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**Electricity Load Forecasting using Artificial
Neural Networks**

BY

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Abstract

Electricity load forecasting has become increasingly important for the power industry. To generate “what is reasonably required” one needs forecast the future electricity demands. However, the accurate load prediction remains a challenging task due to several issues such as the nonlinear character of the time series or the seasonal patterns it exhibits. The objective of the study is to use Artificial Neural Network to solve the problem for Kenya’s Electrical Power sector. The tool used in this study attempts to address the challenge of nonlinearity of the load function.

In this project ‘‘day ahead short term load forecast’’ is studied using sample data. Raw data is collected cleaned and loaded into the proposed model to forecast the electricity needs for the next day. The test results showed that the hour-by-hour approach is more suitable and efficient for a day ahead load forecasting. The work suggests that incremental training approach of a neural network model should be implemented for on-line testing application to acquire a universal final view on its applicability.

Conclusion is then drawn based on the data collected to ascertain whether the proposed model addresses the issue of nonlinearity in the load function. Also discussed under this project are other popular techniques that have been used to address the short term load forecasting problem but are only analyzed by means of explanatory methods. The study then suggests future research directions in the area of electricity load forecasting.