

Concept Paper		
Webinar on “Techniques to Forecast Long-term Demand of Electricity for SAARC Member States”		
Webinar	PRG-219/2021/PETREN	SEC

Background:

A power system is built to supply its customers economically and reliably realizing their requirements. With the ever-increasing demand of electricity, new generation sources, transmission and distribution lines are added to a power system. Long-term power system planning is a prerequisite to optimize the investment in the power sector as well as ensure efficient utilization of energy resources¹. Demand forecasts for the long-term provide a roadmap for eight to fifteen years ahead and play an important role in economic expansion of the power system to meet the future demand reliably while maintaining power quality².

In the SAARC region, the size of the power system varies significantly from one country to another with differences in generation resources, energy usage patterns, technologies available and degree of power trade³. As power systems are dynamic and continue to evolve, it is critical that the system planning criteria is regularly updated and global best practices are adopted to optimally utilize the available resources. As cross border electricity trade shifts from bi-lateral to tri-lateral arrangements in the SAARC region, coordinated system planning can help all Member States to use the full potential of their energy sources, rapidly increase the integration of renewable energy and enhance energy security⁴.

Introduction:

SAARC Energy Centre (SEC) is organizing a webinar on “Techniques to Forecast Long-term Demand of Electricity for SAARC Member States”. This webinar will be a one-day activity and will

¹ Ghods L, Kalantar M., “Different Methods of Long-Term Electric Load Demand Forecasting a Comprehensive Review” in IJEEE Vol. 7 Issue 4 page: 249-259, 2011.

² Dang Khoa T. Q. and Oanh P. T., “Application of Elman and neural wavelet network to long-term load forecasting”, in ISEE Journal Track 3 Sec. B No. 20 page: 1-6, 2005.

³ CRISIL, “SAARC Energy Outlook 2030”, SAARC Energy Centre, 2018, <https://www.saarcenergy.org/wp-content/uploads/2019/05/SAARC-Energy-Outlook-2030-Final-Report-Draft.pdf>.

⁴ Rajiv Ratna Panda, “Cross Border Electricity Trade in South Asia: Transitioning from Bilateral to Trilateral Trade”, in Asia Clean Energy Forum, June 2020, https://sari-energy.org/wp-content/uploads/2020/06/CBET-in-South-Asia-Transitioning-from-bilateral-to-trilateral-multilateral-trade_RajivRatnaPanda-SA-Case-Study_ACEF-2020.pdf

consist of presentations from various experts of the field. The experts will delve into the importance of power system planning, various models and methods used for long term load forecasting, ways to minimize the inherent inaccuracies in the forecasting methods and impacts of forecasting on power system expansion. The webinar will share the effects of regional electricity trade and renewable energy integration on power system planning criteria. The discussion will also cover the correct approach to adopt and apply latest forecasting methods and the recommended frequency to update planning criteria.

Objectives:

The objective of the webinar is to share information on the application of the latest and the best practices currently utilized for long term electrical load forecasting. The motive is to enable the power system planners, working in the SAARC region, to make a learned decision on the choice of forecasting method best suited to their power system planning constraints.

Major Aspects /Topics to be covered during the Webinar:

The following aspects shall be covered during the webinar:

1. Importance of long-term forecasting
2. Mathematical models and methods followed globally for load forecasting
3. Limitations of long-term forecasting methods and ways to minimize the inherent inaccuracies
4. Impact of long-term forecasting on development of generation, transmission and distribution system facilities
5. Knowledge sharing and interactive discussions

Potential Professional Resource:

The experts/speakers, within and outside SAARC region, specializing in forecasting methods and their application on power system planning will be engaged during the webinar. They shall deliver their presentations during the webinar and respond to questions by the participants.

Venue of the Workshop:

The Webinar shall be broadcasted from the office of SAARC Energy Centre on Thursday February 18, 2021.