Annex-VI

Concept Paper
SAARC Webinar on "Importance of Digital Technologies in Effective Management of Power Grid"
Wednesday, 30th October 2024: 1000 – 1200 hrs Pakistan Standard Time (PKT)

Introduction

The rise in global energy demand and transition towards the low carbon economies, has paved way for distributed technologies including Alternative and Renewable Energy Technologies. The increasing penetration of Renewables in Power Grids and deployment of Mini and Micro Grids for decentralized power generation has increased concerns of grid operators on the level of security, efficiency, availability, and durability of energy systems. However, the advent of Digital Technologies such as data logging sensors can facilitate the optimization and security of systems and processes. On the other hand, the introduction of Information and Communication Technologies (ICT) such as Big Data, Internet of Things (IoT) and Artificial Intelligence (AI) techniques allows the development of sustainable and efficient models for the consumption and production of energy. The use of Digital Technologies coupled with ICT provides various benefits to the power sector such as:

- Flexibility in operational processes
- Ability to have more accurate and real time information
- Efficient use of resources and increased productivity
- Monitoring of the entire chain from generation, transmission, distribution, and commercialization in an optimal way
- Possibility to automate processes and increase the operational efficiency of distribution companies
- Adjusting supply and demand in real time, reducing ineffective operations
- Improve the prediction of failures and incidents, resulting in extended life of equipment
- Allow generating useful information for analysis and operational optimization

Nowadays, Digital Technologies along with ICT applications are widely used for managing the power grids. It empowers the grid operators not only to effectively monitor and control the power generation and distribution systems but also making it possible for them to prevent and correct inefficiencies in real time, as well as decision-making based on predictive scientific and mathematical models. In the SAARC region, power generation and distribution companies may find it useful to explore various advancements in Digital Technologies and practical applications of ICT to address the concerns arising due to large scale integration of Variable Renewable Energy sources in Power grids.

In this context, SEC is organizing a Knowledge Sharing Webinar on "Importance of Digital Technologies in Effective Management of Power Grid" on Wednesday, 30th October 2024 from 1000 – 1200 hrs 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 introduce and familiarize professionals from the SAARC Member States with the advance Digital Technologies and the practical application of ICT such as Big Data, AI, and IoT, etc. in Power sector. This webinar shall serve as a knowledge sharing event, especially for those who are working in the public/private electric utilities, and the Regulator/Energy Ministry.

Major Aspects to be covered during the Webinar

The Webinar is intended to mainly cover the following aspects:

- Overview of Digital Technologies
- Applications of the Digital Technologies in Power sector
- Use of ICT i.e. Big data, AI, and IoT, etc.
- Use of Machine Learning to optimize energy supply-demand
- Integration of interconnected Sensors, Machines, and Devices
- Application of IoT and AI within Generation, Transmission and Distribution sectors
- Cyber Security and Risk Management

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 Wednesday, 30th October 2024 from 1000 – 1200 hrs Pakistan Standard Time (PKT).