Serbia: Demand forecast in TSO company EMS

Categories : News Serbia Energy

Date : July 4, 2016

Development of consumption forecast within the procedure of short-term operation planning in the Public Enterprise "Elektromreza Srbije" (EMS), which, as a transmission system operator is obliged to function in accordance with ENTSO-E standards (European Network of Transmission System Operators for Electricity), is the subject of paper made by a group of authors from EMS. Investigation of Marija Djordjevic, Juliana Vicovac, Srdjan Mladenovic and Aleksandar Kurcubic is presented at the 32nd conference CIGRE Serbia, organized by the Serbian National Committee of CIGRE, held on Zlatibor in May 2015.

Transmission system management becomes more complex with increased volume of cross-border electricity exchange. Therefore, it is predicted that transmission system operators provide consumption forecasts in its control area, in order to guarantee security of supply and, as a consequence, provide the best conditions for the electricity market integration. Forecast of uniform consumption is essential in the open electricity market, where the balance responsible party is not responsible for the forecasts and consideration of country's overall consumption.

The EMS uses several software tools that creates high-quality and accurate demand forecast which allows more functional transmission system management, better reserve management, and a better assessment of dispatchers when taking emergency assistance. The paper presents the tools used for consumption forecast, as well as applications within the EMS / SCADA system. Provides an overview of the results, the mean percentage error, standard deviation, peak hour error, which is achieved in the consumption forecast as an important segment of short-term operation planning system.

Forecast of the system for a period of seven days on hourly level, shall be based on the input data and forecasted values of meteorological parameters for the period of time for which, available historical forecast consumption values and achieved meteorological parameters for the previous time interval is made.

The authors conclude that the currently used software provides satisfactory accuracy. EMS will continue to improve demand forecast, which also becomes more significant from aspect of renewable energy sources (solar and wind), whose influence on the shape of the consumption diagram will be high. In this sense, cooperation with distributions is expected, in order to cover the impact of part of consumption that is supplied to the distribution voltage level.

Another important element in the accuracy of demand forecasts is its impact on the forecast of losses in transmission system, which become more significant when it is known that in the near future energy for losses cover will be procured on the open market, transmits Serbia-energy.eu