

Electricity Demand Modeling and Forecasting in Singapore

Authors : Xian Li, Qing-Guo Wang, Jiangshuai Huang, Jidong Liu, Ming Yu, Tan Kok Poh

Abstract : In power industry, accurate electricity demand forecasting for a certain leading time is important for system operation and control, etc. In this paper, we investigate the modeling and forecasting of Singapore's electricity demand. Several standard models, such as HWT exponential smoothing model, the ARMA model and the ANNs model have been proposed based on historical demand data. We applied them to Singapore electricity market and proposed three refinements based on simulation to improve the modeling accuracy. Compared with existing models, our refined model can produce better forecasting accuracy. It is demonstrated in the simulation that by adding forecasting error into the forecasting equation, the modeling accuracy could be improved greatly.

Keywords : power industry, electricity demand, modeling, forecasting

Conference Title : ICECECE 2014 : International Conference on Electrical, Computer, Electronics and Communication Engineering

Conference Location : Paris, France

Conference Dates : September 22-23, 2014