were not linked to any reasoned analysis of benefits and costs. Nor were they set in terms of reductions from business-as-usual growth, which is a better indicator of cost. Analyses of the cost-minimizing emissions path to stabilize concentrations at various given levels show that much less stringent targets would be needed. And analyses of optimal paths that balance both the costs and the benefits of abatement indicate that targets should be less stringent than Kyoto (though more stringent than the cost-minimizing stabilization path).

Prompt ratification of Kyoto by the U.S. is not likely to lead to reform from within the Kyoto regime. The U.S. would give up much leverage by joining without getting reforms in exchange. A parallel joint regime with China, and the demonstration that this regime works in practice, would offer far greater leverage for persuading Europe to fix the flaws in Kyoto. In any case, the Senate is highly unlikely to ratify Kyoto unless China and other major developing countries join a system of future emissions limitation obligations.

### The Case for Action

Those who urge inaction on climate change emphasize that climate forecasts are highly uncertain, so that the benefits of emissions abatement might be small. They point out that some global warming could even be beneficial, at least for agriculture in some countries in the near-term. And they urge that emissions limitation could be very costly, both for the world and for the U.S. under its Kyoto target. They add that limiting emissions in the U.S., Japan, and Europe, while China and other developing countries face no such limitations, could yield significant leakage of emitting activities to the developing economies and consequent impairment of U.S. competitiveness.

The book agrees with some of these criticisms. It evaluates climate policy in terms of expected net benefits, an approach espoused by careful regulatory analysts. Furthermore, the book emphasizes that under the international law of treaties by consent, a climate policy regime must yield net benefits not only to the world as a whole, but also to each major country whose participation is needed for climate policy to be effective.

The book finds that the Kyoto Protocol, as currently structured, would probably yield expected benefits less than its expected costs, particularly for the United States. Perhaps for this reason, the Bush administration has rejected the Kyoto Protocol and proposed a set of voluntary measures aimed at reducing U.S. GHG emissions intensity (emissions per unit of economic output) but not necessarily reducing total emissions. To many, the administration seems to have embraced a climate policy of benign neglect, hoping that the issue will go away.

It won't. Climate risks are uncertain but nonetheless significant. They warrant a sensible global regulatory response – the creation of efficient global property rules to prevent the overuse of the global atmospheric commons. The U.S. cannot afford to remain on the sidelines while other countries design a global regime that America will later wish it had helped shape. U.S. ecosystems may suffer from global warming, especially if it is rapid. If the U.S. stays out of international climate policy, U.S. businesses subject to eventual U.S. domestic emissions limitations, as well as those with operations abroad in industrialized countries that ratify Kyoto, will be unable to enjoy the compliance cost savings provided by international emissions trading. London, not New York or Chicago, will become the center of the global emissions trading market. There is even the prospect that the EU may impose countervailing duties on the carbon content of U.S. exports, potentially damaging U.S. economic growth and sparking a costly trade war. Severe weather events may be blamed, accurately or not, on the U.S., and become a new flashpoint for anti-American activity. Other countries may be less willing to support the U.S. on international initiatives such as antiterrorism. Thus the U.S. has significant economic and strategic, as well as environmental, interests in helping to shape and participate in an effective international GHG regime -- provided that regime includes full use of the comprehensive approach and emissions trading, includes developing country participation, and sets sensible targets. The book argues that an improved climate policy incorporating these design elements would yield expected benefits to the U.S. and the world that would exceed its expected costs.

Investment in limiting GHG emissions growth can be prudent insurance against the risks of climate change. A recent National Academy of Sciences report requested by the White House confirmed that rising GHG emissions due to human activities are already causing the earth's atmosphere to warm and that the rate and extent of warming will increase significantly over this century. Recent studies indicate that some initial warming and CO<sub>2</sub> fertilization may help agriculture in some areas (including the OECD, Russia and China), but will have adverse impacts in poorer areas; and that the impacts of greater warming will become adverse worldwide over time, including losses of 1 to 2 percent of GDP in OECD countries and 4 to 9 percent in Russia and most developing countries (except China, which is forecast to gain about 2 percent of GDP). There is also the possibility of disruptive changes in ocean currents or other earth systems. But the Kyoto Protocol would only reduce global emissions enough to avoid a fraction

of these future losses, perhaps ten percent, amounting to a benefit of 0.1 to 0.2 or 0.3 percent of GDP in the U.S. and other industrialized countries.

The cost of meeting the Kyoto targets through wholly domestic measures to reduce CO<sub>2</sub> emissions has been estimated at 1 to 3 percent of GDP in the U.S. and other industrialized countries – clearly exceeding the benefits noted above. Yet sound regulatory design can make the costs of climate insurance reasonable and justified. With no constraints on its use as a disposal site for GHG emissions, the atmosphere is being overused in a classic "tragedy of the commons," with eventual significant net losses. Hence some regulatory limitations on GHG emissions are required, in addition to investments in low-GHG technology development and adaptation to a changing climate. Innovative designs can minimize the costs of these regulatory limits. Because of varied GHG abatement opportunities across gases and sectors, the comprehensive approach would reduce costs by about 60 percent (or even more if sinks are counted) compared to regulating CO<sub>2</sub> alone. Because of varied abatement opportunities across countries, international emissions trading (involving all major emitters, including China) would reduce costs by about 75 percent compared to wholly domestic CO<sub>2</sub> emissions limitations. With the 60 percent savings from the comprehensive approach (plus more from sinks) and the 75 percent savings from international emissions trading, the combined cost savings could be 90 percent compared to an energy-CO<sub>2</sub>-only policy with national caps and no trading. Thus, sound regulatory design could reduce the costs to 0.1 to 0.3 percent of GDP.

Engaging developing countries such as China and India would increase the benefits further (by more effectively reducing global emissions) and reduce the costs further (by reducing leakage, and by involving developing countries in emissions trading). And adopting a gradual emissions limitation pathway, with targets set to maximize net benefits, would make the costs even more reasonable. Moreover, the U.S. would reap strategic benefits on other initiatives from its willingness to engage in multilateral climate policy. Thus, the book's design for climate policy would yield a regime with expected benefits exceeding expected costs, both to the world and to the U.S.

The developing countries have strong reasons against agreeing to emissions cuts that would compromise their economic development in order to address an environmental problem created primarily by and of primary concern to wealthier countries. In order to attract major emitting developing countries' participation, the industrialized countries must help finance emissions limitations in poorer countries. The book argues that the most promising method is an international emissions trading system that assigns major emitting developing countries allowances above their existing emissions, providing "headroom" (not "hot air") for future growth and profitable allowance sales, while also reducing costs to industrialized countries. Such a system of emissions trading and headroom allowance allocations to developing countries would be fair and efficient. It would effectively address global emissions while avoiding the competitiveness distortions of leakage, ensuring "common but differentiated responsibility" through industrialized country leadership, reducing the costs to industrialized countries, and providing resource and technology flows to developing countries.

### The Path Forward

The Bush administration was right to question the flaws in Kyoto, but its follow-up appears to have been insufficient. The book proposes a new, third option: the U.S., China and other major developing countries (as well as Australia and other like-minded industrialized countries) should create a parallel climate policy that full use of the comprehensive approach and emissions trading, includes developing country participation, and sets sensible targets. This parallel regime would be a useful source of experimentation and learning with alternatives to the Kyoto rules. It would be much easier to construct than to seek renegotiation of the entire Kyoto accord among all countries. And it could merge the Kyoto regime in the next several years. Meanwhile, the book advocates a series of steps to be taken by the U.S., internationally and domestically, to build this parallel regime and U.S. participation in it.

China's accession should satisfy domestic U.S. political requirements (especially if other developing countries follow China's lead), and reduce U.S. costs through emissions trading. U.S. abatement would meet China's concerns about fairness, and provide China a valuable market for selling its headroom emissions allowances. Moreover, the book argues, Europe, Japan and Russia would want the U.S. and China to join simultaneously and not alone. If one joins without the other, that would distort allowance prices in the Kyoto emissions trading market: prices will rise if the U.S. (a large net demander) joins alone, and fall if China (a large net supplier) joins alone. The EU and Japan will not want prices to rise sharply, and Russia will not want prices to fall sharply.

Thus, the awkward result at Bonn could pave the way for an unexpected bonus: joint accession by the U.S. and China. If China joins, other major developing country emitters are likely to follow. Without the U.S. and China, Kyoto/Bonn will amount to little.

The real difficulty in implementing this scenario will not be the U.S., but China. The U.S. faces both costs and benefits from joining. But China may well perceive only costs, because many forecasts of the impacts of global warming suggest that China would on balance benefit from a warmer world. Thus China will have to be paid to play. The most cost-effective way attract China to join the abatement regime will be through assignments of headroom allowances that China can then sell -- just as was done in the Kyoto Protocol to engage Russia.