

ISSUE BRIEF

The Climate Has Changed— So Must Policy

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Raymond J. Kopp



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The Center for Climate and Electricity Policy (CCEP) at Resources for the Future provides a framework for policymakers and stakeholders to better understand and address one of the most complex economic and environmental issues of our time—climate change—and to better understand the structure of and options for U.S. electricity generation, the main source of U.S. greenhouse gas emissions. The work of the Center is organized into three areas: 1) activities designed to support domestic policy development, 2) research on international climate policy strategies, 3) and analysis to anticipate the future needs of policymakers. Cross-cutting these areas are the three themes: mitigation, adaptation, and electricity policy.

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The Climate Has Changed—So Must Policy

Raymond J. Kopp¹

This year marks the 20th anniversary of the United Nations Framework Convention on Climate Change (UNFCCC). Adopted in 1992 at the UN Conference on Environment and Development (the “Rio Earth Summit”), this international treaty seeks to guide and shape efforts to develop an effective global response to climate change.² We have seen some progress toward this goal, but few would argue the treaty has been even moderately successful in stemming greenhouse gas (GHG) emissions. In the past 20 years, while international negotiations under the UNFCCC have been ongoing, global emissions of carbon dioxide have increased almost 50 percent.³

The lack of progress has opened the treaty to scrutiny, criticism, and even derision. Perhaps 20 years is insufficient time for such a difficult problem to be solved, and hard work over the next decade will bear fruit. Or perhaps no real progress can ever be made under the treaty, and we must adapt to a significantly altered climate. Or, as I suggest, climate policy will evolve and become integrated within the broader economic and political considerations of individual nations.

The purpose of this brief is to explore the evolution of international efforts to formulate global climate policy. This is a positivist rather than normative essay. That is, it is not my intention to suggest what the path forward ought to be, but rather, what the path might likely be, given the global economic and political forces shaping the foreign policies of the major nations.

This piece is composed of four sections. In the first section I trace the historical development of the UNFCCC. The decisions made over the past decades have shaped the current process and, I argue, are responsible for its ineffectiveness in reducing global emissions. In Section 2 I identify the global economic and political forces that drive both domestic and foreign policy on climate change. Section 3 describes how these forces dictate an alternative to the UNFCCC treaty process, and Section 4 speculates about the form of that alternative.

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¹ Senior Fellow and Director, Center for Climate and Electricity Policy, Resources for the Future; kopp@rff.org.

² There have been other international efforts under the auspices of the G8, G20 (<http://www.g20.org/index.aspx>) and Major Economies Forum (<http://www.majoreconomiesforum.org/>), but these have been very recent activities and relatively narrow in scope. However, these institutions could play a much larger role in the future.

³ From just over 20 gigatons to just under 30 gigatons (see IEA 2010, 8).



1. How Did We Get Here?

The UNFCCC and its major amendment—the Kyoto Protocol—constitute the dominant regime for international cooperation on matters of climate change. It’s helpful to review the origins of the current regime so that we can critically assess its effectiveness, viability, and alternatives.

THE STOCKHOLM CONFERENCE

The UN Conference on the Human Environment, held in 1972 in Stockholm, drew worldwide attention to environmental problems. The conference of 113 nations—developed and developing—focused not only on the environment and protection of natural resources but on economic and human development as well. Participants identified the need for international cooperation to achieve the twin goals of environmental preservation and economic development. The official conference declaration laid the foundation for the concept of sustainable development, even though the term does not appear in the declaration.

Four features of the Stockholm conference contributed to the DNA of the current UN climate regime. First, the conference followed an all-inclusive UN model, in which representatives of countries with disparate histories, cultures, economies, politics, priorities, and problems come together to discuss and negotiate a specific international issue. Second, it merged environmental protection and economic development into a single goal. Third, the conferees decided that the goal could be attained only through international cooperation, and that the framework for that cooperation would be the inclusive, consensus-driven UN process.⁴ Fourth, the conferees articulated agreed-upon principles but did not address implementation.

THE RIO SUMMIT AND THE FRAMEWORK CONVENTION

In 1983 the UN established the World Commission on Environment and Development to examine the relationships between environmental degradation, poverty, and economic growth. Chaired by Gro Harlem Brundtland, of Norway, the commission formalized the concept of sustainable development. Following on the “Brundtland Report,” the UN General Assembly in 1987 called for the Conference on Environment and Development (UNCED).

Held in Rio de Janeiro in June 1992, the conference followed the model of the Stockholm meeting. This time 172 nations participated, each having an equal voice, along with 2,400 representatives of nongovernmental organizations. The conference led to three agreements—Agenda 21, concerning sustainable development; the Rio Declaration on Environment and Development; and the Statement of Forest Principles—and, of direct importance to the issue of climate policy, a legally binding treaty, the UN Framework Convention on Climate Change.

Whereas the Stockholm conference focused attention on both the environment and economic development, the environment held center stage at Rio. Most of the negotiation centered on environmental matters, and most of the negotiators came from environment ministries. Trade and finance ministers were notable by their absence, and fundamental elements of development

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⁴ Consensus had meant unanimity in UN processes dealing with climate change until UN climate chief Christiana Figueres stated in Cancun, Mexico at COP 16 this past December 2010 that “The rule of consensus does not mean unanimity.”



policy—trade, market liberalization, direct foreign investment, technology, finance—were not addressed. Splitting global environmental policy from economics and economic growth was perhaps unintentional but truly unfortunate, and only now are they being rejoined.

The UNFCCC goal was “stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.” While laudable, to say the goal lacked specificity is an understatement.⁵ (Today, international climate policy has a somewhat specific goal—that global mean temperature not be allowed to rise more than 2 degrees Celsius above preindustrial levels.) Moreover, like the Stockholm conference 20 years earlier, the UNFCCC had wide-ranging global support (including ratification by the U.S. Senate). Signatories agreed to take actions to reduce greenhouse gas emissions, but these actions were undefined and purely voluntary; no compliance or penalty language was needed or included.⁶

Interestingly, the Rio Summit added five bits of DNA to global climate regime. First, developed and developing countries would have “common but differentiated” responsibilities: all nations would agree to undertake some activities, but the heavy lifting to reduce GHG emissions would be done by the developed nations.⁷ The developed nations were listed in Annex 1 and agreed to the actions spelled out in Article 4 of the convention.⁸

Second, developed nations would also act first to reduce emissions, and at some ill-defined point in the future, developing countries would be called upon to reduce emissions.⁹

Third, the convention defined a goal for the Annex 1 nations—to return annual emissions to 1990 levels¹⁰—but the implementing policies and measures to attain the goal were not defined.

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⁵ In addition, the goal presumes that a concentration threshold exists above which danger prevails and below which safety reigns. If such a threshold exists, it is currently unknown or at least not widely recognized. As pointed out by Schmalensee (1998), the presumption of a threshold rules out the use of any formal cost-benefit balancing with respect to the choice of policy.

⁶ Bodansky (2001) and others have observed that following the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988, many nations, particularly those of the European Union and the small island states, began to advocate for mandatory reductions of greenhouse gases and to establish national emissions reduction targets. The first Bush Administration was opposed to this idea and prevented such emissions reduction targets from being incorporated into the UNFCCC.

⁷ As stated in the UNFCCC, “Acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions ...”

⁸ Article 4, paragraph 2(a), states, in part, “Each of these Parties shall adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention.”

⁹ “Recognizing also the need for developed countries to take immediate action in a flexible manner on the basis of clear priorities, as a first step towards comprehensive response strategies at the global, national and, where agreed, regional levels that take into account all greenhouse gases, with due consideration of their relative contributions to the enhancement of the greenhouse effect.” UNFCCC.

¹⁰ Article 4, paragraph 2(b): “Parties shall communicate, within six months of the entry into force of the Convention for it and periodically thereafter, and in accordance with Article 12, detailed information on its policies and measures referred to in subparagraph (a) above, as well as on its resulting projected anthropogenic emissions by sources and removals by sinks of



Fourth, no rationale—scientific or political—was provided for choosing 1990 emissions as the target. Since there is no scientific or political link that ties short-term emissions reductions to long-term atmospheric concentration goals, the focus on short-term emissions reductions has been criticized as inconsistent with the concentration stabilization objectives.

Finally, there is no timetable for reducing emissions to 1990 levels, and there are no penalties for failing to return to 1990 levels. The absence of compliance and penalty provisions continues to be part of the treaty DNA even as specific actions to reduce emissions have been added.¹¹

THE BERLIN MANDATE AND KYOTO PROTOCOL

The UNFCCC called for all signatories to meet once a year at a conference of the parties (COP) to conduct treaty business.¹² The treaty required them to review the adequacy of the Annex 1 commitments—that is, the 1990 emissions reduction target—at the first COP, held in Berlin in 1995. No review of non-Annex 1 (developing nations) actions was intended or carried out.

The result of the review was the Berlin Mandate, stating that the parties agreed “to begin a process ... to take appropriate action for the period beyond 2000, including the strengthening of the commitments of the Parties included in Annex I to the Convention.” The process would further define the policies and measures that Annex 1 countries would take and “set quantified limitation and reduction objectives within specified time-frames, such as 2005, 2010 and 2020” The Berlin Mandate is perhaps the first clear expression of the coming “top-down” approach to international climate policy.¹³

The Clinton Administration, then in office, had departed from the previous administration’s distaste for binding targets and timetables; its negotiators agreed to the language. Following adoption of the mandate, the parties formed the Ad Hoc Group on the Berlin Mandate (AGBM) to develop the targets and timetables for consideration at the third COP meeting, in Kyoto in 1997. Once again, the focus was squarely on Annex 1 countries. In response, the U.S. Senate sent a strong message to the administration in summer 1997 by voting 95-0 in support of the Byrd-Hagel Resolution. The resolution stated the Senate’s opposition to the absence of commitments by

greenhouse gases not controlled by the Montreal Protocol for the period referred to in subparagraph (a), with the aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol.”

¹¹ The failure of the UNFCCC and its subsequent amendments to specify effective compliance and penalty provisions is recognized as one of the treaty’s major weaknesses (see Barrett 2003 for a detailed description of the compliance and penalty critique of the UNFCCC).

¹² Like the 1972 Stockholm Conference and Rio in 1992, the COPs were mega events with 150-plus participating nations and thousands of NGO representatives. One can argue that these annual COPs kept the climate issue visible and put political pressure on countries to act.

¹³ Hare et al (2010, 601) characterize a strong top-down approach as approach that “would involve strong global coordination, be centred around the pursuit of a common objective, and be implemented through targets and timetables based on commonly agreed rules, which would be progressively broadened and strengthened over time and would be legally binding, with a strong measuring, reporting and verification (MRV) system and compliance mechanism.”



developing countries and to binding targets and timetables that the senators believed would cause economic harm.¹⁴

The result of the work by AGBM was an amendment to the UNFCCC, negotiated at COP3 and known as the Kyoto Protocol. Its substantive provision was the establishment of legally binding targets and timetables for individual countries' reductions in GHG emissions.¹⁵ Despite the warning issued by the U.S. Senate a few months earlier, Vice President Al Gore flew to Kyoto to sign the protocol on behalf of the United States.¹⁶

Although the protocol required specific outcomes – quantified emissions reductions at specific points in time – it allowed flexibility in how those reductions would be achieved by introducing two features: tradable allocated amounts and the clean development mechanism (CDM). Tradable allocated amounts meant a country with low emissions could transfer (sell) a portion of its GHG reduction commitment to another country that was unable or unwilling to meet its target reductions. This flexibility mechanism, based on the U.S. tradable emissions permit system, was designed to lower the cost of meeting the emissions reduction targets. Under the CDM, project-level offsets (called certified emission reduction units) generated in developing countries could be sold to a developed, Annex 1 country and used to meet that country's Kyoto commitment. The primary purpose was to lower compliance costs in Annex 1, but CDMs were also envisioned as a way to help the developing world with both economic development and GHG emissions reduction.

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¹⁴ In part the resolution stated the following.

Resolved, that it is the sense of the Senate that--

- (1) the United States should not be a signatory to any protocol to, or other agreement regarding, the United Nations Framework Convention on Climate Change of 1992, at negotiations in Kyoto in December 1997, or thereafter, which would--
 - (A) mandate new commitments to limit or reduce greenhouse gas emissions for the Annex I Parties, unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period, or
 - (B) would result in serious harm to the economy of the United States; and
- (2) any such protocol or other agreement which would require the advice and consent of the Senate to ratification should be accompanied by a detailed explanation of any legislation or regulatory actions that may be required to implement the protocol or other agreement and should also be accompanied by an analysis of the detailed financial costs and other impacts on the economy of the United States which would be incurred by the implementation of the protocol or other agreement.

¹⁵ Article 3: "The Parties included in Annex I shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A do not exceed their assigned amounts, calculated pursuant to their quantified emission limitation and reduction commitments inscribed in Annex B and in accordance with the provisions of this Article, with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012."

¹⁶ Because the U.S. Senate has sole authority to ratify international treaties, the vice president's signature was only symbolic.



THE HAGUE, BONN, AND SECOND BUSH ADMINISTRATION

After COP3, the Kyoto Protocol was still a work in progress. Over the following three years negotiators filled in the details and readied the protocol for ratification. Recognizing the uphill battle the protocol would face in the U.S. Senate, the U.S. negotiating team to COP6, held in The Hague in December 2000, attempted to make the protocol as kind to the United States as possible. In the end, The Hague round of negotiations produced no progress; a second round was scheduled six months later, in Bonn.

However, in 2001 the second Bush Administration was in office, and in March, President Bush formally withdrew the United States from further negotiations. The Bonn negotiations proceeded, and most contentious issues were laid to rest. It would take another four years for the protocol to be ratified by the required number of countries and to enter into force on February 16, 2005.

We now fast-forward through the two terms of the Bush presidency, setting aside the geopolitical disruptions of the decade, and consider four noteworthy developments. First, scientific understanding of the relationship between human activities and climate change was surveyed by the Intergovernmental Panel on Climate Change, whose Fourth Assessment Report confirmed the link. Second, emissions from developing countries (non-Annex 1), most especially China, were increasing rapidly. Third, major trading partners—both developed and developing countries—became locked in a battle for markets and economic growth, and in this competitive environment, developed nations questioned whether China, India, and Brazil were still “developing” countries that required special status as non-Annex 1 countries. Fourth, late in his second term, in 2007, President Bush hosted a conference of major GHG emitters in Washington to discuss ways to limit greenhouse gas emissions without impeding economic growth. The major emitters were the Group of 8 (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States) plus Brazil, China, India, Mexico, and South Africa. The meetings of “major economies” were continued by the Obama administration and serve as a venue where global climate policy can be discussed beyond the confines of the UNFCCC.

Those four developments set the stage for the current events. There is now a scientific consensus that humans are affecting the global climate and that unless checked, the effects might overwhelm the climatic system. GHG mitigation by the developed countries acting alone is not sufficient to halt and reverse the problem; developing countries must also reduce emissions. Globalization of markets is increasing and with it, intense competition to maintain politically acceptable domestic economic growth targets. The bulk of global GHG emissions are due to a handful of countries that together must reach a deal, and part of that deal must be acceptable levels of economic growth.

2. What Facts and Forces Will Shape the Future?

From a positivist perspective, the path ahead will be shaped by broad political and economic forces. Consider the following premises.



The threat posed by climate change will not go away on its own.

It is highly unlikely we will awake one morning to a scientific revelation that the threat posed by climate change has been vastly overstated. Rather, emissions will continue to accumulate in the atmosphere, and we will learn more about the response of the atmospheric and terrestrial systems to that accumulation.

Climate change is not an environmental problem.

Climate change could have catastrophic environmental consequences, but so could nuclear war – yet we don’t think of nuclear disarmament as an environmental problem. Greenhouse gas mitigation, the climate parallel to nuclear disarmament, is first and foremost an energy, technology, land-use, and investment problem. If one accepts this premise, then future negotiations regarding greenhouse gas “disarmament” will require expertise drawn from the energy, technology, land-use, and investment fields – areas of expertise not normally present at UNFCCC negotiations.

Unlike adaptation, mitigation is an issue for a small number of countries.

The countries that emit huge volumes of GHGs into the atmosphere are at present few.¹⁷ If low carbon energy technologies are developed and deployed in the near term, large scale mitigation will remain a policy problem for a small number of countries. However, given current patterns of economic growth and reliance on fossil energy technologies, large-scale GHG emission threats could proliferate unless low-carbon energy technologies are rather quickly deployed.

The world is characterized by inherent heterogeneity.

The major emitting economies differ in their economic, social, political, and cultural structures, and accordingly, so do their priorities for climate protection. This heterogeneity precludes the development of uniform policies for all nations. Public policies that may be acceptable and desirable in one country can be wholly unacceptable in another.

All countries do, however, share a common desire for economic growth.

Economic growth is the only demonstrated method by which large populations, on the scale of countries, can be lifted out of abject poverty and experience even minimal, subsistence levels of food security, shelter, health care, and education. And economic growth is the only path by which peoples can achieve the higher states of well-being associated with developed-country standards of living.¹⁸ The importance of economic growth to the material well-being of a country’s citizens is embraced by developed and developing countries alike, and hence the desire for growth is likely shared by all governments.

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¹⁷ More than 80 percent of current emissions is due to 20 political entities.

¹⁸ Some will argue that beyond basic needs, well-being does not depend on economic growth. It’s not my purpose here to argue the contrary, only to point out that the actions of most nations suggest that economic growth has a very high priority, and governments and regimes of countries where growth has not yet occurred or is lagging are often in precarious political positions, particularly if they are at all democratic.



Global competition is a fact of life.

The major world economies (and largest GHG emitters) are global competitors in both political and economic realms. The rapidly developing economies of China, India, and Brazil have now intensified the international competition, with ramifications for the older G8 countries felt most in the economic realm, through the “great rebalancing.”¹⁹ All negotiators of bilateral or multilateral international policies will have their nations’ competitiveness firmly in mind.

Economic laws are not amenable to repeal.

Two centuries of economic thought teaches us the following lesson. When individuals contemplate future actions, financial or otherwise, they explicitly or implicitly balance the costs of the action with the benefits. No matter how great the benefits of the action might be, if the costs are judged greater still, no action is taken. The same holds true for democratic governments considering policies to mitigate the threat posed by climate change. Policymakers balance the perceived threat posed by climate change against the perceived cost of action and choose mitigation activities such that the additional (political) value of further reductions in climate risk is just offset by the additional (political) cost incurred by the last bit of mitigation activity. A democratic government’s perception of benefit and cost can depart from the perceptions of its citizens, but not by much and not for long.²⁰

3. How Will Climate Policy Evolve?

We begin from the premise that the threat posed by climate change will motivate international action to restrain and reduce GHG emissions, and this motivation will be long-lived (at least over the next half-century). Given this premise, the path forward is determined in large part by the facts and forces noted in the previous section.

Heterogeneity among nations means the assessed threat posed by climate change and the priority assigned to addressing it will vary a great deal from one country the next. Importantly, even for countries where the threat and priority are approximately the same, heterogeneity in political and economic systems as well as culture means that policies to address climate change will differ. One size surely does not fit all.

Because a small number of nations account for the vast bulk of current emissions, negotiation of the GHG emissions reductions will take place among the major emitters. The inclusive, unanimity-drive consensus-based UNFCCC process involving 190-plus nations, which dates back 20 years to

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¹⁹ It’s unclear where the phrase “great rebalancing” first appeared, but an article in the June 2010 *McKinsey Quarterly* sums up the ramifications of the phenomena: “As the center of economic growth shifts from developed to developing countries, global companies should focus on innovation to win in low-cost, high-growth countries. Their survival elsewhere may depend on it.” http://www.mckinseyquarterly.com/The_great_rebalancing_2627.

²⁰ McKibbin and Wilcoxon (2006).



the Rio Summit (and arguably 40 years to the Stockholm conference), has been the wrong framework for negotiating such commitments. Its failure is now readily apparent.²¹

Negotiations among the major emitters will take place in the context of political and economic competition. This does not mean that political and economic considerations will always trump climate change. Quite to the contrary, the threat posed by climate change may become so large that political and economic considerations will take a back seat. What competition does mean is that each country will evaluate any consensus package of actions on the basis of their effect on its international competitiveness, in terms of economic growth.²²

The unprecedented levels of investment and technological advancement required to mitigate GHGs, combined with the desire of all nations for sustained economic growth, has two important influences on the path forward. First, the negotiation of mitigation targets and actions will become the realm of finance and trade ministers since we now recognize that climate change is not an environmental issue but rather an energy, technology, land-use, and investment problem. Second, although climate science will help mobilize political will and effort, science alone will not set the long-term climate policy goal.²³ Rather, the goal will be an evolving target set by the political balancing of the perceived threats posed by climate change against the perceived costs, all in the presence of great uncertainty.

4. What Will Be the Form of the New, Post-Kyoto Regime?

For two decades the international process to reach agreement on activities to limit GHGs has been dominated by the UNFCCC, but in the past few years alternatives have sprouted and taken root. In this concluding section I speculate about the form of international efforts to forge global collaboration and cooperation on climate change in a post-Kyoto world.

Recall the first premise in Section 2: that global efforts to mitigate emissions will intensify as those emissions continue to accumulate in the atmosphere and as our knowledge of climate science improves. The threat posed by climate change, though not nations' dominant domestic and foreign policy issues, will be ever present in the background and will have some influence, perhaps and growing influence, over policy developments that have climate implications.

DOMESTIC CIRCUMSTANCES DRIVE COMMITMENTS AND POLICIES

Surely the most striking difference between the UNFCCC Kyoto regime and the emerging international regime will be in the formulation of individual countries' mitigation commitments. Both developed and developing economies will hammer out new commitments from dominantly domestic processes rather than from grand international negotiations of commitments *à la*

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²¹ Although the UNFCCC will not be the venue for negotiating mitigation commitments, it may very well remain the venue for negotiations on other substantive issues, such as adaptation policy.

²² For example, policies might transfer large amounts of financial and technological resources from a developed country to a developing country to transform the latter's energy sector, thereby making it more internationally competitive in the production of energy-intensive goods. Such policies would be politically challenging for a developed country with an important energy-intensive goods industry.

²³ For example, the maximum 2-degree C global temperature increase over preindustrial levels.



Kyoto.²⁴ Thus the regime will change from a top-down process first established by the Berlin Mandate to a more bottom process that was arguably first seen in the Copenhagen Accord.

The U.S. Senate made clear early in 1997 it would not allow its domestic climate policy agenda to be shaped by the UNFCCC negotiations,²⁵ and the same was and is true of China and other major emitters among the developing countries. Strikingly, the opening of the most recent conference of the parties, held in Cancun in December 2010, saw Japan (a staunch supporter of the protocol) announce that it would not negotiate or be bound to additional mitigation commitments in a second Kyoto Protocol commitment period. Rather, Japan would set its own domestic policy and mitigation commitments outside any legally binding international treaty or process.²⁶

The reluctance of the major emitters (other than the European Union) to accept legally binding, internationally negotiated commitments reflects the different priority each sets on the threat of climate change and the fear that aggressive commitments will slow domestic economic growth and compromise international competitiveness. International negotiation still has a role to play in helping set individual country commitments, but that role will be very different from the UNFCCC negotiation process.

THE NEED FOR “WHERE FLEXIBILITY” AND THE VIABILITY OF GLOBAL CARBON MARKETS

Kyoto established provisions—tradable allocated amounts and the clean development mechanism for purchasing offsets of certified emissions reductions—by which Annex I countries could achieve flexibility in where they would reduce emissions.²⁷ Although many critics considered “where flexibility” insufficient to reduce mitigation costs to politically acceptable levels, the U.S. House’s 2009 climate and energy bill (Waxman-Markey) viewed it as the key to mitigation cost containment and, to that end, specified the establishment of bilateral agreements between the United States and developing countries. These bilateral agreements would allow U.S. private sector funds to flow to designated developing country partners and be used to decrease emissions in those countries. The quantities of emissions reduced would then be “repatriated” and used to meet the U.S. domestically imposed emissions reduction commitments. The United States has for now backed away from a comprehensive cap-and-trade approach to regulate GHGs, but the concept of bilateral agreements to provide where flexibility has been embraced by Japan; other developed countries may follow Japan’s lead and adopt similar mechanisms.²⁸

Are these bilateral agreements complements or substitutes for global or regional carbon markets, and if they are substitutes, are they superior to the development of global carbon markets? In a sense the bilateral agreement is akin to a two-country carbon-trading regime, so in terms of economic efficiency it is superior to autarky (economic self-sufficiency) but generally inferior to an

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²⁴ In the Kyoto Protocol, the “quantified emission limitation and reduction commitments” are described and specified in Annex B.

²⁵ See 15, *supra*.

²⁶ Statement by Ryu Matsumoto, Minister of the Environment, Japan, delivered December 9, 2010, in Cancun. See also http://www.mofa.go.jp/policy/environment/warm/cop/kp_pos_1012.html.

²⁷ Articles 3, 4 and 12 of the Protocol.

²⁸ See the “Bilateral Offset Mechanism” document distributed by the Government of Japan at COP16 in Cancun.



expanded market with more mitigation opportunities. However, in a global carbon market, wealth from countries with high mitigation costs flows to the lowest-cost mitigation provider, largely independent of broader political and foreign policy considerations. For example, financial resources may flow from country A to its economic competitor, county B, and therefore the market transaction may be at cross purposes with other foreign policy and domestic economic goals. In contrast, by its very construction the bilateral agreement which selects particular developing country partners is both an economic and a foreign policy tool and can be crafted such that the flow of funds complements other policy goals.

Choosing a bilateral agreement rather than participation in a broader carbon market is a trade-off between enhanced economic efficiency and economic and foreign policy coherence. This may be a trade-off many countries find attractive. If so, then I would expect to see a proliferation of such arrangements. Following the attractiveness of bilateral agreements, the formation of carbon markets may look like closed clubs where financing flows among club members, where club members are chosen to minimize negative economic or foreign policy consequences.

INTEGRATING CLIMATE POLICY WITH BROADER CONCERNS

Mitigating GHGs is a trade, technology, energy, and investment problem, and adaptation to climate change is largely an economic development problem. When climate policy is viewed through this lens, it properly belongs in global economic discussions of the type conducted within the G20 (the G8 plus Argentina, Australia, Brazil, China, the European Union, India, Indonesia, Mexico, Saudi Arabia, South Africa, South Korea, and Turkey) and importantly, in the many bilateral summits conducted from time to time by the major economies' chief executives.

This integration process has already begun. The G20 normally discusses climate policy at its meetings, and climate policy is often on the agenda of bilateral summits. Climate policy plays a dominant role at the meetings of the Major Economies Forum (MEF), which integrates climate policy within broader economic concerns, reflecting the high priority it gives to economic growth and economic and political competition. In fact, to the extent the UNFCCC continues to “stovepipe” climate change, isolating climate policy from the broader issue of economic growth, the more rapid will be its loss of relevance.

PLEDGE-AND-REVIEW: THE WAY FORWARD

Domestic circumstances, not UNFCCC negotiations, will drive and determine individual countries' commitments. These commitments may very well be legally binding under a country's domestic laws, but not binding under international law. However, since domestic commitments have implications for a county's economic growth and competitiveness, and since the goal of climate protection cannot be achieved unless all major emitters take domestic action, the international process will have some bearing on these domestic commitments.

An obvious candidate for an international process compatible with economic and political forces is “pledge and review”: a bilateral or (better) multilateral process is convened, each participating country places on the negotiating table its domestic commitment to mitigation actions, the countries then negotiate their final pledges, and at some agreed-upon point in the future, their progress on the commitments is assessed and a second round of pledging begins. The idea of a pledge and review as the backbone process for international climate negotiations is not new, but



rather, out of vogue until recently. As Navroz and Rajamani 2010 point out, Australia (2009, p.22-23) sketched a workable pledge and review process in 2009 within the context of the UNFCCC. The process then repeats itself.

At the most basic level, each country's pledge—its stated mitigation actions and commitments, which may vary in both form and magnitude—is a function of three factors:

- the country's perception of the threat posed by climate change, or in economic terms, its maximum willingness to pay (WTP) to mitigate the threat;
- the marginal cost of mitigation (based on domestic mitigation costs and the availability of where flexible mechanisms); and
- the actions taken by the country's most serious economic competitors.

The countries' commitments are linked to one another because their relative competitive positions and prospects for economic growth will be affected. For example, country A may perceive a high threat of climate change (and therefore have a high willingness to pay), suggesting it would pledge aggressive mitigation commitments (at high marginal control costs). However, country A's prime competitor, country B, might have a lower WTP and would pledge a smaller mitigation commitment and a lower marginal control cost. If A believes it will suffer competitively vis-à-vis B given the different marginal control costs, A will try to influence B's pledge, perhaps by offering concessions on issues of importance to B that are wholly unrelated to climate change.

Since negotiation of nonclimate issues can be used to blunt perceived negative competitive effects of aggressive mitigation actions, casting the pledge-and-review process in a broad context where many issues are subject to negotiation enlarges the feasible set of mitigation actions that a country will be willing to undertake. Thus, a process that is intended to drive aggressive mitigation commitments must include policies that can ameliorate the domestic competitiveness effects of those aggressive commitments.

At present there is no obvious venue that could accommodate this pledge-and-review process, but we can identify the venue's characteristics. The venue must include all the major emitters,²⁹ it must have a broad charter reaching deeply into trade, technology, and international finance policies, and given its broad charter, it must involve the heads of states. Importantly, the participants must be supported by deep technical expertise – specialists who can evaluate and compare, county-by-county, the effects of the pledges on GHG emissions and the range of economic ramifications distributed across all members of the pledge group. This technical support unit must ensure that the mitigation potential and economic effects of each country's pledge are made transparent to all participants. Transparency reduces uncertainty about the economic ramifications of each country's actions and therefore can be expected to facilitate the pledge-and-review process.

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²⁹ Although it makes sense to have all the major emitters at the pledge-and-review table, a good deal of bilateral negotiation between major competitors (e.g., the United States and China) would likely take place in advance.



The UNFCCC has succeeded in focusing attention on the threat posed by climate change and the need to drastically reduce global emissions of GHGs. However, it has not succeeded in stimulating coordinated mitigation action on a scale commensurate with threat and this failure is now widely recognized (if not publicly acknowledged). The Framework Convention may very well continue to play a productive role as the venue for negotiations on other substantive issues, such as adaptation policy, but as far as mitigation commitments are concerned, the interest of the major emitters in developing an effective international venue for meaningful discussion of mitigation policy suggests an alternative process and venue will be found.

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