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Master Thesis

Marginal Production Costs of Electricity Generating Plants

Background

Prices on electricity markets are determined by a (largely) inelastic demand and a supply side consisting of production capacities from different technologies. Consequently, using standard assumptions, the price on electricity markets should equal the marginal production cost of the most expensive plant that is required to fulfill the inelastic demand. Marginal costs of production in the electricity sector depend on a range of factors ranging from input costs to operational costs determined by the inter-temporal production schedule of power plants.

Research Questions

Aim of this work is to elicit marginal cost/bids from unit generation data in combination with spot prices on the EPEX market. The main difficulty will be to disentangle the static part of costs determined by fuel prices from the dynamic effects and possible markups due to market power. Furthermore, the thesis includes a comparison of results obtained with traditional techniques of marginal cost derivation, e.g., static merit order approach to the results of the model build in the thesis.

Main work packages are the collection of data, the estimation of statistical models to explain prices, and analyzing the model results. Applicants have a proficiency with working on large data sets and have already had some exposure to a high level statistical or mathematical programming language (R, MATLAB, ...).

Qualified applicants are invited to send their electronic application to

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