

Global Climate Change: Prospects for a New Deal

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Ever since climate change emerged as a threat that required concerted global action, practical political efforts to devise an international policy have been stuck in gridlock. The first international treaty on the subject, the 1992 Framework Convention on Climate Change, contained no substantive obligations—partly because Europe and the United States were unable to agree on a scheme for controlling emissions. The 1997 Kyoto Protocol included emission targets for industrialized nations, but that treaty proved inconvenient for Australia and, especially, the United States. The only substantial efforts to control emissions within the Kyoto system lie within the EU and Japan—which together account for barely one-fifth of world emissions—and they are struggling for compliance.

Many aspects of the climate problem imply that deadlock will remain in place. The United States government, along with industrial interests in Europe and Japan, has professed deep opposition to any regulatory scheme that does not include developing countries. Developing countries, noting that their per-capita emissions remain far lower than those in the industrialized world, abhor any obligation that might crimp economic development. That same fissure hobbled the Kyoto Protocol, which sought to cap emissions for industrialized nations but studiously omitted any limits on the developing world. The Kyoto Protocol's "Clean Development Mechanism (CDM)," which was designed to bridge the gap, has been plagued with fundamental problems that make it unlikely to have much dramatic impact on emissions. Not much has changed in the years since. At the recent meetings in Nairobi, the EU pushed for stronger limits to succeed Kyoto, the U.S. fiddled, and developing countries demanded that the negotiating mandate for future agreements omit any near-term cuts for the developing world.

Despite these seemingly intractable troubles, this paper argues that the prospects for a serious deal to address the climate problem have never been brighter. The seeds of optimism are found in the efforts of each key country and region to struggle with the issues at hand, and their realization that new approaches will be needed:

- The United States. After rejecting Kyoto the Bush administration has struggled to develop an alternative. It largely abandoned those efforts when 9/11 and then the Iraq war shifted attentions elsewhere. But polls show that political discourse in the United States is shifting back as the public becomes increasingly aware of climate dangers and, also, as the war on terror becomes more familiar and less dominating in the political debate. Pushing in this direction, too, are the rising fortunes of democrats and centrist republicans and perennial high energy prices that have made the public more willing to fathom reforms in all matters energy. So far, these efforts have not produced radical changes, but in the coming few years nearly every corner of American political and industrial elite expects new policy. Led by the states, a U.S. scheme to limit carbon emissions is emerging. Led by the Bush administration the United States—along with Australia, China,

India, Japan and South Korea that together account for half of the world's emissions—has also taken a leading role in creating a consortium of Asian countries, the Asia Pacific Partnership (APP), to work outside the Kyoto system on strategies for reducing emissions.

- Canada. After supporting Kyoto and planning to implement the strictures, the new conservative government in Canada has switched the country's position, which has pleased the emissions-intensive energy province of Alberta but is unsettling to most of the rest of the nation. The government must find a scheme that will satisfy the environmental pressure for action while not adopting rules that will be completely intolerable in Alberta. That pushes Canada to seek international bargains, aligned notably with the United States.
- Europe and Japan. The core members of the European Union and Japan, while formally supportive of Kyoto, are all abundantly aware of the difficulties in meeting the Kyoto targets. While they have made substantial investments in building institutions, such as the European Emission Trading System (ETS), these schemes have faced severe difficulties. Moreover, political support remains fragile. Outside the core northern European countries, support for stringent action remains scant and it is not yet clear what will happen when other members of the EU fail to meet their emission targets. It may prove difficult to contain the economic consequences of noncompliance since the ETS binds all European countries to a common framework (much like a common currency), and thus the adverse consequences of noncompliance could ripple across Europe eventually to affect all 25 members. Industrialists in the EU and Japan are increasingly concerned about their countries' efforts to sustain strict controls on emissions without their economic competitors doing the same. Compliance in the EU and Japan would be impossible without prodigious use of the Clean Development Mechanism, but awareness is growing that the CDM is producing large numbers of credits that lack integrity.
- China, India and other major developing countries. The developing countries have always been wary of climate controls, but two factors suggest a decisive shift is under way. First, some countries have become more attuned to the dangers of changing climate and thus willing, albeit modestly, to consider emission limits if implemented in concert with a more aggressive effort by the advanced industrialized world. Second, and much more importantly, developing countries have seen that the emission controls can align with their other development objectives. This potential has been evident in the large volume of projects under the Kyoto Protocol's Clean Development Mechanism (CDM), which now totals several billion dollars of new investment in these nations. The potential to align development goals with climate protection is also abundantly evident as the large developing countries struggle with the deterioration in local environmental quality as well as energy insecurity. Some strategies for addressing these problems—such as through greater use of clean natural gas, nuclear power and renewable energy—will also cause sharply lower emissions of CO₂ and thus less global warming. Developing countries are keen to attract such investments in clean energy, although practically none of them are allowed under the current CDM system.
- Russia. Until recently Russia's strategy has been to ignore the climate problem. There is new evidence that Russia may be more vulnerable than originally thought, and it is clear that the EU—Russia's largest customer for natural gas—

will link its relationship to Russia, at least in part, to efforts to control emissions. And while the Russian government is not currently focused on these issues, EU concern about climate will affect Russia's ability to realize bold plans to utilize much larger amounts of coal for generating electricity (which, in turn, would free more natural gas for lucrative export.) Efforts to control emissions could even benefit Russia since gas is much less carbon intensive than coal, but realizing that benefit will require that Russia develop a coherent plan to attract badly overdue investment in its gas sector.

In addition to these political developments, there have been three important changes in the underlying scientific, technological and economic base for action. Scientists have shifted from their exclusive study of the gradual and predictable effects of climate change, such as steady rise in sea level, to examine the possibly abrupt impacts of a changing climate on ocean currents, the Greenland ice pack, or extreme weather such as hurricanes. This new branch of science has sounded credible alarms that have rightly captured the public imagination. To the extent that publics will pressure their governments to reduce the risk of abrupt climate change, governments will need to find ways to make much steeper cuts in emissions. Indeed, most of the science in this area suggests that when the risk of catastrophic change, it is economically rational to make larger—perhaps much larger—efforts to control emissions.

Technologically, the concern about climate change is reversing a long-standing slide in investment in energy R&D. Among the products on the horizon that are poised to benefit from this investment are commercially viable nuclear plants and advanced coal technologies that make it feasible to generate electricity without emissions of carbon dioxide. They also include wind power and biofuels that can sharply reduce emissions of carbon dioxide.

Economically, the most important change of late is the sharp rise in crude oil prices, which in turn has lifted the price of natural gas. Whereas most new power plants in the advanced industrialized world, and many in the developing world, have been gas-fired, at current high prices investors have generally swung back to conventional coal technology, which is much more carbon-intensive. Worldwide, the coal plants in the planning stage would emit more CO₂ than all the CO₂ emitted from all sources since the 1750s.

In short, the technological and economic context for the world's energy system is in flux just at a time when all governments are rethinking their interests and strategies with respect to global warming.

Toward a New Deal on Global Warming

The trouble with Kyoto, I suggest, is that the framework is too universal and inflexible. It involves too many countries and thus is especially vulnerable to become a forum that codifies the least common denominator. Compared with more productive economic negotiations—such as trade rounds—the negotiating process leading to Kyoto (and most environmental treaties) is remarkably brief and one-dimensional. The main content of the final agreement is focused on simplistic emission targets when, in fact, a more complex package of measures would be needed if countries' diverse interests and

circumstances are to be reflected in ways that actually advance a common goal. Fixing these problems requires a more flexible forum and one that concentrates on a smaller number of players—the L14, for example.

L14 negotiations on climate should contain at least five elements—each noted below, with some questions that require discussion that could, in turn, inform a communiqué.

First, the L14 must not threaten Kyoto. For some countries—notably the EU and Japan as well as developing countries that have become supporters of CDM—the Kyoto system is an important political and economic achievement. Moreover, for countries that must embed their national efforts in a legally binding treaty, the Kyoto framework is widely seen as the only viable option. Thus Kyoto (and its successor agreements) should be viewed as an umbrella, under which more intense negotiations and efforts, such as through the L14, could be undertaken. The L14 process could be seen as a forum to handle issues that are important yet have proven difficult or impossible to address in the Kyoto framework. Such issues could include long-term targets that frame the level of effort that will be required—e.g., warming no more than 2-3 degree C, or concentrations of CO₂ and other greenhouse gases no higher than 550ppm, which is double the pre-industrial level.

Second, the L14 process must encourage a multiplicity of autonomous efforts. Ultimately, a global approach will be needed, but starting with a globally integrated system will lead to the lowest common denominator. Thus globalism must be built from the bottom-up. Thus countries that want to undertake serious efforts to control emissions might adopt carbon taxes or cap & trade systems or sundry regulations. A range of approaches is not an enemy of a global effort to manage climate change—it is, rather, a sign of seriousness. The L14 could play a central role in promoting useful diversity in two ways:

- By providing a framework for technical support to analyze the level of effort in each nation's proposed "package" of measures that it would take—so that there is some shared understanding and agreement on the comparability of effort and likely impact on emissions. This could be done through the L14 itself or delegated to some other respected organization such as the International Energy Agency. Among the precedents for providing such functions are the North Sea Conferences and also the WTO secretariat (working with key WTO members) during WTO accession talks as well as the WTO's dispute resolution system during some trade disputes.
- A second important function is to focus countries on ways to integrate their fragmented efforts in time. For example, countries that create emission trading systems could establish agreements for mutual recognition so that credits from one system would be legal tender in others. Then, much as a common European market for goods emerged through mutual recognition, a common system of emission trading could emerge. The L14 could provide the framework for setting and codifying such agreements. With time, it also might include a "most favored nation" provision so that bilateral deals created through the L14 could extend, automatically, to other members—just as MFN in the GATT helped that system blossom, over many decades, into a global scheme from more humble beginnings as a series of reciprocal trade concessions.

Third, a new strategy is needed for engaging developing countries. The CDM is not working well (though must be preserved in some form, for it has a strong political constituency). Our program at Stanford estimates that one-third to one-half of the CDM credits in circulation are without merit; and we have shown that most of the investments are concentrating on marginal activities that actually have little (possibly negative) impact on the fundamental choices about investment in energy infrastructures. Yet without a change in infrastructure it will be impossible to alter much the trajectory of global warming. At the same time, the strategy of forcing developing countries to cap emissions is not compatible with those countries' interests. Some industrialized countries—most recently France—have suggested forcing developing countries to accept limits by creating trade sanctions through the WTO. But that approach is unwise because it will cause crisis in the WTO and will be impossible to apply.

A better strategy would identify areas of action that align with these countries' development plans (and thus are relatively easy to implement because they align with existing interests) while also allowing for deep reductions in CO₂. Top candidates for such deals include:

- spreading viable commercial nuclear power to India, which requires building on the US-India commercial nuclear partnership with additional partnerships. Success here will also require working, notably through the IAEA, on a viable scheme for the nuclear fuel cycle;
- making gas more widely available in China, which would displace coal (at least marginally) and lead to much lower CO₂ emissions while also making it easier for Chinese cities to manage local air pollution problems. This deal will require, among many things, an arrangement between Russia and China to supply large volumes of gas as well as Chinese confidence in complementary supplies of gas from other countries as LNG delivered along the coastline. A key sticking point is the Russian supply, and solving that requires all of Russia's major customers (including the EU) to gain confidence in Russia's ability to produce the volumes needed.
- implementing a viable plan for slowing deforestation in Brazil (and other countries whose silvan balance sheets are shrinking). Most deforestation is due to activities that cause other harms to Brazil, such as large subsidies for rural settlement (which are especially costly at present because price controls on oil products are one of the key subsidies) as well as poor enforcement of existing settlement and environmental rules in the Amazon region.

Assembling these “deals” will be a complex task because each will require special provisions and acute attention to local interests and capabilities. Thus only a few deals should be pursued, and the ones selected for action should offer large cuts in emissions. Such deals, by nature, are unlikely to be realized through existing carbon investment schemes such as the CDM, which require calculating the “baseline” of emissions that would occur without the deal and then award credit for the difference. Fundamentally, the approach proposed here would alter baselines. What is striking, however, is that all the deals suggested above—and many more—reflect real actions that are already at least partially underway and thus likely to succeed if pushed with vigor.

Fourth, it is important that the effort not become seized entirely with a focus on regulating emissions. Such policies encourage switching from high-carbon fuels and technologies to those with lower or zero carbon. They also encourage energy efficiency. Those are important tasks, but by themselves they are inadequate to solve the climate problem. Radically new technologies are needed. The L14 could play a role in coordinating negotiations on investment in new R&D and in coordinating that R&D in cases where an international approach is needed—such as with costly programs (e.g., highly advanced and commercially risky coal combustion programs, or advanced nuclear reactors). It could also provide a forum for discussing the types of national policies that have become barriers to an adequate level of R&D effort worldwide—such as the failure of some countries to sustain tax incentives for R&D. For technologies that require costly and risky demonstration projects, the L14 could provide a forum for coordinating the investment provisions and perhaps technology standards that would encourage government agencies and private investors to build the needed demonstration plants as well as order the commercial units once the technology is proven. There is already some experience with such programs, such as CERN, ITER, the Human Genome project, the Generation IV nuclear reactor program, and the US-led FutureGen program on advanced coal. The L14 could establish task forces on key technologies, building perhaps on similar task forces already established under the Asia Pacific Partnership. It could also serve as the forum for codifying key agreements on R&D strategy while charging other organizations with follow-up—such as OECD, which has played this role for many large international science projects. The L14 is potentially a good forum for coordinating R&D since its members are likely to include the countries that account for about 90% of all R&D spending worldwide—including China and India whose roles in global R&D for some technologies are rapidly expanding.

Fifth, and finally, the L14 will need to instruct other agencies with tasks. I have already suggested some tasks for the IEA, OECD, and IAEA. The L14 might also instruct the IPCC with particular tasks for reviewing aspects of climate science or advanced engineering that are crucially important for addressing the climate problem—just as IPCC did when it provided a comprehensive assessment of the prospects for capturing and sequestering CO₂ from power plants. It may instruct the Energy Charter forum to address some issues related to gas supply involving Russia, although that approach will first require an assessment of whether Russia is willing to work with that institution that has become one of the EU’s main mechanisms for addressing gas security. The L14 may also instruct certain regional organizations—such as APEC, ASEAN or NAFTA—to focus their efforts on implementing some of the “deals” that could engage critical developing countries.