

Letter to Editor

Peak load estimation studies in several Countries

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As an editorial board member of Engineering Press Journals, as well as being part of the faculty in the University of Bahrain, I have become well versed in the several aspects of the engineering field. Through the period of my research studies in the electric power system field, I found that one of the most important aspects, calling for further research is the peak load estimation for future needs of a country.

As it is well known; the load forecast helps an electric utility in making important decisions for the future. Load forecast can be divided into three categories. These categories are the short-term forecasts, the medium-term forecasts, and the long-term forecasts. Most load forecast methods use statistical techniques or artificial intelligence algorithms. The load demand for electric power typically depends on several conditions, such as gross domestic product (GDP) and the population. These factors help with regards to estimating the maximum peak load for any country on the long-term.

Therefore, it is found that the load estimation is an appropriate and important study especially for the recent research in the electric power systems. Based on literature reviews it is established that the load estimation nowadays is suitable to make scientific contribution to the engineering article in the electric power field. The load estimation helped raising the awareness of the countries and will guide them with regard to their future needs and provides them the opportunity for future planning and development.

Koo et al¹ in their study performed a short-term electric load forecasting using three methods and compared them. These methods are the artificial neural networks, simple exponential smoothing and group method of data handling before making a forecasting model.

Qamber² in his study concentrated on the peak load in the Kingdom of Bahrain for the period from the year 2009 to the year 2012. Three scenarios are carried out and their models obtained. The curve fitting technique was used to estimate the peak load.

Qamber et al³ in their study concentrated on the modeling of the peak load, population and GDP versus years obtained. Three models are found using Neuro-Fuzzy. These three models are exponential, linear modeling and Neuro-Fuzzy. The most accurate method found is the Neuro-Fuzzy. The linear modeling is the second most accurate out of the three.

Moral-Carcedo and Perez-García⁴ in their article proposed a new method of forecasting, which helps in improving the approaches developed previously, they were able to combine the long- and short-term features. The developed method is applied to forecast electricity load for Spain. The authors' proposed procedure is flexible enough to be applied to different scenarios based on alternative assumptions regarding both long-term and short-term. The model has been tested with historical data of the explanatory variables for Spain.

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