



Forecasting hourly Electricity demand in Egypt

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Abstract

Forecasting electricity demand is critical concerning future technical improvements. A notable feature of the electricity demand time series is the presence of both intraday and intraweek seasonal cycles. This study investigates using double seasonal Holt-Winters exponential smoothing method for forecasting hourly electricity demand in Egypt. A one year of hourly electricity demand measured in Megawatt from 7 January 2010 to 31 December 2010 is used. The mean absolute percentage error is used to compare forecasting accuracy between the double seasonal Holt-Winters method and the traditional Holt-Winters that considers only single seasonality pattern. The forecasts produced by the double seasonal Holt-Winters method outperform those obtained from single seasonal Holt-Winters methods.

Keywords: multiple seasonality pattern; double seasonal exponential smoothing; mean absolute percentage error; Egyptian electricity demand.