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Optimal offering strategies for generation companies operating in electricity spot markets

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Abstract— An unprecedented process of reforms has shaken the power industry during the last two decades. In order to sell the energy produced by their plants, many generation companies are now forced to prepare and submit daily offers to an electricity market under uncertainty about the offers submitted by their rivals. In this paper we describe a methodology to prepare optimal offers for a generation company operating in a day-ahead market organized as a series of twenty-four hourly uniform-price multiunit double auctions. We explicitly consider the ability of the company to affect the price of electricity as well as the company’s uncertainty about rivals’ behavior.

Index Terms— Electricity competition, market models, offering strategies, power generation scheduling

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