United Nations Fact Sheet on Climate Change

Curbing Emissions that Cause Climate Change

The Problem

- The world's surface temperature has risen by 0.6 degrees over the 20th century. Scientists attribute the large increase in temperature to human activities that have caused a buildup of greenhouse gases — primarily carbon dioxide — in the earth's atmosphere.
- At the present rate, it is expected that the earth will warm by 1.4-5.8° C (2.5-10.4° F) during this century, an increase that would be much larger than any climate change experienced over the last 10,000 years.

Two approaches are needed to deal with the problem: by addressing the causes of climate change by either reducing greenhouse gas emissions or by capturing and storing those emissions, and by learning to adapt to the impacts brought by changes in climate. These approaches need to be pursued in parallel. Emission reductions on the order of 60-80 per cent of 1990-level emissions would be necessary to stabilize concentrations of carbon dioxide in the atmosphere.

The cost of reducing emissions is a major concern for governments and the private sector. The carbon-based energy sources that fuel most economies are still cheaper than most alternatives, such as solar energy, and changing to more sustainable energy sources requires significant capital investments. The recently released Stern Review confirmed that a strategy of "doing nothing" could ultimately incur costs far in excess of what it would cost to take action.

Energy decisions made now will affect the climate situation in the future:

- According to the International Energy Agency, in the next 25-30 years, investments of more than US$17 trillion will be made to finance the world's energy needs. At least 40 per cent of the world's power-generating capacity will need to be replaced in the next 5 to 10 years, and decisions concerning long-term sustainability will affect the efforts to mitigate the effects of climate change over the next 30-50 years.
- Energy use will continue to increase to meet the demand of growing economies. The International Energy Agency forecasts that energy use in 2030 will be at least 50 per cent higher than it is today, with more than two thirds of this increase occurring in developing countries. Unless meausres are taken during this same time, carbon dioxide emissions are likely to grow by 62 per cent.
- The World Bank's Investment Framework suggests how low carbon technologies can be financed and climate concerns integrated into development strategies.
- Emissions can be reduced by improving energy efficiency, using low-carbon and carbon-free energy technology, reducing greenhouse-gas-emitting activities and through the capture and sequestration of carbon dioxide.

The Process

Realizing that international cooperation was essential for confronting the challenges posed by climate change, countries adopted the UN Framework Convention on Climate Change, which called on countries to take steps to limit climate change-causing emissions. The Convention went into effect in 1994 and has 189 contracting countries.

- As a first step towards concrete action to reduce emissions, countries adopted the 1997 Kyoto Protocol, which requires industrialized nations to cut greenhouse gas emissions by at least 5 per cent in 2012 (the first commitment period) of 2008-2012 from 1990 levels.
- Negotiations concerning emission reductions after 2012 have started are figuring prominently during the Climate Change Conference in Nairobi, 6 to17 November 2006.
- While 166 countries have ratified the Kyoto Protocol, the US and Australia did not. One cause for opposition was the contention that cutting emissions so quickly would harm their economic growth.
- Although developing countries are not required, under the Kyoto Protocol, to reach specific emissions targets, they are required to implement policies and programmes and many of these countries have taken strong action to reduce emissions. At least 85 developing countries have identified measures in the energy sector to abate greenhouse gas emissions, and countries such as China and India have moved to improve energy efficiency and have adopted strict auto-emission standards.
- The Kyoto Protocol has spurred many new initiatives to reduce emissions. While all Convention Parties reduced their emissions by 3.3 per cent between 1990 and 2004, the industrialized Kyoto Parties reduced their emissions by 15.3 per cent for the same period. Also, in terms of action, most of the industrialized Kyoto Parties have in place ambitious climate change programmes and strategies. In particular, emission trading emerged as a very effective and innovative instrument to curb the emission growth in the majority of the Kyoto countries as noted in the bullet below.
- The Clean Development Mechanism (CDM), under the Kyoto Protocol, offers an innovative way for industrialized countries to get "credits" towards their own emissions targets by funding sustainable development projects in developing countries — a "win-win" situation.
- The CDM already has over 1,300 projects in the pipeline and an overall emission reduction potential of about 1.4 billion metric tons by 2012, amounting to more than the total CO_2 emissions of Germany in 2004.
- In addition to this, the Kyoto Protocol's joint implementation (JI) mechanism allows developed countries to acquire carbon credits from greenhouse gas emission reducing projects undertaken in other industrialized countries, in particular central and eastern European transition economies. The United Nations Climate Change Secretariat expects emission reductions in the order of several hundred million ton of CO_2 by the end of the first commitment period of the Kyoto Protocol.
- These two mechanisms form part of an international carbon market—essentially a market in the rights to emit greenhouse gases — that been developed and is expected to reach the $30 million mark by the end of 2006. Carbon markets, however, need greater long-term certainty in the policy framework to achieve their full potential.
- Significant new scientific information about climate change will be available next year when the Intergovernmental Panel on Climate Change (IPCC) — the United Nations body to assess of climate change — issues its Fourth Assessment Report "Climate Change 2007." The IPCC report on mitigation — on how to reduce the causes of climate change—will be released on 4 May 2007 in Bangkok.

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