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Kyle W. Danish

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AN OVERVIEW OF THE INTERNATIONAL REGIME ADDRESSING CLIMATE CHANGE

by Kyle W. Danish*

INTRODUCTION

The current international climate change regime comprises a network of agreements and mechanisms.¹ A high water mark in the evolution of this regime was the entry into force in February 2005 of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (“UNFCCC” or “Framework Convention”).² However, the Kyoto Protocol will not be the final word on the issue. Its emission limits cover only a fraction of the world’s greenhouse gas (“GHG”) emissions and those limits expire in 2012.

Addressing climate change presents unique challenges for international law, which already is complicated to negotiate and difficult to enforce. Climate policies potentially reach all activities that burn fossil fuels and therefore go to the heart of each country’s economy. In addition, the nature of the issue is such that it will require a very long-term response under conditions of scientific uncertainty. For these reasons, governments are understandably cautious about making commitments under international law to limit GHG emissions and are sensitive to whether their trade competitors will commit to undertake comparable efforts.

This article will examine how governments have attempted, so far, to address the issue of climate change through international law. The article will provide an overview of the different treaties, rules, and institutions that comprise the existing international climate change regime, including a review of the negotiating history that has brought the regime to its current status.

THE UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

The foundation for the international climate change regime is the Framework Convention, a treaty with practically global participation by governments. The Framework Convention was opened for signature in 1992 and garnered a sufficient number of ratifications to enter into force in 1994. It currently has 189 Parties, including the United States.³ The Kyoto Protocol is a direct and formal outgrowth of the Framework Convention.

The Framework Convention is the first chapter in the evolution of the climate change regulation, serving as a constitution-like document guiding intergovernmental cooperation on this issue. The UNFCCC does not establish binding limits on GHG emissions for any countries. Rather, true to its name, it forms a framework for further action and cooperation on the issue of climate change.

Article 3 of the Framework Convention sets forth a series of guiding “principles” that attempt to balance the aims of environmental protection, economic development, and the general division of burdens between developed and developing country Parties. One of the principles is the so-called “precautionary principle,” which provides that where there are “threats of serious or irreversible damage, lack of full scientific certainty

should not be used as a reason for postponing [precautionary] measures.”⁴ However, such measures should be “cost-effective so as to ensure global benefits at the lowest cost.”⁵ Furthermore, the Parties have a “right to, and should promote sustainable development,” taking into account “that economic development is essential for adopting measures to address climate change.”⁶

A fundamental and recurring theme in the UNFCCC is that developed and developing country Parties have “common but differentiated responsibilities and respective capabilities,”⁷ reflecting a view that

developed countries bear a greater historical responsibility for the accumulation of GHG emissions and have greater capacity to take action. Thus, the Framework Convention divides the Parties into two main groups: the Annex I countries, which comprise primarily developed countries, and the non-Annex I countries,

A fundamental and recurring theme in the UNFCCC is that developed and developing country Parties have common but differentiated responsibilities and respective capabilities.

*Kyle Danish is a Member at Van Ness Feldman, P.C. practicing environmental law with a special focus on corporate climate strategy and emissions trading-related transactions. Mr. Danish also is an Adjunct Faculty Member at the Washington College of Law. This article is drawn from a more extensive treatment of the issue. See Kyle Danish, “The International Regime,” in *GLOBAL CLIMATE CHANGE AND U.S. LAW* (Michael Gerrard, ed. American Bar Association, forthcoming March 2007).



International climate change agreements and mechanisms aim to protect areas vulnerable to global warming, such as the polar regions.

which comprise primarily developing countries. In setting forth commitments under the treaty, the UNFCCC makes certain commitments general to all Parties, but also assigns certain additional obligations to the Annex I Parties.

The UNFCCC provides that all Parties will develop and submit national inventories of emissions by sources and removals by sinks,⁸ implement national plans that include measures to mitigate climate change,⁹ promote and cooperate in technology transfer,¹⁰ and encourage and assist in scientific research on climate change.¹¹ Each Party is required to submit “national communications” reporting on its progress in meeting these various commitments.¹² The Framework Convention also states that the extent to which developing country Parties effectively implement their commitments will depend on the level of assistance from developed countries.¹³

The UNFCCC outlines certain commitments only relevant to Annex I Parties. Article 4.2 obliges Annex I Parties to adopt national policies to mitigate climate change and to report on the progress of these policies “with the aim of” returning emissions to their 1990 levels.¹⁴ This became a “soft” commitment; Annex I Parties generally have not met this target, and many missed the target by a wide margin. However, the 1990 emissions “baseline,” became a touchstone for development of binding emissions limits under the Kyoto Protocol.

THE KYOTO PROTOCOL

The Kyoto Protocol is the current apogee of international efforts to address global climate change and a significant milestone in the evolution of international environmental law generally. As a non-party, the United States has no obligations under the Protocol, nor does it currently participate in the Conference of Parties meetings Parties to the Protocol (“COP/MOP”).

A BRIEF HISTORY

The origins of the Kyoto Protocol can be found in the report of UNFCCC COP-1 in Berlin (1995). The Parties to the Framework Convention determined that a more forceful international

response to the threat of climate change was needed,¹⁵ leading to a commitment to develop a protocol with binding emission limits.¹⁶ Consistent with the principle of “common but differentiated responsibilities,” it was agreed that such limits should apply only to the developed country Parties.

Subsequent negotiations resulted in the Kyoto Protocol, which was adopted by the Parties at UNFCCC COP-3 at Kyoto in 1997. The Protocol outlined emission limits for the Convention’s Annex I Parties. However, many key details about the Protocol were not resolved and negotiations continued. During this period, the United States government negotiated under a cloud of uncertainty as the U.S. Senate passed in 1997 a near-unanimous resolution directing the government not to enter into agreements under the Convention that “mandate new commitments to limit or reduce GHG emissions for the Annex I Parties, unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce GHG emissions for developing country Parties within the same compliance period.”¹⁷

Negotiations surrounding the Protocol reached a crisis point at UNFCCC COP-6, which was held in November 2000 in the Hague. After nearly reaching a compromise, the negotiations collapsed. This was followed by the election of George W. Bush. The Bush Administration quickly repudiated the Protocol, asserting that it “fails to establish a long-term goal based on science, poses serious and unnecessary risks to the U.S. and world economies, and is ineffective in addressing climate change because it excludes major parts of the world.”¹⁸

The exit of the United States from the Protocol created a crisis in the negotiations because the Protocol rules for entry into force were designed to privilege the position of the United States and Russia. The United States’ repudiation of the Protocol (followed by Australia) meant that Russia became the keystone for entry into force. The Protocol received a sufficient number of ratifications to enter into force in February 2005 after Russia ratified. November of that same year saw a parallel session of the COP (COP-11) and the first meeting of Parties to the Protocol (COP/MOP-1).

OVERVIEW OF THE KYOTO PROTOCOL’S STRUCTURE

The Kyoto Protocol sets forth binding emission limits for developed country Parties for the period of 2008–2012. Parties effectively have full discretion in developing national measures to meet their limits. Furthermore, they can take advantage of certain “flexible mechanisms,” which offer market-based approaches for achieving emission reductions across borders. The Protocol is buttressed by a compliance system that combines facilitative systems with harder enforcement mechanisms.

Emission Limits

The central element of the Protocol is its binding quantified emission limitation and reduction commitments, which are established by Article 3 and inscribed in Annex B and apply only to Annex I Parties under the UNFCCC. The commitments vary on a Party-by-Party basis and are calculated, with some variations, with reference to each Party’s 1990 emissions level. Each Annex I Party must meet its commitment as an annual average

during the period 2008–2012, which is referred to as the “first commitment period.” Collectively, the assigned amounts of the Annex I Parties correspond to a 5.2 percent reduction below their 1990 emissions levels.

Basket of Greenhouse Gases

Each Annex I Party’s commitment applies on the basis of a “basket” of six GHGs: carbon dioxide (“CO₂”), methane (“CH₄”), nitrous oxide (“N₂O”), hydrofluorocarbons (“HFCs”), perfluorocarbons (“PFCs”), and sulfur hexafluoride (“SF₆”).¹⁹ The Intergovernmental Panel on Climate Change (“IPCC”) determined the “global warming potential” of each of these types of GHGs relative to carbon dioxide.²⁰ The Protocol expresses each Party’s limit in the form of a “carbon dioxide equivalent” in tons of GHG emissions. In addition, for HFCs, PFCs, and SF₆, the Protocol allows the use of 1995 as a base year, easing the stringency of requirements for those GHGs.²¹ The “basket” approach allows each Annex I Party a degree of flexibility in determining a cost-effective combination of reductions of different types of GHGs.

Consideration of Russia and Economies in Transition.

The Protocol provides former Soviet-bloc countries, referred to in the treaty as Parties “undergoing the process of transition to a market economy,” with certain flexibility. Under certain circumstances, these Parties may use a base period other than 1990 for their emission commitments.²²

Also, Russia has a significant and somewhat controversial accommodation under the Protocol. Russia’s Annex B commitment limits the country to its emissions level in 1990. However, because of the collapse of the Russian economy in the 1990s, the country’s emissions are below its 1990 level and are projected to stay below that level through 2012. Accordingly, Russia has significant headroom between its projected emissions and its assigned amount. This arrangement eases Russia’s compliance burden and provides the country with a potential surplus of credits it can trade for profit. The Russian surplus, among other concessions, was critical to securing the country’s participation in the Protocol. However, critics deride Russia’s arrangement as watering down the overall environmental effectiveness of the treaty. These critics assert that Annex I countries can reduce their need to implement “new” emission reductions in their own countries by purchasing credits from Russia that resulted from “old” emissions reductions, also called Russian “hot-air.”²³

Commitment Period Approach

One of the elements of the treaty designed to provide for cost-effective compliance is the commitment period approach. Instead of a single fixed-year limit, the Protocol’s emission commitments apply as an annual average to be achieved over a five-year period. This approach responds to the concern that a country’s GHG emissions could rise or fall in any particular year because of difficult-to-control factors such as the vagaries of the business cycle or weather fluctuations affecting power production. The commitment period approach makes a government’s efforts to mitigate its emissions less vulnerable to such factors.

European Union “Bubble”

Article 4 of the Protocol provides that two or more Annex I Parties may agree to fulfill their Article 3 commitments jointly, in which case they become subject to a summed assigned amount, rather than their individual commitments. The European Union (“EU”) opted to take advantage of this provision, replacing each Member State’s Annex B commitment with a collective commitment. The EU separately negotiated a burden-sharing agreement that re-distributes emission commitments among the EU Member States.²⁴ Under the EU burden-sharing agreement, Member States with relatively fast-growing economies have relatively more lenient emissions commitments.

Accounting for Land Use, Land Use Change, and Forestry

Activities that lead to deforestation, or even clearing of agricultural land and disturbance of soils, result in substantial releases of carbon dioxide. For these reasons, issues related to land use, land use change, and forestry (“LULUCF”) have been a significant topic of discussion at the COPs. Notwithstanding the general benefits of focusing on LULUCF for purposes of climate change mitigation, LULUCF is controversial. Data on emissions and removals associated with LULUCF activities are less certain and reliable than data associated with industrial and power generation activities. Moreover, some governments and non-governmental organizations view LULUCF activities as distracting from investments in cleaner energy technologies.

The Protocol embodies a complicated set of compromises on these issues. First, the Protocol provides that, in meeting their Article 3 commitments, Annex I countries only may take into account a finite set of relatively easily-measured activities: “net changes in greenhouse gas emissions by sources and removals by sinks resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990.”²⁵ The Protocol did not fully resolve whether forest management other than afforestation and reforestation could count toward targeted reductions.

Annex I Parties that opt to use LULUCF activities to meet their commitments must issue certain credits for the tons sequestered by these activities, referred to as Removal Units (“RMUs”). Annex I Parties may add RMUs to their assigned amount or trade them through the Kyoto flexible mechanisms; however, banking surplus RMUs for future commitment periods is prohibited.²⁶ Finally, the Parties established certain limits to LULUCF-related projects under the Clean Development Mechanism (“CDM”).

National Policies and Measures

Central to the Protocol’s structure is an understanding that Annex I Parties are free to determine what combination of policies and measures they will develop to meet their quantified commitments. Article 2.1 provides that each Annex I Party, in meeting its Article 3 commitment, shall “implement and/or further elaborate policies and measures in accordance with its national circumstances.” It goes on to delineate a list of preferred examples of such policies, including enhancement of

energy efficiency, enhancement of sinks and reservoirs of GHGs, and increased use of renewable energy. In all, Article 2 is more hortatory than obligatory in form.

Annex I Parties to the Kyoto Protocol have developed or are developing a variety of different national programs to meet their Article 3 commitments. A particularly noteworthy program is the cap-and-trade program established by the European Union Member States to help contribute to compliance with their “bubble” commitment, known as the European Union Emissions Trading Scheme (“EU ETS”).

The 25 EU Member States developed the EU ETS as a cap-and-trade program, which will operate over two phases. The first phase runs from 2005 to 2007 and the second phase runs for the duration of the first commitment period, 2008 to 2012. During the first phase, each Member State must include in the program all of its “installations” in the following sectors: (1) energy (electricity and refineries with direct emissions); (2) production and processing of iron and steel; (3) minerals (cement, glass, and ceramic production); and (4) pulp and paper. Approximately 12,000 installations are covered in the first phase. In addition, Phase I will cover only emissions of carbon dioxide — the covered sectors represent 46 percent of the EU’s carbon dioxide emissions. In Phase II, the EU might extend the ETS to cover other sectors and other GHGs. In the years before the onset of the first commitment period, the EU ETS has been a powerful engine for the development of a global emissions trading market, generating U.S. \$18.8 billion in the first three quarters of 2006.²⁷

The Flexible Mechanisms

Perhaps the most important international environmental law innovation of the Kyoto Protocol is its establishment and significant reliance on market-based instruments, often referred to as the “flexible mechanisms.” These mechanisms are the Article 17 emissions trading system, Article 6 Joint Implementation, and the Article 12 CDM. Each provides a pathway through which an Annex I government, and entities regulated by that government, can meet the Article 3 commitments by investing in emission reduction or sequestration opportunities in other countries.

The rationale for the flexible mechanisms is straightforward. All emissions of GHG have an identical impact on the atmosphere regardless of their location, but the cost of achieving emission reductions varies substantially. The flexible mechanisms exploit these characteristics by providing what has been referred to as “where” flexibility. In theory, “where” flexibility can ensure that reductions will be implemented wherever they can be achieved at lowest cost.

In addition to the flexible mechanisms, the Protocol has other features that promote other kinds of flexibility and cost-effectiveness. For example, the Protocol also provides “what” flexibility: it allows Annex I governments to use their discretion to promote cost-effectiveness that make sense under their national circumstances. The Protocol also provides for “when” flexibility, which also promotes cost-effectiveness. Elements of the Protocol’s “when” flexibility include the multi-year commitment period approach and the ability of Annex I Parties to

“bank” surplus Kyoto credits to use in subsequent commitment periods.

Article 17 Trading

As discussed above, each Annex I Party’s Article 3 commitment translates into an “assigned amount,” of GHG emissions over the five-year commitment period. At the end of the commitment period, an Annex I Party’s emissions cannot exceed its assigned amount. The Protocol further provides that a Party’s assigned amount can be subdivided into “assigned amount units” (“AAUs”), with each AAU corresponding to the right to emit one carbon dioxide equivalent ton of GHG emissions. Article 17 directs the COP to develop rules under which Annex I can trade AAUs with one another.

A concern identified during the Protocol negotiations was that the Article 17 system could create a risk of “overselling.” To address this risk, the Protocol provides that an Annex I Party may not engage in trades that would bring its holdings of AAUs or other Kyoto credits below the level of its “commitment period reserve,” a limit calculated for each Annex I Party. For most Parties, the commitment period reserve precludes the sale of all but ten percent of their initial allotment of AAUs.

Article 6 Joint Implementation

The Protocol also establishes a form of emissions trading among Annex I countries that revolves around projects that reduce or remove emissions, referred to as Joint Implementation (“JI”). In a JI transaction, an Annex I Party invests in a project in the country of another Annex I Party, presumably because the cost of achieving such reductions is lower in the host country than in the investing country. The host Annex I Party then transfers a corresponding portion of its assigned amount to the investing Annex I Party in the form of Emission Reduction Units (“ERUs”). The investing Annex I Party can add these ERUs to its assigned amount. ERUs may be earned only for reductions or removals occurring during the 2008–2012 commitment period.

The requirement that the project achieve mitigation results “additional to any that would otherwise occur” is a central, complicated, and controversial touchstone for project-based emissions trading — both for JI and for the CDM. At the heart of the so-called “additionality” requirement is the view that credits should not go to reductions that would have occurred even without the intervention of an investing Annex I Party or legal entity.

Article 12 Clean Development Mechanism

A significant innovation of the Kyoto Protocol is the establishment of the CDM. Through the CDM, Annex I governments (and companies or other persons authorized by them) can earn certified emission reductions (“CERs”) by investing in emission reduction projects in non-Annex I countries. Like JI, the CDM provides for project-based emissions trading. In this way, the CDM has been the primary mechanism for involvement of developing countries during the Kyoto Protocol’s first commitment period. Because of a perceived abundance of low-cost mitigation project opportunities in developing countries, many experts believe that Annex I Parties are likely to rely on CDM projects as a significant strategy for compliance with their Arti-

cle 3 commitments.

Article 12 of the Protocol outlines the fundamental elements and requirements for the CDM. CDM projects, like JI projects, are required to achieve reductions in emissions that are “additional to any that would occur in the absence of the certified project activity.”²⁸ Participation in each project must be voluntary and approved by each Kyoto Party involved.²⁹ Governments have established “Designated National Authorities” to approve projects and project participants. Article 12 adds an overlying “purpose” for CDM projects that is additional to climate change mitigation: to assist non-Annex I Parties in “achieving sustainable development;”³⁰ the determination of which is left to host country Designated National Authorities.

At the heart of the CDM is its project approval cycle. The cycle is a process through which the CDM Executive Board approves a project and then issues CERs for that project. The CDM Executive Board has taken a number of steps to facilitate and expedite the project cycle — and, indeed, to avoid a full project-by-project review whenever possible. One of the steps taken by the Executive Board has been to accredit a number of private companies to serve as project reviewers; these accredited companies are known as Designated Operational Entities (“DOEs”). DOEs have the primary responsibility for validating that a proposed CDM project meets all relevant requirements and for verifying on annual basis that the project has generated reductions. A second expediting strategy adopted by the Executive Board has been to build up a library of standard emissions baseline methodologies for certain types of commonly-implemented projects. The Executive Board has encouraged project participants to use these pre-approved methodologies. New proposed methodologies go before a subcommittee of the Executive Board, referred to as the Methodology Panel.

With this overview, the discussion that follows outlines the various steps in the project cycle. The first step is for the project participant(s) to develop a Project Design Document, for which there is a specific template. The Project Design Document contains critical information about the project, including whether it has earned host country approval from the Designated National Authority. The Project Design Document also describes the project’s baseline, including whether the project participant is using a standard methodology or proposing a new methodology, and sets forth the case for the project’s additionality.

A DOE reviews the Project Design Document. If the DOE determines that the project meets the CDM rules, then the DOE transmits a “validation” report for the project to the Executive Board. If the Executive Board agrees with the recommendations of the DOE, it “registers” the project. A registered project is eligible to receive CERs.

For each year of the project’s crediting period, the project participant must deliver a monitoring report. The participant must retain a second DOE, different than the one responsible for the validation of the project, to verify these results. The DOE delivers its verification report to the Executive Board. If the Executive Board concurs with the DOE’s verification, it will issue CERs into the national registry or registries requested by

the project participant. In other words, issuance of CERs is on a *post hoc* basis; it occurs only after a demonstration that the project has achieved reductions.

Recognizing that the burdens of the standard CDM project approval process might exceed the resources of the developers of small projects, the CDM Executive Board has developed a set of streamlined procedures for approval of “small-scale” projects. Eligible project categories include certain types of renewable energy projects and certain types of energy efficiency projects.

Compliance

The Kyoto Protocol compliance system is more robust than that of any other international environmental agreement and has introduced a number of innovations to international law generally. The Protocol’s compliance system includes mechanisms to generate information about performance, mechanisms to facilitate compliance, and mechanisms to deter non-compliance through penalties.

The fundamental measure of compliance under the Protocol is the obligation of each Annex I Party to hold a sufficient combination of credits at the end of the commitment period to cover its emissions. To this end, the Protocol establishes a number of mechanisms to generate information about holdings of credits and emissions. For example, Article 5 of the Protocol requires Annex I Parties to develop national systems for estimating emissions by sources and removals by sinks. Article 7 requires each Annex I Party to submit an annual emissions inventory that provides information necessary to determine progress toward compliance with its Article 3 commitment.

To evaluate compliance, Article 8 of the Protocol calls for the establishment of expert review teams. These teams are empowered to audit information submitted by Annex I Parties pursuant to Article 5 and Article 7. Claims of non-compliance come before the Compliance Committee,³¹ which consists of two bodies: the Facilitative Branch and the Enforcement Branch, each consisting of delegates appointed by the Parties. The Facilitative Branch, consistent with its name, has assistance and early warning functions and aims to prevent non-compliance before it occurs. It can direct financial and technical assistance to Parties. The Enforcement Branch, by contrast, has quasi-judicial functions. It assesses compliance by Annex I Parties with respect to reporting requirements and Article 3 commitments. The Enforcement Branch is empowered to determine that Annex I Parties are ineligible to participate in the flexible mechanisms and can apply adjustments to emission inventories in response to information provided by Expert Review Teams. Under certain circumstances, a Party may appeal a decision of the Enforcement Branch to the COP/MOP.

An Annex I Party that fails to fulfill its Article 3 commitment — *i.e.*, because its emissions exceed its holdings of credits — is subject to a penalty. The violating Party’s second commitment period assigned amount will be reduced by a number of credits sufficient to restore it to compliance — plus a penalty “interest rate” of 30 percent. The hope is that this penalty will be sufficient to deter willful non-compliance. Yet, its deterrent effect will be diminished if the negotiation and adoption of

assigned amounts for a second commitment period extends into the first commitment period.

THE FUTURE OF THE INTERNATIONAL CLIMATE REGIME

Article 3.9 of the Protocol provides that the COP/MOP shall initiate no later than 2005 the consideration of commitments for subsequent commitment periods — but only with respect to Annex I countries. Article 9 provides that a broader review of the Protocol should take place at the second meeting of the COP/MOP; such a review presumably could include consideration of commitments for non-Annex I parties.

At the COP-11/MOP-1 meeting, the parties to the Protocol agreed to launch an *ad hoc* working group to consider post-2012 commitments for Annex I Parties. They also consented to extending an invitation to all Parties to submit their views on how an Article 9 review should proceed. At the same time, pressed by the United States and other large developing countries, the COP agreed on an initiative aimed at enhancing long-term cooperation on climate change through the UNFCCC, including cooperation with regard to technology.³² The launching of these parallel consultation processes reflects the wide differences of opinion on where the international climate change regime should go after 2012.

Negotiations on possible commitments after 2012 will need to contend with the range of criticisms that have emerged about the Kyoto Protocol's architecture. One criticism is that the Protocol's emission targets do not conform to the most cost-effective approach to addressing the problem. According to many experts, reducing the risk of global climate change ultimately will require very steep reductions in emissions but that the optimally cost-effective path to achieving these reductions involves starting with relatively modest commitments and then imposing more stringent commitments over time. In this light, the Protocol is "too much, too soon," imposing sharp, near-term reductions that force costly premature retirements of capital stock while leaving uncertain the long-term path of reductions.³³

Indeed, critics of Protocol often assert that few Annex I countries are on track to meet their Article 3 commitments and that, for several countries, compliance appears increasingly out of reach. In 2006, the government of Canada announced that it expected to miss its target. Another fundamental criticism of the Protocol is that it does not extend commitments to developing countries, including major emitters such as China and India, even though the emissions from developing countries are expected to surpass those of industrialized countries in the next two decades.

To be sure, the Protocol's architects assert that its structure is consistent with the Framework Convention's principle of "common but differentiated responsibilities." According to this view, the first commitment period necessary had to impose commitments only on Annex I Parties in order to lay the foundation for key developing countries to adopt limits in the subsequent commitment period. The text of the Protocol, however, does not make any such bargain explicit much less enforceable.

Moreover, there is some question as to whether the Protocol's architecture of absolute emissions caps can be feasibly extended to developing countries. One issue is political; developing countries are reluctant to accept fixed limits on their emissions, lest they effectively amount to limits on their economic growth. The second issue is administrative; many developing country governments lack the capacity to develop an economy-wide regulatory program that could achieve a precise numerical limit on emissions.


Indeed, the Bush Administration and like-minded critics of the Protocol argue that an emissions targets approach is fundamentally flawed. They assert that the key elements of the problem — the ultimate need for substantial reductions in emissions and the imperative of involving developing countries — point away from an emissions targets approach and toward a technology-based program. In their view, the Protocol's near-term emissions targets are a costly and inequitable distraction from this technology-based path.

Proposals for future directions of international efforts on climate change are multiplying rapidly.³⁴ While the majority of proposals assume the continued negotiation of commitments by governments under the auspices of the UNFCCC, a few would abandon the UNFCCC and the Protocol for some other form and forum. For instance, some proposals would bring together a more limited number of major-emitting and like-minded countries. Part of the theory behind the approaches that propose an alternative forum is the difficulty of making progress under the United Nations "mega-conference" approach.

Similarly, there are different proposals as to how to develop commitments to mitigate GHG emissions. While some proposals would maintain the top-down approach of multilateral negotiation of national commitments, other proposals would encourage countries to make pledges of particular domestic measures.

In addition, experts have come forward with various approaches to the design of commitments. Some propose extending the Protocol's quantitative emission targets, but with variations. Other designs would replace or supplement the emissions targets approach with harmonized domestic policies and measures, which could take the form of coordinated carbon taxes, energy efficiency standards, or technology policies.

CONCLUSION

The Kyoto Protocol has broken new ground in international law. The Protocol's flexible mechanisms have spawned an international market in emissions trading, which generated upwards of U.S. \$21.5 billion in transactions in the first three quarters of 2006.³⁵ The treaty also has established a more robust compliance system than most other international agreements. The long-term evolution of the Protocol, however, remains in question. 

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ENDNOTES: AN OVERVIEW OF THE INTERNATIONAL REGIME *continued from page 15*

¹ Because of their multi-faceted character, the various international laws and institutions addressing climate change aptly fit the definition of what international relations scholars refer to as a “regime,” *i.e.*, a “persistent and connected set[s] of rules (formal and informal) that prescribe[s] behavioural roles, constrain activity, and shape expectations” in a particular issue area. *See* ROBERT O. KEOHANE, *INTERNATIONAL INSTITUTIONS AND STATE POWER 3* (Boulder: Westview Press, 1989). For an extensive and detailed analysis of the international climate change regime, *see* FARHANA YAMIN AND JOANNA DEPLEDGE, *THE INTERNATIONAL CLIMATE CHANGE REGIME: A GUIDE TO RULES, INSTITUTIONS, AND PROCEDURES* (Cambridge University Press, 2004).

² Kyoto Protocol to the United Nations Framework Convention on Climate Change, Feb. 16, 2005, 37 I.L.M. 32, *available at* <http://unfccc.int/resource/docs/convkp/kpeng.pdf> (last visited Feb. 11, 2007) [hereinafter Kyoto Protocol].

³ UNFCCC, Status of Ratification, http://unfccc.int/essential_background/convention/status_of_ratification/items/2631.php (last visited Feb. 11, 2007).

⁴ United Nations Framework Convention on Climate Change, art. 3, May 9, 1992 31 I.L.M. 849, *available at* <http://unfccc.int> (last visited Feb. 11, 2007) [hereinafter UNFCCC].

⁵ UNFCCC, *id.*

⁶ UNFCCC, *id.* at art. 3.4.

⁷ UNFCCC, *id.* at art. 3.1.

⁸ UNFCCC, *supra* note 4, at art. 4.1(a).

⁹ UNFCCC, *supra* note 4, at art. 4.1(b).

¹⁰ UNFCCC, *supra* note 4, at art. 4.1(c).

¹¹ UNFCCC, *supra* note 4, at art. 4.1(g).

¹² UNFCCC, *supra* note 4, at art. 12.

¹³ UNFCCC, *supra* note 4, at art. 4.7.

¹⁴ UNFCCC, *supra* note 4, at arts. 4.2(a) and (b).

¹⁵ The Berlin meeting coincided with the publication of the Intergovernmental Panel on Climate Change’s “Second Assessment Report,” which outlined a stronger basis for concern about the risks of human-induced climate change.

See generally, CLIMATE CHANGE 1995: THE SCIENCE OF CLIMATE CHANGE: CONTRIBUTION OF WORKING GROUP I TO THE SECOND ASSESSMENT OF THE INTER-GOVERNMENTAL PANEL ON CLIMATE CHANGE (J.T. Houghton, *et al.*, eds., Cambridge University Press 1995).

¹⁶ See UNFCCC, *Report of the Conference of the Parties on its First Session*, FCCC/CP/1995/7/Add.1 (June 6, 1995), available at <http://unfccc.int/resource/docs/cop1/07a01.pdf> (last visited Feb. 11, 2007).

¹⁷ 143 Cong. Rec. S8138-39 (daily ed. July 25, 1997).

¹⁸ ANALYSIS OF THE KYOTO PROTOCOL, U.S. GLOBAL CLIMATE CHANGE POLICY BOOK (2002), available at <http://www.whitehouse.gov/news/releases/2002/02/climatechange.html> (last visited Feb. 10, 2007).

¹⁹ See Kyoto Protocol, *supra* note 2, at Annex A.

²⁰ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2001: THE SCIENTIFIC BASIS 6.1.2 (2001).

²¹ Kyoto Protocol, *supra* note 2, at art. 3.8.

²² Kyoto Protocol, *supra* note 2, at art. 3.5.

²³ See e.g., David M. Driesen, *Free Lunch or Cheap Fix?: The Emissions Trading Idea and the Climate Change Convention*, 26 B.C. ENVTL. AFF. L. REV. 1, 60-61 (1998).

²⁴ Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder *OJ L 130, 15.5.2002 P. 0001-0003*.

²⁵ Kyoto Protocol, *supra* note 2, at art. 3.3.

²⁶ United Nations Framework on Climate Change, Oct. 29–Nov. 10, 2001, *Report of the Conference of the Parties on its Seventh Session*, FCCC/CP/2001/13/Add.2 (Jan. 21, 2002), para. 16, available at <http://unfccc.int/resource/docs/cop7/13a02.pdf> (last visited Feb. 11, 2007).

²⁷ Philippe Ambrosi & Karen Capoor, *State and Trends of the Carbon Market 2006* 1, Oct. 2006, available at <http://www.ieta.org/ieta/www/pages/getfile.php?docID=1667> (last visited Feb. 15, 2007).

²⁸ Kyoto Protocol, *supra* note 2, at art. 12.5(c).

²⁹ Kyoto Protocol, *supra* note 2, at art. 12.5(a).

³⁰ Kyoto Protocol, *supra* note 2, at art. 12.2.

³¹ See generally Decision 25/CMP.1, FCCC/KP/CMP/2005/8/Add.3.

³² *Summary of the Eleventh Conference of the Parties to the United Nations Framework Convention on Climate Change the First Conference of the Parties Serving as the Meeting of Parties to the Kyoto Protocol*, Nov. 28–Dec. 10 2005,” EARTH NEGOTIATIONS BULL., Dec. 12, 2005, at 14.

³³ See, e.g., Robert Stavins, *Can an Effective Global Climate Treaty be Based on Sound Science, Rational Economics, and Pragmatic Politics?* (Resources for the Future, Discussion Paper 04-28, May 2004), available at www.rff.org/Documents/RFF-DP-04-28.pdf (last visited Feb. 11, 2007).

³⁴ See Daniel Bodansky, *International Climate Efforts Beyond 2012: A Survey of Approaches* (Pew Center on Global Climate Change, Dec. 2004) available at <http://www.pewclimate.org/docUploads/2012%20new%2Epdf> (last visited Feb. 15, 2007).

³⁵ Ambrosi & Capoor, *supra* note 27, at 1.