

Concept Paper
SAARC Webinar on “Pumped Storage Hydropower: Opportunities and Challenges in SAARC Region”
Thursday, 17 th October 2024 : 1000 – 1200 hrs Pakistan Standard Time (PKT)

Background

Pumped Storage Hydropower (PSH) is a proven technology which is cost effective, efficient, and operationally flexible. This grid-scale storage technology is used extensively to both store and redistribute electricity from periods of excess supply to periods of peak demand, and to provide grid reliability services with its generation and pumping modes. Globally, it provides 160 GW of the approximately 167 GW of energy storage in operation, accounting for over 97 percent of the world’s utility-scale energy storage applications¹.

In SAARC Region, energy storage markets are still nascent yet there is vast potential for its development. With the rapid growth of renewables across SAARC Member States, PSH will have an increasingly important role in integrating Variable Renewable Energy (VRE) and ensuring power system reliability. The energy supply from VRE can't be regulated since they are dependent on the time of the day, seasons, and the vagaries of weather. Hence, there is an ever-increasing demand for energy storage assets. PSH are best suited in the present scenario for addressing this demand².

With reliability, resilience and the push for a low carbon future being the major focus for today’s grid operators, future energy scenarios with increasing VRE and decreasing base load options creates challenges and a need for dependable solutions. PSH brings the added benefit of absorbing off-peak and excess electric generation and is an important asset in integrating renewable energy resources.

Introduction

The challenge will be for utility planners, industry stakeholders, regional market operators, and regulators to put into place policies that ensure the grid maintains reliability during this rapid development. Planning models demonstrate that adding more wind and solar requires greater amounts of storage and operational flexibility to assure grid resilience. The combination of increasing VRE and the retirement of fossil fueled dispatchable capacity makes hydropower and pumped storage the unique proven technology that can provide clean energy, flexibility and storage³.

In this context, SEC is organizing a Knowledge Sharing Webinar on “Pumped Storage Hydropower: Opportunities and Challenges in SAARC Region” on Thursday, 17th October 2024 from 1000 – 1200 hrs

¹ *Prospect of Pumped Storage hydropower in Asia, Asia Clean Energy Forum, International hydropower association, 2023*

² *Guidelines on Pumped Storage Projects, Ministry of Power, Government of India, 2023*

³ *Pumped Storage Report, National hydropower Association, 2021*

Pakistan Standard Time (PKT). The Webinar shall feature presentations, and interactive discussion sessions led by resource person(s) engaged from regional/ international market.

Objectives

The objective of this webinar is to discuss the need for developing PSH technology, and to explore what policy and regulatory changes are needed in the SAARC Region.

Major Aspects to be covered during the Webinar

The Webinar is intended to cover, but not limited to the following aspects:

- Scale of Energy Storage needs;
- Potential for PSH in the SAARC region;
- Policy and Market mechanisms for PSH;
- Revenue Certainty and de-risk Investment for the PSH deployment;
- PSH experience within and outside SAARC region,
- Opportunities and Challenges for PSH;
- Benefits of PSH; and
- Any other(s).

Potential Professional Resource

During the Webinar, the experts/resource persons engaged for the purpose will deliver their presentations and respond to questions by the participants.

Venue of the Webinar

The webinar will be broadcasted from the office of SEC on Thursday, 17th October 2024 from 1000 – 1200 hrs Pakistan Standard Time (PKT).