

# ELECTRICITY PRICE FORECAST: A MULTIVARIATE MODEL FOR PREDICTING MARKET OFFERS

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ABSTRACT. Electricity price forecasting has been a booming field over the years, with many methods and techniques being applied with different degrees of success.

At the corporate level, electricity price forecasts have become a fundamental input to energy companies' decision-making mechanisms. Electric utilities are highly vulnerable to economic crisis, since they generally cannot pass their excess costs on the wholesale market to the retail consumers and, since the price depends on variables like weather (temperature, wind speed, precipitation, etc.) and the intensity of business and everyday activities (on-peak vs. off-peak hours, weekdays vs. weekends, holidays and near-holidays, etc.) it shows specific dynamics not observed in any other market, exhibiting seasonality at the daily, weekly and annual levels, and abrupt, short-lived and generally unanticipated price spikes. These extreme price volatility make price forecasts to become of particular interest to power portfolio managers.

Most methods forecast the electricity price itself; this document gives a new perspective to the field by trying to forecast the dynamics behind the electricity price: the market curves that originate from the day-ahead auction. Given the complexity of the data involved which include many block bids/offers per hour, it proposes a technique for market curve modeling and forecasting that incorporates multiple seasonal effects and known market variables.

This document shows the importance of using market offers in electricity price forecasting by comparing its performance with other models.

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