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A cobweb bidding model for competitive electricity markets

J. Contreras Sanz; O. Candiles Jiménez; J.I. Fuente León; T. Gómez San Román

Abstract-

The new competitive framework that has been established in several electricity markets all over the world has changed the way that electric companies attain benefits. Under this new scenario, generation companies need to develop bidding models not only for the sake of achieving a feasible dispatch of their units, but also for maximizing their benefits. This paper presents a new bidding strategies model which considers the global policy of a company, but also specifies the bid of each generating unit. The proposed model produces a maximum price bid and an optimal bidding quantity by means of an iterative procedure using the generating company\'s residual demand curve. It is based on an economic principle known as the cobweb theorem, frequently used to study stability in trading markets. A realistic case study from the Spanish daily electric market is presented to illustrate the methodology.

Index Terms- Bidding strategies, cobweb theorem, electricity markets, Nash–Cournot equilibrium, residual demand

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