

Concept Paper

On-line Training of SAARC Professional on Small, Mini and Micro Hydro Power Generation

Introduction

Energy security is an important agenda for peace and prosperity of the South Asian region. The demand forecast and identification of potential energy sources in long time horizon are very important for securing and maintaining the energy security in the region. Most of the SAARC Countries are blessed with huge hydro power potential. The availability of ample hydro potentials in the region can be harnessed to meet increasing energy needs of the region. Besides, large hydro, there are certain prospects of development of Small, Mini and Micro Hydro Power (SMMHP). Small hydro can be connected to a central grid, to an isolated grid or can be connected to a dedicated power load. Small Hydropower provides the reliable energy supply with minimum adverse environmental impacts. Thus, development of small hydro plants can help in boosting the access of electricity in South Asian Countries.

In order to enhance the expertise of the Member States, SAARC Energy Centre is conducting an on-line training on SMMHP Generation. The training will cover various aspects of policies, technologies, socioeconomic and environmental aspects, planning, design concepts, techno-economic feasibility, project development and operation/maintenance. The training will also focus on issues, challenges and opportunities pertaining to SMMHP. The training will be based on presentations, lectures, training notes, videos, laboratory training and interactive discussions. It shall be attended by professionals from all SAARC Member States.

Training Sessions and learning objectives

This training will help the participants to understand the theoretical knowledge and to develop technical skills on design, environmental screening, financial evaluation, and operation and maintenance of SMMHP plants. After this training, the participants will also be familiar on policy, regulatory support and ownership model for community-based projects.

The training shall be conducted in Five (05) interactive sessions (one on each day). Each session will comprise of two 70 – 80 minutes lectures and discussion by experts followed by rapid questions, online quizzes, and query session for next 20 -30 min (minimum of 3 hours each day). Following are details of training session and learning objective:

Day	Training Session	Learning objectives
1.	Introduction and site selection	• Inform trainees about the need for, value provided by, and opportunities and challenges presented by SMMHP development based on experiences in SAARC and the rest of the world • Convey key considerations for site selection • Train the participants on all major aspects of SMMHP planning, from techno-economic considerations to ownership models
2.	Small Hydropower Planning and Design	• Improve understanding of the trainees on technical, financial, and regulatory challenges that should be considered during the planning phase of SMMHP development • Provide training on all aspects of designing SMMHP plants, including selection and dimensioning of civil, mechanical, and electrical equipment, software used for designing the plants, and learnings from the trainers' own experiences
3	SMMHP Construction Operation and Maintenance	• Provide critical information for safe and reliable construction, maintenance, operations, and control of SMMHP project
4.	SMMHPP Financial Regulatory and Policy considerations	• Train the participants on existing regulations, policies, financing mechanisms, and business models for SMMHP projects in SAARC and the rest of the world. • Provide examples of successful policies and business models that have encouraged SMMHP projects. • Identify potential directions for policy and regulatory changes that could accelerate SMMHP development in SAARC
5.	Online Laboratory Trainings	• Online session shall be undertaken to demonstrate: 1) Real time small hydro power (SHP) simulator for operation and maintenance of SHP plants, and 2) Measurement of performance of SHP stations

Target Audience

The sessions are designed for policy and decision makers, prospective SMMHP plant developers, SMMHP Independent Power Producers, private sector investors, off takers,

academia/researchers and other stakeholders.

Training Dates and Timings

The training will be conducted online from **Monday 13th September till Friday 17th September, 2021**. The detailed training agenda will be shared with the participants one week before the training.

Training Venue

This on-line training shall be broadcasted from the office of SEC, Islamabad. The participants will be provided with the web link to join the training.