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Forecasting Issues in Energy Markets within a Reg-ARIMA Framework

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Abstract : Electricity markets throughout the world have undergone substantial changes. Accurate, reliable, clear and comprehensible modeling and forecasting of different variables (loads and prices in the first instance) have achieved increasing importance. In this paper, we describe the actual state of the art focusing on reg-SARMA methods, which have proven to be flexible enough to accommodate the electricity price/load behavior satisfactory. More specifically, we will discuss: 1) The dichotomy between point and interval forecasts; 2) The difficult choice between stochastic (e.g. climatic variation) and non-deterministic predictors (e.g. calendar variables); 3) The confrontation between modelling a single aggregate time series or creating separated and potentially different models of sub-series. The noteworthy point that we would like to make it emerge is that prices and loads require different approaches that appear irreconcilable even though must be made reconcilable for the interests and activities of energy companies.

Keywords : interval forecasts, time series, electricity prices, reg-SARIMA methods
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