



## COPENHAGEN 101: MITIGATION

### THE URGENT NEED FOR ACTION

The Intergovernmental Panel on Climate Change, which represents the consensus view of the international scientific community, has concluded that global warming must be capped at 2°C to 2.4°C in order to avoid potentially catastrophic climactic changes.<sup>1</sup> To achieve this, greenhouse gas concentrations in the atmosphere must not exceed 450 parts per million (ppm); the current level is 425 ppm. Therefore, total global greenhouse gas emissions must peak by 2015 and fall to between 50 percent and 85 percent of 2000 levels by 2050.<sup>2</sup> These science-based objectives must frame the Copenhagen negotiations on efforts aimed at alleviating the effects of climate change around the world.

### SETTING A SHARED, EQUITABLE GLOBAL MITIGATION GOAL

The 1992 United Nations Framework Convention on Climate Change called for action by developed and developing nations to stabilize atmospheric greenhouse gas concentrations. The most developed countries are not only more able to undertake mitigation actions, but also are responsible for most of greenhouse gas emissions released into the atmosphere over the past 200 years. For these reasons, one of the central principles under the Convention is the idea that parties have “common but differentiated responsibilities” in responding to climate change. Following this principle, Annex I Parties (developed nations) have agreed to adopt binding emission targets known as quantified emission limitation and reduction objectives. Meanwhile, Non-Annex I Parties (developing countries) would continue with qualitative mitigation measures such as energy efficiency and deployment of cleaner energy technologies.<sup>3</sup>

Consistent with these principles and understandings and with the objective of limiting greenhouse gas concentrations to 450 ppm, experts have estimated that developed nations must reduce emissions by 25 percent to 40 percent from 1990 levels by 2020, and by more than 80 percent by 2050. While it is expected that developing nations’ emissions will grow in the coming decades, these countries must achieve carbon emission reductions of 15 percent to 30 percent below baseline projections by 2020 in order to keep greenhouse gas concentrations below 450 ppm.<sup>4</sup> Cuts by developing countries can be accomplished by shifting to low-carbon development growth and by adopting nationally appropriate mitigation actions.

### ISSUES UNDER NEGOTIATION

The Copenhagen negotiations concern emission reduction strategies after 2012. The Kyoto Protocol, agreed to in 1997, compels developed countries

that have ratified it (the United States being a notable holdout) to make emission reductions of 5 percent over the 2008-12 period. Current projections are that Kyoto Protocol parties will achieve an aggregate 11 percent reduction.<sup>5</sup>

In Copenhagen, negotiators will grapple with a range of issues related to emission reductions in the post-2012 period. These include:

- **Developed Country Emission Reductions.** Negotiators are trying to agree on mid- and long-term targets for developed countries. Most difficult are mid-term targets for 2020. Virtually all developed nations except the United States have articulated an acceptable quantified emission limitation and reduction objective, ranging from 5 percent to 30 percent below 1990 levels by 2020.<sup>6</sup> Legislative proposals under consideration in the United States are within this range. The American Clean Energy and Security Act (HR 2454), passed by the U.S. House of Representatives in June 2009, would cap emissions at roughly 1990 levels. Under the bill, U.S. emissions would be reduced by 16 percent below 1990 levels in 2020.<sup>7</sup> Further, the Group of Eight—the world’s most industrialized nations, including the United States—has agreed on a long-term Annex I emissions cap of 80 percent by 2050, as has been set in the major legislative proposals being considered by the U.S. Congress.<sup>8</sup>
- **Developing Country Actions.** In the Bali Action Plan negotiated in 2007, developing country parties committed for the first time to undertake nationally appropriate mitigation actions. The Copenhagen negotiations will work to define and articulate these national plans. Over the course of the negotiations, it has become clear that the mitigation efforts will take different forms depending on the level of development in a particular nation. Some of these countries have articulated specific commitments: For example, Brazil has pledged to cut emissions 36 percent from projected levels in 2020,<sup>9</sup> and Indonesia will reduce emissions 26 percent, from projected levels in 2020.<sup>10</sup> China, in partnership with the United States, announced that “an agreed outcome at Copenhagen should . . . include emission reduction targets of developed countries and nationally appropriate mitigation actions of developing countries.”<sup>11</sup>
- Some have suggested that rapidly developing countries should agree to mid-term targets for sectoral emission reductions or when their total emissions peak. Much of the debate over developing country actions centers on whether actions will be measured, reported and verified. Also in the Bali Action Plan,

developed nations agreed to measurable, reportable and verifiable financial and technological assistance to help developing nations achieve their emission reduction goals. Many developing country parties argue that their emission reduction efforts should be contingent on the availability of financial and technological help from developed countries. This issue is likely to be a key sticking point during the negotiations in Copenhagen.

- **Flexibility Mechanisms.** The Kyoto Protocol included several “flexibility mechanisms” that have helped to reduce costs and drive investment toward climate change mitigation efforts. These mechanisms take several forms. Joint implementation projects are undertaken between developed nations to earn credits by reducing emissions. Projects under the Clean Development Mechanism (CDM) enable developed countries to offset their greenhouse gas emissions by undertaking a project in a developing country. This mechanism in particular has stimulated more than 1,900 registered projects and raised more than \$25 billion in investment.<sup>12</sup>
- In Copenhagen, negotiators will explore whether Kyoto Protocol mechanisms should be continued and expanded to allow sectoral crediting under the CDM and thus drive much larger volumes of investment. In addition, negotiators will explore ways to link national and international trading systems to improve cost and operational efficiency.
- **Deforestation.** Deforestation is responsible for approximately 20 percent of global emissions. The Kyoto Protocol purposefully left out deforestation as an offset option under the CDM, largely due to concerns over the verification of reductions and the issue of sovereignty raised by developing countries. Some estimates suggest that deforestation could be cost-effectively scaled back by 50 percent by 2030.<sup>13</sup> Encouragingly, significant progress has been made on reducing emissions from deforestation and degradation. At Copenhagen, negotiators will take up a new program to address deforestation under the Convention. Key issues will be the certification and sustainability of emissions savings associated with avoided deforestation. In addition, negotiators will take up ways to stimulate public and private investment in these efforts, including extension of the CDM to include emission credits in

a carbon market for deforestation and degradation activities.

- **Monitoring, Reporting and Verification (MRV).** One of the most complicated and difficult issues undertaken by negotiators at Copenhagen will be how to monitor, report and verify emission reductions. These are critical issues given the importance of quantifying emission reductions and the monetary value attached to some reduction efforts. Effective monitoring, reporting and verification are essential to expanding carbon markets and providing financial resources for mitigation efforts in developing countries. Some parties are lobbying to extend MRV to issues such as technology transfer and the mobilization of financial resources.

## WHAT TO EXPECT IN COPENHAGEN

Mitigation matters will be at the center of the Copenhagen negotiations, and no country will be under greater scrutiny than the United States, which has yet to pass national climate change legislation that includes mid-term and long-term mitigation targets, although the President recently announced a 17 percent mid-term emission reduction target to be offered at Copenhagen. However, the lack of certainty surrounding the U.S. legislative process will constrain the willingness of the U.S. delegation and other Annex I parties to enter into agreements on mid-term targets. Given this uncertainty, the United States has called for a sort of “bottom-up” approach on near-term targets. Under it, each developed country would articulate an achievable target, and the commitments would be bundled into a collective Annex I emissions objective. This approach is controversial because it would not require comparable efforts among parties.

For developing countries, there will be two major issues. One is whether rapidly emerging and high-emitting countries such as China and India will agree to cap emissions by a certain year or otherwise quantify an emissions goal under the Convention. A closely related issue concerns the financial commitments by developed countries. Developing countries may be inclined to condition any emission reduction efforts on the availability of financial assistance, and in any case will argue that it will be impossible for developing countries to undertake mitigation or adaptation efforts without reliable, sustained financial assistance.

1 Intergovernmental Panel on Climate Change, Fourth Assessment Report, 2007. Working Group III, “Climate Change 2007: Mitigation,” Summary for Policy Makers, p. 15, [www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-spm.pdf).

2 *Ibid.*

3 Harald Winkler, “Climate Change Mitigation Negotiations, With an Emphasis on Options for Developing Countries,” U.N. Development Program Environment and Energy Group, July 2008, [www.undp.org/climatechange/docs/UNDP\\_Mitigation.pdf](http://www.undp.org/climatechange/docs/UNDP_Mitigation.pdf).

4 U.N. Framework Convention on Climate Change (UNFCCC), “Emission reductions for stabilizing at 450 ppm CO<sub>2</sub>-eq,” March 2009, [http://unfccc.int/files/kyoto\\_protocol/application/pdf/emission\\_reductions\\_for\\_stabilizing.pdf](http://unfccc.int/files/kyoto_protocol/application/pdf/emission_reductions_for_stabilizing.pdf).

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6 UNFCCC, “Documentation to facilitate negotiations among Parties,” Oct. 19, 2009, <http://unfccc.int/resource/docs/2009/awg9/eng/10a04r02.pdf>.

7 World Resources Institute, “Emissions Reductions Under Cap-and-Trade Proposals in the 111<sup>th</sup> Congress,” Oct. 28, 2009, [http://pdf.wri.org/usclimatetargets\\_2009-10-28.pdf](http://pdf.wri.org/usclimatetargets_2009-10-28.pdf).

8 G-8 Chair’s Summary, L’Aquila, 10 July 2009 [http://www.g8italia2009.it/G8/Home/Summit/G8-G8\\_Layout\\_locale-1199882116809\\_Atti.htm](http://www.g8italia2009.it/G8/Home/Summit/G8-G8_Layout_locale-1199882116809_Atti.htm).

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10 Reuters, “Indonesia CO<sub>2</sub> pledge to help climate talks—Greens,” Sept. 29, 2009, [www.reuters.com/article/latestCrisis/idUSSP495601](http://www.reuters.com/article/latestCrisis/idUSSP495601).

11 White House, “U.S.–China Joint Statement,” Nov. 17, 2009, [www.whitehouse.gov/the-press-office/09-11-17/us-china-joint-statement](http://www.whitehouse.gov/the-press-office/09-11-17/us-china-joint-statement).

12 The UNFCCC, Executive Summary, “Investment and Financial Flows to Address Climate Change,” p. 3, [http://unfccc.int/files/cooperation\\_and\\_support/financial\\_mechanism/application/pdf/executive\\_summary.pdf](http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/executive_summary.pdf).

13 The Eliasch Review, “Climate Change Financing Global Forests,” [www.occ.gov.uk/activities/eliasch/Full\\_report\\_eliasch\\_review\(1\).pdf](http://www.occ.gov.uk/activities/eliasch/Full_report_eliasch_review(1).pdf).

