



Climate Strategies For Success

by Ruth Greenspan Bell



Growing the Economy Through Global Warming Solutions



Global warming is one of the most urgent problems of our time.

The good news is that many of the solutions to this extraordinary problem are within reach. Many of the solutions to global warming are not only feasible, they are economically and socially beneficial. While some claim that addressing global warming will have a negative impact on the economy, the most recent report by the Intergovernmental Panel on Climate Change (“IPCC”) asserts that there is substantial economic potential for the mitigation of greenhouse gas emissions over the coming decade. In fact, there is a growing global market to address global warming, and the United States must act now or risk being left behind.

Growing the Economy through Global Warming Solutions sets forth the steps we can take to curtail global warming, the governance models needed to encourage such a transition, and the economic benefits of doing so. By taking these steps as soon as possible, we not only will minimize the grave risks of global warming, we will position the United States as the leader in the clean industries and technologies that are emerging as the key growth engine of the Twenty-First Century.

It is now a given that global warming is happening. It is caused by the emissions of greenhouse gases – primarily carbon dioxide released during the combustion of fossil fuels -- and already has begun to inflict harms on climate, ecology and people. The most recent IPCC report confirms that global warming is here and will accelerate in the future with serious harms and risks if greenhouse gas emissions are not promptly limited. Dr. James Hansen, of NASA’s Goddard Institute for Space Studies, warns that a global average warming of 3.5 degrees Fahrenheit will produce a “different planet” by taking us over dangerous climate thresholds that greatly magnify the risks of disintegrating the great ice sheets on Greenland and West Antarctica, an event that would cause massive and rapid sea level rise. Dr. Hansen emphasizes that we can keep the planet within the known boundary conditions by limiting the future global temperature increase to no more than 3.5 degrees Fahrenheit.

To do so, we must stop the business as usual approach in which carbon dioxide and other greenhouse gas emissions increase every year. One of the primary obstacles to moving from this business as usual approach to a problem solving approach is the argument that mandates to limit emissions will cripple the U.S. economy and that the market will produce all necessary solutions on its own. But this argument focuses too narrowly on the economic impact to “big energy”, which for too long has dominated the political discussions in Washington. Growing the Economy through Global Warming Solutions asserts that we cannot afford to wait for voluntary market solutions. We must either invest now to implement solutions, or we will pay much more later as we have to adapt to the growing impacts of global warming. Many mitigation strategies, those that will help reduce emissions now, will not only be cheaper to implement, they will stimulate the economy.

Government has an essential role to play in developing a strong governance model – those procedures, rules and regulations that can work to bring greenhouse gas emissions under control. In fact, with the right set of government incentives to help focus their attention, the business community, which is already beginning to recognize challenges and opportunities - and looking to both adapt and innovate - will see even more possibilities for capitalizing on economic opportunities while achieving environmental gains. The good news is that, if we get started right away, we can rapidly move to this solutions-oriented approach in which emissions are limited and reduced in time to avert the worst risks of global warming.

Growing the Economy through Global Warming Solutions is a series of papers written by experts in the fields of economics, public policy, energy policy, architecture, insurance, investment, transportation, and agriculture. It details the solutions that can be taken off the shelf today. While there is no single silver bullet for addressing global warming, there are a wide variety of solutions that, taken together, will lead to a reduction of carbon dioxide emissions, the key to stopping global warming. These promising solutions must be phased in as we phase out our outmoded reliance on foreign oil and coal. Along with its companion reports, *Climate Strategies for Success*, by Ruth Greenspan Bell, sets out important next steps that can and should be taken in the near and medium term to ensure that we do everything possible to address the challenges of global warming.

We have the know-how and it is the American Way to innovate and problem solve. We have time.

We have to get started now.

“We have at most ten years—not ten years to decide upon action, but ten years to alter fundamentally the trajectory of global greenhouse emissions.” – Jim Hansen, Director of the NASA Goddard Institute for Space Studies, and Adjunct Professor of Earth and Environmental Sciences, Columbia University's Earth Institute.

Executive Summary

Climate governance is short-hand for how political authority and institutional resources are marshaled to manage greenhouse gas emissions. Governance skills and capacity for these tasks differ around the world. Thus, while nations can agree on the goal of carbon regulation – stopping the growth of and ultimately reducing greenhouse gas emissions – the path to that goal is complex and will vary depending on the particular regulatory structures and institutional strengths of each country.

In the United States, Congress will develop the legislative architecture that will govern climate change, including which federal agencies will be responsible for administering policies and what regulatory tools they will have to do so. Developing climate policy is a complex challenge both because it touches virtually every part of the U.S. economy, and because it requires “legislating for the long term,” a particularly daunting task for legislators that live in two and six year elections cycles.

The legislative challenges are substantial, but there is much that Congress can and should do to create a sense of urgency. A comprehensive and sound carbon trading program is likely to be one, but not the only, major tool, so long as there is emphasis on the cap as well as accurate accounting and verification in order to be effective in reducing emissions over time. Congress should also pay careful attention to the rulemaking process, which is carried out in agencies within the executive branch. Congress should clearly articulate its expectation for an efficient, fair and effective rulemaking process, utilizing strategies such as cascading rulemaking, agency sub-deadlines, smoothing the legal review process, and defining the judicial standard of review. Finally, Congress and the Executive branch will have to provide adequate resources and oversight to ensure that legislative priorities move efficiently and equitably through rulemaking in order to achieve the urgent goal of green house gas reduction in the U.S.

Beyond the United States, the governance challenges are many, varying from country to country depending on their particular form of government as well as the level of political will to address climate change. In terms of cooperative schemes, the primary experience has been with the Kyoto Protocol, which essentially created a complement of sophisticated emissions trading systems. These systems have not been adequate to accomplish its goals. Few countries have both the governance capacity and the political will to enforce the complex trading system envisioned in Kyoto.

Looking forward, four guiding principles will help lead the way to good governance around the world:

1. Make environmental regulation a priority in the developing world and help environmental regulators to do their job well.
2. Enlist the public to strengthen enforcement and make environmental laws effective.
3. Encourage countries to set appropriate goals they can meet, goals that are consistent with and lead them to a more rigorous regime in the longer term.
4. Learn from the enlightened private sector.

Finally, as we work to support the development of governance mechanisms world wide, we may need to reconsider whether multiple tracks in addition to the UN should be devised, in view of the increasing speed of climate science and the need to focus on priority countries for emission reductions. Do all countries need to be involved in all details? Will regional approaches be more effective or at least a useful supplement to a global UN process? What is the appropriate role of the U.S. and other rich, industrialized countries? The answers to these questions, along with the particular challenges that arise along the way, will determine the most effective strategies to employ to limit and reduce carbon emissions around the world.



The quickening pace of climate change does not allow much margin for error or time for wishful thinking. It is essential to put into place, as rapidly as possible, procedures, rules and regulations that can work to bring greenhouse gas emissions under control, recognizing the inevitable lags between decision-making and accomplishment of environmental goals. All this comes under the general category of governance.

How that will happen from country to country among the major contributors to warming will differ, sometimes radically, according to the experience, strengths and weaknesses of each regulatory system and varying institutional constraints and demands. In the United States, despite federal inaction during a critical 6-year period, legislation is now actively under consideration. The issues to be hammered out in Congress include complex matters such as how aggressive carbon reductions will be, how soon they will be put in place and through what mechanisms. But there is reason to be confident, in light of US know-how and past successes in mobilizing the resources of government and industry to manage pollution. Once these decisions are made and elaborated in EPA requirements, they can be achieved.

The challenges are very different in the developing world and especially in the fastest growing economies – particularly China and India – whose contribution to carbon accumulation is growing by leaps and bounds. These countries have typically been less successful in implementing and enforcing their environmental requirements. Fortunately, there is much we can learn from what has worked and what has not in both the regulatory experience to date and in the application of the Kyoto Protocol.

This chapter will identify and examine only a few of the governance challenges most important to meeting the goal of reducing greenhouse gas emissions, with particular emphasis on some important details that might otherwise slip beneath the radar.

What is Climate Governance?

Just how political authority and institutional resources can and will be marshaled to first limit and then reliably reduce of the emissions of greenhouse gases is where the rubber meets the road in climate governance. The substantive goals are no secret. They include coordinated efforts to: 1) reduce the addiction to oil that characterizes modern society and otherwise encourage more carbon-responsible consumers; 2) de-carbonize domestic and global energy systems; 3) increase the efficiency of existing methods of producing and using energy; 4) expand the use of non-fossil fuel solutions for generating energy; and 5) develop and deploy technologies for sequestering (trapping and storing) CO₂. Basic equity demands that the richer countries engage in active efforts to protect vulnerable populations, particularly in the developing world, from the already growing impacts of global warming on their ability to produce food, find water and survive increasingly uncertain and unpredictable conditions.

While the goals are not difficult to state, the means to achieve them are only starting to be worked out. Because carbon emissions are generated in almost every part of every society on earth, rich and poor, the changes that must be made must



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involve whole populations. This is not just a case of going after particular manufacturers or “sources”, as has been the pattern in previous efforts to regulate specific pollutants. Longstanding and well-entrenched lifestyles and habits, and perhaps more importantly, societal aspirations are at stake.

The basic challenge within the United States is how best to put into place laws and procedures that will result in genuine reduction in emissions. Typically in a democracy, coming to agreement takes time: a wide variety of interest groups must be heard out and their views resolved or reconciled. The devil is always in the details. Agreements must be distilled into legal language, then implemented and monitored.

The complexity of this challenge is illustrated by proposals to sequester CO₂ by, for example, injecting it deep into geologic formations. At the same time that work is underway to prove techniques of sequestration from an engineering and geologic point of view, a parallel and equally complex set of governance issues must be identified and resolved. What will be the legal structure for sequestration including potential liability for leakage, and how will a myriad of other legal, jurisdictional and political issues surrounding capture and pipeline transport to the final disposal site be resolved? We can expect that at least some local populations will object to pipelines crossing their communities or disposal taking place in the ground beneath their homes and places of work. As we know from other attempts at waste disposal, the most difficult and delicate of which being the case of nuclear waste, each one of these is a complex set of issues that takes considerable time to resolve. Globally, the goals are equally challenging. The only mutually agreed approach we have at the current time for achieving



greenhouse gas reductions on a global scale is embodied in the Kyoto Protocol. Employing the tools provided there which largely rely on creating financial incentives for individuals to act, deals are being struck to develop emission reduction credits. But there are an increasing number of concerns about the robustness and reliability of these transactions, and whether they can begin to make headway against the reality of growing carbon emissions in the key countries like India and China. All of this raises the question: Are the economic incentives enshrined in Kyoto a workable governance tool to manage the enormity of climate change?

Challenges on the Domestic Front

Congress must first decide the legislative architecture of climate change. These issues will include which agencies within the federal government will have responsibility for managing each piece of this puzzle and what set of regulatory tools they will have available. As is typical in the legislative process, and certainly for legislation that deals with almost every part of the American economy, Congress will have somehow to consider and resolve a wide variety of interests and tensions.

Congress faces its biggest challenges, as Sarah Binder of the Brookings Institution and others have pointed out, legislating for the long term. Doing so is “vexed by the difficulty of reaching compromise on policy problems whose effects will not be felt for decades – even as the political fallout occurs immediately.”¹ Climate may be the ultimate test of this proposition. Because CO₂ is retained in the troposphere for hundreds of years, the pattern of climate change that has been set in motion for many years will not easily or quickly be reversed. Current generations may end up paying for reforms that only their children or possibly their grandchildren and other descendants will see in the form of slowing the rate of making things worse, rather than really solving the problem. Whether the Congress will undertake to shoulder this burden, or will take the easy way out and defer these costs into the future, will be a significant test of political will and governance commitment.

Tools

Trading is a principal tool in most of the climate bills currently pending in Congress. Many of the bills would cap emissions and then allow trading to reach the goal. The theory of this tool is discussed in other papers in this series. However, trading does not take place in a vacuum and special attention is necessary to be sure that a trading program delivers the emission reductions necessary to begin to tame climate change. In this context, the governance issue is: how can we be sure that the moment never comes when our expectations of reducing greenhouse gas emissions have been undercut by Enron and WorldCom-like accounting scandals—in this case phony trades or transactions that didn’t otherwise achieve the policy goals of the cap and trade laws?

One answer to this is to pay closer attention to the details of the model acid rain (SO₂) program on which most of the proposed greenhouse gas emissions trading programs would be based. Accurate accounting and verification were integral parts of the model SO₂ trading program, a trading regime that isn’t remotely laissez-faire. The basic law and EPA regulators demand that emissions steadily decrease over time. They apply automatic and very tough penalties against violations. SO₂ trading transactions are regulated down to small details. Because polluted air is the commodity, traders use mandated, and rather elaborate, accounting measures and work with such complete transparency that transactions are tracked on the EPA website. The cap – the commitment to make genuine, steady reductions in the harmful emissions – is what makes or breaks the overall scheme. But the entire program including the cap is backed up by a strong, old-fashioned commitment to enforce against laggards and cheaters, and automatic penalties.

In the end, the objective of a greenhouse gas emissions trading program must be the integrity of the trades, not how profitable they are. The program must create a high degree of public confidence that whatever process has been established will result in genuine emission reductions, not just income for traders. Hard experience with the sham and inflated trades of Reliant Resources, Dynergy, Enron, and CMS Energy in California and elsewhere – and WorldCom, which committed out-and-out balance sheet fraud – are another demonstration why legislation must include safeguards to assure that this will not happen. These cautions are reinforced by recent experience with the global version of emissions trading, the Clean Development Mechanism (discussed on following pages).²

Assuring a Speedy Regulatory Process

Legislation currently under consideration will likely create the broad outlines of a regulatory plan for controlling carbon emissions and will distribute responsibility to appropriate agencies around the federal government for carrying out these responsibilities. In view of the complexities of regulating carbon, it is unlikely Congress can write sufficiently detailed legal instructions such that rulemaking can be avoided. Indeed, if legislation follows the pattern of past regulatory efforts, responsibility will fall to US EPA and other federal agencies to use rulemaking to spell out the details and then implement the results.

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The history of past environmental rulemakings, combined with the complexity of carbon's integration into the entire structure of the economy, suggests that even with the best of intentions, the subsequent rulemaking effort could take considerable time. Regulations to, for example, set effluent guidelines for the organic chemical industry took more than a decade to write and promulgate largely because of the complexity of assembling and analyzing information, writing draft regulations, obtaining the necessary notice and comment from the public, finalizing the regulatory language and the rulemaking package in all its legal requirements, and shepherding the regulation through government review (particularly review by the Office of Management and Budget –OMB). Climate change is significantly more complicated to regulate and will involve many more stakeholders, some rather tenacious about their positions and potential costs.

Does the swiftly evolving challenge of climate change allow us sufficient time to carry through the normal rulemaking process, with the possible result that rules controlling greenhouse gases can be even more delayed? If Congress wants to minimize the time spent in rulemaking, but also protect basic process values, there are steps it can take to balance rulemaking fairness and regularity against the unique urgency of acting on the climate threat. The next section is a start in thinking about what issues must be addressed in order to facilitate rulemaking. It is not comprehensive and does not contain specific implementation suggestions in the form of legislative language. I also suggest what the executive branch can do to hold rulemaking lags to a minimum.

Legislative Ideas

Congress is almost sure to mandate agency action, rather than make it discretionary. This is critical because historically, EPA and other agencies have had great difficulty concluding rulemakings for activities that are not mandated. This has especially been the case when agency action requires a multi-year commitment that might span various administrations. Rulemakings are always impacted by changes in agency leadership, whether the change has to do with the election of a new president or whether the responsibility for agency leadership passes from one like-minded individual to another within the same administration. When regulations are mandated, it is much harder to put a hold on the regulatory progress while a new Administrator or Assistant Administrator re-thinks priorities or approaches (for good or for bad). It certainly limits the options of a hostile administration.


But Congress can go farther than this. It could make clear its interest in quick executive branch response by creating within the legislation specific milestones or sub-deadlines with clear endpoints. In other words, the relevant agency would be on notice that its actions would be watched carefully to avoid slippage harmful to the overall goal of putting climate requirements into place as quickly as possible. Another way to make this happen is through cascading rulemaking. As climate is a multi-sector, multi-year challenge, the regulatory tasks could be broken into short, medium and longer-term tasks (e.g. 2, 5 and 10 years) to make sure that the regulatory process responds to real climate priorities.

Specifying agency sub-deadlines, however they are set out, would have several important implications for speeding the regulation-writing process. In addition to providing specific points for Congressional oversight, the agency's failure to meet sub-deadlines would give watch dogs in the public interest community a handle to take issues to the courts, and provide a good tool to the courts which otherwise would not be able to intervene until the agency had missed its ultimate deadline for action. The presence of deadlines can also reinforce a sense of urgency within the agency and the government and establish ground rules for allocation of adequate resources to carry out the regulatory tasks assigned by Congress.

What regulatory standard is written into the law will also make a big difference in terms of how much time a rulemaking process will take. The Congress should be careful not to reintroduce through legislation issues that can be resolved in the legislative debate and need not be further re-hashed during rulemaking. One important example is whether the regulatory standard requires the rulemaking agency to consider in detail the cost reasonableness of climate controls and how those costs impact society. Cost is inevitably a big consideration in any legislation, and is shaping up as a major battleground for climate. Opponents of restrictive legislation are already using focus groups to test how to frame this issue for the public in ways that create anxiety about the overall impact of climate change mitigation actions on working people (see J. Eilperin, Washington Post, 1/23/07). However messy this battle turns out to be, there is no reason to give opponents two bites at the apple. Problems down the road can be avoided if the law uses language that does not make cost analysis a major rulemaking issue that can be exploited by climate opponents.

Another set of issues revolves around whether the language of the legislative standard should be simple and broad or more prescriptive. On the one hand, there is an argument that a standard that directs the agency to "establish requirements that protect human health and the environment" generally gives an agency a lot more flexibility in rulemaking than does more convoluted language such as "establish cost-effective requirements that achieve the maximum feasible reduction of pollutants that ensure protection of human health and the environment, considering [a number of enumerated criteria]."

The argument for the more simplified approach is supported by some history with prescriptive provisions in environmental legislation that caused trouble when EPA actually got around to implementing them. The agency discovered there were problems with the detailed statutory directives due, for example, to changes in science, technology or economics; inadequate analysis of issues at the time the legislation was being drafted; new issues that arose post-legislation; or the fact that the



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prescriptive provisions were based on political compromises, not good policy or good analysis. In such cases, EPA was reluctant to go back to Congress to get the statutory problems fixed. Instead, agency lawyers were asked to resolve the problems, a process that potentially raises the legal risks of the rulemaking.

On the other hand, the argument for more prescriptive language is that making the legislative directives general and non-prescriptive can open the door to undue complexity during the rulemaking. The Agency would need to address fundamental policy issues without Congressional guidance and that could result in delay and uncertainty. Under this way of thinking, the legislation should be quite explicit on the levels of reduction to be achieved, the design and scope of cap-and-trade programs, and how allowances will be allocated or auctioned. But, for example, if legislators want the climate change statute to include

explicit levels of reduction of greenhouse gases by certain dates, they need to be very confident that meeting those levels by the statutory deadlines is technologically feasible. Or if they want to include detailed provisions concerning the design of a cap-and-trade program, they must be sure that the program will in fact work both at the current time and also far into the future.

Most rulemakings are also routinely slowed down by the need to address requirements set out in a large number of laws and executive orders (EO). A long laundry list of requirements can usefully inform rulemaking, but each of these takes considerable time to address and is a demonstrable reason for delay. For example, the requirements might make it necessary to engage other parts of the executive branch (e.g. OMB and other agencies) or it might require substantial resources to address each of the issues framed by the law or executive order. The difficulty is that the time frames for analysis and resolution of each of these requirements may not be consistent with the quickly evolving environmental challenge to get effective regulations into place.

There are various ways to manage this concern. Congress could make the requisite findings of compliance with existing requirements directly in its climate legislation. Thus, for example, Congress could determine that any actions taken by, say, EPA to carry out the directives of its climate mandate automatically are in compliance with the paperwork reduction act without forcing the agency to undertake separate analysis to so determine.

Or, Congress could find some other means that put value on the various substantive concerns embodied in the requirements or executive orders without creating opportunities for delay. For example, Congress could truncate the process of addressing legal or executive branch requirements in view of national emergency or other findings. The Administrative Procedures Act allows agencies to truncate the rulemaking process and to make rules immediately effective in certain statutorily-described circumstances, mostly emergencies of various kinds. Finally, Congress could explicitly specify an abbreviated time for, e.g., OMB or interagency review under any of these requirements, or could explicitly reduce the discretion of reviewing agencies to limit, delay or stop rulemaking.

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To make the point clearer, consider that a normal EPA rulemaking must consider the following laws and executive orders:

- 1) *Executive Order 12866 (58 FR 51735, October 4, 1993): Regulatory Planning and Review*: a “significant regulatory action” (i.e. one that raises novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in the Executive Order) must be submitted to the Office of Management and Budget (OMB) for review under EPA 12866 and any changes made in response to OMB recommendations documented in the docket for the action.
- 2) *Paperwork Reduction Act, 44 U.S.C. 3501 et seq.* (OMB control numbers for EPA’s regulations are found at 40 CFR part 9). Agencies must estimate the annual reporting and recordkeeping burdens associated with the information collected in a rule considering the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency.³
- 3) *Regulatory Flexibility Act*: Agencies must prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute, unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.⁴
- 4) *Unfunded Mandates Reform Act (Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4*. Title II establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with “federal mandates” that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year.⁵
- 5) *Executive Order 13132: Federalism (64 FR 43255, August 10, 1999)*: This provision requires EPA to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications,” including regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.”
- 6) *Executive Order 13175: Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 9, 2000)*: requires EPA to develop an accountable process to ensure “meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.”
- 7) *Executive Order 13045: Protection of Children From Environmental Risks and Safety Risks (62 FR 19885, April 23, 1997)* applies to any rule that: (1) is determined “economically significant” as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children.⁶
- 8) *Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution or Use (66 FR 28355 (May 22, 2001))* Requires preparation of a detailed Statement of Energy Effects describing the effects of certain regulatory actions on energy supply, distribution, or use and reasonable alternatives to action with adverse energy effects and the expected effects of such alternatives on energy supply, distribution and use.⁷
- 9) *National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note)* directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical.⁸
- 10) *Congressional Review Act 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996* generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, that includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. A major rule cannot take effect until 60 days after it is published in the Federal Register.
- 11) *Environmental Justice, Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 11, 1994)* requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations.⁹

Judicial review is an essential and appropriate part of the rulemaking process and a safeguard in a democratic society, but various things can be done to assure that judicial review does not mean undue delay. First, any climate legislation can

make it easier for reviewing courts to sustain agency action, for example, by defining the standard of review, or limiting review to certain parts of the regulation. This would by no means be unusual. The Clean Air Act takes a similar approach in that most of its rulemakings can be reversed for procedural errors only if the errors are serious and of central relevance to the rule and if there's a substantial likelihood that the rule would have been significantly changed had the errors not been made.¹⁰

Congress can also direct that judicial review of any rule go immediately to the Court of Appeals rather than first to a District Court. This is already the case in cases challenging rulemakings under the Clean Air Act where cases go directly to the D.C. Circuit Court of Appeals, for example.

Three other thoughts for Congress and the regulatory agencies that will be implementing legislation to consider: To avoid time consuming disputes between federal agencies, Congress should be specific in the legislation about which agency Congress wants to carry out each task and what each should focus on. Second, the formidable challenges of rulemaking and getting action underway in a timely fashion may tempt some to think about miracle cures in the form of, for example, negotiated rulemakings and voluntary actions. This can only delay the ultimate adoption of clear, enforceable climate rules. Negotiated rulemakings have only proved effective when the issues are narrow and straightforward, quite the opposite of the reality of climate change. And voluntary actions are somewhat of a pipedream – something the Bush administration has already promoted unsuccessfully for climate change mitigation.

Third, depending on how the federal legislation is shaped, some attention should be paid to the power of tribes on tribal lands to circumvent efforts of states to cut greenhouse gas emissions. For example, the State of New Mexico's plan to cut CO₂ and other greenhouse gases may be threatened by a plan to build a 1,500-megawatt coal-fired power plant on sovereign Navajo land in the state.

Practical Governance

Congress can make sure that agencies designated to do climate rulemaking and otherwise carry out the legislative climate intent have adequate resources to do their jobs. This means providing both the appropriations and personnel (in federal government parlance, full time equivalents - FTEs) necessary to conduct defensible rulemakings in the requisite timeframe. Congress has frequently in the past assigned responsibilities without providing the resources to carry out those duties. Taken in its best light, Congress may have thought the agencies had sufficient resources to proceed. This leads to a classic dance between the executive and legislative branches. Typically, the executive branch, and particularly the OMB, which is tasked to watchdog budgetary responsibilities, is reluctant to state that it is without adequate resources to carry out the mandates of Congress. OMB's job is to maintain the lid on expenditures and OMB is the intermediary between the agencies and Congress. Thus strapped agencies are not free to mention this constraint in communications to Congress or when responding to mandatory duty lawsuits that seek to force the government to adhere to Congressionally set deadlines. Congress should face up to this, and avoid the complicated minuet that normally results in the Agency "making do." In this case, the urgency of the climate issue should override OMB's instincts to starve agencies, and the agency's reluctance to be up front about the resources necessary to carry out important tasks.

Congressional and Executive oversight will help assure that the process of rulemaking is not delayed and emphasize that greenhouse gas reduction is a government priority. There is really no substitute for an engaged Executive branch. It isn't surprising to note that agency heads and personnel respond, quickly, when they know their bosses are watching, and they are stimulated (and honored) knowing they are engaged in a task that matters. It is a good sign that California's Governor has made it clear that he is closely tracking the state's regulatory process and progress. The White House should demonstrate that it will do everything in its power to clear roadblocks and smooth the path for climate rulemaking, but also that results count in carrying out the responsibilities contained in climate legislation.



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Similarly, anyone who has ever worked in the executive branch knows that when Congress schedules oversight hearings or asks for information, agencies pay close attention. Obviously, the Congress can keep close track of the executive branch's progress. While the Congress cannot directly control what the President does, it can announce and use regular oversight and reporting requirements (so long as they don't slow the progress of rule-writing), meetings with agency officials, and other approaches to make sure that rulemakings are on track and headed in the right direction.

The Even Greater Challenges of International Governance

When the Bush Administration famously walked away from the Kyoto Protocol, it unintentionally revitalized an agreement that might otherwise have died on the vine. Europeans and other seeking to prove George Bush wrong then united behind Kyoto, and it (and the US directed plan contained in it) eventually came into force with an adequate number of countries ratifying. The irony, of course, is that the tools enshrined in the Protocol (the so-called "flexible mechanisms"), were originally recommended by the United States.



Whatever has been the history of acceptance of the Kyoto Protocol, we now have experience with it and some basis to assess whether the flexible mechanisms contained in it (several variations on emissions trading) will be adequate to control the growing threat of climate change.

The foremost lesson of experience to date, from my point of view, is how critical governance skills and institutions are in supporting global emissions trading. This has played out in a variety of ways, illustrating that as tough as the climate governance issues are domestically, they don't compare with the international challenges which range from issues of political will in western Europe that impede the imposition of a genuine cap on greenhouse gas growth to fundamental institutional gaps in the developing world that are starting to cause serious doubt about local ability to deliver genuine reduction results in response to deals made. The bottom line, and something we should have known all along, is: 1) political will is critical, and 2) markets don't work by themselves; they require a depth of understanding and adequate back up institutions.

To start at the beginning, the Kyoto Protocol embodied a belief that people across the globe respond in the same way to economic incentives, and that when the opportunity is offered them to make money by providing greenhouse gas reductions to a global market, they will take the opportunity and the environment will benefit. Accordingly, the Protocol established a complement of sophisticated global greenhouse gas emissions trading systems ("flexible mechanisms"), modeled on the U.S. "cap-and-trade" system to control acid rain. The "Clean Development Mechanism" (CDM) facilitates trading with the developing world; "Joint Implementation" allows a 'donor' country to invest in pollution abatement measures in a 'host' country in return for 'credits' that it may use in meeting its own pollution abatement targets. Since then, a European Union trading system has started up, and there are some purely domestic trading systems in Europe.

The difficulty is that the tool itself is unusual. Previous to its adoption into the Kyoto Protocol, experience with pollution-related trading could have been found only within the United States and under very controlled circumstances. There were no working examples outside of the United States. Although there have now been a number of emission trading experiments in various parts of the developing world, these have generally been based on efforts to control other specific pollutants, for example SO₂. The best that has been achieved domestically in critical countries like China, India, and Brazil is a handful of administratively managed trades between carefully selected polluters, generally overseen by the designers of the program.

Why haven't these trading experiments worked out? In part, this has to do with scarcity of the basic commodity being traded – the capacity and will to reduce pollution load from specific factories and plants. When we engage in trades, the basic assumption is that one partner in the sale can offer up reliable, verifiable and continuous emission reductions. This is a commodity in dramatically short supply in the countries of the developing world and the countries in economic and

political transition which have had discrepancies for many years between the environmental laws on their books and their actual practice in restraining pollution. An additional complicating factor is that few have the skills to manage or enforce complex intangible property rights such as polluted air from the pipe of a factory.

In part the belief in trading is that through programs like Joint Implementation, outsiders with the incentive to control CO₂ emissions will install technology to clean-up industries and factories. It seems indisputable that any firm in any part of the world can recognize that someone offering free equipment, for example to capture CO₂ from flue gases expelled by power plants, is offering something of value. The tricky part is whether the manager of that plant has any incentive to pay the operating costs of running the equipment, to keep it going night and day, day in and day out, and to clean it from time to time. Evidence from China demonstrates that even plants equipped with superior pollution equipment fail to run those controls when doing so is inconvenient.

Effective governance is what makes the difference between theory and practice in a trading or, for that matter, any environmental protection regime. In the case of technology, experience tells us it is more often used under the watchful eye of disinterested enforcement.



No wonder that a few close observers are asking whether the process or the results obtained in some of Clean Development Mechanism deals will contribute to either genuine sustainable development or the purposes of greenhouse gas reductions. India's Center for Science and the Environment recently examined two projects. It concluded that it is impossible to determine whether the transactions, which would provide credits to help Europeans meet their Kyoto targets, meet standards because their terms are not transparent; that the projects may have been approved by Indian authorities on the basis of the prestige of the consultant that validated them rather than the projects' merits; and that certain conditions of the transactions are yet to be met, despite being specified in the project design document.

A study by Michael Wara of CDM projects in China to control the powerful greenhouse gas HFC 23 has been even more damning. Wara's research showed that investment bankers were drawn to high profit schemes, and that emissions reductions or long-term sustained benefits (such as building wind farms) fell by the wayside. Worse yet, the profits that went to Chinese as a result of the CDM transactions were used to finance new and expanded factories that produced precisely the same dangerous emissions. And, there is some evidence that the Chinese officially have sought to avoid regulatory control of that gas, which is also very damaging to the ozone layer, because of the profits from CDM transactions.

In other words, markets without effective governance structures and a strong, ongoing focus on emissions reductions rather than profits are all pieces of the puzzle that still need reinforcing.

Growing the Economy through Global Warming Solutions

The Way Forward

Reducing greenhouse gas emissions will inevitably be a prolonged and messy process of reinforcing the necessary governance structure to assure that the result has reasonable integrity, whatever specific means are used for control..

These are huge challenges in the developing world and much of the former Soviet bloc, where the largest carbon growth is anticipated. Achieving reliable reductions in a steady fashion for many years ahead will require fundamental reform. Trading and technology are great policy tools, but they must be part of a larger program whose core is systematic and predictable reductions of greenhouse gas emissions. The right kinds of governance structures will make the difference.

Recommended Actions within countries

1. [Make environmental regulation a priority in the developing world and help environmental regulators to do their job well.](#)

Putting a lid on growing CO₂ emissions that cut across the economy is a classic regulatory problem that requires a classic regulatory approach and strong political will. In a handful of countries, regulation is working. In too many others, it is not. There is no other way but for the countries whose cooperation is needed for a global trading scheme and the leaders who are quite rightly pointing to the perils of greenhouse gases to implement the fundamentals of environmental regulation.

Environment officials currently lack the clout of their counterparts from Ministries of Industry and Finance, where the real power resides. The position of head of the environment ministry should cease being a place to park partners from small political parties in coalition governments, or to make a symbolic statement. Environmental ministries must be taken seriously as partners in power. Partnership does not mean dictating solutions, but environment ministers should have the status and power necessary to make sure that critical environmental laws are not undercut or bypassed.

For their part, the leaders of government environmental agencies can and should make the case that what they offer is not only consistent with growth, but will facilitate it, and make it viable in the long term. They should point out, for example, that the pollution that results from lost energy that leaks from every possible pipe and seam in the power plants and factories of the developing world represents wasted money. Manufacturers are paying twice—when they buy the raw materials and energy and when it is thrown away. It simply does not make economic sense to ignore low cost design and operating approaches that avoid wasting energy. This kind of argument is one way that environmental authorities can align themselves with the economic goals of their nation, rather than being seen as an obstacle to progress..

Environmental enforcers also need some level of independence so that laws can mean what they say. An effort has just begun in Asia to develop a network of environmental enforcers to, in the words of Philippine Senior Associate Supreme Court Justice Reynato Puno, assure that environmental laws are no longer consigned to their current “graveyard,” where they are “at best meaningless ideals and, at worst, mere teasing illusions.” Reliable enforcement will provide credibility that will also enhance trading regimes for future investors.

Reform is particularly critical in countries like China, where there are still a significant number of industries controlled by government and where CO₂ emissions are growing at a rate rapid enough to overtake the developed world possibly within the decade. Local Chinese environmental protection bureaus lack autonomy: their policy authority to regulate and enforce comes from the central environmental ministry in Beijing. But local government controls what is really important: budget, rank, appointments, staff size, and even office space. Growing the local economy is almost always the decisive winner in any struggle between values in the Chinese context.

2. [Enlist the public to strengthen enforcement and make environmental laws effective.](#)

Where the government fails to act, the public can be a force for reform. Citizen groups were important in the effort that jump-started environmental protection in the United States. Non-governmental organizations (NGOs) around the world (including in the developing world) have absorbed this lesson and are starting to flex their muscles and use a variety of tools to push governments toward action. In the new democracies of Central and Eastern Europe, NGOs are demanding that



Even in countries with strong enforcement bodies, the government cannot bring every lawsuit or monitor every plant. Techniques exist that would allow citizens to check whether factories and power plants are keeping their commitments and then to report the results.

their governments implement commitments to greater transparency of environmental data. Improvements in air quality in Delhi, India were a result of a lawsuit brought by one NGO to the Indian Supreme Court, prompted by another NGO that published information describing in very precise ways how the health of Delhi residents was endangered by air among the worst in Asia. Success in Delhi led to copycat lawsuits in Pakistan, Bangladesh, and other neighboring countries. China too has a litigating public-interest group that seeks damages for the victims of polluters.

Even in countries with strong enforcement bodies, the government cannot bring every lawsuit or monitor every plant. Techniques exist that would allow citizens to check whether factories and power plants are keeping their commitments and then to report the results. One example is visible emissions testing, in which ordinary citizens are trained to “read” smoke coming from plant smokestacks to see whether the emissions are meeting extant standards. This approach has not only been used for enforcement purposes in the U.S., it is the basis for a large number of enforcement actions that the EPA brings. There is also the possibility of allowing private citizens to bring

environmental enforcement actions when the government does not. This idea, originated in the U.S., has been adopted in some other countries as well. The Philippines, for example, now has provisions that allow citizens to bring polluters to justice when official enforcement agencies fail to do so. These and other approaches are ways of developing both a broader, stronger environmental ethic and more effective control mechanisms.

[3. Encourage countries to set appropriate goals they can meet, as a start toward a more rigorous regime.](#)

Everything depends on the cap – the regulatory limits of greenhouse gas emissions. An idea, perhaps revolutionary, is to start by asking countries to set caps they can actually meet. These might not initially be very ambitious. But if the immediate goal is to mobilize countries and gain experience in managing and reducing greenhouse gas emissions, an achievable cap might be a way of focusing governments and getting them moving in the right direction. With practice and success under the belt of regulators, the cap can be tightened.

[4. Learn from the enlightened private sector.](#)

A small number of multinationals, General Electric and Wal-Mart prominent among them, are not waiting for the U.S. government to act to begin their own plans of action. These may prove to be influential models. They will put these plans into practice at plants worldwide, saving money while reducing waste. Their actions should help embolden local regulators fearful that climate action is all cost and no benefit, and put pressure on local industry to improve their habits.

Breaking the Deadlock at the International Level

As we face up to the deficiencies in the current international plan of action for curbing greenhouse gas emissions, the timing may well be right for a substantial re-thinking of international carbon governance.

Among the overlapping and related questions worth examining are:

- Should governance remain in the hands of the UN? Is the UN process too slow? Does it make sense to continue a process that gives every country an equally voice when the greenhouse gas emissions of some count more than others?

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What does the United Nations Framework Convention on Climate Change/Kyoto experience to date tell us about that? Would it be feasible to separate out countries, allowing some to concentrate more on mitigation and others (the vulnerable populations that are more likely to take it on the chin) on adaptation?

- Are global negotiations that require everyone to “be on board” to move forward still feasible in view of how much time they take? There are arguments for a variety of different approaches including a mixture of bilateral and/or regional arrangements, with global agreements saved for setting overall emission goals or providing a forum for interaction among a wider group of countries. An alternative is to move the implementation focus to a series of regional foci or even to a tiered approach as suggested in the bullet below.

Regional interactions are often more effective and urgent than global interactions simply because of repeated encounters between the parties and a greater sense that there are common concerns and issues. Global interactions are more distant and formal, and less frequent; and there is a sense that global agreements sometimes unintentionally overshadow effective working regional agreements. Daunting tasks are also made more manageable when they are broken down into bite-sized tasks.

- If, in reality, only about six or seven key country-players (counting the EU as one) really matter in terms of emissions, what does that suggest for a global structure? Perhaps it makes more sense to concentrate on a reduced number of countries initially, either through the leadership of the UN or through renewed US leadership (in the event of a new administration more strongly committed to progress on climate change).
- What should be the role of the U.S. and the richer industrialized countries, particularly those that have contributed historically to the build up of carbon load? There is a menu of possibilities ranging from government financing or credit guarantees for technology transfer (e.g., exports of American designs and hardware to Chinese power producers) to a Marshall Plan-like arrangement that directly funds the additional or incremental costs of carbon neutral building (e.g. assuring that all new Chinese power plants are built to sequester the carbon as it is generated).

Conclusion

Governance lies at the heart of any practical solution to the problem of global warming. This means different things for different countries. In the United States, it means attention to a myriad of legislative and administrative details so that there is a reasonable assurance that the pattern of carbon build up will be reversed in a timely manner. Whatever processes we set in motion for achieving that goal must have integrity. In the developing world, it means building capacity to deliver verifiable, credible ongoing reductions of greenhouse gases, as well as developing both the political will and the regulatory skills to carry out these commitments. The overall objective should be to undertake the ambitious but necessary task of creating a culture of environmental compliance that will ensure that greenhouse gas emissions are kept under control and that the promises of reductions – whether purchased through trading or through other means – will actually be met.



ENDNOTES

¹ Can Congress Legislate for the Future? Sarah A. Binder. Research Brief Number 3, December 2006, Robert F. Wagner Graduate School of Public Service.

² Reference to India study and others. plus the Wava study.

³ This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information, unless it displays a currently valid OMB control number.

⁴ Definitions are contained in: (1) a small business as defined by the Small Business Administration's (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise that is independently owned and operated and is not dominant in its field. Normally, the Act requires the agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute.

⁵ Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

⁶ If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

⁷ Draft statements must be provided to the Administrator of the Office of Information and Regulatory Affairs, Office of Management and Budget and published in each related Notice of Proposed Rulemaking and in any resulting Final Rule.

⁸ Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

⁹ The accompanying Presidential memorandum specifies that federal agencies "shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the National Environmental Policy Act of 1969 (NEPA), 42 U.S. Code Section 4321 et seq." The memorandum further stated that federal agencies "shall provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving the accessibility of meetings, crucial documents, and notices."

¹⁰ Another example of review expediting rulemaking involves federal clean-up actions under CERCLA (admittedly a response program, not a regulatory program). The law provides that EPA, the Coast Guard, etc. can recover their clean-up costs if their response actions are "not inconsistent with the National Contingency Plan."

Author Biography

Ruth Greenspan Bell recently left Resources for the Future, a program designed to help countries build more effective systems of environmental protection. Prior to this, she worked as Senior Advisor to the Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, and in various management positions in EPA's Office of General Counsel.

Since 1991, when she resided in Poland, Bell has worked to build a culture of environmental compliance throughout the former Soviet Bloc, and more recently in Asia. Recent major projects include:

- Helping Danube-region countries (initially governments, NGOs, industry and other stakeholders first in Hungary and Slovenia and then Romania, Bulgaria, Croatia, Serbia-Montenegro and Bosnia-Herzegovina) to implement their commitments to make environmental information and data available to their citizens on request - similar to a Freedom of Information Act for environmental information.
- Bringing together advocates from throughout Asia to share their varied experiences in shaping a public voice on environmental issues.
- Examining and critiquing the policy process and changes that led to the recent improvements in air quality in Delhi, the most important being the switch of all commercial vehicles from petrol and diesel to CNG.

Bell publishes extensively. The subject matter has included the environmental issues connected with the political and economic transition in Central and Eastern Europe; ways to stimulate better implementation of domestic environmental requirements in the developing world and the countries in transition; specific project results; international environmental requirements; and climate change. Her publications are found in venues as diverse as *Foreign Affairs*; *Environment*; *Issues in Science and Technology*; the *Harvard International Review*; and the *Environmental Law Reporter*. She is a graduate of UCLA and Boalt Hall School of Law (University of California at Berkeley), sits on a number of not-for-profit boards, and is a member of the Council on Foreign Relations.



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