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INTERNATIONAL CLIMATE NEGOTIATIONS: OPPORTUNITIES AND CHALLENGES FOR THE OBAMA ADMINISTRATION

DAVID B. HUNTER[†]

Although many important environmental issues face President Obama, none is as critical or complex as climate change. Climate change will dominate the early environmental policies of the Obama Administration, not only because of its vital importance, but also because of a confluence of national and international politics. First, the Bush Administration took a number of administrative actions in its last year aimed at curtailing domestic response to climate change, and the Obama Administration will look to reverse them or minimize their impacts.¹ Even without new legislation, President Obama will have many opportunities to address climate change under existing statutes and within existing agency mandates.² Secondly, the newly strengthened Democratic majority in the U.S. Congress has made climate change a priority and has been holding hearings on a new comprehensive climate change bill. Finally, international

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1. See, e.g., Memorandum from Stephen Johnson, Adm'r, U.S. Env'tl. Prot. Agency, to Reg'l Adm'rs on EPA's Interpretation of Regulations that Determine Pollutants Covered by Federal Prevention of Significant Deterioration (PSD) Permit Program (Dec. 18, 2008) (prohibiting the denial of permits under the Clean Air Act on the basis of concerns over CO₂ emissions); Interagency Cooperation under the Endangered Species Act, 73 Fed. Reg. 76,272 (Dec. 16, 2008) (to be codified at 50 C.F.R. pt. 402) (weakening the scientific basis for interagency consultation and changing the definition of indirect cumulative effects); California State Motor Vehicle Pollution Control Standards, Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 73 Fed. Reg. 12,156 (Mar. 6, 2008).

2. See REBECCA M. BRATSPIES ET AL., CTR. FOR PROGRESSIVE REFORM, WHITE PAPER No. 906, PROTECTING PUBLIC HEALTH AND THE ENVIRONMENT BY THE STROKE OF A PRESIDENTIAL PEN (2008), available at http://www.progressivereform.org/CPR_ExecOrders_Stroke_of_a_Pen.pdf (proposing several new executive orders for safeguarding the environment, including orders to require federal agencies to evaluate the climate change-related implications of their actions under the National Environmental Policy Act (NEPA) and to require each federal agency to measure, report, and reduce its carbon footprint).

negotiations on the post-Kyoto climate regime are scheduled to be completed by the end of 2009.³ Administratively, legislatively, and internationally, the Obama Administration will have unprecedented opportunities to develop a comprehensive, long-term strategy for responding to climate change. This article is limited to a discussion of the international dimensions of climate change policy facing the new Administration, although the international dimensions will undoubtedly be shaped substantially by progress (or the lack of it) on the domestic administrative and legislative fronts.

I. BACKGROUND TO THE INTERNATIONAL CLIMATE NEGOTIATIONS

The first challenge for the Administration in international climate policy is really one of timing. The United States is a party to the UN Framework Convention on Climate Change (UNFCCC),⁴ signed in 1992, but is not a party to the subsequent 1997 Kyoto Protocol.⁵ That protocol was famously repudiated by President Bush in 2001 and entered into force without U.S. participation.⁶ Under the Kyoto Protocol, the European Union and other industrialized countries have agreed to reduce their greenhouse gas (GHG) emissions on average by five percent below 1990 levels.⁷ These reductions are to be achieved during the years 2008–2012, known as the first reporting period.⁸

3. See Conference of the Parties to the United Nations Framework Convention on Climate Change, Bali, Indon., Dec. 3–15, 2007, *Report of the Conference of the Parties—Addendum, Part Two: Action Taken by the Conference of the Parties at its Thirteenth Session*, dec. 1/CP.13, U.N. Doc. FCCC/CP/2007/6/Add.1 (Mar. 14, 2008), available at <http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf> [hereinafter Bali Action Plan]; *US Sets Terms for Climate Talks*, BBC NEWS, Dec. 15, 2007, <http://news.bbc.co.uk/2/hi/science/nature/7145608.stm>.

4. United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107, available at <http://unfccc.int/resource/docs/convkp/conveng.pdf> [hereinafter UNFCCC].

5. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 37 I.L.M. 22, available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf> [hereinafter Kyoto Protocol].

6. *UN's Kyoto Treaty Against Global Warming Comes Into Force*, UN NEWS SERV., Feb. 16, 2005, <http://www.un.org/apps/news/story.asp?NewsID=13359&Cr=global&Cr1=warm>; *Bush Firm over Kyoto Stance*, CNN.COM, Mar. 29, 2001, <http://archives.cnn.com/2001/US/03/29/schroeder.bush/index.html>.

7. Kyoto Protocol, *supra* note 5, art. 3, ¶ 1. See generally MICHAEL GRUBB ET AL., *THE KYOTO PROTOCOL: A GUIDE AND ASSESSMENT* (1999) (providing a general overview of the Kyoto Protocol).

8. Kyoto Protocol, *supra* note 5, art. 3, ¶ 1.

Anticipating that the first reporting period would soon be drawing to a close, the parties to the Framework Convention negotiated the so-called Bali Road Map in 2007.⁹ The Bali Road Map is comprised of several forward-looking decisions, including (1) a timetable with a 2009 deadline for negotiating further commitments of those parties (called Annex I Parties) that have adopted a cap on emissions under the Kyoto Protocol,¹⁰ (2) a decision operationalizing the Adaptation Fund that had been created under the Kyoto Protocol and was viewed as critical for developing countries,¹¹ (3) a compromise on what to include in the review of the adequacy of the Kyoto Protocol as required under Article 9,¹² and (4) the Bali Action Plan.¹³ The Bali Action Plan sets out an ambitious framework for negotiating a post-Kyoto agreement with binding commitments on all parties. The parties, including the United States and most other major countries in the world, agreed to launch a “comprehensive process” for achieving a “shared vision for long-term cooperative action, including a long-term global goal for emission reductions.”¹⁴ These negotiations are structured under an “Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA).” The Bali Action Plan further enumerates a number of topics for “consideration,” including:

- (i) Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives, by all developed country Parties, while ensuring the comparability of efforts among them, taking into account differences in their national circumstances;

9. See Rachmat Witoelar, President, U.N. Climate Change Conference, Address to Closing Plenary at Closing of the Joint High-Level Segment: The Bali Road Map (Dec. 15, 2007), available at http://unfccc.int/files/meetings/cop_13/application/pdf/close_stat_cop13_president.pdf.

10. See Ad Hoc Working Group on Further Commitment for Annex I Parties under the Kyoto Protocol, Fourth Session, Bali, Indon., Dec. 3–15, 2007, *Report of the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol*, ¶ 22, U.N. Doc. FCCC/KP/AWG/2007/5 (Feb. 5, 2008).

11. Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol, Bali, Indon., Dec. 3–15, 2007, *Report of the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol on its Third Session—Addendum, Part Two: Action Taken by the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol at its Third Session*, dec. 1/CMP.3, U.N. Doc FCCC/KP/CMP/2007/9/Add.1 (Mar. 14, 2008), available at <http://unfccc.int/resource/docs/2007/cmp3/eng/09a01.pdf> [hereinafter Adaptation Fund].

12. See *id.* dec. 4/CMP.3.

13. See Bali Action Plan, *supra* note 3.

14. *Id.* dec. 1/CP.13(a).

(ii) Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building, in a measurable, reportable and verifiable manner . . .¹⁵

Through this language, all developed countries (including the United States) agreed to negotiate “measurable, reportable and verifiable” commitments that would include further binding caps on emissions. For their part, all developing countries (including China and India) agreed to negotiate “actions” to reduce the threat of climate change that would be nationally appropriate, consistent with goals of sustainable development, and in a “measurable, reportable and verifiable” manner. The developing countries did not commit to negotiating caps on emissions, but did commit to negotiations over taking actions of some indeterminate nature. Other provisions in the Bali Action Plan committed the parties to negotiate positive incentives for reducing emissions from deforestation and forest degradation in developing countries,¹⁶ enhanced actions for adaptation,¹⁷ technology development and transfer,¹⁸ and international financial support for responding to climate change.¹⁹

The Bali Action Plan committed both the United States and developing countries to negotiating a post-Kyoto agreement with some form of binding—or at least measurable, reportable, and verifiable—commitments. Under the terms of the Bali Action Plan, the agreement is to be finalized at a Conference of the Parties of the UNFCCC in December 2009 in Copenhagen. The issue of timing quickly becomes apparent. The last major negotiating session occurred in December 2008 in Poznan, Poland. Smaller interim negotiations are scheduled between Poland and Copenhagen, but this gives little time for a new Administration to shape its international climate policy and promote that policy effectively in the international negotiations.

As then President-elect Obama said repeatedly, “there is only one President of the United States at a time,” and the U.S. negotiating team in Poznan was still led by the disinterested Bush

15. *Id.* dec. 1/CP.13(b)(i)–(ii).

16. *Id.* dec. 1/CP.13(b)(iii).

17. *Id.* dec. 1/CP.13(c).

18. *Id.* dec. 1/CP.13(d).

19. *Id.* dec. 1/CP.13(e).

Administration.²⁰ Despite a grassroots effort launched to convince President-elect Obama to attend the Poznan negotiations, he wisely demurred and indeed did not send any high-level delegation at all.²¹ Elected only in November, Obama had little time to form a team of representatives for the Poznan meeting and, in any event, would have had no formal role in the negotiations.

Although he refused to send a team to Poznan, President-elect Obama did send a clear signal to the negotiators in a highly publicized, taped message sent to the Global Climate Summit convened by California Governor Schwarzenegger two weeks before the beginning of the Poznan negotiations.²² There, President-elect Obama reiterated his campaign pledges to “engage vigorously” in international climate negotiations and to reassert U.S. leadership in combating climate change.²³ Specifically, he endorsed federal cap-and-trade legislation with goals of reducing current emissions to 1990 levels by 2020, and eighty percent reductions from 1990 levels by 2050.²⁴ He also promised an investment of \$15 billion a year in shifting the U.S. toward a clean energy future—albeit one apparently premised in part on nuclear power and clean coal technology.²⁵

Although these goals may be both scientifically insufficient (particularly the mid-term 2020 goal) and economically infeasible,²⁶ the Obama speech clearly signaled a dramatic change in the U.S.

20. See, e.g., Juliet Eilperin, *Transition's Timing Hits Climate Talks*, WASH. POST, Dec. 8, 2008, at A2, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/12/07/AR2008120702426.html>.

21. *Id.*

22. Streaming Video: President-Elect Barack Obama, Address to the Global Climate Summit: A New Chapter on Climate Change (Nov. 17, 2008), available at <http://www.youtube.com/watch?v=hvG2XptfEJk> [hereinafter Obama Climate Speech].

23. *Id.*

24. *Id.*

25. *Id.*

26. U.S. emissions are now over fifteen percent higher than 1990 levels. See ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, REP. NO. DOE/EIA-0573(2007), EMISSIONS OF GREENHOUSE GASES IN THE UNITED STATES 2007, at 1 tbl.1 (2008), available at [http://www.eia.doe.gov/oiaf/1605/ggrpt/pdf/0573\(2007\).pdf](http://www.eia.doe.gov/oiaf/1605/ggrpt/pdf/0573(2007).pdf). Given emissions growth in the United States, some European negotiators are particularly concerned that the United States not be allowed to use a different set of baselines than those that form the basis for Kyoto or otherwise benefit from its delay in reducing emissions. See Louise Van Schaik & Karel Van Hecke, *Skating on Thin Ice: Europe's Internal Climate Policy and Its Position in the World* 8–9 (Egmont Royal Inst. for Int'l Relations, Working Paper No. 2008/12); Press Release, Council of the European Union, 2898th Council Meeting: Environment (Oct. 20, 2008), available at <http://www.eulib.com/2898th-council-meeting-environment-luxembourg-2008-2972> (underlining “the importance of . . . a clear reference to 1990 as the base year”).

approach to climate negotiations. President-elect Obama confirmed that the climate change science was “beyond dispute” and that delay and denial were no longer options from Washington.²⁷ Moreover, Obama appears to be surrounding himself with knowledgeable people committed to combating climate change. Particularly the selections of Dr. Stephen Chu to head the Department of Energy, Dr. John Holdren as Science Advisor, and Dr. Jane Lubchenco to head up the National Oceanic and Atmospheric Administration suggest a new and real commitment to science-based policymaking around climate change.²⁸

Through these steps, the President has begun to meet what may be the most important short-term challenge in international climate negotiations—not only must the Administration recommit the United States to an aggressive, multilateral approach to address climate change, but it must also *convince* the world that the U.S. commitment is both long-term and serious. Much of the rest of the world is waiting for the United States to engage more directly and more constructively in an international effort to address climate change. Europe, particularly, will welcome this effort, but will understandably remain somewhat skeptical until President Obama’s rhetoric is matched by real positions put on the table. The United States must recognize that it has been rightly viewed as an obstacle to global climate policy for the last eight years, if not longer.

The types of proposals and approaches the Obama Administration actually puts on the table in the negotiations will signal how serious the United States is about climate change. Climate change is a complex issue that extends to virtually all aspects of foreign and domestic public policy, including not only environmental policy, but also agricultural, transportation, and energy policies. Rather than trying to address the entire field of issues implicated by climate change, the rest of this article will address six interrelated issues vital to the success of the current climate negotiations: (1) the level of U.S. targets in the post-Kyoto regime; (2) the nature and level of developing country commitments in such a regime; (3) the amount and structure of international financial assistance; (4) the treatment of forests, particularly efforts to curb deforestation; (5) the approaches to adaptation or measures to be taken to reduce the impact of climate

27. Obama Climate Speech, *supra* note 22.

28. Deborah Zabarenko, *Obama Team Primed to Push Climate Change Agenda*, REUTERS, Dec. 22, 2008, <http://www.reuters.com/article/vcCandidateFeed2/idUSN22505340>.

change; and (6) the future of the market mechanisms, particularly the clean development mechanism. The article ends with recommended steps the Administration should take in international climate policy outside of the post-Kyoto negotiations.

II. U.S. COMMITMENTS IN A POST-KYOTO AGREEMENT

The United States needs to embrace generally the cap-and-trade structure of the Kyoto Protocol, if for no other reason than to continue the momentum built during implementation of Kyoto. The parties to Kyoto, particularly in Europe, have invested considerable resources and time in developing the carbon market, and the United States will rightly be viewed suspiciously if we oppose the basic structure of cap-and-trade. As suggested below, supporting the cap-and-trade structure does not mean that *every* step taken internationally to address climate change needs to fit within the cap-and-trade system.

What then should the U.S. cap look like? To assure the world that we are serious about addressing climate change, the United States must be willing to take difficult and possibly costly steps at home to reduce our emissions, just as the other countries have begun to do within the Kyoto framework. The U.S. commitment needs to meet several criteria. First, the US commitment must be commensurate with those commitments being made by the European Union and other Annex I countries. Not only has the European Union taken actions under Kyoto, but it has promised deeper commitments in a post-Kyoto regime. The European Union has suggested a twenty percent emissions reduction from 1990 levels by 2020 if there is no post-Kyoto agreement, and as much as a thirty percent reduction if there is agreement.²⁹ Some countries have suggested even deeper cuts; the United Kingdom, for example, has enacted legislation to cut greenhouse gas emissions twenty-six percent by 2020 and eighty percent by 2050.³⁰

29. See *EU Reveals Energy Plan of Action*, BBC NEWS, Jan. 23, 2008, <http://news.bbc.co.uk/2/hi/science/nature/7203514.stm> (detailing the European Union's commitment to cut its greenhouse gas emissions by twenty percent by 2020, and potentially by up to thirty percent if a global agreement is reached to more equitably distribute the attendant burden).

30. See Richard Black, *UK: Climate Pioneer?*, BBC NEWS EARTH WATCH, <http://www.bbc.co.uk/blogs/thereporters/richardblack/2008/11> (Nov. 27, 2008, 14:12 GMT) (reporting that the enactment of the Climate Change Bill will make the UK the first nation to create domestic, legally binding carbon emissions reduction targets commensurate with the cuts recommended by the IPCC, by mandating reductions of greenhouse gas emissions of twenty-six percent by 2020 and eighty percent by 2050).

Any U.S. proposal to the international negotiations has to be within a similar range to be politically credible. The question remains whether Obama's announced interim goal of returning to 1990 levels by 2020 is deemed to be sufficient. While welcoming the U.S. long-term goal of cutting emissions eighty percent by 2050, an amount identical to Europe's commitments, the other parties may demand more interim progress from the United States.³¹ The interim goal is far below what is being promoted by the European leaders, and in 2020 would still place the United States below the *current* obligations of Annex I parties under the Kyoto Protocol.³² The interim target raises concerns that the United States may put off major changes needed for the long term, leaving the more difficult political choices to a future Administration that may or may not be serious about avoiding climate change. As a starting point for negotiations, however, Obama's announced position at least suggests that the United States will be a constructive player in the ensuing negotiations. One possible outcome is that the United States agrees to additional interim commitments for 2030 or 2040 that bind it to make progress along the way to 2050.³³

The second criterion (which is related to the first) is that any U.S. goal has to reflect the current science of climate change. More specifically, the U.S. goal must reflect a scientifically defensible effort to achieve the objective of the climate regime:

The ultimate objective of this [regime]... is to achieve... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.³⁴

31. See, e.g., Ko Hirano, *Japan Eyes Proactive Climate Diplomacy in 2009*, JAPAN TIMES ONLINE, Dec. 17, 2008, <http://search.japantimes.co.jp/cgi-bin/nn20081217a8.html>.

32. See, e.g., NICHOLAS STERN, LONDON SCH. OF ECON. & POLITICAL SCI., KEY ELEMENTS OF A GLOBAL DEAL ON CLIMATE CHANGE 5 (2008), available at http://www.lse.ac.uk/collections/granthamInstitute/publications/KeyElementsOfAGlobalDeal_30Apr08.pdf (calling on developed countries to reduce emissions by twenty to forty percent by 2020).

33. See *G8 Ministers Compromise on 2050 Climate Target*, EURACTIV.COM, May 26, 2008, <http://www.euractiv.com/en/climate-change/g8-ministers-compromise-2050-climate-target/article-172669>.

34. UNFCCC, *supra* note 4, art. 2.

Most scientists now recommend deep cuts in current and future emissions if we are to meet the UNFCCC objective.³⁵ Although the operating assumption in the climate negotiations for many years was that carbon dioxide (CO₂) concentrations could double from pre-industrial times (to roughly 550 parts per million (ppm)), scientists have been continually and dramatically dialing back that estimate. Now, the leading U.S. climate scientist, NASA's James Hansen, suggests that to avoid the worst consequences of climate change we need to stabilize atmospheric CO₂ emissions at 350 ppm.³⁶ Such a level suggests even greater cuts than the eighty percent reduction aimed for by 2050. The United States must be able to make credible arguments that its long-term commitments are sufficient to avoid the most serious climate consequences, or be prepared to aim for even deeper cuts. As noted above, the Obama Administration's decision to tap top scientists for leadership positions in the Administration suggests it will be responsive to climate science.

The third criterion, and the one that requires careful balancing with the other two criteria, is that U.S. commitments must be in line with what can politically be supported at home in the United States, and particularly with what the U.S. Congress either passes or is likely to pass in federal climate legislation. Consider the failed strategy underlying the Clinton Administration's negotiations of the Kyoto Protocol. The Clinton Administration and its environmental allies apparently believed that they could set strong carbon commitments internationally and use those negotiations to gain the political support at home to win Congressional ratification.³⁷ Perhaps that could have occurred had Al Gore become president, but even before the election in 2000, the Protocol appeared to lack sufficient support in the U.S. Senate.³⁸ At best, the fight for Kyoto ratification was going to be a long and difficult one, with an uncertain outcome.

35. See, e.g., James Hansen et al., *Target Atmospheric CO₂: Where Should Humanity Aim?*, 2 OPEN ATMOSPHERIC SCI. J. 217, 226 (2008).

36. *Id.*

37. See Kathryn Harrison, *The Road Not Taken: Climate Change Policy in Canada and the United States*, 7 GLOBAL ENVTL. POLITICS 92 (2007).

38. See, e.g., Byrd-Hagel Resolution, S. Res. 98, 105th Cong., 143 CONG. REC. S8138 (1997) (enacted) (passing the resolution 95-0, and expressing the sense of the Senate that the United States should not sign any protocol that would "(A) mandate new commitments to limit or reduce greenhouse gas emissions for the Annex I Parties, unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period, or (B) would result in serious harm to the economy of the United States").

Much has changed in the ensuing decade, not the least of which is that the current U.S. Congress has been debating serious climate change legislation for several years and will debate cap-and-trade legislation again early in the 2009 session.³⁹ It is anyone's guess whether the Congress will be able to pass a comprehensive climate change bill before the Copenhagen negotiations in December. If they do, the U.S. legislation will likely form not only the floor, but also the ceiling, for our commitments in the international negotiations. If the Congress does not reach agreement, then one of the big challenges for the Administration will be to correctly gauge what is possible within the U.S. political setting. Even if legislation is not passed by Copenhagen, the parameters of federal climate legislation should be somewhat predictable and should allow the Obama Administration to seek reduction targets from other countries in exchange for U.S. commitments. In this context, the Administration's own views will be quite persuasive and its negotiating position can be used to send a signal of seriousness both internationally to other parties and domestically to the U.S. Congress. Nonetheless, without clear direction from the Congress,⁴⁰ U.S. negotiators will be forced either to agree to commitments that are uncertain of becoming law in the United States or seek a delay in the international negotiations.

The question of what can be sold to the U.S. Congress is also related to what will be acceptable to the U.S. public, and here the Administration faces a difficult framing challenge. President Obama repeatedly framed his response to climate change as an economic opportunity to retool the basis of our energy economy, to bring decent "green-collar" jobs back home, and to stop shipping oil revenues overseas.⁴¹ As part of the U.S. negotiating posture, the Obama Administration needs to internationalize this "green-collar"

39. See, e.g., Ben Block, *Growing Optimism for US Climate Change Bill*, WORLDWATCH INST., Jan. 30, 2009, <http://www.worldwatch.org/node/6000>; H. Josef Hebert, *Waxman Promises Quick Action on Climate Change*, USATODAY.COM, Jan. 15, 2009, http://www.usatoday.com/weather/climate/globalwarming/2009-01-15-waxman-legislation_N.htm.

40. Draft climate bills proposed in Congress in 2008 varied widely in their caps and commitments. See Pew Center on Global Climate Change, *Economy-wide Cap-and-Trade Proposals in the 110th Congress*, <http://www.pewclimate.org/docUploads/Chart-and-Graph-120108.pdf> (last visited Mar. 10, 2009) (summarizing major economy-wide cap-and-trade legislation). The leading proposed bill in the 2009 Congress is the Waxman-Markey American Clean Energy and Security Act of 2009. See American Clean Energy and Security Act of 2009 (Discussion Draft), 111th Cong. (2009), available at http://energycommerce.house.gov/Press_111/20090331/acesa_discussiondraft.pdf.

41. Marla Dickerson, *Why Obama's Green Jobs Plan Might Work*, L.A. TIMES, Jan. 4, 2009, at A1, available at <http://articles.latimes.com/2009/jan/04/business/fi-greenjobs4>.

jobs message and explain how others, particularly developing countries, will benefit economically from the shift to a carbon-free energy future.

As the economic crisis continues, however, the policy options may shrink. The need for a massive economic stimulus package with substantial public investments does offer an opportunity to catalyze an energy transformation, but long-term climate goals will have to compete with the need for short-term job creation. Moreover, alternative energy cannot compete in the market with depressed oil and gas prices, and the economic incentives for developing alternative energy sources have diminished. At the same time, policy options that tax or otherwise increase the costs of fossil fuels will be criticized as dampening the chances of economic recovery.

III. LEVEL AND NATURE OF DEVELOPING COUNTRY COMMITMENTS

Developing countries agreed under the Bali Action Plan to negotiate commitments that are “measurable, reportable and verifiable,” and supported by financial and technical assistance from the Annex I countries.⁴² Developing countries’ agreement to negotiate at least some commitments was an important and critical piece of the Bali Action Plan, and is considered to be a major concession.⁴³ The Administration must recognize, however, that the developing country commitments are unlikely to be in the same form as those of industrialized countries. Developing countries are not likely to accept an overall comprehensive cap on net greenhouse gas emissions at this stage, nor should the United States demand such a cap.

The developing country position is consistent with the overall framework that all countries agreed to in the UNFCCC, particularly the principles of equity⁴⁴ and of common but differentiated responsibilities⁴⁵ that underlie the overall climate regime. These principles are premised on the idea that developed countries would

42. See *supra* note 15 and accompanying text.

43. See, e.g., Bali Action Plan, *supra* note 3, dec. 1/CP.13(b)(ii).

44. UNFCCC, *supra* note 4, art. 3, ¶ 1 (providing that “[t]he Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity”).

45. See *id.* arts. 3, 4 (including the recognition that the Parties should participate in climate change efforts in accordance with, and taking account of, “their common but differentiated responsibilities and respective capabilities”).

accept binding commitments first, and take real steps to address climate change *before* developing countries would be asked to make similar commitments. The U.S. denunciation of the Kyoto Protocol and our failure to accept any binding commitments either domestically or internationally have left not only the United States, but all industrialized countries, in a weakened position to demand greater commitments from the major emerging economies, such as China, India, Brazil, and the other developing countries.

Although emerging economies such as China are often painted as obstacles to the climate regime, these countries have good reasons to participate and cooperate in the international climate regime. First, developing countries were stunned by the 2007 Intergovernmental Panel on Climate Change (IPCC) report that clearly showed both that developing countries would be extremely hard-hit by climate change and that their participation would be necessary to resolve climate change.⁴⁶ These findings of the IPCC report have been described as “an intellectual tsunami” on developing country policymakers, because it shows the inevitability of the need to address climate change.⁴⁷ Second, the climate change regime obligates the North to transfer technology and financial assistance to the South in furtherance of protecting the global climate and promoting sustainable development.⁴⁸ Participation in the regime should provide significant benefits for developing countries. More generally, the promise of a new energy economy premised on decentralized, renewable energy offers significant benefits to many developing countries that have not benefited from fossil fuel development.

To be sure, not all developing countries are the same in the climate system. China, which became the largest annual emitter of

46. Stephen H. Schneider et al., *Assessing Key Vulnerabilities and the Risk from Climate Change*, in CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY. CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 779, 791–92 (2007), available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter19.pdf>.

47. The reference to an “intellectual tsunami” was made by Christiana Figueres, UNFCCC Clean Dev. Mechanism, Remarks at the American Society of International Law Panel: Beyond Kyoto: Dilemmas of Climate Regulation and Equity (Apr. 10, 2008).

48. See UNFCCC, *supra* note 4, art. 4, ¶¶ 3–5; Juliet Eilperin, *Report Says 2 Global Programs to Curb Emissions Fall Short*, WASH. POST, Dec. 6, 2008, at A09, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/12/05/AR2008120503327.html> (noting that the executive secretary for the UNFCCC, Yvo de Boer, considers the clean development mechanism to “represent one of the only incentives for developing countries to participate in emissions reduction”).

greenhouse gases in 2008,⁴⁹ and other middle-income countries like India and Brazil, are significant contributors to climate change as their economies (and emissions) have grown at a double-digit pace for more than a decade. Such countries may have both greater moral responsibility and financial capability to address climate change than less developed countries, for example those in sub-Saharan Africa or small island-states affected most dramatically by climate change. The inherent differences within developing countries are already reflected, at least in principle, in the climate regime,⁵⁰ and suggest the need for divergent climate-related commitments. Differentiating developing country commitments must be handled with sensitivity, however, and cannot be seen as driven by the North. Divergent commitments must emerge from a flexible approach that allows for different national commitments.

This analysis suggests that the new Administration must be flexible in what types of commitments it seeks from developing countries. Developing countries can be expected, and indeed should be required, to adopt binding policies and measures, and other types of targets under the current regime. Rather than a comprehensive cap on emissions like those imposed on Annex I countries, commitments for China and other middle-income countries could come in one of many forms:⁵¹ sector-specific targets requirements, for example, efficiency targets for cement manufacturing or transport, or renewable portfolio standards for the energy production sector;⁵² action targets, requiring a certain amount of effort in reducing

49. See Roger Harrabin, *China 'Now Top Carbon Polluter'*, BBC NEWS, Apr. 14, 2008, <http://news.bbc.co.uk/2/hi/asia-pacific/7347638.stm> (documenting that China's greenhouse gas emissions surpassed those of the United States and likely did so in 2006–2007, but that this state of affairs was not reported due to underestimation of China's emissions).

50. See, e.g., UNFCCC, *supra* note 4, art. 3, ¶ 2 (acknowledging that “[t]he specific needs and special circumstances of developing country Parties, . . . especially developing country Parties that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration”).

51. See, e.g., Robert A. Reinstein, *A Possible Way Forward on Climate Change*, 9 MITIGATION & ADAPTATION STRATEGIES FOR GLOBAL CHANGE 295, 295–309 (2004) (suggesting that each developing country should be allowed to identify its own commitments based on national circumstances).

52. See, e.g., Niklas Hohne & Christiam Ellermann, *A Sectoral Approach and Technology Transfer for the Cement Sector* 1 (Ecofys, Working Paper, 2008), available at www.bafu.admin.ch/klima/index.html?lang=en&download...JjKbNoKSn6A--.pdf; Stern, *supra* note 32, at 16 (“The move from a project to a wholesale approach could take the form of sector targets, or programmatic emission reduction objectives.”).

emissions;⁵³ or intensity targets that would require an increased efficiency in the country's energy use. Such commitments would meet the Bali Action Plan's requirements for being "measurable, reportable and verifiable," but would not necessarily cap overall carbon emissions. In this way, developing countries would signal their long-term commitment to a global partnership in addressing climate change, and the regime would benefit from experimentation with a diverse range of policies and measures.

Such a flexible approach would likely find favor with developing countries, many of which are already beginning to propose specific commitments they are willing to make—at least if financial and technical assistance is made available. At the December 2008 negotiations in Poznan, for example, developing countries proposed a wide range of commitments that were generally seen as a clear signal that they are willing to take serious mitigation steps. Among the proposals: China promised to reduce its energy intensity by twenty percent by 2010; Brazil committed to cut its deforestation rate by seventy percent by 2017 (resulting in a thirty to forty-five percent reduction in the country's GHG emissions); Mexico pledged to cut its emissions by fifty percent by 2050; South Africa committed to capping its GHG emissions by 2025 and working toward a decline thereafter; and Kazakhstan announced a decision to join Annex I of the Kyoto Protocol and reduce emissions to 1992 levels by 2012.⁵⁴ These developing country pledges are premised on expanded financing and technology coming from the industrialized countries,

53. Kevin Baumert & Donald Goldberg, *Action Targets: A New Approach to International Greenhouse Gas Controls*, 5 CLIMATE POL'Y 567, 569 (2006).

54. Juliet Eilperin, *Developing Nations Plan Emission Cuts*, WASH. POST, Dec. 12, 2008, at A10, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/12/11/AR2008121103822.html>; see also Raymond Colitt, *Brazil Pledges to Cut Amazon Destruction in Half*, REUTERS, Dec. 1, 2008, <http://www.reuters.com/article/environmentNews/idUSTRE4B04G420081201> (discussing Brazil's commitment to decrease its deforestation rate); Vanessa Gera, *Mexico Pledges 50 Percent Cut in Greenhouse Gases*, ABC NEWS, Dec. 11, 2008, <http://abcnews.go.com/Business/wireStory?id=6439878> (discussing Mexico's commitment to reduce its emissions); Sheryl Gay Stolberg, *Richest Nations Pledge to Halve Greenhouse Gas*, N.Y. TIMES, July 9, 2008, at A1, available at <http://www.nytimes.com/2008/07/09/science/earth/09climate.html> (discussing G-8 leaders' commitment to cut greenhouse emissions in half by 2050 and South Africa's minister of environmental affairs' being vocal about not wanting to support efforts that result in a "regression from what is required to make meaningful change"); Justin Gerdes, *Poznan Edition, Week 2: CCC Councilor Steve Chu Looks to be Next U.S. Energy Secretary*, COPENHAGEN CLIMATE COUNCIL, Dec. 12, 2008, <http://www.copenhagenclimatecouncil.com/get-informed/news/poznan-edition-week-2-ccc-councillor-steve-chu-looks-to-be-next-u-s-energy-secretary.html> (discussing the Mexican Environmental Secretary's statement regarding Mexico's vow to halve emission rates).

but nonetheless are serious proposals that increase pressure on the United States and other Annex I countries to make stronger commitments in the post-Kyoto period.

IV. FINANCIAL AND TECHNICAL ASSISTANCE

A fundamental principle of the climate regime (as well as other multilateral environmental agreements) is that the incremental costs for developing countries to address climate change should be covered by new and additional financial and technical assistance from industrialized countries.⁵⁵ Thus, financial and technical assistance to address climate change should not diminish assistance aimed at poverty alleviation or other humanitarian goals, particularly achieving the Millennium Development Goals.⁵⁶ The debate over financial assistance—both the scale of assistance and the mechanisms for delivering it—under the climate regime will prove critical to the success of the future negotiations.

The scale of financial assistance required for developing countries to mitigate and adapt to climate change is enormous. By 2015, for example, the United Nations Development Programme (UNDP) estimates \$86 billion per year will be needed just for *adaptation* efforts in developing countries—i.e., just those steps necessary to reduce the impacts from climate change.⁵⁷ These figures dwarf current financial assistance flows for climate change. In 2006, donors to the Global Environment Facility (GEF)—ostensibly the primary financial mechanism under the climate regime—pledged only \$3.13 billion to fund projects between 2006 and 2010.⁵⁸ The World

55. See, e.g., UNFCCC, *supra* note 4, art. 4, ¶¶ 3–5, 7–10 (requiring developed countries, inter alia, to provide financial resources and to transfer technology to developing countries to assist them in meeting their obligations under the Convention, as well as mandating that developed countries help developing countries meet the costs of adaptation to the adverse effects of climate change).

56. See generally U.N. Millennium Declaration, G.A. Res. 55/2, U.N. Doc. A/RES/55/2 (Sept. 18, 2000), available at <http://www.un.org/millennium/declaration/ares552e.pdf> (setting forth eight goals regarding poverty, universal education, gender equality, child health, maternal health, HIV/AIDS, environmental sustainability, and global partnership that have come to be known as the “Millennium Development Goals”).

57. U.N. DEV. PROGRAMME, HUMAN DEVELOPMENT REPORT 2007–2008: FIGHTING CLIMATE CHANGE 15 (2007), available at http://hdr.undp.org/en/media/HDR_20072008_EN_Complete.pdf; see also U.N. Dev. Programme, *US\$86 Billion Needed Each Year to Avert ‘Adaptation Apartheid’*, UNDP NEWSROOM, Dec. 11, 2007, <http://content.undp.org/go/newsroom/2007/december/bali-climate-adaptation-20071211.en>.

58. Since 1991, GEF has contributed \$8.26 billion in grants and has raised over \$33.7 billion in co-financing derived from other sources to fund approximately 2000 projects designed to

Bank's new and highly publicized Climate Investment Funds were launched with \$6 billion in pledges, meant to be paid out over a period of several years.⁵⁹ Not surprisingly, developing countries seek substantially greater financial commitments in the future.

The debate over financial resources is not only about the amount of money, but also about what mechanism should be used to deliver the money. Developing countries are demanding the creation of a new multilateral financial mechanism under the UNFCCC institutional structure.⁶⁰ Currently, the GEF is the primary financial mechanism under the climate regime,⁶¹ but the World Bank may be the more important funding institution for climate change. The World Bank is an implementing agency for the GEF and administers the GEF Trust Fund.⁶² In addition, the World Bank recently launched its Climate Investment Funds to support mid-term investments in climate-friendly projects and to facilitate the growth of the global carbon market under the climate regime.⁶³ Moreover, the World Bank remains among the largest public financiers of projects that contribute to climate change.⁶⁴

Developing countries question the governance structure of the World Bank, which gives a disproportionate share of decision-making authority to the donor governments. The GEF offers an arguably

yield global environmental benefits in 160 developing countries and countries with economies in transition. Global Environment Facility, What is the GEF?, http://www.gefweb.org/interior_right.aspx?id=50#GEF%20Funding (last visited Mar. 13, 2009).

59. Press Release, World Bank, Climate Investment Funds: Countries Selected for Governing Bodies (Oct. 17, 2008), available at <http://go.worldbank.org/AVUF843NG0>. The World Bank's Climate Investment Funds are comprised of two independent funds: the Clean Technology Fund and the Strategic Climate Fund. For more information on the Clean Technology Fund, see WORLD BANK, CLEAN TECHNOLOGY FUND (June 9, 2008), available at http://siteresources.worldbank.org/INTCC/Resources/Clean_Technology_Fund_paper_June_9_final.pdf. For more information on the Strategic Climate Fund, see WORLD BANK, STRATEGIC CLIMATE FUND (June 3, 2008), available at http://siteresources.worldbank.org/INTCC/Resources/Strategic_Climate_Fund_final.pdf#Strategic_Climate_Fund.

60. See G77 & CHINA, PROPOSAL: FINANCIAL MECHANISM FOR MEETING FINANCIAL COMMITMENTS UNDER THE CONVENTION 2 (Aug. 26, 2008), available at http://unfccc.int/files/kyoto_protocol/application/pdf/g77_china_financing_1.pdf.

61. WORLD BANK, STRATEGIC CLIMATE FUND, *supra* note 59, ¶ 6.

62. GLOBAL ENV'T FACILITY, INSTRUMENT FOR THE ESTABLISHMENT OF THE RESTRUCTURED GLOBAL ENVIRONMENT FACILITY ¶ 8, at 13, ¶ 22, at 19 (2008), available at http://thegef.org/uploadedFiles/GEF_Instrument_March08.pdf.

63. WORLD BANK, STRATEGIC CLIMATE FUND, *supra* note 59, ¶ 5.

64. See, e.g., *infra* note 69 and accompanying text.

more democratic structure based on double-majority voting,⁶⁵ but the GEF's effectiveness and independence in delivering aid has been questioned, particularly by developing countries.⁶⁶ Developing countries would prefer that the financial architecture for climate change be more balanced and point to the recently established Adaptation Fund Board as a model.⁶⁷

Although the United States and other industrialized countries rightly resist a proliferation of international financial mechanisms, some good reasons exist to consider such a mechanism under the UNFCCC. First, an independent mechanism controlled by the Conference of the Parties has worked well in assisting developing countries to reduce ozone depleting substances under the Montreal Protocol.⁶⁸ Moreover, the World Bank and the GEF both have significant negative factors—the World Bank does not enjoy credibility among many environmentalists and the GEF is viewed as bureaucratic and ineffective.⁶⁹ Perhaps most importantly, the creation of an independent financial mechanism with balanced representation may be the key compromise necessary to ensure fuller participation by developing countries.

The underlying conflict is that donor governments are unwilling to give large sums of money to institutions over which they lack control, ostensibly because they believe such accountability improves the effectiveness of development aid. To be sure, significant inefficiencies and bloated bureaucracies can reduce the effectiveness of development aid, but there is little evidence that the World Bank or other donor-controlled institutions are immune from these

65. PETER CHOWLA ET AL., BRIDGING THE DEMOCRATIC DEFICIT: DOUBLE MAJORITY DECISION MAKING AND THE IMF 8 (2007), available at http://www.brettonwoodsproject.org/doc/wbimfgov/DoubleMajority_IMF.pdf.

66. See THOMAS GRIFFITHS, INDIGENOUS PEOPLES AND THE GLOBAL ENVIRONMENT FACILITY 14–17 (2005), available at http://www.forestpeoples.org/documents/ifi_igo/gef/gef_study_jan05_eng.pdf.

67. See Adaptation Fund, *supra* note 11, dec. 1/CMP.3, ¶ 6 (describing the composition of the Adaptation Fund Board).

68. For information on the Multilateral Fund for the Implementation of the Montreal Protocol, see <http://www.multilateralfund.org> (last visited Mar. 26, 2009).

69. See, e.g., Friends of the Earth Int'l, *World Bank Still Fuelling Climate Change*, Apr. 13, 2007, <http://www.foei.org/en/media/archive/2007/world-bank-still-fuelling-climate-change>; Janet Redman, *The World Bank's Carbon Deals*, FOREIGN POL'Y IN FOCUS, Apr. 10, 2008, <http://www.fpiif.org/fpiftxt/5143>; JANET REDMAN, SUSTAINABLE ENERGY & ECON. NETWORK, WORLD BANK: CLIMATE PROFITEER (2008).

complaints.⁷⁰ The United States needs to engage in this dialogue and be supportive of more flexible arrangements, where recipient countries have greater buy-in at the project level because they have more voice at the decision-making level.

The tension between donors and recipients has led to some recent innovations in the climate context. The World Bank's recently created Climate Investment Funds (CIFs) are run by committees with balanced representation between recipient and donor countries.⁷¹ The \$6 billion in CIFs are intended to provide interim funding for the carbon market until the future climate financial architecture is finalized.⁷² In the end, the CIF structure may simply have added a bureaucratic layer to the decision-making, albeit one in which developing countries have more control, because any project financed by the CIF must still be approved by the underlying development bank's donor-dominated board of executive directors. In addition, as noted above, recent negotiations establishing the Adaptation Fund under the Kyoto Protocol resulted in an arguably more democratic governance structure, with a governing board featuring relatively more balanced North-South representation.⁷³

The current global financial crisis shifts this discussion in ways that are hard to predict, and the financial crisis will also create climate-related challenges for the Administration. On the one hand, the financial crisis will generally make less money available for international climate assistance, thus expectations should be lowered accordingly. On the other hand, the massive amounts of public money put on the table for responding to the financial crisis (now estimated to be up to \$4 trillion) has moved the benchmark for what is possible, raising expectations that the climate crisis deserves a similarly massive investment over time.⁷⁴

The same conflict over financial governance seen in the climate context also permeates discussions for a comprehensive response to the current global financial crisis. For example, the weakening

70. See, e.g., South Centre, *The Administrative Costs of Climate Change Adaptation Financing: The Global Environment Facility as an Operating Entity of the UNFCCC Financial Mechanism*, at 14–20, SC Doc. SC/GGDP/AN/ENV/4 (July 2008), available at http://www.southcentre.org/index.php?option=com_content&task=view&id=673&Itemid=1 (criticizing the GEF's administrative costs for operating two funds under the UNFCCC).

71. Press Release, World Bank, *supra* note 59.

72. *Id.*

73. See Adaptation Fund, *supra* note 11, dec. 1/CMP.3, ¶ 6.

74. See, e.g., Colin Barr, *Bank Bailout Could Cost \$4 Trillion*, CNN MONEY.COM, Jan. 27, 2009, <http://money.cnn.com/2009/01/27/news/bigger.bailout.fortune/>.

financial power of the G-8, in comparison to middle-income countries like China and India, provides an opportunity for restructuring the responsibilities and authorities in international financial institutions. Calls to vest greater decision-making authority in major emerging economies can be coupled with greater responsibility, including perhaps even financial assistance, from those economies. The instability that accompanies the financial crisis should be viewed as an opportunity for experimenting with innovative financial mechanisms and governance structures. Solutions found there that provide greater voice to emerging economies may spill over to influencing the future financial architecture in the climate context as well.

V. THE FUTURE OF THE CDM AND OTHER MARKET MECHANISMS UNDER KYOTO

The Kyoto Protocol is premised on the establishment of an overall cap for greenhouse gas emissions and the use of innovative flexibility mechanisms to reduce the overall costs of emission reductions.⁷⁵ The resulting cap-and-trade system relies on the development of an international carbon market to attract significant private sector investments in projects that create carbon offsets. Kyoto's Annex I parties have designed their national systems in accordance with this market-based approach. Most notably, the European Union's Emission Trading Scheme has created a region-wide carbon market aimed in part at meeting EU commitments under the Kyoto Protocol.⁷⁶ Similarly, state and regional initiatives in the United States presume that a global carbon market will exist in the future to provide lower cost supplies of emission reduction credits.⁷⁷

75. See Kyoto Protocol, *supra* note 5, arts. 2–6.

76. See generally A. DENNY ELLERMAN & PAUL L. JOSKOW, PEW CTR. ON GLOBAL CLIMATE CHANGE, THE EUROPEAN UNION'S EMISSIONS TRADING SYSTEM IN PERSPECTIVE 7–9 (2008), available at <http://www.pewclimate.org/docUploads/EU-ETS-In-Perspective-Report.pdf> (discussing the development of the European Union carbon market).

77. See generally Jonas Monast, *Integrating State, Regional, and Federal Greenhouse Gas Markets: Options and Tradeoffs*, 18 DUKE ENVTL. L. & POL'Y F. 329, 330–31 (2008) (noting the increasing number of regional and state carbon markets, including the Regional Greenhouse Gas Initiative (RGGI), Western Climate Initiative, and the Midwest Greenhouse Gas Accord). For more on RGGI, which was the first mandatory market-based CO₂ emissions reduction program in the United States and includes ten signatory states, see Regional Greenhouse Gas Initiative, About RGGI, <http://www.rggi.org/about> (last visited Mar. 22, 2009). For more on carbon markets in California, see Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE Div. 25.5, §§ 38500–99 (West 2007); PETER HSIAO ET AL., THE GREAT GREEN HOPE: CALIFORNIA CARBON TRADING FOR CLIMATE CHANGE IMPROVEMENTS (2008),

Unless the Obama Administration has a very specific and detailed alternative to propose, supporting the extension of the flexibility mechanisms past Kyoto is virtually inevitable.

But, extending the Kyoto mechanisms into a new reporting period is different than expanding them into all areas related to climate change. To be sure, the market-based approach holds the promise to secure substantial private sector funding needed to finance a transformation to a green economy, but many environmentalists fear that the Kyoto's flexibility mechanisms are not providing climate benefits.⁷⁸ Serious questions exist regarding whether many projects financed under the existing clean development mechanism (CDM), for example, result in additional, long-term climate benefits.⁷⁹ The Obama Administration needs to support the enhancement of the CDM and other market-based approaches, but must insist on rigorous criteria that ensure measurable climate benefits.

Not all aspects of global climate regulation need to be forced into the cap-and-trade formula. Some aspects may be better left on the outside of the market-based system. The supply of carbon offsets can and should be limited to those types of projects or programs that are measurable and verifiable. Moreover, some substances or activities may be advantageously addressed through direct regulation. A mixed system that incorporates clear "policies and measures," as contemplated under Article 3 of the UNFCCC,⁸⁰ should be used in sectors that are not appropriate for the carbon offset market. Thus, for example, the lack of clear methodologies for measuring and compensating for carbon offsets from avoided deforestation and degradation should not delay the international community from making significant efforts to sustainably manage forests. The

available at http://www.mofo.com/news/updates/files/Great_Green_Hope.pdf (discussing the cap-and-trade program under the statute).

78. See, e.g., Shankar Vedantam, *Kyoto Credits System Aids the Rich, Some Say*, WASH. POST, Mar. 12, 2005, at A12, available at <http://www.washingtonpost.com/wpdyn/articles/A28191-2005Mar11.html> (noting environmentalists' criticisms of Kyoto and the CDM). Support for the emissions trading approach of the Kyoto Protocol is far from universal, and a significant and vocal opposition movement—the climate justice movement—has emerged to try to counter the dominance of emissions trading in the negotiations. See, e.g., Mobilization for Climate Justice, A Call to Climate Action: We Stand at a Crossroads, <http://www.actforclimatejustice.org/> (last visited May 6, 2009).

79. See Vedantam, *supra* note 78.

80. See UNFCCC, *supra* note 4, art. 3, ¶ 3 (providing that Parties should pursue "policies and measures" that should "take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors").

regulation of black carbon or certain industrial gases may present other opportunities to take significant, immediate steps to mitigate climate change without including them in a carbon market.

We can see this approach in the 2007 decision to accelerate the phase-out of hydrochlorofluorocarbons (HCFCs) under the Montreal Protocol to the Vienna Convention on Substances that Deplete the Ozone Layer.⁸¹ Designed to reverse the deterioration of the stratospheric ozone layer, the Montreal Protocol regime is widely considered the most successful multilateral environmental agreement.⁸² In accelerating the phase-out of HCFC production in developing countries, the parties to the Montreal Protocol acknowledged for the first time its potentially important role in regulating greenhouse gas emissions. The accelerated phase-out of HCFCs removes one of the most popular types of projects from the Kyoto Protocol's Clean Development Mechanism—namely, the destruction of hydrofluorocarbons (HFCs) created as a byproduct of HCFC production.⁸³ Although a disproportionate share of the CDM's current projects,⁸⁴ HFC-destruction projects have been widely criticized for providing few development benefits,⁸⁵ distorting the underlying market for the production of HCFCs,⁸⁶ and flooding the carbon market with an oversupply of cheap emission credits.⁸⁷ The revenue stream available from the destruction of HFCs was subsidizing the growth of HCFC production in China and India.⁸⁸ The

81. Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, S. Treaty Doc. No. 100-10, 1522 U.N.T.S. 3 [hereinafter Montreal Protocol]; *see also* Press Release, U.N. Env't Programme, Combating Climate Change Given Big Confidence Boost in Canada (Sept. 22, 2007), available at <http://ozone.unep.org/Publications/PressReleaseFinal-22Sept2007.pdf>.

82. *See generally* STEPHEN O. ANDERSEN & K. MADHAVA SARMA, PROTECTING THE OZONE LAYER (2002) (discussing the Montreal Protocol's history and effectiveness).

83. *See* Hepeng Jia & Xiaohua Sun, *Kyoto Less Lucrative for Chemical Industry*, CHEMISTRY WORLD, Jan. 25, 2008, <http://www.rsc.org/chemistryworld/News/2008/January/25010802.asp>.

84. PEW CTR. ON GLOBAL CLIMATE CHANGE, CLEAN DEVELOPMENT MECHANISM BACKGROUNDER 4 (2008).

85. *See* Anup Shah, *Climate Change Flexibility Mechanisms*, GLOBAL ISSUES, <http://www.globalissues.org/article/232/flexibility-mechanisms> (last visited Feb. 18, 2009).

86. *See* Donald Kaniaru et al., *Strengthening the Montreal Protocol: Insurance Against Abrupt Climate Change*, SUSTAINABLE DEV. L. & POL'Y, Winter 2007, at 3, 3-5, available at <http://www.wcl.american.edu/org/sustainabledevelopment/2007/07winter.pdf?rd=1>; Tillmann Elliesen, *Burning Money*, MAG. FOR DEV. & COOPERATION, Feb. 2007, available at http://www.inwent.org/E+Z/content/archive-eng/02-2007/tribune_art2.html.

87. *See* Kaniaru et al., *supra* note 86.

88. Elliesen, *supra* note 86.

Montreal Protocol curtailed this subsidy and, in so doing, tightened the future market for emission reduction credits under the Kyoto Protocol regime.

The Obama Administration should look for similar opportunities that can be peeled out of Kyoto's market-based system and addressed effectively in a more direct command-and-control regulatory approach. Limited use of such policies and measures would not undermine the overall carbon market or the fundamental cap-and-trade structure of the climate regime. Parties in the post-Kyoto negotiations will simply adjust their caps going forward, if they need to.⁸⁹ Caps are negotiated in light of the underlying rules for trading and offsets.

The key from a climate perspective should be to simplify the carbon trading mechanisms and to ensure that the resulting market operates effectively. Only credits that provide clearly verifiable and additional benefits should be included, so that the market for emissions is resulting in climate benefits. Moreover, the supply and demand for carbon must be equated, and this becomes more difficult if the market includes large sectors with inherently uncertain marginal costs for supplying GHG reductions. Guessing wrong about either the amount or costs of carbon offsets that will be made available from avoided deforestation, for example, can undermine the carbon market's price incentives. If unexpectedly large amounts of cheap carbon offsets (for example, from avoided deforestation or destroyed HFCs) enter the market, then the price of carbon offsets may crash and leave little incentive to take other steps to reduce emissions—steps such as energy conservation or shifts toward renewables that may be more central to the long-term transformation of our energy economy. Maintaining some predictability and consistency to the price of carbon may require shrinking the supply of carbon offsets to those sectors that are themselves more predictable and certain.

89. Just such calculus shaped the Kyoto Protocol negotiations. The United States was willing to accept one cap if net emissions from certain forest activities were included in the formula or a less restrictive cap if net forest emissions were not included. See GRUBB ET AL., *supra* note 7, at 79 (noting that during the Kyoto negotiations “[t]here [were] also strong industrial pressures to include [forest] sinks, particularly in the United States, which conceded that their inclusion could strengthen its stabilization offer by several percentage points”).

VI. TREATMENT OF FORESTS UNDER THE CLIMATE REGIME

Forest and land use practices account for nearly twenty percent of all net greenhouse gas emissions.⁹⁰ As a result, improving forest and agricultural practices is critical to addressing climate change. The overall objective of the framework convention is written in terms of stabilizing net greenhouse gas *concentrations* in the atmosphere.⁹¹ In this way, the framework convention embraces efforts both to reduce sources of greenhouse gases and to enhance the effectiveness of sinks, such as forests, in absorbing greenhouse gases from the atmosphere.

Despite the recognition that forests are an essential part of the climate puzzle, the Kyoto Protocol addressed forests only in limited ways. In particular, countries' net emissions could be adjusted for net emissions resulting only from afforestation, deforestation, and reforestation.⁹² Left out of the Kyoto Protocol was any treatment of sustainable forest management that avoids deforestation in the first place. Leading up to the Bali negotiations, several developing countries proposed that donor countries should pay developing countries for "reducing emissions from deforestation and forest degradation" (known as REDD).⁹³

The Bali Action Plan subsequently endorsed, in general terms, the need to promote overall forest conservation efforts.⁹⁴ Currently, support is growing for establishing some kind of structure for developed countries to provide broad financial payments to heavily forested developing countries, and, in turn, developing countries will agree to protect and conserve their forests.⁹⁵ The result could lead to

90. See Terry Barker et al., *Technical Summary*, in CLIMATE CHANGE 2007: MITIGATION. CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 26, 27 (2007), available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-ts.pdf>.

91. See generally UNFCCC, *supra* note 4.

92. Kyoto Protocol, *supra* note 5, art. 3, ¶ 3.

93. See UNFCCC, Methods & Science, REDD, http://unfccc.int/methods_science/redd/items/4531.php (last visited Feb. 18, 2009).

94. See Bali Action Plan, *supra* note 3, dec. 1/CP.13(b)(iii) (calling for enhanced "national/international action on mitigation of climate change" with consideration of "[p]olicy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries").

95. See, e.g., UNFCCC, Subsidiary Body for Sci. & Tech. Advice, *Brazil: Brazilian Perspective on Reducing Emissions from Deforestation*, at 22–24, U.N. Doc. FCCC/SBSTA/2007/MISC.2 (Mar. 2, 2007); UNFCCC, Subsidiary Body for Sci. and Tech. Advice, *Bolivia, Reducing Emissions from Deforestation in Developing Countries: Approaches to Stimulate Action*, at 14–16, U.N. Doc. FCCC/SBSTA/2007/MISC.2 (Mar. 2, 2007). See

substantial financial flows from North to South, with the goal of improving forest management in developing countries.

Critics of the proposal fear that large amounts of money flowing into the forest sectors in most of these countries will not effectively curb deforestation, and may in fact exacerbate problems if it increases access to forests or disempowers traditional forest communities.⁹⁶ The problem for many of these countries—which include countries that face civil war, such as Congo, and countries that perennially struggle to control illegal timber trade, such as Indonesia—are significant and pervasive governance challenges that generally undermine any efforts at sustainable forest management. The fear is that more money will do little to fix the governance problems or to reduce deforestation.

Questions also exist over how to measure and verify emissions from avoided future deforestation. Countries must set national baselines for deforestation so that changes can be measured over time. A group of sixteen countries have volunteered to serve as pilot projects under a World Bank initiative called the Forest Carbon Partnership Facility.⁹⁷ If countries meet certain criteria and demonstrate that deforestation has slowed in their countries, then they would be eligible to receive payments for the amount of carbon emissions avoided by their improved forest management.⁹⁸ One of the difficulties is ensuring no leakage over time from the system (i.e., that deforestation and thus carbon emissions are not simply delayed a few years).⁹⁹ Others question the scientific basis for measuring the carbon impacts of avoided deforestation.¹⁰⁰

generally AMAZON INST. FOR ENVTL. RESEARCH & ENVTL. DEF., TROPICAL DEFORESTATION AND CLIMATE CHANGE (Paulo Moutinho & Stephan Schwartzman eds., 2005), available at http://www.edf.org/documents/4930_TropicalDeforestation_and_ClimateChange.pdf.

96. See, e.g., Press Release, Envtl. Def. Fund, On the Agenda: Tropical Deforestation—Who Gets to Benefit from the Carbon Market?, available at http://www.edf.org/documents/8896_EDF_Poznan_REDD.pdf (discussing compensation as a means to reduce deforestation emissions).

97. See Forest Carbon Partnership, About the FCPF, <http://www.forestcarbonpartnership.org/fcp/node/12> (last visited Mar. 7, 2009).

98. See WORLD BANK, FOREST CARBON PARTNERSHIP FACILITY INFORMATION MEMORANDUM 15–18 (2008), available at http://wbcarbonfinance.org/docs/FCPF_Info_Memo_06-13-08.pdf.

99. See *Questions Loom Large as Bank Pushes Carbon Finance for Forest Protection*, BANK INFO. CTR., Oct. 7, 2007, <http://www.bicusa.org/en/Article.3510.aspx>.

100. See U.N. Permanent Forum on Indigenous Issues, Apr. 21–May 2, 2008, *Report on the Seventh Session of the Permanent Forum on Indigenous Issues*, ¶¶ 44–45, U.N. Doc. E/2008/4, E/C.19/2008/13 (reflecting the concerns of indigenous peoples about current REDD proposals).

In addition to questioning the carbon “integrity” of REDD, non-climate concerns also permeate the debate. Significant infusions of international financing may simply empower national governments more in their efforts to usurp property rights of traditional forest communities. A form of “carbon colonialism” could further diminish forest dwellers’ ability to control what happens to their forests.¹⁰¹ This suggests that additional, non-climate conditions should be placed on how REDD is implemented—yet references to any rights-based approach to REDD were rejected in the recent Poznan negotiations.¹⁰²

The Obama Administration should embrace the concept and goal of avoiding deforestation, as well as seek ways to financially support countries that curb deforestation. If sufficient funding was made available through assistance programs, it might not be necessary, at least in the near term, to link efforts to avoid deforestation to the carbon market. Particularly given difficulties in measuring long-term deforestation trends and the resulting impact on the carbon cycle, the United States should solicit specific commitments from developing countries to take concrete steps to curb deforestation, and the United States should be willing to help pay for those steps. Over time, we could measure the impacts on the climate system; and perhaps future avoided deforestation could be used as an offset in the international carbon market established under Kyoto. This would mean that, at least in the near term, private financial flows from the offset market would not be available for avoided deforestation. Public assistance would have to be used to launch REDD and gain experience over time.

VII. INTERNATIONAL CLIMATE POLICY OUTSIDE THE KYOTO REGIME

The United States should also assert leadership to address climate change in other international fora. Climate change is too important and pervasive a challenge to cabin off in one set of

101. See Press Release, Friends of the Earth Int’l, *Climate Talks End Amidst Fears Over Carbon Colonialism* (Aug. 27, 2008), <http://www.foei.org/en/media/archive/2008/climate-talks-end-amidst-fears-over-carbon>; *The World Bank Forest Carbon Partnership Facility: REDDy or Not, Here it Comes!*, REDD MONITOR, Nov. 10, 2008, <http://www.redd-monitor.org/2008/11/10/the-world-bank-forest-carbon-partnership-facility-reddy-or-not-here-it-comes>.

102. See Emily Brickell, World Wildlife Fund, *REDD Negotiations* (Nov. 12, 2008), http://www.wwf.org.uk/what_we_do/tackling_climate_change/getting_a_global_deal/poznan_climate_change_conference/index.cfm?uNewsID=2545.

negotiations; going forward, climate change concerns must now inform a wider range of U.S. foreign policy. For example, climate change concerns should guide our foreign assistance, whether bilateral or multilateral assistance, provided through such institutions as the World Bank. The United States should curtail assistance, at least to middle-income countries, for fossil fuel projects that contribute significantly to climate change, particularly if those countries continue to operate without binding commitments under the climate regime.¹⁰³ A different approach may be needed for those developing countries that lack sufficient capital for meeting basic energy needs through alternative energy sources, but the clear presumption in all cases should be that U.S. assistance will be going increasingly to renewables, conservation, and the long-term transformation of the world's energy economy. We should similarly use our voice and vote at the World Bank and other international financial institutions to promote clean energy in their portfolios as well. The World Bank's planned revision of its energy sector strategy in 2010 provides a welcome opportunity to shift that institution's energy portfolio.

The United States should also look for specific public/private partnerships that can be used to eliminate inefficient processes in specific sectors. The Bush Administration's focus on capturing methane from landfills is a good example that has had significant climate benefits.¹⁰⁴ The United States, working bilaterally and with U.S. companies, can help to transfer technologies and support the shift to more efficient alternatives in developing countries. Regional organizations, such as the Organization of American States (OAS), could also be used more proactively to address climate change. Climate change will heavily impact countries in this region,

103. See, e.g., End Oil Aid, Global Call to End Oil Aid, <http://www.endoilaid.org/globalcall> (last visited Feb. 18, 2009). The United States should announce it will no longer provide support for fossil fuel projects from either the Overseas Private Investment Corporation or the US Export-Import Bank, and the U.S. Treasury should ensure that our executive directors use their voice and vote to curtail funding of fossil fuel projects at the World Bank and other multilateral development banks.

104. See generally U.S. Env'tl. Prot. Agency, *Energy Star and Other Climate Protection Partnerships 2006 Annual Report*, 2006 E.P.A. ANN. REP. 2, available at http://www.energystar.gov/ia/news/downloads/annual_report_2006.pdf; Thomas Kerr, *Voluntary Climate Change Efforts*, in GLOBAL CLIMATE CHANGE AND US LAW 591, 591 (Michael Gerrard ed., 2007).

particularly Caribbean island-states, and climate change has attracted increasing attention at the OAS.¹⁰⁵

A clear example where this could lead to immediate and significant climate benefits is the elimination of black carbon. Black carbon, or soot, is a major health problem and a localized air pollutant in much of South Asia and many other parts of the world.¹⁰⁶ The technologies and methods for reducing black carbon are well-known, but not well-distributed, throughout the globe. A major initiative by the United States, with money and technical support to reduce black carbon emissions from China, India, and other developing nations, would be a classic win-win situation. Not only would reducing black carbon result in significant climate benefits,¹⁰⁷ but public health would also improve in many developing countries' largest cities.¹⁰⁸

President Obama should also continue U.S. support for the emerging use of the Montreal Protocol to address climate change. As noted above, parties to the Montreal Protocol in 2007 accelerated the phase-out of HCFCs in developing countries, in large part to address climate change.¹⁰⁹ This decision was the first binding international commitment by both developed and developing countries specifically for the purpose of addressing climate change, and the decision could result in GHG emissions reductions equivalent to sixteen billion

105. Org. of Am. States [OAS], *Mainstreaming Adaptation to Climate Change*, at 4–6 (Apr. 2002), available at <http://www.oas.org/macc/Docs/MACC-BRO.pdf> (discussing projects to adapt to effects of global climate change).

106. Press Release, Nat'l Sci. Found., Black Carbon Transported from Asia Plays a Role in Pacific Ocean Climate (Mar. 15, 2007), available at http://www.nsf.gov/news/news_summ.jsp?cntn_id=108465.

107. Black carbon is now viewed as the second most important warming agent behind carbon dioxide. Veerabhadran Ramanathan & Gregory Carmichael, *Global and Regional Climate Changes Due to Black Carbon*, 1 NATURE GEOSCIENCE 221, 221 (2008).

108. See Lisa Raffensperger, *Black Carbon Emerges as Main Contributor to Global Warming*, EARTHTRENDS, Mar. 30, 2008, <http://earthtrends.wri.org/updates/node/295>.

109. See Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal, Can., Sept. 17–21, 2008, *Report to the Nineteenth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer*, dec. XIX/6, at 33–34, U.N. Doc. UNEP/OzL.Pro.19/7, available at http://ozone.unep.org/Meeting_Documents/mop/19mop/MOP-19-7E.pdf (recording adjustments to the Montreal Protocol with regard to hydrochlorofluorocarbons in Decision XIX/6); The Ozone Secretariat, 2007 Montreal Adjustment on Production and Consumption of HCFCs, http://ozone.unep.org/Ratification_status/2007_Montreal_adjustments_on_hcfc.shtml (last visited Mar. 22, 2009) (providing a comparison of the past hydrochlorofluorocarbons control commitments of non-Article 5 Parties (developed countries) and Article 5 Parties (developing countries) with the commitments contained in Decision XIX/6).

metric tons of carbon dioxide emissions.¹¹⁰ Other similar opportunities may be available in the future under the Montreal Protocol or other regimes.¹¹¹

110. See Press Release, U.S. Dep't of State, Accelerated Phase-Out of Ozone-Depleting HCFCs (Sept. 22, 2007), available at <http://2001-2009.state.gov/r/pa/prs/ps/2007/sep/92598.htm> ("Assuming the adoption of substitute refrigerants that are commercially available today, with this agreement, the world will avoid nearly 3,000 million metric tons of carbon dioxide equivalent emissions into the atmosphere."). Additionally, if countries develop and transition to new refrigerants "not yet invented that have no global warming impact, this agreement will enable the world to avoid as much as 16,000 million metric tons of carbon dioxide equivalent emissions into the atmosphere." *Id.*

111. For example, the International Maritime Organization is considering standards to reduce greenhouse gas emissions from bunker fuel used in international shipping. See UNFCCC, Emissions Resulting from Fuel Used for International Transport: Aviation and Marine "Bunker Fuels," http://unfccc.int/methods_and_science/emissions_from_intl_transport/items/1057.php (last visited Feb. 18, 2009). Under the Kyoto regime, emissions from international maritime transport are reported separately as part of the national GHG inventories of Parties, and are not subject to the limitation and reduction commitments of Annex I Parties under the Convention and the Kyoto Protocol. *See id.*