

## COURSE OBJECTIVES

The development of small hydropower around the world is on the increase. Small hydro offers a wide range of benefits especially for rural areas and developing countries. Governments, financiers, and developers are finding new ways to fund and promote small hydropower development. Efforts are also being made to improve the exchange of ideas and technology related to small hydropower. Small hydropower stations throughout the world contribute more than 45,000 MW, representing about 5 percent of the installed hydropower capacity worldwide.

In India, small hydropower up to 25 MW capacity also includes the mini-and-micro hydro power 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 priority to SHP development as thrust area.

The participants will be provided an insight to SHP, site selection potential assessment, planning and design of civil works, selection of E&M equipment etc.

## TARGET PARTICIPANTS

The course has been designed for the participants having Engineering/Scientific background and are involved in Small Hydropower Development. The participants may be from government departments, academic institutions, private developers, manufacturers and NGO etc. who are contributing or intend to contribute in Small Hydropower Development.

## COURSE PROGRAMME

The classroom teaching using modern teaching aids, group discussions, site visits etc. will be used to impart training. The course will have lectures, tutorials, exchange of experiences of participants from different countries through country presentations, case studies and software development for SHP project involving latest technology.

## TENTATIVE COURSE TOPICS

The course will cover the following topics:

- Overview of SHP Development.
- Comparative Country policies for small hydropower development
- Small Hydropower and Rural electrification.
- Small hydropower under regulatory regime
- Use of modern techniques such as GPS, RS and GIS for conducting investigations and assessment.
- Community based shp in remote villages
- Regulatory impact on shp and Tariff
- Financing of SHP projects
- Case studies
- Hands on Exposure on Real Time Simulator for SHP Plants
- Electro- Mechanical Equipment/Works
- SHP for Carbon Trading under CDM
- Cost effective New Generating Equipments
- Visit to Project Stations

**Last date of nomination receipt: Dec. 15, 2010**

## NUMBER OF SEATS

There shall be only 15 seats. Accordingly, the participants will be advised to send their nominations at the earliest. The admission will be granted on first cum first basis by given the representation to large number of countries. Women candidates will also be encouraged to apply.

Participants are to be in good health, proficient in English reading, speaking and listening.

## VENUE

The course will be held at Alternate Hydro Energy Center (AHEC), Indian Institute of Technology Roorkee (Uttaranchal), India. Roorkee is about 180 km North of Delhi and has a number of academic and research Institutions. It is connected by road and rail from Delhi. The nearest international airport is in New Delhi. The average statistical temperature is about 15°C during February. A large number of interstate buses ply from Delhi to Roorkee on way to Haridwar and Dehradun. Roorkee is also connected by rail from Delhi and other important towns.

## BOARDING/LODGING & COURSE FEE

All the expenses during the course on accommodation, boarding, field visits and course material will be borne by us directly. The accommodation is arranged at Officers guest house (Continuing Education/Khosla International House) of Indian Institute of technology, Roorkee on twin sharing basis. There is no course fee for attending the course.

## TRAVEL

The nominating organization(s) or the participant(s) shall have to bear all expenses on travel from their home town to Delhi International Airport and back.

The organizer and sponsor would not hold any responsibility for risk of illness, accidents and loss of property incurred by the participants. Participants are strongly advised to insure themselves for such risks.



The travel of participants from Delhi Airport to Roorkee and back of to Delhi airport shall be arranged/met by host institution on the receipt of the confirmed programme in advance.

## COURSE FACULTY

The course faculty will comprise faculty of AHEC and other departments of the IIT, Roorkee, planners, policy makers, equipment manufacturers and engineers with considerable experience in SHP development. The experts from other countries are also expected to deliver the expert lectures.

## THE SPONSOR, MNRE GOVT. OF INDIA

The Ministry of New Renewable energy (MNRE), government of India, the nodal Ministry for the development of Small Hydropower (upto 25 MW) has sponsored the course(s). MNRE offers several incentives to utilities and private developers for the development of Small Hydropower in India.

## AHEC, THE HOST INSTITUTION

Alternate Hydro Energy Center (AHEC) was set up initially at Indian Institute of technology, Roorkee by the Ministry of New Renewable Energy (MNRE), government of India, in the year 1982 to work for power generation through the development of small hydropower in hilly as well as in plain areas. AHEC, an Academic centre of IIT, Roorkee, has been imparting training to the field engineers and technologists regularly. It provides real time simulator based training for operation of SHP Plants

It provides expert services on all aspects of SHP development to the utilities in both govt. and private sector nationally as well as to other developing countries. AHEC has been identified as 'Apex Technical Institution' for the Small Hydropower Development in India. AHEC offers a 4 semester duration master of Technology (M.Tech.) course in "Alternate Hydro Energy Systems" and Ph.D. programmes to national and international candidates.

*For further information and registration, please contact or write to:*

Head,  
**Alternate Hydro energy Centre,  
Indian Institute of Technology Roorkee  
Roorkee-247667 (Uttarakhand), India**  
Phone : +91-1332 274254, 285213, 285836  
Fax : +91-1332 273517, 273560  
E-Mail : ahec@iitr.ernet.in, aheciitr@gmail.com  
Web site: www.iitr.ernet.in

## Registration Form

### INTERNATIONAL TRAINING COURSE ON SMALL HYDROPOWER DEVELOPMENT

(Feb. 01 – 12, 2011)

Affix Photo

Name ..... Mr./Dr./Mrs./Ms.)  
(Write in block letters as in your passport)

Nationality:.....

Position: .....

Company/Organisation.....

Department/Division.....

Mailing Address:.....

Tel (Off.):..... Residence:.....  
(with country and area code) (with country and area code)

Fax:..... E-mail:.....

Duties and Responsibilities:.....

Please describe briefly your professional experience in the course subject area on a separate sheet..

Educational Background:

Degree	Year	Field of Study

Proficiency in English: Speak ..... Understand ..... Read.....

#### PERSONAL:

Passport No.:..... Place of Issue:.....

Date of Issue:..... Date of Expiry:.....

Date of Birth: .....

Date:

Signature

For further information and registration, please contact or write to:

Head,  
Alternate Hydro Energy Centre,  
**Indian Institute of Technology Roorkee**  
Roorkee- 247 667 (Uttarakhand), India  
Phone : +91-1332 274254, 285213  
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## INTERNATIONAL TRAINING COURSE on Small Hydropower Development

(Feb. 01 – 12, 2011)

at Roorkee, INDIA



#### Sponsored by



सत्यमेव जयते

Ministry of New and Renewable Energy (MNRE)  
Government of India, New Delhi

#### Organised by



Alternate Hydro Energy Centre  
Indian Institute of Technology Roorkee  
Roorkee - 247667  
(Uttarakhand) India