

# INSIDE THE GREENHOUSE DEBATE

## ENERGY ISSUES SET TO RISE ON GLOBAL WARMING AGENDA

**A**t The Hague in November 2000, pivotal talks on climate change policies and actions -- notably ways to cut emissions of greenhouse gases -- were suspended after two weeks of intensive debate. Countries now are looking to resume negotiations by June 2001, possibly in Bonn, Germany.

"It is extremely disappointing that political leaders were unable to work it out and finalize guidelines for reducing greenhouse gas emissions, especially when the public had such high expectations," said Jon Pronk, Environment Minister of the Netherlands and Chairman of the Sixth Conference of Parties to the United Nations Framework Convention on Climate Change (COP-6). "But I believe the political will to succeed is still alive." He remained confident that countries would be able to complete a deal that leads to effective actions to control emissions and protect the most vulnerable countries from the impacts of global warming.

Expectations ran high because COP-6 was aimed at setting the operational details for commitments on reducing emissions of greenhouse gases under the 1997 Kyoto Protocol, and for implementation of the Buenos Aires Action Plan adopted in 1998. Under the Kyoto Protocol, industrialized countries agreed to binding limitations on their greenhouse gas emissions for the period



2008-2012. They also agreed to three "flexibility mechanisms" that would establish a "market" for greenhouse gas reductions, with specific rules to be worked out later, presumably at COP-6.

Of these three mechanisms, one known as the Clean Development Mechanism (CDM) is open to developing countries. Under it, an industrialized country may sponsor efforts to reduce greenhouse gases in a developing country by, for example, financing an eligible project (namely, a project that otherwise would not occur), and then receiving carbon-reduction credits in return.

One point of contention has been nuclear energy projects under the CDM. At COP-6, nuclear's potential role in the

context of climate change was concisely described in a statement by IAEA Deputy Director General David Waller and more comprehensively during a "sidebar" event on the issue at which national case studies were presented. (*See boxes on following pages.*)

The Conference made some progress towards outlining a package of financial support and technology transfer to help developing countries contribute to global action on climate change. But the key political issues -- including an international emissions trading system; the CDM; the rules for counting emission reductions from carbon "sinks" such as forests; and a compliance regime -- could not be resolved. Trees -- not atoms -- turned out to be the main

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*Photo: An estimated 7000 participants from 182 governments, 323 inter- and non-governmental organizations, and 443 media outlets attended COP-6 in the Netherlands. During the Conference and at issue-oriented "sidebar" events, participants presented their views in different ways. (Credit: Leila Mead/IISD)*

## KEEPING THE NUCLEAR OPTION OPEN

Five countries interested in nuclear power under the Clean Development Mechanism (CDM) for reducing greenhouse gas emissions presented national case studies at COP-6. The presentations were made at a "sidebar" event introduced by Mr. Hans-Holger Rogner (*photo*), who heads the IAEA's Planning and Economic Studies Section, Department of Nuclear Energy. Case studies were presented by Mr. R.B. Grover, India; Mr. Chaeyung Lim, Republic of Korea; Mr. Liu Deshun, China; Mr. Le Doan Phac, Viet Nam; and Mr. Muhammad Latif, Pakistan.

India's presentation outlined plans to expand electricity production through 2012, including an increase in nuclear capacity. Mr. Grover said that some nuclear power projects are dependent upon receiving financial assistance under the CDM; the dependence is linked to the plant's location relative to India's major coal mines.

The Republic of Korea presentation addressed the cost of carbon reduction, noting that reductions using nuclear power would cost about one-tenth of the cost using gas-fired plants in the country. Nuclear power also would contribute to the country's energy security.

China's presentation reviewed the country's plans to boost nuclear power capacity over the next 20 years in the face of rising electricity demand, with new plants targeted for coastal regions that are more economically developed. Achieving nuclear expansion plans would result in the annual avoidance of about 63 million tonnes carbon through reduced carbon-dioxide emissions. Nearly 75% of the country's electricity production is now coal-fired, which places a heavy toll on both the environment and transportation requirements. Financial support is needed to more fully develop the nuclear option.

Viet Nam's presentation outlined a number of potential CDM options, including construction of a nuclear power



plant that offers a low-cost option for reducing emissions of greenhouse gases.

Pakistan's presentation described plans to reduce greenhouse gas emissions using cleaner technologies, including nuclear power. Mr. Latif noted that the nuclear option offers both economic

and environmental advantages, given that in the absence of the CDM, coal-fired plants for electricity generation would have to be built instead.

Of the various alternatives analyzed in the case studies, nuclear power provided the lowest cost carbon reductions. However, for a nuclear power project to be economically attractive, the CDM would have to be in place to allow each of the five countries to sell carbon reductions to industrialized buyers. If nuclear power were excluded from the CDM, a country could opt for a more expensive clean alternative if industrialized countries were willing to pay the higher price for its carbon reductions. But if that price were too high, the economic choice would then be coal-fired power generation, which proved both the dirtiest and cheapest (absent the CDM) in all five countries.

The full texts of the case studies are in a new IAEA booklet, *Nuclear Power for Greenhouse Mitigation*. It is available in electronic format on the *WorldAtom* pages at [www.iaea.org](http://www.iaea.org). In another booklet, *Climate Change and Nuclear Power*, the IAEA reviews the potential role of nuclear power in the context of the Kyoto Protocol and global warming issues. The booklet also is accessible on the Agency's *WorldAtom* pages.

sticking point, which hinged on differences of opinion between European countries and the United States on the role that forests could play as carbon "sinks" and what emission credits countries could claim from them.

Efforts to exclude nuclear energy -- as well as large-scale hydropower and clean coal-powered electricity generation projects -- as a flexibility mechanism faltered at COP-6.

The question of whether nuclear power should be eligible for CDM credits thus remains on the table, subject to further negotiations when climate change talks are expected to resume in mid-2001.

The debate on which technologies qualify for carbon-emission credits, and which do not, is an evolving one. As the Nuclear Energy Institute in the United States has pointed out, nuclear energy

was not even on the agenda in 1997 when delegates gathered in Kyoto, Japan for the agreement to reduce greenhouse gases. "The fact that nuclear energy is part of the political trade-offs is a sign of its incomparable emission-avoidance value, both today and in a potentially carbon-constrained world," says Maureen Koetz, who is working closely with the International Nuclear Forum,

## IAEA STATEMENT AT COP-6

*On 20 November 2000, IAEA Deputy Director General David Waller addressed the Conference on climate change. The full text of his remarks follow:*

Mr. President, Distinguished Delegates, Ladies and Gentlemen:

I carry a simple message on behalf of the International Atomic Energy Agency. In your deliberations on climate change, we ask that you consider nuclear power in exactly that context - that is, in terms of its impact on future climate change.

The membership of the IAEA consists of 130 countries, nearly all of which are parties to the UNFCCC. Our mandate contains three fundamental objectives: to help ensure nuclear safety worldwide; to help prevent nuclear weapons proliferation; and to enhance the contribution of nuclear technologies towards meeting, in a sustainable manner, the needs of Member States - not only with regard to nuclear power, but also in areas ranging from agriculture and medicine to hydrology, industry and protection of the environment. Additionally, in 1999 our members -- in large part you, the Parties to the Convention -- specifically asked that we assist our developing country members to explore and prepare potential Clean Development Mechanism projects based on nuclear power.

Yet, there are currently proposals before you to exclude nuclear power from the CDM, Joint Implementation (JI), and/or emission trading. Such proposals, however, cannot be based on climate concerns; nuclear is undeniably benign.

The underlying concerns about nuclear power are that it could be unsafe, uneconomic, or associated with weapons production. But we respectfully suggest that negotiations on climate change are not the appropriate forum to deal with any of these concerns. As regards safety, the Convention on Nuclear Safety provides an effective international mechanism for review. Moreover, the conventional wisdom among technical experts is that most reactors are safe -- the remainder are being either upgraded or phased out -- and that the means exist for dealing safely with waste. Regarding costs, it is investors who are best equipped to forecast what will be economically attractive in 2010. And, as concerns proliferation, there is in place the robust, near-universal, indefinitely extended Non-Proliferation Treaty, and the growing adherence to



the Additional Protocol, which further strengthens the safeguards agreements under this Treaty. Finally, it should be noted that nuclear power is an evolving technology and work is currently under way on the development of new generation reactors which are inherently safe, proliferation resistant and more economically competitive.

Reducing future greenhouse gas emissions is the issue before you. With continuing population and economic growth, and increasing needs in the developing world, substantially greater energy demand is a given. Nuclear power is today a significant contributor to both the world's energy supply and greenhouse gas abatement. More specifically, it currently produces 16% of the world's electricity, and, in doing so, avoids 8% in greenhouse gas emissions which would otherwise result. That amounts to approximately 600 million tonnes less of carbon annually, about the same as is avoided by hydropower. One clear reason President Chirac could state this morning that France's *per capita* greenhouse gas emissions are "very much lower than those of other leading industrialized countries" is his nation's advanced nuclear power programme. Moreover, nuclear power has the potential for much greater capacity - without adding greenhouse gas emissions.

At this juncture, the exclusion of any technology with clear climate benefits can only limit options, flexibility, and cost-effectiveness. The best chance for sustainable development -- that is, for meeting the needs of the present without compromising the ability of future generations to meet their needs -- lies in allowing those future generations to make their own decisions about energy supply options, and allowing these options to compete on a level playing field.

Thank you.

an informal group of the world's leading nuclear industry associations.

Though the IAEA's Member States hold different views on nuclear power's role, they have come together in support of resolutions over the past two years on Agency assistance to developing countries interested in the option. In September 1999, the IAEA General Conference requested the Agency to assist developing countries to explore and prepare potential CDM projects based on nuclear power. In September 2000, the General Conference passed a resolution requesting the Agency to help interested Member States to obtain access to relevant information on the role of nuclear power in mitigating greenhouse gas emissions and achieving sustainable development, to implement national case studies, and to prepare potential projects.

The Paris-based International Energy Agency of the Organization for Economic Cooperation and Development (OECD) continues to advocate a positive nuclear role. In his address at COP-6, Executive Director Robert Priddle underscored that much can be achieved in power generation by using renewables, extending the life of nuclear plants, and further fuel switching from coal to gas. He said that a recent study shows that the three OECD regions would fall far short of their Kyoto commitments if compliance is measured solely in terms of carbon dioxide emissions in the energy sector. He also emphasized the importance of engaging the developing world in the battle against climate change on equitable terms.

## REFERENCES & RESOURCES ON LINE

Information on the Internet related to climate change, sustainable development, and global energy trends includes:

- *The United Nations Commission on Sustainable Development*, at <http://www.un.org/esa/sustdev>
- *United Nations Framework Convention on Climate Change*, at <http://www.unfccc.int>
- *Intergovernmental Panel on Climate Change*, established by the World Meteorological Organization and the United Nations Environment Programme, at <http://www.ipcc.ch>
- *International Institute for Sustainable Development*, at <http://www.iisd.ca/climate/cop6>
- *World Energy Council*, at <http://www.worldenergy.org>
- *The OECD International Energy Agency*, at <http://www.iea.org>

The OECD's Secretary-General, Donald Johnson, recently backed that view. "If we are to hand to future generations a planet that will meet their needs as we have met ours," he said, "it can only be done by incorporating the nuclear energy option."

**Looking Ahead.** The year 2001 should see energy issues rise on the global warming agenda. Besides the planned resumption of COP-6 talks before mid-year, a number of important events are scheduled. ■ From 16-27 April 2001, the UN Commission on Sustainable Development will be holding its ninth session in New York. Major topics on the agenda include -- for the first time -- energy and transportation, two of the more than 30 separate issues identified in Agenda 21 adopted at the Earth Summit in Rio de Janeiro, Brazil, in 1992. In its various chapters, Agenda 21 states that all energy sources need to be used in ways that protect the atmosphere, human health, and the environment as a whole.

■ In late April 2001, the run-up activities to the Earth

Summit 2002 pick up steam. The first meeting of the Rio+10 Preparatory Committee is scheduled at the United Nations in New York. It is expected to be preceded by a multi-stakeholder panel that brings together representatives of major groups engaged in the process. Rio+10 will be a summit gathering of world governments, concerned citizens and groups, UN agencies, and other major actors to assess global change since the Earth Summit in 1992. South Africa has been selected to host the event.

■ In October-November 2001, the Seventh Conference of Parties to the UNFCCC (COP-7) is scheduled in Marrakech, Morocco.

As the months unwind, the pressure may grow on governments to achieve consensus on difficult issues related to both climate change and sustainable development. Many Parties to the Kyoto Protocol had hoped to see the agreement in force by 2002, in time for the 10th anniversary of the Earth Summit. By any measure, considerable work remains to be done. □