

## **AIDE MEMOIRE**

### **UNITED NATIONS SYMPOSIUM ON HYDROPOWER AND SUSTAINABLE DEVELOPMENT 27-29 OCTOBER, 2004, BEIJING, CHINA**

#### **Introduction**

Hydropower plants are in operation in over 140 countries providing proximately one fifth of global electricity supply, equivalent to energy generated by 4.4 million barrels of oil per day and about 6% of the world's current oil production. Presently hydropower produces more than 90% of the total national electricity in 24 countries. Around a third of the countries in the world rely on hydropower for more than half of their electricity needs. Before the 1950s, some three quarters of all hydropower stations built were to be found in North America and Europe. From the 1960s onwards, this began to change as former colonies became independent and the industrialization process began. Between 1973 and 1996, hydropower generation in developing countries grew from 29 to 50% of world production.

Hydropower development has slowed down since 1980. The construction of many large dams as well as hydropower stations has revealed problems ranging from cost overruns to performance shortfalls. Inadequate attention was paid to environmental and ecological impacts and to damage caused by hydropower development to certain river basins and regional eco-systems. Allied with this were adverse impacts on people, particularly indigenous people whose lives were affected by projects. Awareness has been growing concerning the need to ensure preservation of eco-systems, and protection of the environment at local, regional and global levels, and the need to ensure that economic development is pursued in a socially responsible and environmentally sustainable manner. As a result, dams, both existing and planned, and associated hydropower projects have come under increasingly critical scrutiny. Some projects, particularly those that failed to give due consideration to their social and environmental impacts, have faced strong resistance from the public and some have even been stopped.

Debates surrounding the benefits of dams and the process of decision-making on building dams and hydropower projects climaxed in late 1990s with the formation of the World Commission on Dams (WCD) and publication of its report entitled "Dams and Development". The report cast the issue of large dams in the perspective of increased attention to environmental and social dimensions. The study, based on a detailed assessment of existing dams and extensive consultations among stakeholders, proposed a new framework—consisting of a series of principles and policy priorities—to be followed in reviewing dam and hydropower projects.

Debates over dams and large hydropower continue to be controversial. In many developing countries, hydropower constitutes one of the most important means to provide reliable, affordable and sustainable energy services. As is well known, it is estimated that some two billion people in the world currently have no access to modern energy services. This situation is greatly constraining industrial, agriculture and commercial activities, as well as efforts to provide education and public health services to the poor. On the African continent, the abundant hydropower resources of Central and West Africa are largely untapped, although they have the potential to contribute significantly to economic recovery and social advancement in the region. In light of the recognition that renewable energy technologies such as photovoltaics (PV) and

modern biomass alone cannot meet the energy needs of developing countries. Many developing countries, particularly those in South America and Africa, are placing greater emphasis on hydropower development and developing strategies for mobilizing investments. Similar steps are being taken in South-East Asia and elsewhere.

Meanwhile, increasing concern over the emission of greenhouse gases and threat of climate change calls for a shift from the massive use of fossil fuels to the development of renewable energy. Although not without greenhouse gas impacts, hydropower does have significant advantages in relation to fossil fuel powered generation. It is perceived as a clean, low cost renewable source of energy that relies on proven technology. Once built, hydropower facilities have low operating cost and a long service life, particularly for those run-of-river and reservoir projects where sedimentation is no concern. At the World Summit on Sustainable Development (WSSD) held in Johannesburg, South African in 2002, a consensus emerged from heated and lengthy debates that a significant increase of renewable energy in world energy mix was necessary to address global warming problem and hydropower must be included. Governments affirmed their commitment, in the Johannesburg Plan of Implementation (JPOI), to boosting the development and use of renewable energy and promoting international cooperation in this field.

Against this backdrop, the United Nations, the World Bank, and the Government of the People's Republic of China propose to convene a Symposium on Hydropower and Sustainable Development, to be held in China in October 2004. The Symposium will serve as a follow-up to the WSSD, with the aim of bringing together all stakeholders to explore the role and future of hydropower in the context of sustainable development.

### **Objectives**

The principal objective of this Symposium is to bring together leaders from government, distinguished experts from the scientific community and academia, representatives of the private sector, professional institutions, representatives from international organizations, as well as non-government organizations (NGOs) to discuss the hydropower and sustainable development.

The symposium will focus on the following key topics:

#### **A. Hydropower and sustainable development**

- Strategic concerns on energy growth and integrated water resources management at local, regional and global levels in the context of sustainable development;
- Optimum balance between economic, social, environmental and ecological dimensions in hydropower planning, design and construction; and
- Needs and requirements of developing countries to implement hydropower in a manner consonant with sustainable development.

#### **B. Environmental-friendly techniques in hydropower development**

- Basic criteria and standards for effective planning, design, construction and operation of hydropower projects;
- Advance and new trends of technology in hydropower development in view of long-term ecological and environmental impacts of hydropower projects; and
- Energy development in less developed and eco-vulnerable areas.

#### **C. Benefits and concerns regarding existing dams and hydropower facilities**

- Monitoring and evaluation of the overall performance of hydropower for sustainable development;
- Best practices of hydropower projects in relation with economic, social, environmental and ecological aspects; and
- Rehabilitation and upgrading of existing dams and hydropower plants to maximize their output and efficiency.

D. Principles and processes for hydropower development

- Interdependence between human and nature, interact of economic and social forces, correlation between immediate requirements and future growth;
- Public participation, democratic and effective decision-making with a clear delineation of responsibility among major stakeholders; and
- Private sector participation in hydropower projects.

The Symposium is expected to lead to: i) a better understanding of the role and potential of hydropower in promoting sustainable development, ii) a road map consisting of principles, policies, modalities to be applied in hydropower projects, and iii) the road map which could be useful to developing countries in mobilizing technical assistance and support from international organizations and bilateral donors.

### **The Organization of Symposium**

The Symposium will be jointly organized by the United Nations Department of Economic and Social Affairs (UN DESA), the World Bank, and the National Development and Reform Commission (NDRC) of the Government of the People's Republic of China. UN DESA is mandated, among other things, to organize and serve as the secretariat for UN Commission on Sustainable Development (CSD); to perform analytical studies and make proposals concerning policy, priority and approaches to sustainable development to the CSD and Member States; and to promote the implementation of sustainable development at the global, regional and country levels. Specifically, the WSSD requested that UN DESA monitor the implementation of the JPOI implementation and report to the CSD on progress and constraints. The Symposium is viewed as a concrete step to fulfil this mission and to follow-up on the decisions reached at the WSSD.

It is proposed that the International Energy Agency, the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and other international organizations will be invited to participate in the meeting. UN DESA will be responsible for bringing this event to the attention of the international community, to prepare substantive discussion and deliberation at the Symposium, and to invite participants and papers from governments, professional associations, NGOs and Major Groups and international agencies. It will also, with help of the World Bank and other partners, sponsor the participation of developing country representatives and experts.

China is one of the leading countries in the world in terms of hydropower development. Looking ahead, it has an ambitious programme to build more hydropower projects to fuel its rapid economic growth and diversify the coal-based energy structure and mitigate environmental pollution. China has both success stories and bitter lessons from its hydropower endeavour and could certainly contribute to, and benefit from, the deliberation and outcome of the Symposium.

It is proposed that the Symposium be held in Beijing. After the symposium, participants would have a choice of two site visits relevant to relevant facilities.

As local partner, the Chinese National Development and Reform Commission (NDRC) will be responsible for the mobilization of national participants from state and local government agencies, the scientific institutions and academia, local communities and NGOs, for the provision of meeting venue and facilities, and for the facilitation of travel arrangements of international participants.

It is expected that some 200 participants around the world will attend the Symposium. Included will be:

- Government leaders and officials who are responsible for and sensitive to comprehensive planning and development, the preservation and protection of natural resources and ecosystems to satisfy the needs of not only today but also future generations, and the provision of reliable and affordable energy services to all people in their respective countries.
- Senior energy and environment experts who have experience and insight on policy issues in relation to hydropower including energy development options vis-à-vis macro-economic and social progress, hydropower projects and integrated development of serving region/river basin, sustainable use and conservation of natural resources, preservation of heritage and culture of people, in particular, indigenous peoples for their social progress.
- Representatives from Major Groups, NGOs and others stakeholders who will contribute to constructive dialogue and cooperation on hydropower for sustainable development and bring different perspectives into discussions to ensure principles, policy options and approaches the Symposium propose to be comprehensive, unbiased and implementable.
- Representatives from UN organizations, World Bank and regional development banks as well as bilateral donors to share their experiences and views, identify needs for capacity building of developing countries, and gain inputs for the establishment of appropriate and effective internal appraisal and approval mechanisms in support of hydropower for sustainable development in developing countries.

The Symposium will focus on economic, social and environmental dimensions, striving for fruitful discussions on how an optimal balance among the three pillars of sustainable development can be struck. To ensure that discussions and deliberations are conducted in an open and constructive manner, the Symposium will be so structured as to have: a) plenary where keynote speeches will examine hydropower from a broad and strategic perspectives of sustainable development; b) separate sessions to address specific dimensions of hydropower projects, such environmental impacts and assessment, economic and social issues, and technical issues; and c) panel/roundtable discussions to encourage open and interactive discussions between highly reputable and experienced panellists and other stakeholders. To highlight critical issues and best practices, case studies will be introduced in the course of the discussions.

The report of the symposium is expected to serve as a valuable source of information for decision- making at national levels and for international cooperation concerning hydropower development and as an important input to inter-governmental discussions at future sessions of the CSD.