Chapter 5
THE KYOTO PROTOCOL

SYNOPSIS

I. INTRODUCTION

Even as governments took the first steps to address climate change in the United Nations Framework Convention on Climate Change (UNFCCC or Framework Convention), most observers knew that it was just a starting point for the real negotiations that would certainly have to come in the future. The Framework Convention would only be as good as its ability to respond to emerging science and to establish a process for negotiating further commitments. The first test would come soon after the UNFCCC came into force, because the convention required the Conference of the Parties (CoP) at its first meeting to "review the adequacy" of the developed countries' commitments "in light of the best available scientific information and assessment on climate change and its impacts. . . ."

Although the UNFCCC did not include a legally binding obligation to meet 1990 levels of greenhouse gas (GHG) emissions by the year 2000, Article 4 required at least that developed country Parties try to meet that target. To outside observers, two things were clear by 1995 when the CoP met for the first time: first, the original target of freezing emissions at 1990 levels for Annex I countries was not going to be sufficient to meet the Convention's Article 2 objective — i.e., to achieve stabilization of greenhouse gas concentrations at a safe level; and second, even if it was sufficient, few developed countries were even going to come close to meeting the 1990-level target.

As described below, the negotiations for the Kyoto Protocol were complex, intense, and,

until the final hours, filled with uncertainty. Ultimately, the Parties would agree to an ambitious — if somewhat ambiguous — agreement that would set clear targets for reducing the net greenhouse gas emissions of most developed countries while allowing them to meet these targets by trading emission credits among themselves or investing in climate-friendly projects in developing countries. While the United States withdrew from the Protocol, Europe and other developed countries went forward. Once only theoretical, the Kyoto Protocol's "cap-and-trade" system entered into force in 2005 and created a dynamic market for buying and selling greenhouse gas emissions. *See* Kyoto Protocol to the United Nations Framework Convention on Climate Change, FCCC/CP/1997/L.7/Add.1 (Dec. 11, 1997), entered into force (Feb. 16, 2005) [hereinafter Kyoto Protocol].

The Kyoto Protocol set binding targets for developed country Parties to reduce greenhouse gas emissions an average of 5.2 percent from 1990 levels during the period from 2008 through 2012 (the first commitment period). The Protocol's design anticipated additional commitment periods beginning in 2013, with targets that would have to be negotiated. Those negotiations would become entwined with broader climate negotiations aimed at creating binding commitments on developing countries and non-Kyoto Parties, particularly the United States. Ultimately, the Parties negotiated a "limited Kyoto II" agreement in late 2012 that created a second commitment period from 2013 to 2020 and maintained much of the architecture of the Kyoto Protocol. Thirty-seven countries, including the twenty-seven countries of the European Union, Australia, Switzerland, and Norway agreed to a second round of binding targets as part of Kyoto II. The Kyoto Protocol's second commitment period is largely meant as a partial bridge to what many hope will be a universally approved agreement with more widely applied targets to take effect in 2020.

This chapter introduces the negotiating process that led to the Kyoto Protocol, followed immediately by a summary of the basic provisions of the Protocol and a summary of Kyoto II. The details of several particularly complicated issues, including the role of carbon markets, and the treatment of forests and other sinks, are addressed in Chapters 7 and 8, respectively. Although the Kyoto Protocol has been widely criticized and relatively few countries have agreed to Kyoto II commitments, the basic architecture and approach of the Kyoto Protocol remain important for understanding international climate policy, as they will likely influence the design of any future agreements.

II. NEGOTIATING THE KYOTO PROTOCOL

A. The First CoP and the Berlin Mandate

Environmentalists and most developing countries came to Berlin for the first meeting of the Conference of the Parties (CoP1) hoping to persuade the Annex I countries to step up their level of commitment, both financially and politically. A group of developing countries offered a first draft of what became known as the "Berlin Mandate," which would establish a timetable for developed countries to negotiate a protocol with clear "quantifiable emissions limitation and reduction objectives" (QELROs) — a new term for "targets and timetables."

CONCLUSION OF OUTSTANDING ISSUES AND ADOPTION OF DECISIONS

FCCC/CP/1995/L.14 (April 7, 1995) (The Berlin Mandate)

The Conference of the Parties, at its first session, having reviewed Article 4, paragraph 2 (a) and (b) and concluded that these are not adequate, agrees to begin a process to enable it to take appropriate action for the period beyond 2000, including the strengthening of the commitments of Annex I Parties in Article 4, paragraph 2 (a) and (b) through the adoption of a protocol or another legal instrument. * * *

2. The process will, *inter alia*:

(a) Aim, as the priority in the process of strengthening the commitments in Article 4.2 (a) and (b) of the Convention, for developed country/other Parties included in Annex I, both to elaborate policies and measures, as well as to set quantified limitation and reduction objectives within specified time-frames, such as 2005, 2010 and 2020, for their anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol taking into account the differences in starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances, as well as the need for equitable and appropriate contributions by each of these Parties to the global effort, and also the process of assessment and analysis referred to in section III, paragraph 4, below;

(b) Not introduce any new commitments for [developing country] Parties . . . , but reaffirm existing commitments in Article 4.1 and continue to advance the implementation of these commitments in order to achieve sustainable development, taking into account Article 4.3, 4.5 and 4.7; * * *

3. The process will be carried out in the light of the best available scientific information and assessment on climate change and its impacts, as well as relevant technical, social and economic information, including, inter alia, IPCC reports. It will also make use of other available expertise. * * *

The Berlin Mandate thus set the Parties on a path to negotiate targets and timetables for developed countries by the third meeting of the CoP, which was scheduled for December 1997 in Kyoto, Japan. The Ad Hoc Working Group on the Berlin Mandate (AGBM) was tasked with the negotiations.

QUESTIONS AND DISCUSSION

1. In the Berlin Mandate, the Parties essentially "agreed to agree" to a treaty with certain general characteristics. What are the primary parameters established in the Berlin Mandate for the ensuing negotiations? What role does such a document play? As you read the description of the Kyoto negotiations below, consider how the Mandate influenced the outcome. Preliminary agreements on workplans or negotiating parameters are often overlooked by the media, but they are important for setting the agenda and aligning the Parties in anticipation of the actual negotiations. The "Durban Platform" adopted in 2011 and discussed in Chapter 6 plays a similar role today, setting an aspirational timetable for a universally applicable agreement by 2015.

2. Can you see how the Framework Convention's mechanism for reviewing progress was critical for pushing the Parties toward the Berlin Mandate?

B. Prelude to Kyoto: Building Political Will

The Berlin Mandate establishes the parameters for what would eventually become the Kyoto Protocol: targets and timetables (though named "quantified limitation and reduction objectives") for developed countries were in; developing country commitments to reduce emissions were out. Nevertheless, reaching agreement on the Kyoto Protocol would prove very difficult and involve massive efforts to build political will domestically for binding commitments, while trying to negotiate an acceptable formula for compromise internationally. Ultimately, negotiations over the Kyoto Protocol would continue past the scheduled end of the meeting.

In 1995, the IPCC released a report that would become a significant milestone in the development of the climate regime. For the first time, the IPCC formally reported a consensus among scientists that "the balance of evidence suggests that there is a discernible human influence on global climate." The climate was changing and humans were causing it. This conclusion sparked considerable debate, pitting the great majority of atmospheric scientists and environmentalists who endorsed the IPCC report against a small but vocal group of "climate skeptics" funded substantially by the fossil fuel industry. *See* Ozone Action, TIES THAT BLIND (1996).

Despite the initial controversy, the IPCC Report catalyzed the negotiation of the Kyoto Protocol. The scientific consensus that climate change was not only a serious long-term problem but was actually already occurring provided the political leaders with critical support for adopting targets and timetables. However, global emissions of greenhouse gases had increased in the years since the 1992 UNFCCC was adopted, making efforts based on a 1990 baseline even more difficult for some countries, including the United States, to achieve.

At Berlin, several key Parties re-tabled the negotiating positions they had proposed during the UNFCCC three years earlier. The Europeans for the most part maintained their position of calling for 15 percent reductions in CO_2 from 1990 levels by the year 2010. The Alliance of Small Island States (AOSIS) continued their call for 20 percent reductions in CO_2 by the year 2005, by far the most progressive stance of any official delegation or negotiating bloc, and one that gained little support from other governments.

The United States, meanwhile, was increasingly isolated in its refusal to support any target or timetable. Finally, in part because of the findings in the 1995 IPCC Report and because of growing public pressure, the United States surprised climate negotiators by announcing for the first time that it would support binding targets and timetables for greenhouse gas emissions. The United States was silent, however, on what specific levels it would support. Nonetheless, the public announcement gave a shot in the arm to the negotiations and offered the first promise that a meaningful regime might be negotiated at Kyoto.

Through the next year, the United States remained silent about specific targets and timetables. Increasing pressure built from Europe as well as the developing countries for the United States to show leadership on this issue by announcing support for a strong target. Instead, President Clinton announced at the "Rio+5" Session of the United Nations in June 1997 (marking the five-year anniversary of the Earth Summit and the signing of the UNFCCC) that he would use the six months remaining before Kyoto to educate the American public about the need for greenhouse gas reductions.

The Europeans and others were not pleased with the U.S. position. Perhaps the loudest cheers during the entire Rio+5 Session greeted British Prime Minister Tony Blair when he indirectly criticized the United States by saying "some of the greatest industrialized nations" have not lived up to their promises. He stated further that: "The biggest responsibility falls on those countries with the biggest emissions. . . . We in Europe have put our cards on the table. It is time for the special pleading to stop and for others to follow suit." The G-77 Chairman, Daudi Mwakawago was even clearer: "[President Clinton] articulated the problems very clearly, but when it came to global action, joining the rest of humanity to address them, there wasn't very much there."

Clinton's announcement that he would build political will over the next six months catalyzed both sides of the U.S. climate debate to rally their troops and build political support for either a stronger or weaker protocol. Just a few months after Clinton's June speech, industry announced a $13 million dollar campaign under the ambiguous name of the "Global Climate Information Project." Amid a refrain of "It's not global, and it won't work," industry first attacked the Framework Convention as being unfair to U.S. industry because it let developing countries off the hook for binding commitments. Other ads in the campaign claimed that energy prices would rise more than 20 percent. Over 1500 utilities, trade associations, labor unions, and other corporations signed on to an advertisement asking the President not to "rush into an unwise and unfair United Nations Agreement that's bad for America." WASHINGTON POST, Oct. 6, 1997, at A9. The U.S. Senate added its support to this position by passing a resolution urging the President not to agree to any convention that did not include binding targets on developing countries. The so-called Byrd-Hagel Resolution strongly influenced both the Kyoto negotiations and the ensuing national dialogue over whether to support the Kyoto Protocol.

S. RES. 98, REPORT NO. 105–54, 105TH CONG.

(July 25, 1997)

Expressing the sense of the Senate regarding the conditions for the United States becoming a

signatory to any international agreement on greenhouse gas emissions under the United Nations Framework Convention on Climate Change. * * *

Whereas the 'Berlin Mandate' calls for the adoption, as soon as December 1997, in Kyoto, Japan, of a protocol or another legal instrument that strengthens commitments to limit greenhouse gas emissions by Annex I Parties for the post-2000 period and establishes a negotiation process called the 'Ad Hoc Group on the Berlin Mandate';

Whereas the 'Berlin Mandate' specifically exempts all Developing Country Parties from any new commitments in such negotiation process for the post-2000 period; * * *

Whereas greenhouse gas emissions of Developing Country Parties are rapidly increasing and are expected to surpass emissions of the United States and other OECD countries as early as 2015; * * *

Whereas the exemption for Developing Country Parties is inconsistent with the need for global action on climate change and is environmentally flawed; [and]

Whereas the Senate strongly believes that the proposals under negotiation, because of the disparity of treatment between Annex I Parties and Developing Countries and the level of required emission reductions, could result in serious harm to the United States economy, including significant job loss, trade disadvantages, increased energy and consumer costs, or any combination thereof; * * *

Now, therefore, be it

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) 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.

Environmental groups countered by launching media and public information campaigns and grassroots actions to raise awareness and garner support for U.S. commitments to cut greenhouse gases. Some environmental groups attacked Vice President Gore, quoting passages from his book *Earth in the Balance* and running advertisements with the words "Withdrawn by the author" superimposed over a copy of the book's cover. A statement signed by over 2600 leading scientists was handed to the President on June 18, 1997, endorsing strong and clear commitments at Kyoto. A similar statement from over 1000 leading economists argued that the United States could meet the objectives of the Framework Convention without harming the national economy.

Inside the White House, however, infighting continued between those pushing the Administration to come as close as possible to the European position and others cautioning that dramatic steps could harm the robust U.S. economy. Even a Department of Energy study, which concluded that energy efficiency technologies could allow the United States to reach 1990 levels by the year 2010 with little or no overall cost to the economy, did not unify the Administration's position.

On the eve of the final formal negotiating meeting before Kyoto, the Clinton Administration announced its long-awaited policy on October 22, 1997. The U.S. position proposed a binding target of stabilizing emissions at 1990 levels by 2008 to 2012 and further unspecified reductions by the year 2017. To meet these targets, the President outlined a program of $5 billion in tax and other incentives to spur energy efficiency technologies; endorsed the concept of an international pollution trading system that would allow for reduced costs of compliance; and emphasized the restructuring of the electric industry concurrent to deregulation (a process that was already beginning). The Administration's position drew immediate criticism from both U.S. environmentalists and industry groups, and by governments around the world, especially European, which had hoped for stronger leadership from the world's only remaining superpower.

With the U.S. position finally known, the major proposals for targets and timetables leading up to Kyoto could be identified. See Table 5-1.

Table 5-1: Kyoto Negotiating Positions on GHG Reductions

Country/Bloc	**Negotiating Position**
Alliance of Small Island States	20% below 1990 levels by 2005
G-77	35% below 1990 levels by 2020
European Union	7.5% below 1990 levels by 2005; 15% below by 2010
Russia	1990 levels by 2010
Czech Republic	5% below 1990 levels by 2005; 15 % below by 2010
Eastern Europe	1990 levels by 2005
Peru	15% below 1990 levels by 2005
Brazil	30% below 1990 levels by 2020
Switzerland	10% below 1990 levels by 2010 based on per capita consumption

Japan	0–5% below 1990 levels by 2008–2012, depending on economic factors
United States	1990 levels by 2008–2012; further unspecified cuts by 2017

Differences over the targets and timetables were not the only differences separating the Parties as they entered the last year of negotiations for the Kyoto Protocol. Differences also existed on whether and to what extent emissions trading would be allowed, whether the experiment of joint implementation found in the UNFCCC would be expanded, whether developing countries would commit to making binding future commitments, and to what extent countries such as the OPEC countries (Organization of the Petroleum Exporting Countries) would be compensated for taking steps to address climate change.

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QUESTIONS AND DISCUSSION

1. The Berlin Mandate set out certain parameters for the negotiation of the Kyoto Protocol. For example, the mandate states that the Kyoto negotiations should "not introduce any new commitments" on developing countries. During the Kyoto negotiations, this aspect of the Berlin Mandate would come under intense criticism in the United States, particularly from industry. What justification is there for treating developing countries differently? Do you think those interested in climate change mitigation erred by including this language in the Berlin Mandate?

2. President Clinton quite explicitly made the run-up to Kyoto an exercise in building political support. He challenged environmentalists to show that the U.S. population would support strong action on climate change. To a certain extent, this seems a fair role for environmental groups to play — but what does it say about the President's own willingness to take a bold leadership position? How would you advise the President to build political will for strong and controversial international action? What if you were head of an environmental organization? How, then, would you seek to build political will?

3. The Byrd-Hagel Resolution substantially shaped the national debate over climate change for more than a decade. For example, when the Bush Administration repudiated the Protocol in 1992, it cited the same two reasons highlighted in the Byrd-Hagel Resolution — i.e., that the Protocol did not include developing countries and that domestic economic costs would be too high. What legal significance does the Byrd-Hagel Resolution have? How does this Resolution comport with the principle of common but differentiated responsibilities discussed in Chapter 4?

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C. Negotiations at Kyoto

Not since the 1992 Earth Summit had so much press and attention been paid to an international environmental negotiation as was paid to the Kyoto negotiations. Kyoto teemed with thousands of official delegates, reporters, scientists, activists, and industry officials — and not one of them went to Kyoto knowing how the Protocol would turn out, or indeed even if there would be a Protocol. The various positions of the key Parties — the European Union, the United

States, and the G-77 — seemed too distant for any meaningful agreement to be reached. In addition to being far apart on the size of commitments, the major negotiating blocs could not agree on such basic issues as whether all countries had to accept the same commitment; the extent to which emissions trading would be allowed; and what the consequences for noncompliance would be. Entering the final negotiations at Kyoto, virtually the entire text of the draft Protocol was still heavily bracketed, often with more than two alternative provisions elaborated. Yet, the public scrutiny was such that failure to reach an agreement would have been an embarrassing failure for many of the governments. And no one wanted to be blamed for "killing Kyoto."

One highly publicized turning point was the visit of U.S. Vice President Al Gore midway in the negotiations. Although he did not make any specific commitments, he publicly instructed the U.S. delegation to be "flexible" in order to reach an agreement. More important than what he said was that he was there at all — his presence in Kyoto raised the political stakes of failure. Within a few days, the United States announced that it would consider flexible targets and timetables, meaning that all the industrialized Parties did not have to agree to the same emission reductions and the same baseline year. Japan immediately tabled a new proposal that had the European Union reducing emissions more than either the United States or Japan. Not surprisingly, the European Union criticized the Japanese position, claiming that they were failing to play the traditional role of a host to facilitate consensus. The European Union insisted on being able to use a regional bubble concept, by which it could meet the emissions reductions through a system of trading between member countries. The United States, complaining that the Europeans had an unfair economic advantage in complying with any emissions standards, announced that it was considering creating its own emissions trading bloc with Japan, Russia, Canada, Australia, and New Zealand (collectively referred to as the Umbrella Group).

With two days left to go, the United States had finally agreed to a three percent reduction in emissions from 1990 levels and deals were starting to be made. The final negotiating session went essentially non-stop for forty-eight hours and the end of the session had to be extended for several hours. Even so, only the heavy-handed work of the negotiation's Argentinian Chairperson, Raul Estrada, averted last minute disputes between the G-77 and the industrialized countries that could have derailed the entire agreement. A hastily crafted compromise put off for one year any further discussions about developing country commitments, thus paving the way for final adoption of the Protocol. In the end, the Parties agreed to a set of clear targets and timetables, coupled with a decidedly unclear and complex trading structure that was meant to provide flexibility and lower costs of compliance for the Parties. Some of the last-minute political trade-offs and the tension in the negotiations can be seen in the following excerpt, written shortly after the negotiations ended. Many of these same tensions remain in today's negotiations.

MICHAEL GRUBB, ET AL.,
THE KYOTO PROTOCOL: A GUIDE AND ASSESSMENT
89–114 (1999)

3.5.3. International emissions trading **** * ****

The first reaction to the U.S. proposal [for emissions trading] was one of uncertainty, backed with a lot of suspicion. For most negotiators, the concept was entirely new. Indeed the United States itself was at the time unclear as to how it would develop the proposal in the context of an international agreement, and it mixed references to governmental commitments with examples of its sulphur trading programme, citing the need to let industry invest in emissions reductions wherever it was cheapest to do so. The import of the U.S. proposals only really became clear after a group of U.S. officials retreated over Christmas 1996 to hammer out specific textual proposals. Their subsequent Protocol proposal stated that countries — Parties to the Protocol — should agree to a specific commitment of 'carbon equivalent emissions allowed for a budget period', and that then: 'A Party . . . may . . . transfer to, or receive from, any other [participating] Party, any of its tonnes of carbon equivalent emissions allowed for a budget period, for the purpose of meeting its obligations.' The proposed basis on which governments could exchange their emission commitments was not specified and did not need to be: all that matters is that combined emission allowances after the 'trade' do not exceed the initial combined total allocation. The responsibility rests with the governments, but the way in which countries limit emissions internally would remain entirely a sovereign issue, as would the terms of trading.

The U.S. draft language then stated that: 'A Party may authorize any domestic entity . . . to participate in actions leading to transfer and receipt . . . of tonnes of carbon equivalent emissions allowed.'

This could allow a government to create an internal system of tradable emission permits along the lines of the system used for controlling sulphur in the United States, and then to engage in international trading. Each participating industry would be required to obtain permits equivalent to its emissions. Direct participation in such a system could be limited to major industries (such as power generators). The new feature would be that industries could trade internationally with companies in other countries that adopted a similar system.

Although many details remained to be resolved . . . , the essence of the U.S. proposal on emissions trading was now clear; and the United States embarked upon strenuous diplomatic efforts to explain and promote the concept to other countries.

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Initial reactions included concern that emissions trading would somehow confer a morally objectionable right to pollute. In the OECD, this concern did not go far beyond bar-room rhetoric and denunciations in the press. Every country was emitting and would continue to emit greenhouse gases at some level; indeed the very concept of emission targets could be similarly construed as condoning this. It was hard to argue that making targets tradable necessarily makes them immoral.

A more practical objection raised in Europe was that such a novel and complex idea in the international scene could not possibly be negotiated in time for Kyoto. More Machiavellian commentators suspected the United States of introducing emissions trading as a way of

deliberately confounding the negotiations. For Kyoto to establish industry-level trading — in which industries hold the permits and can trade them internationally — would indeed have been an impossibly complex task in the time available. But the U.S. submission of its negotiating text made it plain that the goal for Kyoto was altogether more practical, focusing upon a structure of intergovernmental trading that could allow the subsequent evolution of industry-level trading by those countries desiring to participate. It sounds complex but is in fact astonishingly simple: the text would just establish that governments can exchange their 'tonnes of CO_2,' allowed under the Protocol, and that they are entitled to pass this authority on to subnational entities (e.g., industries) providing that the governments ensure the integrity of any resulting trades.

Thus concerns that such a system was not practical, that there was not enough time to set it up, or that administrative requirements would be too onerous, proved hard to sustain. As these objections foundered, two core concerns emerged.

The first was the general concern that international flexibility might provide a way for the leading emitters to avoid serious domestic action. As the Kyoto debate proceeded, this began to take a very specific and startling form, arising from the peculiarities of the situation in the EITs [Economies in Transition]. In most of the OECD, as noted, emissions had continued rising. But in the EITs, and most notably Russia, emissions fell dramatically with the economic transition. If emissions there stayed quite low, a flat-rate emissions target with unconstrained trading could imply a huge transfer of allowances from most of the transition economies, which would have a surplus, to the OECD countries, above all the United States and Japan. The United States understood this, and over successive months teams of U.S. officials went to the East to explain the windfall that could be waiting. No specific deal was concluded but the Russians got the point, and in March they submitted their own negotiating proposals in favour of emissions trading with flat-rate initial allocations from 1990 levels.

There are two ways of looking at this. The primary incentive for the United States is that trading provides perhaps the only means by which it can agree to substantial flat-rate emission reductions. It was obvious that the U.S. Congress would never agree to bind the country to significant cuts in its domestic emissions, and it was equally obvious that the EU would place intense pressure for such cuts on the United States and the rest of the OECD. The only way of squaring the circle was to have emissions trading, preferably with a big seller in the market. Russia, with its probable surplus allowances, was the only player big enough.

A more charitable interpretation was possible. To help sustain its old foe in its conversion from communism, the United States was proposing to use the Climate Change Convention as a way of endowing Russia with desperately needed resources. Additionally, Russia would be given an incentive to restructure its staggeringly inefficient and polluting economy in more efficient and sustainable ways, so as to enhance the allowances it could sell. * * *

The problem was that it still looked like cheating on the basic commitment. The EU concern that emissions trading would undermine any success in imposing more stringent U.S. emission targets was reinforced by the east European situation. The United States might not even have to take significant action at home; it might simply buy a surplus of what the EU termed 'hot air'

from Russia. . . .

Against this background the European Council of Ministers met in June, just before the Denver Summit, and under the guidance of the Dutch presidency crafted a compromise between the majority of governments that remained hostile to emissions trading and the small band of supporters. "The Council considers", they concluded, "that mechanisms such as emissions trading are supplementary to domestic action and common coordinated policies and measures, and that the inclusion of any trading system in the Protocol and the level of the targets to be achieved are interdependent. It therefore calls upon all industrialized countries to indicate the targets they envisage for 2005 and 2010." In other words, the EU was prepared to accept the logic of emissions trading, but only if it resulted in practice in the benefits which its proponents claimed, with greater efficiency enabling a stronger overall outcome. The EU had worked out how to catch the ball tossed by the United States, and thrown it down as a gauntlet.

The Japanese focused on a different concern. They were worried that the United States would use its enormous political leverage over Russia to monopolize that country's surplus, and so — along with several other countries — Japan demanded conditions that any trading should be transparent, competitive and open. To this were added other factors. As the EU recognized that the overall level of commitments would indeed be much weaker than its proposed 15% reduction, it pressed for constraints to ensure that any international action would be supplementary to domestic action — a 'supplementary cap" on international trading. . . . The French, in particular, also pressed for some common rules about how any domestic allocations of emission permits might be made. Against this complex background, in Kyoto the OECD countries edged towards an agreed text on emissions trading; for whatever doubts the EU had about emissions trading, it knew full well by now that an agreement was impossible without it.

But the OECD was overlooking a deeper challenge. Developing countries had been almost ignored in the internecine OECD debate on emissions trading. This fed a resentment that grew as they began to understand the game: not only might such trading allow the United States to avoid serious domestic action, but Russia, an industrialized country, could be the major beneficiary. Behind this was a more principled objection. Although the United States was at pains to emphasize that the allowances agreed at Kyoto would not constitute any more basic or long-term 'right' to emit, there was a deep fear that the whole question of long-term emission entitlements was being pre-empted. African countries had already started supporting a principle that emission entitlements should be allocated on a per capita basis, or at least that they should converge towards this. China and, most stridently, India backed similar proposals, arguing that fundamental issues of principle were at stake on which they had not been adequately consulted and on which they could not retreat.

The OECD, having spent much of its energies on internal debate, hit a brick wall when it then tried to place its delicately crafted (and still not finalized) proposed text into the final negotiating texts at the climax to the Kyoto conference. The G77 adamantly refused to accept an article on emissions trading. Chairman Estrada rejected the OECD's complex text on the grounds that it was submitted too late; in reality, he knew that every sentence would be opposed as a matter of principle and that such complexity at the final hour would destroy the negotiations. The

proposed article was omitted and replaced by a simple paragraph allowing countries to exchange parts of their assigned amounts.

But developing-country opposition to emissions trading was rooted in principles, fed by anger that it might enable the United States to avoid significant domestic action, and magnified by resentment about the prospective Russian windfall. They were not going to budge. * * *

At about 2.00 a.m. on 11 December, with the conference already long past its official deadline, the negotiations reached the offending paragraphs. On behalf of the EU, the UK proposed an amendment that trading could not start until rules were agreed at the subsequent Conference of Parties, a condition that the United States resisted, fearing it would be used to block emissions trading altogether. Then China said it could not accept the paragraph, amended or not, as there had not been sufficient time to consider the implications. India followed with its fundamental objections to the ad-hoc creation of tradable entitlements without debate about the global principles involved. A dozen developing countries raised their objections.

At 4.00 a.m. Ambassador Estrada called a halt to the negotiations, for short consultations. A pleasant (alas, unconfirmed) rumour holds that instead of yet more frantic consultations, he went back to his hotel room for a short rest, a shower and a change of clothes. In reality he remained locked in consultations, testing out compromises on emissions trading repeatedly, also in relation to other parts of the package. Nevertheless, he returned with renewed vigour. He reconvened the conference and announced that he proposed to delete the offending paragraphs, and instead insert a new article within the section on implementation procedures. The new article would consist of three short sentences stating basically that the Parties would subsequently negotiate principles, rules, etc. for emissions trading; that they may trade emissions; and that any trading would be supplemental to domestic action. He read the sentences twice, very slowly, and paused. He asked if there were any objections and brought down his gavel as India — some say joined by both China and the EU — raised flags to object. He ignored the flags and stormed ahead to the next paragraph on commitments. Any country that openly challenged his authority would almost certainly have been held responsible for destroying the Kyoto negotiations. None did. Thus in the defining moment of the Kyoto conference, the objections in principle of major developing countries to emissions trading — and countries altogether probably representing almost half the world's population — were overridden. In another area of the agreement, however, they were to get their *quid pro quo*. First, however, the Kyoto negotiations had another surprise in store in the area of international flexibility. * * *

3.6.1 Objections to North-South 'joint implementation'

The concept of joint implementation — generating emission credits by investing in projects outside the industrialized world — faced far more severe opposition in relation to developing countries than when applied between industrialized countries. This sprang from a number of long-standing concerns.

Locus of responsibilities and 'cream-skimming'. Perhaps the most fundamental and principled criticism of JI was that it could allow developed countries — those with the highest

emissions and an acknowledged responsibility to lead — to achieve their emission targets without taking adequate action at home. JI was seen as enabling developed countries to escape their prime responsibility to put their own house in order.

Related to this was the fear that JI projects would focus on and 'use up' the cheapest reduction options in developing countries, so that if and when developing countries came to adopt emission commitments, they would only have more expensive options left. While, strictly speaking, this is an issue that could be simply resolved in terms of allocations, the underlying fear was a potent one. Many developing countries consequently suggested that current JI proposals should be re-evaluated in order to reflect the total economic cost of carbon abatement in the short and long term, rather than on the basis of short-term single projects undertaken by individual companies, but this was anathema to the idea of a market-based process promoting private investment.

Baselines for measuring 'additional' emission reductions. There are serious methodological difficulties in estimating the emissions saving resulting from a JI project, since this hinges upon an estimate of how much higher emissions would have been without it. It is a 'counterfactual' problem of measuring emissions avoided rather than simply the emissions themselves. Would certain alternative projects really have gone ahead? Whose assessment of the alternative favoured and feasible options should be believed? Developing countries have feared that investing countries would get unfairly high credits for JI projects. One solution is to incorporate wide margins of error into the predicted savings achieved by JI projects. However, this would reduce the scope and profitability of projects. * * *

Jl for carbon sequestration or technology transfer? The difficulties were aggravated by the dispute about the role of sinks. To many in the North, forest management and reforestation offered an obvious and cheap way to offset emissions, a view supported by some organizations seeking to protect wildlife and biodiversity in the developing world, and also by some forestry organizations in developing countries that welcomed the opportunity to attract more resources. Costa Rica led the field with extensive offers of forest protection under the aegis of JI.

However, many other developing countries opposed using their land to generate credits that would allow industrialized countries to continue emitting GHGs. Furthermore, many reforestation or land-management schemes in developing countries risk being ineffective or politically unsettling if they take land away from agriculture or otherwise cut across already disputed aspects of land rights. Concentrating on carbon sequestration projects in the developing world provoked the accusation of imposing developed-world environmental values onto the poor and weak — at worst, cast as 'carbon colonialism' — as well as being difficult to measure and enforce.

[The depth of feelings — and the complexities — became visible from an early stage. The most striking example the author witnessed was at a meeting in the early 1990s. An economist from a U.S. environmental NGO (one long associated with promoting market instruments) had expounded the virtues of JI and explained how much cheaper it could be to absorb CO_2 in Africa than to limit emissions in the United States. Shaking with anger, an African present rose and

asked 'why should African governments let their land be used as a toilet for absorbing emissions from Americans' second cars?' Needless to say, the ensuing debate was not a very productive one.]

3.6.3 The 'Kyoto surprise'

It was against this background that the single most remarkable development of the entire Kyoto negotiations occurred. It arose from a most unexpected quarter. One element of the sweeping proposals that Brazil had put forward in June 1997 was that Annex I Parties should be subject to a financial penalty if they did not comply with their quantified commitments under the Protocol, with the fine being levied in proportion to the degree of non-compliance. The money would be paid into a Clean Development Fund that would be used to support appropriate projects in developing countries, for limiting emissions and potentially for adaptation. The proposal included ways of apportioning the proceeds between developing countries, and suggested a level of $10 per tonne of excess carbon-equivalent emitted.

The idea that industrialized countries would agree to being subject to assessed financial penalties as a compliance measure seemed far-fetched to any seasoned politician — the debate about enforcement mechanisms had barely begun — and Ambassador Estrada omitted it (along with the rest of the complex Brazilian proposal) from the chairman's negotiating text for the final pre-Kyoto session in October. But the G77, while uneasy about several aspects of the Brazilian proposal, could unite around the suggestion for financial penalties channelled into a Clean Development Fund, and they insisted that it be reinserted into the text.

The Annex I countries pronounced their opposition and it seemed a fruitless debate. But by the end of the final pre-Kyoto negotiating session, a remarkable twist on the proposal had occurred to one or two key people. If the penalty were levied at a sufficient rate to fund carbon-saving projects in the developing countries that would save emissions equivalent to the excess emissions from Annex I, the practical consequence would be almost identical to JI, though the legal and institutional framework would be completely different. From this perspective, one of the most apparently aggressive proposals from the G77 could be considered as consonant with the U.S. proposals for JI that they had been fiercely rejecting for five years.

The idea was first floated in the negotiations at the small ministerial discussions that Japan hosted early in November 1997. Fired with the possibilities, a U.S. team dashed down to Rio to explore the options. The United States managed to shift the line on compliance to encompass such investments as *contributing to* compliance, rather than being a *penalty for not* complying. The idea of a penalty on governments was transformed into a mechanism for investment by companies. The multilateral character of the framework was retained, but it became a 'mechanism' rather than a 'fund'; and in the final days of Kyoto, the clean development mechanism . . . was born. * * *

3.8 Extending commitments to new countries: evolution and voluntary accession

The most divisive North-South issue of all in the Kyoto negotiations concerned the desire of

most OECD countries — but especially the United States — to draw developing countries into specific quantified emission limitation commitments, or at least into a process that might visibly lead to this conclusion.

The reasons why this was (and remains) such a divisive issue are easy to see. From one standpoint, it is quite unreasonable to expect the developing countries to commit themselves to adopting binding emission constraints at present. Most of them have contributed hardly anything to the climate change problem and their per capita emissions are still but a small fraction of those in the industrialized world. . . . Why should they devote resources towards a diffuse and long-term problem, largely caused by others, when they have more basic and pressing priorities ranging from simple health and sanitation to basic infrastructure developments?

From the other perspective, it is equally apparent that the climate change problem cannot ultimately be solved without action by the developing countries. Their emissions are growing rapidly, especially in percentage terms (though less rapidly since the Asian financial crisis ended), since they comprise more than three-quarters of the world's population, their long-term potential emissions growth could ultimately swamp any restraint by the current industrialized world. Furthermore, many of the cheapest options for limiting emissions may lie in developing countries, whose economies are inevitably less efficient (in carbon per unit of GDP) than most OECD economies. Altering the trajectory of emissions growth in developing countries is probably the biggest low-cost long-term opportunity for limiting global emissions that exists. From this perspective, excluding them makes economic nonsense.

If the divide itself derives from a classic clash of perspectives, and potentially a clash of equity vs. efficiency (though it need not take this form), it became poisoned during the negotiations as a result of the long history of North-South politics, the internal politics of the G77 group (which encompasses hugely diverse interests) and the specific legacy of the debate on developing-country involvement in the climate change regime.

The Convention had little choice but to enshrine the basic structural division between the Annex I countries and the developing countries. Already by the time of the Berlin conference, the pressures in the United States to include developing countries in negotiations on any new commitments were very strong. However, since the industrialized countries had done so little towards establishing leadership through their domestic actions, and most of the OECD was far from ready to achieve the indicative aim of returning emissions to 1990 levels by 2000, there was never any chance of the Mandate including anything that might lead to new commitments by developing countries.

In fact it was the EU which first formally proposed extending the net of commitments, recommending that they be applied in all countries listed in an Annex X, which was clearly intended to go beyond the existing Annex I. The EU belatedly indicated that this should include at least South Korea and Mexico, and also Turkey which was trying to withdraw from Annex I. It was also implied that this same list should undertake quantified emission limitations. Since the core EU proposal on quantified commitments focused on flat-rate reductions from 1990 levels, this seemed a clear provocation to countries whose emissions in 1990 were relatively low but

had already grown by as much as 25–40%. Quite apart from being outside the terms of the Berlin Mandate, the resultant perception that any talk of extending commitments to some new countries might require them to reduce below 1990 levels — clearly impossible and inequitable for most developing countries — was a fear that was very slow to dissipate.

The pressures in the United States were for far broader participation, and they took on concrete form with the specific U.S. protocol proposal of January 1997. This included a section on the 'evolution of commitments' which stated that all countries should have binding quantified commitments by a certain date — 2005 was suggested as a negotiating basis in the U.S. proposal. This was clearly outside the terms of the Berlin Mandate and aroused predictable anger across most of the developing world. 'Evolution of commitments' were dirty words in the negotiations thereafter.

Attempts to extend the negotiations to include new commitments for developing countries continued right up to Kyoto itself, where New Zealand, supported by the other [non-EU developed countries] and by Poland and Slovenia, proposed that conditional upon industrialized countries having fulfilled their commitments in the first period, developing countries should agree to binding commitments applicable in a subsequent period. This at least attempted to acknowledge the agreed principle of industrialized-country leadership, and universal participation was not proposed (they called for 'progressive engagement' according to levels of development, and explicitly excluded the least developed), but it was still clearly outside the terms of the Berlin Mandate. The proposal provoked several hours of angry rejection from the developing countries, which saw such linkage as a betrayal of trust about the whole purpose of the Kyoto negotiations.

The only creative approach towards developing-country commitments that could plausibly be argued to fall within the terms of the Berlin Mandate was the proposal crafted by Chairman Rau1 Estrada-Oyuela to include an article explicitly providing a path for voluntary adoption of quantified commitments — Article 10 (later 9) in the draft Protocol. This appeared innocuous, but many developing countries saw it as a Trojan horse which would leave them vulnerable to being subjected, perhaps one by one, to pressure to adopt commitments. The G77 always felt that its only protection against the might of the OECD was collective strength. Though at least 35 developing countries registered their support for the proposed article in the final night at Kyoto, core countries, which felt they had been slighted in some of the earlier debates, remained adamantly opposed to it. With China, India and Brazil lining up with the OPEC countries and others, forcing the article through could have alienated half the world from the Kyoto regime for years to come. In what must have been the most difficult decision of that long night, Ambassador Estrada declared that the article on voluntary commitments — his own creation and the only credible attempt to resolve the impossible division — had failed to gain sufficient support and had to be removed.

The deletion of the proposed article on voluntary accession was the other major plenary decision in the long night at Kyoto, a *quid pro quo* for riding roughshod over the objections of China and India to emissions trading; given the weight that the United States had placed upon developing-country commitments, some waited to see if its delegation would walk out. But the

clean development mechanism and slightly strengthened references to enhancing the existing commitments of developing countries (shortly to be confirmed) were enough for the U.S. delegation to stay. No one else walked out; half of the delegates anyway were asleep from sheer exhaustion.

The meeting proceeded to more detailed wrangles over aspects of the CDM and confirmation of the procedural articles . . . and the struggle over improving the implementation of existing commitments, noted above. With the full terms of the instruments and the political package in place, the final points of the specific numerical commitments were agreed and brought to the plenary hall. Given the delicate balance between the varied concerns finally reached after two and a half years of negotiations, not a single Party wanted to risk the opprobrium of objecting. Ambassador Estrada brought down his gavel, and declared that the Kyoto Protocol had been agreed unanimously and could now be forwarded for formal adoption.

3.9 Conclusions

What general conclusions can be drawn from the negotiations of the Kyoto Protocol? It was an extraordinary process, grappling with an unprecedented problem. Trying to get more than 150 countries with hugely divergent interests and perceptions to agree was bound to be extremely difficult. That it succeeded at all was a considerable achievement, due in no small measure to the generosity of Japan in funding a host of additional facilitating activities, and the skill and authority ultimately wielded by the chairman of the negotiations, Ambassador Estrada-Oyuela.

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QUESTIONS AND DISCUSSION

1. Does it surprise you how much of the Protocol negotiations depended on the actions or decisions of individuals? Consider particularly the sensitive and important role of the chairperson to encourage and cajole, sometimes even force, a consensus among the Parties.

2. In reviewing the excerpt above, recall the discussion of global climate politics in Chapter 4. Can you see how the different voting blocs affected the Kyoto Protocol negotiations? What techniques are used to get countries to move away from their more self-interested positions?

3. There were obviously many different viewpoints that had to be considered and reflected throughout the negotiations, but some countries still emerge as the most important. One of the great ironies is that the United States achieved virtually every one of the major policy goals it had in negotiating the Protocol, but yet would still be one of the only developed countries to reject it. As Grubb et al. conclude in their treatment of the negotiations:

> U.S. dominance is striking. The United States got virtually everything it wanted in respect of flexibility for Annex I commitments with the sole exception of 'borrowing'. The EU, with greater population and GDP, did score important successes: through its efforts, the United States (and other OECD countries) made a stronger commitment than they otherwise would have done; the EU headed off

> many of the most potentially dangerous proposals on sinks, and at least kept the door open on aspects of its policies and measures proposals. But to discover the source of most of the ideas in the Protocol, one only needs to read the U.S. proposal of January 1997. The coherence of the U.S. administration contrasted with . . . the unwieldy (and introspective) morass of EU decision making during the negotiating process. This reflects the EU's broader foreign policy difficulties, and should provoke a lot of thought among member states. Only in respect of developing countries did the United States not get what it wanted; indeed U.S. pressure on developing countries frequently served only to inflame their resistance.

Grubb, at 114. Can you see why this would make Parties to the Protocol even more upset when the United States subsequently withdrew from the agreement? In what specific ways did the United State achieve its policy goals? In what ways, were its goals rejected?

4. As you read the Kyoto Protocol and begin to learn about the global carbon market it created, you may at times be frustrated with the dizzying and technical issues that emerge. At those times, pause to consider what an amazing and ambitious achievement in international cooperation the Kyoto Protocol represents. The countries are struggling, usually in good faith, to find a compromise that will address the complexities of global climate change while leaving room for economic development. They are also creating an entire carbon market out of nothing other than mutual promises; it is a market completely born out of international law. It may ultimately not work, but there is still great hope in the Kyoto Protocol for successfully responding to climate change and more generally for other international negotiations in the future.

III. THE KYOTO PROTOCOL

The core of the Kyoto Protocol is targets and timetables, or "quantified emissions limitation and reduction objectives" (QELROs), for industrialized (Annex I) Parties to reduce their net emissions of greenhouse gases over a five-year reporting period, 2008–2012. Together, QELROs and the deadline for compliance are commonly called "targets and timetables." In aggregate, developed countries aimed at a 5.2 percent reduction from 1990 levels by the first reporting period, 2008–2012. Most European countries agreed to lower their emission 8 percent below 1990 levels, while the United States agreed to a 7 percent reduction. *See* Annex B to the Protocol for the full listing of commitments (reprinted in Appendix 2 of this casebook). Countries in economic transition were allowed to select an alternative baseline year other than 1990, and several countries did so. In addition, all countries had the option of choosing 1995 as the baseline year for three relatively minor but potent greenhouse gases (hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride). The Protocol envisioned that the first commitment period would be followed by subsequent commitment periods and presumably stricter emission targets. For a further summary of the Kyoto Protocol, see Don Goldberg, *A Legal Analysis of the Kyoto Protocol* (CIEL, 1998).

In addition to the targets and timetables, the Kyoto Protocol also set forth general parameters for four different flexibility mechanisms, including an emissions bubble, emissions trading, joint implementation, and a new initiative called the "Clean Development Mechanism." In this way, Kyoto created a "cap-and-trade" system whereby developed country emissions were capped, but they would be allowed to lower their costs of compliance through trading in one or more of the flexibility mechanisms. Parameters were also set for a compliance and monitoring system and for the consideration of at least certain land-use and forestry activities that could alter carbon reservoirs or sinks. Many of these provisions raised as many questions as they answered, and set the stage for further negotiations after Kyoto at subsequent meetings of the Parties.

At this point, you should review the Kyoto Protocol, reproduced in Appendix 2. The rest of this section summarizes briefly the basic structure of the Kyoto Protocol.

QUESTIONS AND DISCUSSION

1. ***Reading the Protocol.*** Before proceeding further, review the Kyoto Protocol in Appendix 2 of this book. To become better familiar with its provisions, answer the following questions from the Kyoto Protocol.

a) By what year must Annex I countries show demonstrable progress toward their target emissions level? How must they show "demonstrable progress"?

b) What are the conditions placed on trading emissions reduction units?

c) What is the purpose of the Clean Development Mechanism?

d) What number of Parties is necessary for the Protocol to enter into force?

e) What functions, authorities and responsibilities does the Conference of the Parties meeting as the Parties to the Protocol have? Are these sufficient to ensure the success of the Protocol?

f) How does the Protocol penalize non-Parties?

2. After reviewing the Kyoto Protocol, evaluate its terms against the negotiating framework of the Berlin Mandate. In what ways does the Protocol meet the parameters of the Berlin Mandate?

3. As you review the Protocol, consider how it relates to the UNFCCC's framework. The Protocol implements the Convention and incorporates many of its provisions, such as the overall objective and institutional architecture, explicitly into the Protocol. The Parties meet for both agreements at the same time. But when the Parties want to discuss the Framework Convention they meet as the Conference of the Parties (CoP), and when they meet to discuss the Protocol, they meet as the "Conference of the Partings meeting as the Parties to the Protocol," which has

become known as the "CoP/MoP" — one of the more memorable acronyms. As a Party to the Framework Convention, the United States can join fully in discussions of interpreting or revising the Convention, but when the Protocol is being discussed as the CoP/MoP, the United States is merely an observer (albeit an influential one).

A. Emission Reduction Targets and Timetables

The following excerpt from an article published shortly after the Protocol negotiations describes the basic quantified emissions level reduction objectives — i.e., the targets and timetables — to which the developed countries agreed under the Kyoto Protocol. That is followed immediately by excerpts from the Protocol's text.

CLAIRE BREIDENRICH, et al., THE KYOTO PROTOCOL TO THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

92 AM. J. INT'L L. 315 (1998)[*]

Emission Reduction Targets

Article 3 of the Protocol establishes QELROs or emission targets for FCCC Annex I countries, with the exception of Turkey. The Protocol sets targets against base year emission levels. For most parties, 1990 is the official base year. However, certain countries with economies in transition are authorized by a decision of the Conference of the Parties to use a different base year, and other countries with economies in transition may apply to use a different base year. Also, as described in greater detail below, any Annex I country may select 1995 as the base year for the three synthetic GHGs (HFCs, PFCs and SF_6).

The negotiated emission targets for each Annex I country are contained in Annex B to the Protocol, and are listed as percentages of base year emission levels. For example, the target for the United States, which is listed as 93, corresponds to a 7 percent reduction from 1990 levels (or from 1995 levels for the three synthetic GHGs, as explained below). The targets range from an 8 percent reduction (i.e., 92) in the base year emissions level for the European Community (Community or EC) to a 10 percent increase (i.e., 110) in the base year emissions level for Iceland. Overall, the emission reduction among countries listed in Annex B is equivalent to about 5.2 percent of their emissions, if one does not take into account the possible use of 1995 as a base year for synthetic GHGs and the possible use of the Clean Development Mechanism by industrialized countries. . . .

The difference in parties' individual targets is the outcome of contentious negotiations. Several parties, notably EC member states and the United States (until the last stages of the

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negotiations), called for a uniform target for all industrialized-country parties (although the Community envisioned differentiation among its own member states). Other parties, led strongly by Australia, and including Japan, Norway and Iceland, argued that differentiated targets, rather than a uniform target, were appropriate, owing to the vast differences in countries' national circumstances, particularly natural resources and energy production and consumption profiles. In the final negotiations, parties were not able to reach agreement on a uniform target and opted for individual, differentiated targets.

The uniform 8 percent reduction target for the EC member states is also noteworthy. With respect to the FCCC's aim of returning emissions of Annex I countries to 1990 levels by the year 2000, parties are allowed to achieve that aim individually or jointly. Consequently, the Community developed an arrangement, often referred to as the "EC bubble," to share emission reductions among its member states. This arrangement was fundamental to the Community's ability to gain member state support for a reduction target in the Protocol. Under the EC internal burden-sharing agreement, certain member states such as Portugal and Ireland will be allowed to increase their emissions from 1990 levels. Thus, for the Community as a whole to reach the 8 percent reduction target, other member states will be required to reduce emissions by more than 8 percent. Originally, the Community based its burden-sharing arrangement on an overall 10 percent reduction. Although the FCCC allows for internal burden sharing among Annex I countries with respect to its aim of reducing GHG emissions from those countries to 1990 levels, such burden sharing was not automatically a part of the Kyoto Protocol and had to be negotiated. Under Article 4 of the Protocol, Annex B countries may jointly fulfill their commitments. * * *

Rather than a single-year, fixed target, the Protocol establishes a cumulative target that applies to a multiyear "commitment period." Each Annex I country must ensure that its aggregate emissions during the commitment period do not exceed its "assigned amount." The first commitment period is established by the Protocol as 2008–2012. This multiyear formulation was devised to give parties greater flexibility in meeting their emission reduction commitments and to take into account annual fluctuations, for example, from business cycles. Article 3 implies that there will be subsequent commitment periods of unspecified duration.

Each party's initial "assigned amount" is calculated by multiplying its base year emissions by its individual target in Annex B and then multiplying the result by five — the number of years in the first commitment period. However, the assigned amount may increase or decrease, depending on the party's participation in market-based mechanisms authorized by the Protocol.

GHG Coverage

All of the significant GHGs not controlled by the Montreal Protocol are included in parties' targets under the Protocol, as are all sources and sectors of GHG emissions, other than CO_2 from the land use and forestry sector. . . . These GHGs and source categories are listed in Annex A to the Protocol.

The inclusion of the three synthetic GHG categories, HFCs, PFCs and SF_6, was the subject of lengthy debate in the negotiations. Because these gases are primarily used as substitutes for the

stratospheric ozone-depleting substances controlled by the Montreal Protocol, their emissions have grown rapidly since 1990 and are projected to continue to grow. Unfortunately from a climate change perspective, these gases are also potent GHGs with long atmospheric residence times and high radiative forcing effects. For these reasons, several of the parties insisted that the synthetic gases be included in the Protocol's emission targets. Some parties, however, adamantly opposed their inclusion, arguing that to do so would greatly increase the difficulty of attaining overall emission targets. As a compromise, the Kyoto Protocol requires Annex I countries to include the synthetic gases in their emission targets but allows them to use 1995 as the base year for emission reductions of those gases. Since the later base year accounts for an additional five years of growth in emissions, the target is effectively increased for these gases.

KYOTO PROTOCOL, ARTICLE 3

1. 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.

2. Each Party included in Annex I shall, by 2005, have made demonstrable progress in achieving its commitments under this Protocol. * * *

7. In the first quantified emission limitation and reduction commitment period, from 2008 to 2012, the assigned amount for each Party included in Annex I shall be equal to the percentage inscribed for it in Annex B of its aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A in 1990, or the base year or period determined in accordance with paragraph 5 above, multiplied by five. Those Parties included in Annex I for whom land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 shall include in their 1990 emissions base year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in 1990 from land-use change for the purposes of calculating their assigned amount.

8. Any Party included in Annex I may use 1995 as its base year for hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride, for the purposes of the calculation referred to in paragraph 7 above. * * *

10. Any emission reduction units, or any part of an assigned amount, which a Party acquires from another Party in accordance with the provisions of Article 6 [Joint Implementation] or of Article 17 [Emissions Trading] shall be added to the assigned amount for the acquiring Party.

11. Any emission reduction units, or any part of an assigned amount, which a Party transfers to another Party in accordance with the provisions of Article 6 or of Article 17 shall be subtracted from the assigned amount for the transferring Party.

12. Any certified emission reductions which a Party acquires from another Party in accordance with the provisions of Article 12 [Clean Development Mechanism] shall be added to the assigned amount for that Party.

13. If the emissions of a Party included in Annex I in a commitment period are less than its assigned amount under this Article, this difference shall, on request of that Party, be added to the assigned amount for that Party for subsequent commitment periods.

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Annex B thus established targets — quantifiable emissions limitations and reduction commitments — for six greenhouse gases that must be met by developed countries during the 2008 to 2012 commitment period. Each Party with a target established in Annex B is given an "assigned amount" (AA) — the emissions that a Party may emit over the commitment period. Thus, if Country Z must reduce its emissions by eight percent based on 1990 emissions, and its 1990 emissions for the six greenhouse gases was 500 million metric tons of carbon dioxide equivalent ($MtCO_2eq$), then it must reduce its annual emissions to 460 $MtCO_2eq$ on average. Because actual emissions will vary from year to year, depending on economic activity and other factors, achieving a specific reduction target may be difficult in any given year. As a consequence, the Kyoto Protocol establishes a five-year commitment period — 2008 to 2012 — that allows the Party to aggregate its emissions over this period and eliminate year-to-year emission variances. Thus, a country's total allowable emissions must be multiplied by five. In our example, County Z's total allowable emissions — its AA — will be 2300 $MtCO_2eq$ (460 x five) for the full five-year commitment period. In the Kyoto Protocol's jargon, the AA is then broken down into "assigned amount units" (AAUs), where each AAU is equal to one metric ton CO_2eq and calculated using the global warming potentials for the various greenhouse gases. Country Z has 2300 million AAUs.

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QUESTIONS AND DISCUSSION

1. The Protocol's commitments are based on total net emissions for the six greenhouse gases not covered by the Montreal Protocol that were specified in Annex A: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorcarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF_6). The Parties had decided not to address each gas separately but to treat them as one "basket of gases." But not all of the gases are equal when it comes to their global warming effect. Thus, to create a unified market of greenhouse gases, the Parties had to accept a unified "currency" for each of the gases and an exchange rate for determining, for example, how much reduction in CO_2 was worth in terms of reduced methane. The "currency" in the market would be tons of carbon dioxide equivalent (CO_2eq), and the exchange rate would be determined by the "global warming potential" of each greenhouse gas, relative to the global warming potential of CO_2. In this way, a ton of reductions in any gas could be compared (and

traded) with a ton of reductions in any other gas. The global warming potentials for the six gases are established by the IPCC. Kyoto Protocol, Article 5.3. For further discussion of global warming potentials and carbon dioxide equivalency, see Chapter 1, Section I (Questions and Discussions). Can you see why this "basket of gases" approach provides additional flexibility for the Parties to be able to meet their Kyoto commitments? In 2012, the Kyoto Parties added a seventh gas, nitrogen trifluoride, to Annex A.

2. Ultimately, the decision of what targets each country would have to meet under the Kyoto Protocol was left to the give-and-take of the negotiations. No systematic approach was taken. Interestingly, it was the developing countries who were most disappointed that no formula was discussed. When it comes time for developing countries to take a binding commitment, they will push for a rights-based formula that reflects basic concepts of equity. This is discussed further in Chapter 10.

B. Emissions Trading and Other Flexibility Mechanisms

The Kyoto Protocol takes a "cap-and-trade" approach, and the most difficult and interesting questions arising from Kyoto relate to the "trade" part of that approach. For example, on what terms would industrialized (Annex I) countries be allowed to meet their obligations by trading emission credits or financing or undertaking activities in other countries? Would Europe be allowed to meet its obligations under the Protocol by investing in energy efficiency in China? In some respects, the global nature of climate change is ideal for establishing global trading markets in pollution; the reduction of one ton of carbon dioxide emissions anywhere in the world reduces climate change as much as any other ton of reduction. Trading carbon credits offers the promise of greater flexibility and lower costs in meeting climate change targets.

The Protocol contains four mechanisms (collectively known as "flexibility mechanisms") that allow Parties to meet their commitments jointly through cooperating with other countries: (1) "bubbles"; (2) emissions trading; (3) joint implementation; and (4) the Clean Development Mechanism. Each of the flexibility mechanisms has different nomenclature for their contribution to a country's efforts to comply with the Kyoto Protocol, making the Protocol even more confusing than it otherwise would be. In the end, a country's total emissions for purposes of compliance with the Protocol is calculated according to the following formula:

> (AAUs) + (ERUs) + (CERs) + (RMUs), where:
>
> AAUs = Assigned Amount Units (determined by the target taken under the Kyoto Protocol +/- any AAUs traded directly under Article 17);
>
> ERUs = Emission Reduction Units (received from investing in any Joint Implementation (JI) project);
>
> CERs = Certified Emissions Reductions (received from investing in any project under the Clean Development Mechanism);

RMUs = Removal Units (received from the management of forests or land-use practices).

Each of the above is worth one metric ton of CO_2eq.

Returning to our hypothetical Country Z above that has agreed to cut emissions to an average of 460 $MtCO_2$eq per year, it has a target of 2300 million AAUs for the five-year commitment period. Let's assume further that Country Z has received 100 million ERUs through investing in JI projects, 200 million CERs through investing in CDM projects and 50 million RMUs through domestic improvements in forest management. At the end of the commitment period, Country Z reports that its net emissions for the five-year commitment period were 2500 $MtCO_2$eq. Is Country Z in compliance with the Kyoto Protocol? The answer is "yes." Country Z has a final allocation of 2300 million AAUs + 100 million ERUs + 200 million CERs + 50 million RMUs, giving Country Z total allowances to emit up to 2650 $MtCO_2$eq for the full Kyoto commitment period. Since it emitted only 2500 $MtCO_2$eq, it could actually sell 150 $MtCO_2$eq and still remain in compliance with its commitment.

Each of the four flexibility mechanisms is now described in further detail.

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1. *Article 4 "Bubbles"*

Article 4 of the Kyoto Protocol permits Annex I Parties "to jointly fulfil their commitments under Article 3." This allows two or more Annex I Parties to aggregate their emissions and reduce them together. This instrument is called a "bubble" because it acts like an imaginary bubble over a group of Parties (or facilities at the domestic level) so that they may be treated as one entity. Assume Countries A and B establish a bubble and that Country A must reduce its emissions by 500 $MtCO_2$eq and Country B must reduce its emissions by 5 $MtCO_2$eq. In a bubble, the two countries must reduce their emissions collectively by 505 $MtCO_2$eq. Even if Country A reduces its emissions by 250 $MtCO_2$eq and Country B reduces its emissions by 260 $MtCO_2$eq, both countries will be deemed to be in compliance because their aggregate emissions reductions of 510 $MtCO_2$eq exceed their aggregate target of 505 $MtCO_2$eq.

KYOTO PROTOCOL, ARTICLE 4

1. Any Parties included in Annex I that have reached an agreement to fulfil their commitments under Article 3 jointly, shall be deemed to have met those commitments provided that their total combined 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 Article 3. The respective emission level allocated to each of the Parties to the agreement shall be set out in that agreement. * * *

4. If Parties acting jointly do so in the framework of, and together with, a regional economic integration organization, any alteration in the composition of the organization after adoption of this Protocol shall not affect existing commitments under this Protocol. Any alteration in the composition of the organization shall only apply for the purposes of those commitments under Article 3 that are adopted subsequent to that alteration.

5. In the event of failure by the Parties to such an agreement to achieve their total combined level of emission reductions, each Party to that agreement shall be responsible for its own level of emissions set out in the agreement.

6. If Parties acting jointly do so in the framework of, and together with, a regional economic integration organization which is itself a Party to this Protocol, each member State of that regional economic integration organization individually, and together with the regional economic integration organization acting in accordance with Article 24, shall, in the event of failure to achieve the total combined level of emission reductions, be responsible for its level of emissions as notified in accordance with this Article.

Although any group of countries may establish a bubble, it was designed for the EU, and only the EU has established a bubble to redistribute emissions reductions. While each of the original EU member States pledged to reduce emissions by eight percent under the Kyoto Protocol, the EU members negotiated a burden-sharing agreement to re-allocate allowances within the bubble. Under this burden-sharing agreement, Germany and Denmark each agreed to reduce their greenhouse gas emissions by 21 percent and the United Kingdom by 12.5 percent because of their relatively high per capita emissions. Meanwhile, Ireland, Greece, and Portugal were allowed to grow their emissions by 13 percent, 25 percent, and 27 percent, respectively. The countries that joined the EU after the Kyoto Protocol was negotiated were not part of the bubble and did not participate in the burden sharing agreement during the first commitment period. *See* European Environment Agency, *Greenhouse Gas Emission Trends and Projections 2006* 8, Table 0.1 (2006).

Table 5–2: Greenhouse Gas* Emissions in the EU

	Share of EU Emissions in 1990	Emissions in 1990 in Mt CO_2eq	Emissions in 1990 in tCO_2eq per capita	Reductions Due to Burden Sharing	Burden Sharing in MtCO_2eq
Austria	1.7	74	9.2	-13%	64
Belgium	3.2	139	13.7	-7.5%	129
Denmark	1.7	72	13.7	-21%	57
Finland	1.7	73	14.2	0%	73
France	14.7	637	11.0	0%	637
Germany	27.7	1201	14.7	-21%	949
Greece	2.4	104	9.9	25%	130

Ireland	1.3	57	16.0	13%	64
Italy	12.5	542	9.5	-6,5%	506
Luxembourg	0.3	14	34.7	-28%	10
Netherlands	4.8	208	13.5	-6%	196
Portugal	1.6	69	7.0	27%	87
Spain	7.0	301	7.6	15%	347
Sweden	1.6	69	7.9	4%	72
UK	17.9	775	13.3	-12.5%	678
Total EU	**100**	**4334**	**13.1**		**3998**

***CO_2 + CH_4 +N_20**
Source: "Annual European Community Greenhouse Gas Inventory 1990-1996, submission to UNFCCC", prepared by the European Environment Agency for the European Commission (DGXI), April 1999.

QUESTIONS AND DISCUSSION

Why do you think other countries have not followed the EU's lead and formed a bubble? For example, why wouldn't other regional blocs, such as the United States, Canada, and Mexico, or the JUSCANZ alliance, create an Article 4 bubble? Read Article 4.6 of the Kyoto Protocol. What obligations does it impose on members of a bubble? Do you think those obligations explain why other Parties have not created a bubble?

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2. *Emissions Trading*

Emissions trading under Article 17 of the Kyoto Protocol allows one Annex I Party to purchase or otherwise transfer part of its assigned amount to another Annex I Party. The expectation was that Russia and other economies in transition would have substantial carbon emissions to sell and that this would reduce the costs of other countries to meet their commitments. According to Article 17 of the Protocol:

> The Conference of the Parties shall define the relevant principles, modalities, rules and guidelines, in particular for verification, reporting and accountability for emissions trading. The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments under Article 3. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitments under that Article.

Kyoto Protocol, Article 17. The Kyoto Protocol itself does not establish rules for emissions trading, but Article 17 calls on the Parties to establish principles and criteria for verification, reporting, and accountability for emissions trading by Annex I Parties. The Parties have developed those rules at various meetings of the Parties. Parties can participate in emissions trading at the national or policy level, but emissions trading is also the mechanism for transferring credits generated through the other flexibility mechanisms — for example joint

implementation or the clean development mechanism. Thus, "carbon" credits from each of the flexibility mechanisms may be bought and sold.

As a technical matter, all forms of emissions trading — JI, CDM, and Article 17 emissions trading — are only available to Parties. Nonetheless, decisions of the Parties authorize a Party to open up each of these mechanisms to businesses, non-governmental organizations and other private entities. Thus, private entities may develop JI and CDM projects and engage in emissions trading. Decision 11/CMP.1, *Modalities, Rules, and Guidelines for Emissions Trading under Article 17 of the Kyoto Protocol*, Annex, para. 5 (2005).

In addition to project-based emissions trading through JI and CDM projects, the Kyoto Protocol also allows emissions trading in the absence of a specific project. Annex I Parties with quantified emissions limitations may fulfill their commitments by buying and selling "carbon" credits that result from non-project-based activities, such as policy changes that improve fuel efficiency of automobiles or energy efficiency of appliances. They may also buy and sell credits generated from JI and CDM projects. Even in the absence of policies and projects that reduce emissions, the Kyoto Protocol regime is primed for emissions trading. For example, many developed countries agreed to reduce their emissions by seven or eight percent below 1990 levels. Yet, Russia and Ukraine, which negotiated the right to stabilize their emissions at 1990 levels, saw their emissions drop dramatically due to the substantial contraction of the industrial sector after the fall of communism. By some estimates, Russia accumulated more than 5 billion tonnes CO_2eq and Ukraine another 2.4 billion tonnes CO_2eq of surplus AAUs during the 2008–2012 commitment period. Not only did that threaten the integrity of the first round of the Kyoto Protocol, but it complicated negotiations over the second round because the accumulated credits were more than the entire expected emissions from the EU during the entire second commitment period. *See, e.g.*, *Russian Hot Air Threatens Climate Deal*, www.euractive.com, published online Oct. 22, 2009.

Regardless of whether the private sector is involved, any transaction pursuant to the flexibility mechanisms becomes a "government" matter by virtue of accounting registries required by Decisions of the Parties. The Parties track the various transfers and acquisitions through a series of registries. Perhaps the most important is the national registry. Each Annex I Party must establish and maintain a national registry "to ensure the accurate accounting of the issuance, holding, transfer, acquisition, cancellation, and retirement of ERUs, CERs, AAUs and RMUs." Decision 13/CMP.1, *Modalities for the Accounting of Assigned Amounts under Article 7, paragraph 4, of the Kyoto Protocol*, Annex, para. 17 (2005). If a Party has authorized private entities to participate in any of the flexibility mechanisms, the Party must establish an account in the national registry for that entity. *Id.* at para. 21(b). As a result, any transaction between account holders or between Parties takes place within and between the national registries.

QUESTIONS AND DISCUSSION

1. It is important to distinguish the roles and motivations of Parties and private entities in emissions trading, joint implementation, and the clean development mechanism. Parties are

interested in these mechanisms because they can be used to fulfill their commitments under the Kyoto Protocol. They may engage in these mechanisms as active participants by developing joint implementation or clean mechanism projects with other Parties. They may also engage in emissions trading with other Parties or private entities.

Private entities are motivated to participate in these mechanisms either to meet domestic obligations to reduce emissions or simply to make a speculative profit. Many Wall Street financial institutions, such as Goldman Sachs, for example, are among the biggest participants in the Kyoto Protocol's flexibility mechanisms. By investing in joint implementation or clean development mechanism projects, they hope to sell ERUs or CERs for more than they invested in the project. They would sell these ERUs or CERs to regulated entities that need to meet domestic obligations to reduce greenhouse gas emissions. Regulated entities, such as electricity generators, do not always have the capacity to develop such projects, because they are technically demanding to put together. For them, it is more cost-effective to buy ERUs and CERs on the secondary market from Goldman Sachs. A Party may fulfill its obligations under the Kyoto Protocol by using the same ERUs and CERs that a private entity, such as a coal-fired power plant, bought to meet its domestic obligation. The Party, however, will need to ensure that it properly "retires" those ERUs and CERs in its national registry.

2. The potential abundance of AAUs posed substantial risks to the expected climate benefits from the Kyoto Protocol's emissions trading program. Because of the economic transition occurring in the former Soviet Union, Russia, Ukraine and other countries were expecting to emit far lower amounts of emissions than they were allowed under the Kyoto Protocol regime. The excess allowances from Russia and Ukraine were estimated at nearly 800 $MtCO_2eq$ annually by 2010 from fossil fuel emissions alone. Indeed, the combination of excess allowances from this region could theoretically have met *all* the reductions of *all* developed countries. Energy Information Administration, *International Energy Outlook 2005*, at 83 (2005). Under that scenario, the Kyoto Protocol would not result in any additional reductions beyond business-as-usual emissions. Should the Parties have addressed this issue? If yes, how could the Parties have done so?

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3. *Joint Implementation*

Joint implementation (JI) under Article 6 involves the transfer to or acquisition from one Annex I Party to another Annex I Party of *emission reduction units* (ERUs) resulting from projects that reduce greenhouse gas emissions. ERUs are generated by specific projects that reduce emissions or increase removals of greenhouse gases that are "additional" to the reductions or removals that would have otherwise occurred. JI may be distinguished from emissions trading in that emissions trading is program-based, while JI is project-based. Moreover, private Parties may perform JI projects and apply any ERUs earned from the projects towards their own compliance with any applicable domestic law. The private parties' accrual of ERUs will then appear on its own country's registry. Similarly, if a private party sells credits it has earned through a JI project to another entity in another country, this will appear on its country's registry

as a trade. In essence, a private party's trading of ERUs or emissions allowances will be treated as a State Party's trading under JI or emissions trading. However, while emissions trading may occur before associated emissions reductions are achieved, JI reduction credits can be transferred only after they have accrued.

The idea for joint implementation — that countries could obtain credits for climate mitigation projects in other countries — originates in Article 4.2(a) of the UNFCCC, which provides that Parties may implement climate change mitigation policies and measures *jointly* with other Parties. Prior to the Kyoto Protocol, the Parties adopted a joint implementation pilot phase for "activities implemented jointly" (AIJ) that allowed projects between Annex I and non-Annex I Parties. FCCC, Decision 5/CP.1 (1995). Even though no credits could issue from such projects, because they pre-dated any caps under the Kyoto Protocol, more than 150 AIJ projects were developed. Article 6 of the Kyoto Protocol sets out four conditions for JI projects:

KYOTO PROTOCOL, ARTICLE 6

1. For the purpose of meeting its commitments under Article 3, any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy, provided that:

    (a) Any such project has the approval of the Parties involved;

    (b) Any such project provides a reduction in emissions by sources, or an enhancement of removals by sinks, that is additional to any that would otherwise occur;

    (c) It does not acquire any emission reduction units if it is not in compliance with its obligations under Articles 5 and 7; and

    (d) The acquisition of emission reduction units shall be supplemental to domestic actions for the purposes of meeting commitments under Article 3. * * *

3. A Party included in Annex I may authorize legal entities to participate, under its responsibility, in actions leading to the generation, transfer or acquisition under this Article of emission reduction units.

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JI requires an actual project that reduces emissions (e.g., an energy efficiency scheme or the acquisition of pollution control equipment for an industrial facility) or increases removals by sinks (e.g., a reforestation project) in the territory of another Annex I Party. As an example, Germany (or a company based in Germany) could reforest 1,000 acres of forest in the Russian Far East. Germany (or the company making the investment) would receive all or some credits (depending on how the project is structured) for reducing GHGs in an amount equivalent to the

amount of GHGs absorbed by the trees planted. Provided that the project reduces emissions or enhances removals by sinks that are "additional to any that would otherwise occur," then Germany would receive ERUs to help meets its target.

The Parties have established two tracks for verifying whether ERUs may be issued for a JI project. To use "Track 1," both the host country and the ERU-receiving country must meet all of the eligibility requirements to engage in JI projects. The eligibility requirements are discussed in Section III.C, below. If these conditions are met, then the host Party may verify that the project creates "additional" reductions in emissions by sources or enhancements of removals by sinks. After verifying that the project indeed creates reductions or removals additional to those that would otherwise occur, the host Party may issue the appropriate quantity of ERUs. Decision 9/CMP.1, Annex, para. 23.

Failure to meet all of the eligibility requirements, however, does not foreclose the possibility to obtain ERUs; it merely takes away the authority of the host Party to verify reductions or enhancements and issue ERUs. Under "Track 2," a host Party that fails to meet all of the eligibility requirements may still have an independent entity verify any reductions or enhancements from a JI project. The independent entity must be accredited by the Protocol's Joint Implementation Supervisory Committee (JISC), which has established verification procedures that must be used by the independent entity. A host Party that meets all the eligibility requirements may choose to use either Track 1 or Track 2. Decision 9/CMP.1, Annex, paras. 23–24.

QUESTIONS AND DISCUSSION

Because the JI procedures were not clarified until 2006, the use of JI was slow to develop. By the end of the first commitment period, however, more than 650 million ERUs from JI projects had been recorded by the UNFCCC's Joint Implementation unit. More than two-thirds of the ERUs have been generated by projects in Russia and Ukraine. For updated information on JI, see http://ji.unfccc.int/statistics/2012/ERU_Issuance.pdf.

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4. *The Clean Development Mechanism*

During the negotiation of the Kyoto Protocol, many Annex I Parties pressed for a definition of joint implementation that would allow Annex I Parties to meet their commitments through projects in non-Annex I countries that reduce emissions. The G–77 and China objected to such a scheme because they wanted to see Annex I Parties make emissions reductions at home. They countered with a much different plan for financing projects in developing countries: a Clean Development Fund that would impose financial penalties on Annex I Parties that failed to meet their targets. Those penalties would be diverted to fund climate change mitigation projects in non-Annex I countries. FCCC/AGBM/1997/MISC.1/Add.3. Not surprisingly, many Annex I Parties opposed penalties for noncompliance. Moreover, a number of developing countries, having received financial and technological benefits from AIJ projects under the pilot phase,

softened their opposition to projects in developing countries that would assist Annex I Parties in meeting their commitments. These factors opened some negotiating space and led to a compromise. "Joint implementation" was restricted to projects between Annex I Parties. The proposed Clean Development Fund was transformed into the "Clean Development Mechanism" (CDM), which rather than being linked to non-compliance would be a mechanism for channeling climate-friendly investments from Annex I Parties to non-Annex I Parties.

Article 12 of the Protocol was not particularly detailed but it generally provides that Annex I (developed) Parties, or private entities from those Parties, may fund activities in non-Annex I (developing) countries that result in "certified emissions reductions" (CERs) and apply those reductions toward meeting their emissions target.

KYOTO PROTOCOL, ARTICLE 12

1. A clean development mechanism is hereby defined.

2. The purpose of the clean development mechanism shall be to assist Parties not included in Annex I in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments under Article 3.

3. Under the clean development mechanism:

   (a) Parties not included in Annex I will benefit from project activities resulting in certified emission reductions; and

   (b) Parties included in Annex I may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3, as determined by the [CoP/MoP]. . . .

4. The clean development mechanism shall be subject to the authority and guidance of the [CoP/MoP] . . . and be supervised by an executive board of the clean development mechanism.

5. Emission reductions resulting from each project activity shall be certified by operational entities to be designated by the [CoP/MoP] . . . , on the basis of:

   (a) Voluntary participation approved by each Party involved;

   (b) Real, measurable, and long-term benefits related to the mitigation of climate change; and

   (c) Reductions in emissions that are additional to any that would occur in the absence of

the certified project activity.

6. The clean development mechanism shall assist in arranging funding of certified project activities as necessary.

7. The [CoP/MoP] . . . shall, at its first session, elaborate modalities and procedures with the objective of ensuring transparency, efficiency and accountability through independent auditing and verification of project activities.

8. The [CoP/MoP] . . . shall ensure that a share of the proceeds from certified project activities is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation.

9. Participation under the clean development mechanism, including in activities mentioned in paragraph 3(a) above and in the acquisition of certified emission reductions, may involve private and/or public entities, and is to be subject to whatever guidance may be provided by the executive board of the clean development mechanism.

10. Certified emission reductions obtained during the period from the year 2000 up to the beginning of the first commitment period can be used to assist in achieving compliance in the first commitment period.

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The twin purposes of the CDM are to assist developing countries in achieving sustainable development while contributing to the ultimate objective of the Convention and to assist Annex I Parties in meeting their quantified emission limitation and reduction obligations. Assuming that Annex I Parties invest in technologies to reduce greenhouse gas emissions in developing countries, the CDM promises to support developing country efforts to develop their economies in a sustainable, climate-friendly manner while also allowing Annex I Parties a cost-effective means for achieving their GHG emissions targets.

The CDM provides an opportunity for Annex I Parties to meet their emission reduction targets by undertaking qualifying projects that reduce GHG emissions in non-Annex I countries. The Parties apply to an executive board established under the UNFCCC that reviews the proposed projects and issues *certified emission reductions* (CERs) to reflect the additional emissions reductions gained by the project. Non-Annex I Parties may also initiate their own projects and generate CERs (a "unilateral" CDM project). In both situations, CERs are tradable. Starting in 2000, reductions resulting from CDM projects could be counted towards satisfying an Annex I Party's quantifiable emission limitations.

CERs are not issued directly to a private entity but are recorded in a centralized registry. The CDM registry, which the UNFCCC Secretariat administers, issues and distributes CERs to national registries. The UNFCCC Secretariat also administers the International Transaction Log, which verifies registry transactions, in real time, for consistency with rules of the Kyoto Protocol

and Decisions of the Parties. The Log requires registries to terminate transactions that are inconsistent with those rules. To view the CDM registry, go to http://cdm.unfccc.int/Issuance/cers_iss.html.

QUESTIONS AND DISCUSSION

1. By some measures, the CDM has been very successful and is relatively popular among both developed and developing countries. The cost-effectiveness of reducing emissions through investments in developing countries and the development of procedures and methodologies for CDM projects by the CDM Executive Board and its subsidiary panels and working groups have helped create a vibrant market for CDM projects. During the first reporting period of the Kyoto Protocol, over 5,200 CDM projects were registered in over 80 countries and 50 programmes of activities were registered in 27 countries. More than 1 billion CERs were issued and CDM projects attracted $215 billion in investments. For updated information on CDM projects, see http://cdm.unfccc.int/Registry/index.html.

2. Significant questions still persist, however, about whether the CDM is realizing real and permanent positive climate benefits specifically and sustainable development benefits more generally. The CDM and the other flexibility mechanisms raise significant issues of compliance. Questions about leakage — i.e., whether carbon emissions saved by one project are simply transferred to increased emissions elsewhere — or additionality — i.e. whether the carbon credits awarded under the flexibility mechanisms reflect additional benefits beyond what would have happened regardless. Some of the implementation challenges for the CDM and other flexibility mechanisms are described further in Chapter 7, addressing carbon markets.

C. Policies and Measures

From the start of negotiations, the United States and Europe disagreed on whether to adopt, in addition to targets and timetables, a list of mandatory "policies and measures" that countries would have to adopt to lower greenhouse gas emissions. The European Union supported harmonized policies and measures because they would be required to harmonize their measures inside the European Union anyway. Enshrining these policies and measures in the Protocol itself would eliminate any competitive disadvantage Europe's industries might face compared to the United States and Japan. The United States adamantly opposed this approach, however, insisting that each country should retain flexibility to choose its own policies and measures that would minimize domestic costs. The Protocol's ultimate language on policies and measures is not mandatory, and the measures listed in Article 2 — for example, enhancement of energy efficiency, protection of sinks and reservoirs, promotion of sustainable agriculture, and promotion of renewable energy — are fairly general and, by-and-large, uncontroversial.

KYOTO PROTOCOL, ARTICLE 2

1. Each Party included in Annex I, in achieving its quantified emission limitation and reduction commitments under Article 3, in order to promote sustainable development, shall:

   (a) Implement and/or further elaborate policies and measures in accordance with its national circumstances, such as:

      (i) Enhancement of energy efficiency in relevant sectors of the national economy;

      (ii) Protection and enhancement of sinks and reservoirs of greenhouse gases not controlled by the Montreal Protocol, taking into account its commitments under relevant international environmental agreements; promotion of sustainable forest management practices, afforestation and reforestation;

      (iii) Promotion of sustainable forms of agriculture in light of climate change considerations;

      (iv) Research on, and promotion, development and increased use of, new and renewable forms of energy, of carbon dioxide sequestration technologies and of advanced and innovative environmentally sound technologies;

      (v) Progressive reduction or phasing out of market imperfections, fiscal incentives, tax and duty exemptions and subsidies in all greenhouse gas emitting sectors that run counter to the objective of the Convention and application of market instruments;

      (vi) Encouragement of appropriate reforms in relevant sectors aimed at promoting policies and measures which limit or reduce emissions of greenhouse gases not controlled by the Montreal Protocol;

      (vii) Measures to limit and/or reduce emissions of greenhouse gases not controlled by the Montreal Protocol in the transport sector;

      (viii) Limitation and/or reduction of methane emissions through recovery and use in waste management, as well as in the production, transport and distribution of energy; * * *

2. The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.

3. The Parties included in Annex I shall strive to implement policies and measures under this Article in such a way as to minimize adverse effects, including the adverse effects of

climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties. . . .

4. The [CoP/MoP] . . . , if it decides that it would be beneficial to coordinate any of the policies and measures in paragraph 1(a) above, taking into account different national circumstances and potential effects, shall consider ways and means to elaborate the coordination of such policies and measures.

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KYOTO PROTOCOL, ARTICLE 10

All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, without introducing any new commitments for Parties not included in Annex I [of the Convention] . . . shall:

(a) Formulate, where relevant and to the extent possible, cost-effective national and, where appropriate, regional programmes to improve the quality of local emission factors, activity data and/or models which reflect the socio-economic conditions of each Party for the preparation and periodic updating of national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol. . . .

(b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change:

(i) Such programmes would, *inter alia*, concern the energy, transport and industry sectors as well as agriculture, forestry and waste management. Furthermore, adaptation technologies and methods for improving spatial planning would improve adaptation to climate change. . . .

QUESTIONS AND DISCUSSION

1. The voluntary approach in Article 2 meant that Parties would not be required to take any specific policies or measures to address climate change. As a result, relatively little attention has been given to the provision on "policies and measures." Nonetheless, the policies-and-measures approach became an important part of the post-Kyoto climate negotiations. As we will see in Chapter 6, countries that did not want to agree to a binding overall cap — for example developing countries — were willing to adopt domestic pledges to reduce emissions from specific activities or emissions sources. Brazil, for example, pledged to reduce deforestation, restore grazing land, implement no-till farming, and increase the use of biofuels and hydroelectricity. FCCC/AWGLCA/2011/INF.1 (Mar. 18, 2011). What advantages or

disadvantages do you think would have been provided by an approach emphasizing policies and measures as opposed to one emphasizing targets and timetables? What are the advantages or disadvantages of domestic pledges based on policies and measures as opposed to internationally mandates or restrictions on specific activities and emissions sources?

2. Article 10 applies to all Parties, including developing countries and is thus necessarily general. The Protocol negotiators did not have authority under the Berlin Mandate to negotiate any new obligations for developing countries, so the requirements in Article 10 to develop improved emissions data or national or regional mitigation and adaptation plans were carefully crafted so as not to introduce any new obligations on developing countries — but just to reaffirm and clarify existing obligations already enumerated in Article 4 of the Convention.

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D. Forests and Other Sinks

Both the Framework Convention and the Kyoto Protocol clearly contemplate that sinks such as forests would be within the ambit of the climate regime. As noted in the discussion of the Framework Convention, by choosing an objective framed in terms of "concentrations" and focusing on the enhancement of sinks as well as the reduction of emissions, the Parties clearly enlarged the climate talks to encompass forestry and land-use management. But the actual practice of Parties under the Framework Convention varied with respect to land-use change and forestry practices. Many countries had prepared no baseline for the impact of these sectors on their net emissions. Those that did measure them calculated emissions from the sector as a net annual flow rate of carbon sequestered or emitted. Because the ability of trees to sequester carbon declines over time, a country with a large proportion of forested area will have a high rate of carbon sequestration in the base year and thus relatively lower net emissions, but will have difficulty maintaining the rate of sequestration as the country's forests mature. Conversely, countries with heavy deforestation may have had net emissions from the forestry sector contributing to their base year, and they can contribute to their target simply by decreasing the rate of deforestation or by reforesting. Thus, a system that includes sequestered carbon in sinks as part of a country's baseline emissions would paradoxically reward countries that historically had been deforesters and penalize countries that had been better forest managers during their baseline years.

Facing a system with built-in perverse incentives, the Kyoto Protocol took some initial general steps toward better integrating land-use change and forestry into the countries' overall targets and timetables. Article 3.3 allows for Parties to meet their target level by counting the net changes in greenhouse gas emissions resulting from human-induced "afforestation, reforestation, and deforestation" since 1990. Thus, sinks were generally not included in calculating base year emissions, but Annex I countries were to account for human-induced net changes in emissions from land use that occurred from the baseline year to the end of the commitment period. This was intended to benefit countries that were enhancing their forest sinks and penalize those where sinks were declining. Those countries that had net emissions from the land-use activities in the baseline year could also include them in the baseline, so that their target in the reporting period would be higher. In this way, the incentives were overall better aligned with sustainable land-use

and forestry practices.

The Kyoto Protocol's treatment of forests was nonetheless both narrow and deliberately ambiguous. Article 3.3 is limited only to afforestation, reforestation, and deforestation. Article 3.4 provides that additional activities, presumably including conservation, forest management, and sustainable harvesting, could be made mandatory for meeting targets and timetables only in subsequent commitment periods, but would be voluntary in the first commitment period from 2008 to 2012. Article 3.4 prepared for broader treatment of the "land-use change and forestry categories" in the future by requiring each country in Annex I to provide the data necessary to establish a 1990 baseline for its carbon stock (i.e., the amount of carbon held in forests and other terrestrial sinks and reservoirs). The Kyoto Protocol's coverage of land-use change and forests raised many difficult and controversial issues. Afforestation, reforestation, deforestation, and forestry were not defined in the Protocol, leaving them open for a wide range of definitions that could fundamentally change the effect of the Protocol in reducing greenhouse gas emissions. The widely varying interpretations of Articles 3.3 and 3.4 made forest issues central to the post-Kyoto negotiations. The ongoing treatment of land use, land-use changes, and forests is discussed in detail in Chapter 8.

QUESTIONS AND DISCUSSION

1. With large areas of growing forests, the United States in particular argued for an expansive application of Article 3.3. For example, although harvesting was specifically rejected as an activity that must be counted in the first commitment period, the United States at one point suggested that restocking of harvested areas could be counted as reforestation. The impact of such an interpretation could be huge. In 1995, some 1.6 billion seedlings were planted to replace recently harvested trees in the United States, according to the American Forest and Paper Association. A tree removes roughly a ton of CO_2 and takes 40 or so years to mature. Assuming a steady rate of planting and growth from 1990 on, in 2010 the carbon sequestered in trees planted in the United States since 1990 would be roughly 800 million tons, or about 16 percent of total U.S. 1990 emissions. In other words, simply by defining reforestation to include restocking after harvesting, the United States could meet its commitments under Kyoto and be having a greater impact on the climate system in the year 2008! Similarly, despite the rejection of forest management as a credited activity under Article 3.3, the United States also considered taking credit for reforestation and afforestation initiated before 1990 but that required some form of post-1990 management. As you think about these proposals, can you see how important interpretation of the Protocol's ambiguous terms would be for determining whether Parties should ratify the Protocol or not?

2. Article 3.3 could also have been read to require Annex I Parties only to account for emissions and removals that occur during commitment periods. Such an interpretation, however, would have created a perverse incentive to deforest areas before the year 2008 (i.e., the beginning of the first commitment period), thus creating more land for afforestation activities that could be counted if conducted during the reporting period. Consider, too, that under IPCC Guidelines, emissions from deforestation are all counted in the year the activity takes place even

if the carbon in those trees remains locked in finished wood products for hundreds of years. In contrast, removals from reforestation are counted over decades, as the carbon accrues. Parties that follow such a strategy would have reported no emissions from the deforestation if they deforested in 2007, but most or all of the removals from subsequent reforestation during 2008-2012.

3. What should be clear from this analysis is that the science, politics, and economics associated with land-use changes and forest management are complex and dynamic. The deliberately ambiguous terms of the Protocol allowed all Parties to sign on in 1997, but all the Parties knew at the time that they would have to revisit land-use change and forest management issues soon. These issues were among the most contentious and important issues addressed in the Marrakesh Accords. The current treatment of land-use change and forests under the international climate regime is addressed in Chapter 8.

E. Implementation and Compliance

The Protocol envisioned an international regime unlike any attempted in international environmental law — the creation of a global pollution market. That market would require exponentially greater amounts of information for the Parties to police one another than other forms of regulation. A centralized accounting system — like a central bank for carbon trading — would need to be established, and national governments would have to provide more information about their annual net emissions and any trades or investments they had made to adjust their allowances.

The Framework Convention had created some reporting requirements, but they were insufficient to support the Protocol. Under the Framework Convention, Annex I Parties had to provide annual inventories of their anthropogenic sources and sinks and accounts of GHG emission budgets, and periodic reports on all aspects of their implementation of the Convention. Article 5 of the Protocol requires Annex I Parties to put in place a system at the national level for measuring net emissions and for tracking trades made under the flexibility mechanisms. The Protocol then adds a general requirement that the Parties submit "necessary supplementary information for the purposes of ensuring compliance." To ensure that greenhouse gases were measured and counted in the same way — critical for ensuring that one ton of emissions traded or purchased in the market was roughly equivalent to any other — the Parties agreed to develop over time a common set of methodologies for counting and tracking net greenhouse gas emissions. The Secretariat was tasked with publishing national emissions data and eventually would establish a centralized accounting system for tracking each country's net emissions and their participation in the carbon market.

A primary strategy for ensuring implementation piloted in the Framework Convention and expanded in the Kyoto Protocol is the use of "expert review teams" to ensure the veracity and integrity of the information reported by each of the Parties. Under Decision 3/CP.1 made by the Parties under the Framework Convention, the Secretariat was tasked with leading in-country technical reviews of each Annex I Party's reports. Although visits by the expert review teams

were voluntary under the Decision, all Annex I Parties had had their initial reports verified by in-country reviews by the time of the Kyoto negotiations. The negotiators built on this experience and strengthened the composition and use of these expert review teams. Under Article 8 of the Protocol, expert review teams coordinated by the Secretariat were empowered to conduct comprehensive technical assessments of the full range of a Party's implementation of the Protocol and will report any potential compliance problems to the CoP/MoP:

KYOTO PROTOCOL, ARTICLE 8

1. The information submitted under Article 7 by each Party included in Annex I shall be reviewed by expert review teams . . .

2. Expert review teams shall be coordinated by the secretariat and shall be composed of experts selected from those nominated by Parties to the Convention and, as appropriate, by intergovernmental organizations, in accordance with guidance provided for this purpose by the Conference of the Parties.

3. The review process shall provide a thorough and comprehensive technical assessment of all aspects of the implementation by a Party of this Protocol. The expert review teams shall prepare a report to the [CoP/MoP] . . . , assessing the implementation of the commitments of the Party and identifying any potential problems in, and factors influencing, the fulfilment of commitments. Such reports shall be circulated by the secretariat to all Parties to the Convention. The secretariat shall list those questions of implementation indicated in such reports for further consideration by the [CoP/MoP]. . . .

5. The [CoP/MoP] . . . shall . . . consider:

   (a) The information submitted by the Parties under Article 7 and the reports of the expert reviews thereon conducted under this Article; and
   (b) Those questions of implementation listed by the secretariat under paragraph 3 above, as well as any questions raised by Parties.

6. Pursuant to its consideration of the information referred to in paragraph 5 above, the [CoP/MoP] . . . shall take decisions on any matter required for the implementation of this Protocol.

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The expanded national reporting verified by expert review teams strengthened the ability of the Parties to monitor implementation. More problematic, however, was what measures should be taken against Parties that were found to be in non-compliance. Given that the Protocol would include binding commitments to reduce greenhouse gases, these issues of compliance — and non-compliance — took on additional significance. What should the sanctions be if a country, having committed to reduce its net emissions by 7 percent by 2008–2012, misses its target? What can the Parties do to penalize the non-compliant country? Does it matter if the country made a good faith effort and missed by just a little, or if it did little and announced on the eve of the first

commitment period that it expects to miss its Kyoto targets? These are difficult issues. Some would argue they are the most important for ensuring that the Protocol results in real climate benefits. Ultimately, like many of the most difficult issues, the Kyoto Protocol would only provide a general framework for how to respond to non-compliance:

> The [CoP/MoP] . . . shall, at its first session, approve appropriate and effective procedures and mechanisms to determine and to address cases of non-compliance with the provisions of this Protocol, including through the development of an indicative list of consequences, taking into account the cause, type, degree and frequency of non-compliance. Any procedures and mechanisms under this Article entailing binding consequences shall be adopted by means of an amendment to this Protocol. * * *

Kyoto Protocol, Article 18. This provision committed the Parties to develop an "indicative list of consequences" for noncompliance, which could presumably be implemented if they were nonbinding consequences. Any "binding consequences" had to be adopted by amending the Protocol (requiring a three-fourths vote). The details of the Protocol's compliance mechanism, including an indicative list of consequences, were subsequently developed as part of the Marrakesh Accords. See Decision 27/CMP.1, Annex, *Procedures and Mechanisms Relating to Compliance under the Kyoto Protocol* (2005).

UNFCCC SECRETARIAT, AN INTRODUCTION TO THE KYOTO PROTOCOL COMPLIANCE MECHANISM

(2005)

The Compliance Committee is made up of two branches: a facilitative branch and an enforcement branch. As their names suggest, the facilitative branch aims to provide advice and assistance to Parties in order to promote compliance, whereas the enforcement branch has the responsibility to determine consequences for Parties not meeting their commitments. Both branches are composed of 10 members, including one representative from each of the five official UN regions (Africa, Asia, Latin America and the Caribbean, Central and Eastern Europe, and Western Europe and Others), one from the small island developing States, and two each from Annex I and non-Annex I Parties. The Committee also meets in a plenary composed of members of both branches, and a bureau, made up of the chairperson and vice-chairperson of each branch, supports its work. Decisions of the plenary and the facilitative branch may be taken by a three-quarters majority, while decisions of the enforcement branch require, in addition, a double majority of both Annex I and non-Annex I Parties.

Through its branches, the [Compliance] Committee considers questions of implementation which can be raised by expert review teams under Article 8 of the Protocol, any Party with respect to itself, or a Party with respect to another Party (supported by corroborating information). Each Party designates an agent who signs submissions containing such questions, as well as comments. The bureau of the Committee allocates a question of implementation to the appropriate branch, based on their mandates. In addition, at any time during its consideration of a

question of implementation, the enforcement branch may refer a question of implementation to the facilitative branch.

The enforcement branch is responsible for determining whether a Party included in Annex I (Annex I Party) is not in compliance with its emissions targets, the methodological and reporting requirements for greenhouse gas inventories, and the eligibility requirements under the mechanisms. In case of disagreements between a Party and an expert review team, the enforcement branch shall determine whether to apply adjustments to greenhouse gas inventories or to correct the compilation and accounting database for the accounting of assigned amounts.

The mandate of the facilitative branch is to provide advice and facilitation to Parties in implementing the Protocol, and to promote compliance by Parties with their Kyoto commitments. It is responsible for addressing questions of implementation by Annex I Parties of response measures aimed at mitigating climate change in a way that minimizes their adverse impacts on developing countries and the use by Annex I Parties of the mechanisms as "supplemental" to domestic action. Furthermore, the facilitative branch may provide "early warning" of potential non-compliance with emissions targets, methodological and reporting commitments relating to greenhouse gas inventories, and commitments on reporting supplementary information in a Party's annual inventory. * * *

In the case of the enforcement branch, each type of non-compliance requires a specific course of action. For instance, where the enforcement branch has determined that the emissions of a Party have exceeded its assigned amount, it must declare that that Party is in non-compliance and require the Party to make up the difference between its emissions and its assigned amount during the second commitment period, plus an additional deduction of 30%. In addition, it shall require the Party to submit a compliance action plan and suspend the eligibility of the Party to make transfers under emissions trading until the Party is reinstated. * * *

The branches of the Compliance Committee will base their deliberations on reports from expert review teams, the subsidiary bodies, Parties and other official sources. Competent intergovernmental and non-governmental organizations may submit relevant factual and technical information to the relevant branch after the preliminary examination.

There are detailed procedures with specific timeframes for the enforcement branch, including the opportunity for a Party facing the Compliance Committee to make formal written submissions and request a hearing where it can present its views and call on expert testimony.

Any Party not complying with reporting requirements must develop a compliance action plan as well, and Parties that are found not to meet the criteria for participating in the mechanisms will have their eligibility withdrawn. In all cases, the enforcement branch will make a public declaration that the Party is in non-compliance and will also make public the consequences to be applied. * * *

In the case of compliance with emission targets, Annex I Parties have 100 days after the expert review of their final annual emissions inventory has finished to make up any shortfall in

compliance (e.g. by acquiring AAUs, CERs, ERUs or RMUs through emissions trading). If, at the end of this period, a Party's emissions are still greater than its assigned amount, the enforcement branch will declare the Party to be in non-compliance and apply the consequences outlined above.

The Kyoto Protocol's compliance mechanism treats different noncompliance issues differently. For example, the duty to establish a national system for estimating anthropogenic emissions of greenhouse gases is subject to the facilitative branch's "carrot" approach to compliance. In contrast, the penalty provisions of the enforcement branch apply to noncompliance with binding targets and timetables. As a consequence, only Annex I Parties are currently subject to the enforcement branch.

DECISION 27/CMP.1, ANNEX, PROCEDURES AND MECHANISMS RELATING TO COMPLIANCE UNDER THE KYOTO PROTOCOL

(2005)

XIV. Consequences applied by the Facilitative Branch

The facilitative branch, taking into account the principle of common but differentiated responsibilities and respective capabilities, shall decide on the application of one or more of the following consequences:

(a) Provision of advice and facilitation of assistance to individual Parties regarding the implementation of the Protocol;

(b) Facilitation of financial and technical assistance to any Party concerned, including technology transfer and capacity building from sources other than those established under the Convention and the Protocol for the developing countries;

(c) Facilitation of financial and technical assistance, including technology transfer and capacity building, taking into account Article 4, paragraphs 3, 4 and 5, of the Convention; and

(d) Formulation of recommendations to the Party concerned, taking into account Article 4, paragraph 7, of the Convention.

XV. Consequences applied by the Enforcement Branch

1. Where the enforcement branch has determined that a Party is not in compliance with Article 5, paragraph 1 or paragraph 2, or Article 7, paragraph 1 or paragraph 4, of the Protocol, it shall apply the following consequences, taking into account the cause, type, degree and frequency of the non-compliance of that Party:

   (a) Declaration of non-compliance; and

(b) Development of a plan in accordance with paragraphs 2 and 3 below.

2. The Party not in compliance under paragraph 1 above, shall, within three months after the determination of non-compliance, or such longer period that the enforcement branch considers appropriate, submit to the enforcement branch for review and assessment a plan that includes:

   (a) An analysis of the causes of non-compliance of the Party;

   (b) Measures that the Party intends to implement in order to remedy the non-compliance; and

   (c) A timetable for implementing such measures within a time frame not exceeding twelve months which enables the assessment of progress in the implementation.

3. The Party not in compliance under paragraph 1 above shall submit to the enforcement branch progress reports on the implementation of the plan on a regular basis.

4. Where the enforcement branch has determined that a Party included in Annex I does not meet one or more of the eligibility requirements under Articles 6, 12 and 17 of the Protocol, it shall suspend the eligibility of that Party in accordance with relevant provisions under those articles. At the request of the Party concerned, eligibility may be reinstated in accordance with the procedure in section X, paragraph 2 [requiring a finding by an expert review team indicating that the eligibility requirements are met].

5. Where the enforcement branch has determined that the emissions of a Party have exceeded its assigned amount . . . it shall declare that that Party is not in compliance with its commitments under Article 3, paragraph 1, of the Protocol, and shall apply the following consequences:

   (a) Deduction from the Party's assigned amount for the second commitment period of a number of tonnes equal to 1.3 times the amount in tonnes of excess emissions;

   (b) Development of a compliance action plan in accordance with paragraphs 6 and 7 below; and

   (c) Suspension of the eligibility to make transfers under Article 17 of the Protocol until the Party is reinstated in accordance with section X, paragraph 3 or paragraph 4.

6. The Party not in compliance under paragraph 5 above shall, within three months after the determination of non-compliance or, where the circumstances of an individual case so warrant, such longer period that the enforcement branch considers appropriate, submit to the enforcement branch for review and assessment a compliance action plan that includes:

   (a) An analysis of the causes of the non-compliance of the Party;

   (b) Action that the Party intends to implement in order to meet its quantified emission limitation or reduction commitment in the subsequent commitment period, giving priority to domestic policies and measures; and

   (c) A timetable for implementing such action, which enables the assessment of annual progress in the implementation, within a time frame that does not exceed three years or up to the end of the subsequent commitment period, whichever occurs sooner. At the request of the Party, the enforcement branch may, where the circumstances of an individual case so warrant, extend the time for implementing such action for a period which shall not exceed the maximum period of three years mentioned above.

7. The Party not in compliance under paragraph 5 above shall submit to the enforcement branch a progress report on the implementation of the compliance action plan on an annual basis.

8. For subsequent commitment periods, the rate referred to in paragraph 5 (a) above shall be determined by an amendment.

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Designing appropriate and effective noncompliance measures in an international regime is always a difficult tight-rope walk: if the consequences are too severe, governments simply refuse to consent to the mechanism; if they are too soft, then they are unlikely to deter noncompliance. Did the Parties get the balance right?

XEUMAN WANG & GLENN WISER, THE IMPLEMENTATION AND COMPLIANCE REGIMES UNDER THE CLIMATE CHANGE CONVENTION AND ITS KYOTO PROTOCOL

11 RECIEL 181, 196–97 (2002)

Two types of consequences were adopted for the Protocol. . . . This first type of consequences includes those associated with the facilitative branch. They are purely facilitative in nature, such as advice, financial and technical assistance, and recommendations. These measures aim to assist parties in their efforts to avoid non-compliance or return to compliance. Due to their generally non-confrontational nature, the facilitative consequences received relatively little attention from the JWG [Joint Working Group].

The second type includes the consequences imposed by the enforcement branch. Regarding these consequences, the most contentious issues were what would happen if a party failed to honour its Protocol, Article 3(1) emissions reduction target, and what would be the nature of those consequences. The remainder of this section discusses those consequences related to article 3(1).

Deduction of Excess Emissions from a Party's Future Emissions Allowance (Assigned Amount). The deduction proposal was also known as "restoration of tonnes" and — derisively by many environmentalists — as "borrowing." The rationale behind deduction was partly based on the assumption that it would provide incentives for parties to comply with their targets during the first commitment period, because deducting excess tonnes from the subsequent commitment period would significantly increase the difficulty and cost of compliance for that period. Yet several problems were identified for this consequence. First, deduction from the second commitment period will not truly make up for the excess emissions in the first unless there is some extra means of ensuring that the non-complying party does, in fact, reduce its emissions during the second period. Many commentators predicted that the party would in fact simply "borrow" from commitment period to commitment period, in the same way that someone might pass on debt indefinitely into the future until the system was forced to accept that the debt would never be repaid.

Second, commentators were concerned that the party facing deduction would simply negotiate its second (or third) commitment period targets to a higher amount of emissions, to accommodate for the deduction. As stated by the Australian Department of Foreign Affairs and Trade, "[p]arties would simply take into account any anticipated subtraction of emission in negotiating their targets for the subsequent commitment period, thus removing the incentive." Moreover, there was little agreement on what the correct deduction rate should be or how it should be calculated, with some parties arguing that a one-to-one deduction rate would provide the proper compliance incentives, while others replying that discount rates, opportunity costs of money, compliance theory and various other analyses should be taken into account in arriving at the number.

Despite the well-recognized shortcomings of deduction, parties eventually consented to it because no other politically feasible or realistic non-compliance response seemed possible. While most Annex I parties agreed that the Protocol would require a strong compliance system, they were generally loath to expose themselves to the possibility of non-compliance consequences with "teeth", such as financial penalties or trade measures. The deduction rate that was finally adopted, 1.3-to-1, "split the difference" between those who wanted a higher penalty rate and those who preferred a one-to-one deduction.

Compliance Action Plan. The compliance action plan was proposed by the EU as a way to make deductions more palatable to parties that supported stronger consequences. This consequence requires an Annex I party that has exceeded its emissions target to submit a plan explaining specifically how it will comply with its emissions reduction targets for the subsequent commitment period. The plan is subject to "review and assessment" by the enforcement branch.

The rationale of the compliance action plan is that it will provide a means for the enforcement branch to remain involved in the efforts of a non-complying party to meet its subsequent, reduced target, thereby reducing the likelihood that the party will simply 'roll-over' its emissions excess into commitment period after commitment period.

The major concern of some negotiators was that the enforcement branch might use the compliance action plan requirement to dictate to a party the specific means by which it must return to compliance; in particular, the extent to which it could use the Kyoto flexible mechanisms instead of purely domestic actions. These negotiators believed that such a situation would amount to the enforcement branch being able to order a party to adopt specific policies and measures to reach its targets, which was an approach that was specifically rejected during the Kyoto negotiations (and consequently not included in the Protocol). In the end, the compliance action plan language that was adopted did not give the enforcement branch the power to "approve" a compliance action plan. Instead, the enforcement branch is empowered to 'review and assess' the plan after the party submits it.

Suspension of Eligibility to Participate in International Emissions Trading. Many multilateral treaty regimes provide for suspension of a State's rights and privileges when a State fails to honour its treaty obligations. Because participation in the Protocol's emissions trading mechanism will be an important part of many parties' efforts to comply with their targets in a cost-effective manner, the prospects of losing that privilege could provide parties with a powerful incentive to restore themselves to compliance or avoid non-compliance in the first place. Moreover, because the integrity of the trading regime is predicated on the notion that a party will only transfer surplus, valid emissions credits, and not credits that it needs for its own compliance, most negotiators agreed that a non-compliant party should not be allowed to make any emissions trading transfers until it has demonstrated that it will be able to comply with its current emissions target.

The only major point of contention regarding this consequence was how a suspended party would have its eligibility to trade reinstated. In the final Marrakesh rules, parties agreed upon specific reinstatement procedures that create a presumption that the enforcement branch will reinstate a party's eligibility after the party requests it to do so. However, the rules allow the enforcement branch to deny reinstatement if it believes the party has not complied, or will not be able to comply, with its emissions targets for the subsequent commitment period.

Compliance Fund. One alternative to deductions that was considered by negotiators was a compliance fund, which was included in the various compliance negotiating drafts prior to the adoption of the Bonn Agreement. The compliance fund was intended as a mechanism that would allow parties to remedy or avoid a finding of non-compliance by making payments to a fund that would invest the proceeds in GHG mitigation projects. Either a domestic or an international entity could have administered the fund. While one version or another of the compliance fund attracted the support of many parties, it was eventually dropped because some countries perceived it as a potential form of financial penalty, while others suspected that it would be used to set a "price cap" on the compliance cost of parties.

Financial Penalty. Financial penalties are rarely used in multilateral agreements, partly because there are few effective ways to ensure that they will be paid. During the JWG's discussions, many parties felt that the prospect of financial penalties for non-compliance with their emissions targets would make it politically difficult for them to win domestic support for the Protocol. Although financial penalties appeared in some of the compliance text drafts during the negotiations, they never received broad enough support from parties to make them a realistic prospect for adoption.

QUESTIONS AND DISCUSSION

1. Carefully review the compliance procedures and answer the following questions:

- Which compliance issues are allocated to the facilitative branch and which are allocated to the enforcement branch? Considering the consequences of noncompliance, do you think this allocation is appropriate?

- Which body makes the final decision concerning compliance measures, the Compliance Committee or the COP/MOP? Which body do you think should make such decisions?

- Which compliance measures may be appealed? On what grounds may a Party appeal? To whom is the appeal directed?

2. Wang and Wiser note that the Parties adopted the emission deduction scheme for noncompliance with emission targets because "no other politically feasible or realistic non-compliance response seemed possible." Do you agree?

3. ***Proportionality***. A major issue concerning any international compliance scheme is proportionality — that is, penalties or other measures to redress noncompliance should be proportionate to the nature of the obligation and seriousness of the breach, taking into account the cause, type, degree, and frequency of noncompliance. If a Party fails to report its emissions, it is impossible to ascertain what its baseline emissions are and whether it is meeting its targets and timetables. What measure is proportional to this offense? If a Party fails to meet its target by one percent, what constitutes a proportionate response? What if a Party misses its target by 30 percent? In establishing two different branches of the Compliance Committee and imposing different penalties for different noncompliance issues, have the Parties created an equitable compliance regime?

4. Both the facilitative and enforcement branches of the Compliance Committee have seen some activity. At the second meeting of the facilitative branch, South Africa, on behalf of developing countries, submitted questions of implementation concerning 15 Annex I Parties, including Bulgaria, Germany, France, Russia, and others. In each case, South Africa reported that the 15 Parties had not submitted their national communication submissions detailing whether they were making "demonstrable progress" towards meeting their commitments, as required by

Article 3.2 of the Kyoto Protocol. South Africa's submissions can be found at: http://unfccc.int/kyoto_protocol/compliance/facilitative_branch/items/3786.php.

The facilitative branch voted not to proceed against Latvia and Slovenia. Votes to proceed and not to proceed against the other Parties did not receive the required three-fourths majority and those decisions were not adopted. Compliance Committee, Facilitative Branch, *Report of the Third Meeting*, CC/FB/3/2006/2 (Sept. 6 2006); *see also* Report to the Compliance Committee on the Deliberations in the Facilitative Branch Relating to the Submission Entitled "Compliance with Article 3.1 of the Kyoto Protocol" (CC-2006-1/FB to CC-2006-15/FB). Are you surprised by the inertia of the facilitative branch, which was designed to assist with implementation and not to impose punitive measures? If the facilitative branch had pursued these compliance matters, what would have been an appropriate response for a Party's failure to make "demonstrable progress" in achieving its commitments?

The enforcement branch became active as the Parties entered the first commitment period, with most of its attention focused on whether countries had an adequate system for estimating greenhouse gas emissions under Article 5. For example, the enforcement branch found that Lithuania had failed to meet the requirements of Article 5 and withdrew its eligibility to take advantage of the flexibility mechanisms. Lithuania made initial changes to its system for estimating emissions and requested that its eligibility be reinstated. An expert review team found the changes were not sufficient, and the enforcement branch denied the request. Lithuania made more changes before its eligibility was finally reinstated. Documents relating to the enforcement branch's consideration of Lithuania's compliance can be found at: http://unfccc.int/kyoto_protocol/compliance/questions_of_implementation/items/6195.php.

5. ***Triggering the Compliance Procedure***. The compliance mechanism can be triggered in three distinct ways. First, the reports of the expert review teams may point to implementation problems. Second, a Party may request assistance if it is struggling to meets its obligations. This approach is consistent with the facilitative approach to redressing injuries to collective or commons resources. Self-reporting of noncompliance has become a common and effective feature of the Implementation Committee of the Montreal Protocol. Third, a Party may initiate a claim against another Party. Although this approach is used in both the Montreal Protocol and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), it is viewed as confrontational and is thus more controversial. Do you agree? Do you think the success of self-reporting is due to the threat of a more adversarial process? What else might motivate self-reporting of non-compliance?

In both CITES and the Montreal Protocol, the secretariat may trigger the compliance mechanism. As the recipient of the various reports from the Parties and as an important conduit for technical and other expertise, the secretariat is strategically placed to identify potential compliance problems. Nevertheless, the Parties to the Kyoto Protocol refused to grant authority to the climate change Secretariat to trigger the compliance mechanism. Are there valid grounds for restricting the role of the Secretariat to administrative functions within the compliance regime?

6. ***Expert Review Teams under Article 8***. Perhaps the most innovative aspect of the Kyoto Protocol is Article 8, which calls for the establishment of expert review teams to analyze a Party's annual inventory of anthropogenic emissions by sources and removals by sinks of greenhouse gases. Most environmental treaties do not authorize the independent verification of information submitted by Parties, because governments view such verification as an infringement of State sovereignty. Thus, incidents of noncompliance are often uncovered by nongovernmental organizations that use informal channels to bring such cases to the attention of Parties. As a consequence, the authorization of formal expert review teams to verify information submitted by governments is quite an innovation. The compliance mechanism broadens that innovation. Where an expert review team uncovers evidence of noncompliance, that information will automatically be forwarded to the Compliance Committee. Consequently, a State's compliance with the Kyoto Protocol will be subject to technical review by independent experts, and then to a legal assessment by a group of experts, acting in their personal capacities, on the Compliance Committee. This level of non-State involvement in compliance matters is quite extraordinary. Why do you think it is necessary to bypass governments when assessing information concerning a Party's emissions of greenhouse gases?

7. ***Expedited Review***. To ensure the integrity of the Kyoto Protocol's flexibility mechanisms, the Parties designed an expedited review of cases of noncompliance with the flexibility mechanisms. While the process is more or less the same as the standard procedure, the timelines for review of information and submission of documents are all shorter than those of the standard procedure.

8. ***Ratification of the Kyoto Protocol***. No sooner had the ink dried on the Kyoto Protocol than it became clear that significant ambiguities existed in the text of the Protocol that could lead to vastly different reduction requirements for the United States and other Annex I countries. Several provisions of the Protocol were deliberately left ambiguous in order to reach consensus in Kyoto, thus allowing countries to make their own interpretations and their own calculations of the costs they faced in meeting their emission reduction targets. With the clock already ticking toward the beginning of the first commitment period in 2008, however, all of the Parties recognized some urgency in clarifying a unified interpretation of the Protocol. At the very least, the institutional, procedural, and reporting requirements for the first reporting period needed to be established. Whether signatories to the Protocol would be willing to ratify the agreement would depend on whether and how agreement was reached in clarifying the Protocol's approach.

Once the United States clearly withdrew from the Protocol in early 2001, Europe quickly moved to convince other countries to join it in negotiating the outstanding issues under the Protocol and to ratify it without the United States. That would prove to be easier said than done. Under Article 25, the Protocol would enter into force once it was ratified by at least 55 Parties to the Framework Convention, and sufficient Annex I Parties to account for at least 55 percent of the total carbon dioxide emissions from all Annex I countries based on their 1990 baseline years. This meant it was theoretically possible that the Protocol could enter into force without the United States, but only if the European Union was joined by virtually all of the rest of the Annex I countries, including Japan, Canada, Australia, New Zealand, and Russia.

Given that the United States was actively lobbying against the Protocol, most observers thought little progress would be made at the June 2001 negotiations being held in Bonn. But Europe was undeterred. Partly because of the leadership of the Chairperson of the negotiations, Dutch Environment Minister Jan Pronk, as well as European resolve more generally, and the United States' failure to offer even a cosmetic alternative, the remaining Annex I countries surprised most observers by reaching an agreement on the key elements of the Protocol. These agreements would be known as the Marrakesh Accords and would pave the way for the Kyoto Protocol's entry into force.

9. The Kyoto Protocol was clearly never meant to be an end-point of the climate regime. The Parties clearly contemplated that additional commitments would be required beyond the 2008–2012 reporting period. Moreover, all Parties understood that eventually developing countries would be asked to take additional responsibilities under the regime. The posture of the United States in rejecting the Protocol complicated matters but did not derail the structure of the climate regime altogether. In the end, all Parties including the United States agreed to continue negotiations along two tracks — one aimed at a second commitment period under the Kyoto Protocol and the other aimed to create a universal agreement that could include the United States and developing countries. The first track ended in 2012 when Parties agreed to a second Kyoto commitment period (Kyoto II). The second track includes pledges made in the Cancun Agreements by developed and developing countries alike to reduce greenhouse gas emissions between 2013 and 2020. This second track also yielded the so-called Durbin Platform. The Durbin Platform establishes a current "agreement to agree" on new mitigation commitments by 2015, which would take effect in 2020. It also includes pledges to increase mitigation efforts before then. Kyoto II is discussed below, and the Durbin Platform, along with the 2009 Copenhagen Accord and other post-Kyoto agreements, are discussed in Chapter 6.

V. THE KYOTO PROTOCOL'S SECOND COMMITMENT PERIOD

The negotiation of the second round of the Kyoto Protocol was entwined with the broader issue of how to get those Parties that did not have binding targets under Kyoto (namely the United States and the developing countries) to participate in a more universal agreement. At the same time, significant effort and resources had been invested in the implementation of the Kyoto Protocol, particularly in the development of the flexibility mechanisms and the associated carbon market. Yet, the carbon market was dependent on a cap continuing beyond the end of the first commitment period (i.e., 2013). Developing countries, too, were intent on ensuring that the European Union continued to demonstrate its commitment to reducing greenhouse gases as a condition on any future actions by developing countries. Continuing Kyoto also continued to isolate the United States in its failure to take a commitment.

In the end, thirty-seven countries, including most of Europe, Australia, and Kazakhstan, agreed to take a second round of binding commitments as part of "Kyoto II." Several original Parties to the Kyoto Protocol, most notably Russia, Japan, New Zealand, and Canada, refused to join. The countries that have agreed to second round commitments under Kyoto II now only represent 15 percent of global greenhouse gas emissions. Nonetheless, the agreement to extend

the Kyoto Protocol leaves in place its institutional framework at least until 2020, by which time it is hoped a global agreement will come into force

The countries that joined Kyoto II agreed in aggregate to reduce their overall emissions by at least 18 percent below 1990 levels during the second commitment period: 2013 to 2020. As part of that, the twenty-seven countries of the European Union agreed to reduce their emissions 20 percent from 1990 levels. The decision recognizes that Parties may provisionally implement the amendment pending its entry into force and, perhaps more importantly, it encourages countries to increase their level of commitments further. Each country is asked to review its level of commitment by 2014 at the latest, and each country may increase its level of commitment in line with the more ambitious goal of reducing greenhouse gas emissions 25 to 40 percent below 1990 levels by 2020.

In addition to taking on new commitments, the Parties agreeing to Kyoto II also took several other important steps to ensure that the Kyoto Protocol's flexibility mechanisms and associated carbon market could continue. The Parties specifically agreed to continue to allow credits gained through the CDM or any other market-based instruments to meet the reduction commitments in the second commitment period. Article 3, paragraph 12 of the Protocol was amended with the following:

> 12bis. Any units generated from market-based mechanisms to be established under the Convention or its instruments may be used by Parties included in Annex I to assist them in achieving compliance with their quantified emission limitation and reduction commitments under Article 3. Any such units which a Party acquires from another Party to the Convention shall be added to the assigned amount for the acquiring Party and subtracted from the quantity of units held by the transferring Party.
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> 12ter. The Conference of the Parties serving as the meeting of the Parties to this Protocol shall ensure that, where units from approved activities under market-based mechanisms referred to in paragraph 12 bis above are used by Parties included in Annex I to assist them in achieving compliance with their quantified emission limitation and reduction commitments under Article 3, a share of these units is used to cover administrative expenses, as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation if these units are acquired under Article 17.

FCCC/KP/CMP/2012/L.9, at Annex I. The Parties thus extended an administrative fee (currently 2 percent) levied on certain flexibility mechanism transactions to offset administrative expenses and finance the Adaptation Fund's effort to assist vulnerable developing countries to adapt to climate change. Finally, the Parties allowed limited carryover of excess credits from the first reporting period to help them meet their further commitments in the second commitment period.

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QUESTIONS AND DISCUSSION

1. As part of Kyoto II, the Parties added a seventh gas to those regulated under the Kyoto Protocol: nitrogen trifluoride (NF_3). Nitrogen trifluoride has a global warming potential 17,000 times that of CO_2 and persists for 550 years. Ironically, NF_3 is used in many high-tech production processes, including the production of thin film solar cells. However, there are ways to capture many of the emissions from these production processes as well as ready substitutes to the gas. See Michael J. Prather & Juno Hsu, *NF_3: The Greenhouse Gas Missing from Kyoto,* GEOPHYS. RES. LETTERS ONLINE (June 26, 2008).

2. It is hard to overstate the impact of U.S. domestic policy on the ultimate trajectory of the Kyoto Protocol. Because the 2000 election was shrouded with confusion, the U.S. delegation actually went to CoP6 at The Hague not knowing for sure whether Al Gore, a promoter of climate policies, or George W. Bush, a self-avowed oil-and-gas man, would replace President Clinton. The failure to reach consensus at The Hague was thus particularly important because in February 2001 President Bush reversed his campaign pledge to reduce carbon dioxide emissions from power plants and also announced that the United States would no longer support the Kyoto Protocol.

Not only would the United States reject the Protocol, but the Bush Administration offered neither an apology nor an alternative, leaving Europeans and others furious at the unilateral and unexplained shift. Protests occurred at U.S. Embassies around the world, and President Bush was widely decried as a "climate criminal."

The Protocol would go on without the United States, but it was politically crippled thereafter. All the Parties at the time of the Kyoto Protocol negotiations (including the United States) expected to follow in the steps of the Montreal Protocol. By taking significant steps to reduce greenhouse gas emissions first, the strategy was that the Annex I countries would be in a better position to negotiate with the developing countries in the second commitment period. But we never got that far because of the U.S. withdrawal from Kyoto. Environmentalists pondering the current state of climate negotiations are left wondering how much stronger would the industrialized countries be in trying to gain deeper commitments from China and India if the United States had joined Europe and other countries in making at least some efforts to curb greenhouse gas emissions? Is there any reason to believe that the United States rhetorically demanding a "global" commitment adds more pressure on China and India than if the United States made this demand after living up to its own commitments?

3. Ever since the Rio Earth Summit in 1992 when the UNFCCC was adopted, climate negotiations have become huge affairs, with literally thousands of official delegates, industry leaders, environmental advocates, professional climatologists, and other members of the climate community. Along with the official negotiations, literally hundreds of side events are held at each CoP/MoP to highlight different policy initiatives, scientific developments, or technological innovations. These meetings are enormous venues for addressing the full range of climate-related issues.

Environmental nongovernmental organizations (NGOs) are well represented in these negotiations. Many coordinate through an international network called the Climate Action Network to develop and promote joint policy statements that can significantly influence the direction of the negotiations. The NGOs are also present to monitor the situation and to build political pressure among the negotiators — with the hope that this will move the Parties to swifter and stronger action. In the negotiations at CoP6, for example, environmental activists symbolically sandbagged the entire building where the negotiations were being held to underscore the perils of sea level rise. Even the chair of the negotiations, Jan Pronk, came outside to lay a sandbag. Meanwhile, the United States was widely seen as slowing progress at the negotiations, so some of the nearly 200 students brought over to the negotiations by Greenpeace USA feigned sleep at a table under the banner "U.S. Delegation Hard at Work on Negotiations." The Climate Action Network awards a daily "fossil" award (symbolized by a dinosaur skeleton) to the country it sees as presenting the greatest obstruction to negotiations each day. These types of stunts can backfire, of course, but they can also break the ice of tense negotiations while reminding negotiators of their responsibility to address climate change.

4. It is easy to criticize the Kyoto Protocol, particularly in hindsight. For sure, the Protocol has its flaws and at best was never more than a first step toward a global resolution of climate change. Yet one should not underestimate the potentially profound impact of having industrialized countries agreeing to *limit* their emissions of greenhouse gases. Why did they do it? What factors influenced their decision to complete an agreement at all in Kyoto? What pressures drove governments to negotiate for forty-eight hours and to continue the negotiations a full day longer than was scheduled? Does the Kyoto process provide general lessons about how future climate negotiations should proceed?

Negotiations over Kyoto's second round reveal the uncertainties around the future of the Kyoto targets-and-timetables approach. To be sure, the Kyoto II agreement kept the Kyoto Protocol structure alive, but only for thirty-seven (mostly European) countries representing only 15 percent of global emissions. The United States and most of the large developing countries do not share Europe's enthusiasm for the Kyoto structure, although carbon markets of some sort will likely remain important and the lessons learned from Kyoto will be critical for shaping the future climate regime.

5. With entry into force of the Kyoto Protocol in 2005, the world entered a three-tiered approach to international climate policy. Most OECD countries led by the European Union would embark on an aggressive effort to implement the Kyoto Protocol, including creation of a major regional carbon market. The United States, initially with Australia, would follow another strategy, effectively turning their back on global cooperation in favor of limited engagement with selected partners on research, investment, energy efficiency and clean development. Developing countries represent a third category — deliberately left out of the Kyoto Protocol targets and timetables, but eligible for projects and funding designed to further the aims of the UNFCCC. The challenge for the ongoing negotiations is determine whether these three approaches should be unified under a single approach.