

PREFACE

India is endowed with towering mountain ranges, rolling hills, lofty plateaus and extensive plains, which have played their role in shaping its cultural, economic and political history. India is seventh largest country in the world and the second most populous country. The Himalaya in the North crowns it. In the Himalayan region of India, which consists of 13 states, the hydropower potential is available in abundance. In addition to India the Himalayan region covers China, Nepal, Bhutan, Bangladesh, Myanmar, Pakistan & Afghanistan. Most of the opportunities are available in the Himalayan region, where a number of steep gradient perennial streams can be developed to tap this renewable source of energy.

The development of small hydropower around the world is on the increase. Much of the world has huge potential to further develop this resource. Small hydropower offers a wide range of benefits-especially for rural areas and developing countries. The resource is environmentally responsible and has substantial economic advantages. Governments, financiers, and developers are finding new ways to fund and promote small hydropower development. Efforts also being made to improve the exchange of ideas and technology related to small hydropower. Small hydropower stations throughout the world contribute more than 34,000 MW, and is expected to increase to 55,000 MW by the year 2010.

India expect a high growth of over all electricity generation by having installed capacity 212,000 MW from a present 120,000 MW by the year 2012. India's hydropower potential is estimated about 150,000 MW in terms of installed capacity. Only 32000 MW has been harnessed so far. In Himalayas region alone there is a hydro potential of 130,000 MW. Thus there is need to develop this vast hydropower potential which is mainly available in Himalayan region. Recently the Prime Minister of India launched a 50,000 MW hydroelectric initiative programme to add over 50,000 MW by the year 2017.

In Uttaranchal, a hilly state carved out of Uttar Pradesh in the year 2000, there is hydropower potential about 20,000 MW out of which only 1,200 MW has been harnessed and about 4,200 MW is in the different stages of development.

With the concern of climate change, the escalating price of fossil fuel and aging stock of existing assets, there is a great challenge for energy policy.

“Water, Energy, Health, Agriculture and Biodiversity (WEHAB) are the fine key areas in which program is possible with the resources and technologies at our disposal today”(KofiAnnan, UN-Secretary General, 2002).

In India, small hydropower is defined up to capacity of 25 MW also includes the mini-and-micro hydropower projects, which are usually confined strictly to local use. A potential of over 15,000 MW has been identified from small hydropower and Government of India has been according top priority to SHP development as thrust area.

Out of about 600,000 villages, there are still 120,000 villages to be electrified. Only 55% of households have the electricity. There are still over 42,000 villages to be electrified out of 147,000 total villages in the Himalayan Region of India. Small Hydropower offers an indigenous source for meeting the energy need of the area.

Decentralized Generation and Distribution (DGD) in remotely located areas, is cost effective in the Himalayan states and can be maintained by local community itself. Involvement of community in planning, implementation, operation and maintenance of several DGD Projects is creating sense of belongingness and responsibility.

In order to further boost the developing of SHP sector, there is a need to share the views in this field through organizing such summit covering the policy initiatives, sustainability approach and advances made in the Planning, Technologies Selection and Implementation of Small Hydropower projects. To provide forum for exchange of experiences, Alternate Hydro Energy Centre (AHEC), Indian Institute of technology, Roorkee (formerly University of Roorkee) which is completing 25th year of its establishment in association with Government of Uttaranchal, is organizing Himalayan Small Hydropower Summit (HSHS) at Dehradun during October 12-13, 2006.

This proceeding is a compilation of papers accepted for presentation and as such six technical sessions have been formulated covering following themes.

- Overview of SHP Development in Himalayan Region
- Institutional Arrangement and Resources Availability
- Decentralised power generation and distribution
- Grid based generation & Electricity regulations for SHP
- Community Participation & SHP based livelihood activities
- Case Studies

The response for participation in the summit has been overwhelming. We received nominations and papers from various organizations of other countries such as UNIDO (Austria), ADB, Switzerland, Mexico, Germany, Sri Lanka, Norway, Nepal, Bhutan, Bangladesh, Ethiopia in addition to a large number of participants from different key organizations and stakeholders working in the small hydropower sector in India.

We are grateful to all those organizations who have encouraged and helped us in organizing this International Summit.

Technical Committee