

# Hydropower and Sustainability



**IN A WORLD WHERE NEARLY ONE-THIRD OF THE POPULATION HAS NO ACCESS TO ELECTRICITY AND MORE THAN ONE BILLION PEOPLE ARE WITHOUT ADEQUATE WATER SUPPLY, SUSTAINABILITY EXPERTS\* HAVE IDENTIFIED**

**THE FOLLOWING CHALLENGES:**

- ▶ **ENHANCED FRESHWATER MANAGEMENT**
- ▶ **INCREASED USE OF RENEWABLES**
- ▶ **IMPROVED POVERTY ALLEVIATION**

*Johannesburg, 2002...*

*Kyoto, 2003...*

*Bonn, 2004...*

*Beijing, 2004...*

## **INTERNATIONAL DECLARATIONS**

Over the last two years, the international community has recognized the important role of hydropower as a leading renewable energy technology “to be substantially increased with a sense of urgency”. This was confirmed through declarations signed first in 2002 at the *World Summit for Sustainable Development*, in 2003 at the *Third World Water Forum* and in 2004 at the *First International Conference for Renewable Energy*. The most recent *United Nations Symposium on Hydropower and Sustainable Development* calls on governments and financing agencies to accelerate sustainable hydropower development.

## **FINANCING SUSTAINABLE HYDROPOWER**

Hydropower schemes are unique in their longevity and also their financial profile. They have high up-front costs, which tends to deter investment, but very low expenditure in their long operating period. Through offsetting technologies which are more carbon intensive, hydropower should receive credit from the emerging carbon market. Many sustainable hydropower projects will not be developed unless credit is given for the clean power and additional services they can provide. With the *Kyoto Protocol on Climate Change* in force, emissions trading through the flexibility mechanisms presents an opportunity to address these barriers to sustainable development.

\* Globescan 2004.



Hydropower has a key contribution to make to these priorities, as it already produces some 20% of the world's electricity supply and provides about 95% of that generated from renewable sources. As only a third of the hydro potential has so far been developed, hydropower's vast untapped renewable resources – existing mainly in the developing world – can contribute to the sustainable solution of the most urgent water and energy needs.

Sustainable hydropower is a clean, indigenous and highly efficient renewable energy source. In addition, it can provide:

- water storage, flood and drought mitigation, water supply, irrigation, improved navigation, enhanced environmental management, recreation and broader socio-economic development;
- energy storage, back-up for intermittent generation technologies and overall power system stability.

# IHA Sustainability Guidelines: a planning and management tool

To ensure that the environmental, social and economic aspects of sustainability are fully considered in the assessment of new hydropower projects, and in the operation of existing schemes, the International Hydropower Association (IHA) has produced a set of *Sustainability Guidelines*.

When hydropower is identified as the most suitable energy option, *IHA Sustainability Guidelines* provide a planning tool to enable governments, policy-makers, developers, investors and stakeholders to assess the sustainability of projects.

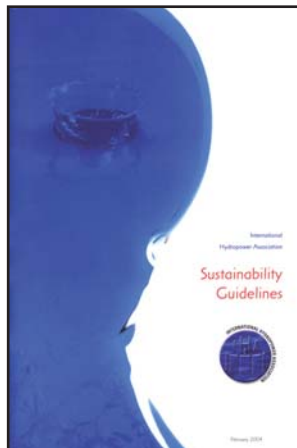
The *Sustainability Guidelines*:

- stress the importance of planning, implementation and operation based on an open, transparent and effective decision-making process;
- consider at an early planning stage several variants for a hydropower project – and the upgrading of existing facilities – to optimize benefits at the least environmental, social and economic cost;

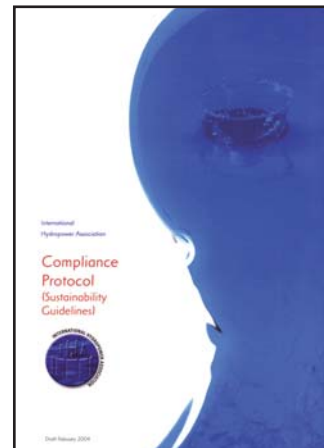
IHA is the global organization advancing hydropower's role in meeting the world's water and energy needs by:

- championing continuous improvement and sustainable practices;
- building consensus through strong partnerships with other stakeholders; and,
- driving initiatives to increase the contribution of renewables.

IHA was formed in 1995 under the auspices of UNESCO. Membership is open to all who are involved in the pursuit of excellence in the field of hydropower and its related subjects. Members comprise individuals, organizations and national committees, and membership currently spans 83 countries.



- require environmental studies to be conducted and sound management plans, including safety programmes, to be applied;
- call for increased cooperation and coordination between the different sectors involved: government, developer/operator and civil society.
- require planners to minimize negative effects and optimize positive outcomes of hydropower projects, with any negative impacts being suitably mitigated or compensated;
- help define sustainable management systems; and,



- recognize that sustainable development is the collective responsibility of government, business and the community.

## THE WAY FORWARD

IHA has drafted a *Compliance Protocol* which permits the objective evaluation of performance according to the *Sustainability Guidelines*. Through the use of the *Compliance Protocol*:

- developers can measure their approach;
- operators can benchmark their performance;
- policy-makers can be assisted in their decision-making;
- investors can prioritize according to international standards; and,
- civil society can be assured that good practice is being applied.

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