

电力市场

基于序贯博弈模型的发电商竞价策略分析

李清清 周建中 莫莉 张勇传

华中科技大学 水电与数字化工程学院, 湖北省 武汉市 430074

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摘要

针对电力市场中水火电厂的竞价过程, 利用Stackelberg序贯博弈模型对完全信息下各电厂的异步决策过程进行了建模分析, 并求解出各电厂的最优发电策略。通过将完全信息下的Stackelberg博弈模型的竞价结果与不完全信息下Stackelberg博弈模型和完全信息下Cournot博弈模型的竞价结果进行对比, 分析了竞价信息和优先政策对竞价过程和电厂决策的影响, 并得出在电力系统处于不同供需状态时, 应引导形成不同类型竞价市场的结论。算例验证了结论的正确性。

关键词 [序贯博弈](#) [Stackelberg模型](#) [不完全信息](#) [优先政策](#) [电力市场](#)

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Analysis on Generators' Bidding Strategy Based on Sequential Game Model

LI Qing-qing ZHOU Jian-zhong MO Li ZHANG Yong-chuan

College of Hydroelectric and Digitalization Engineering, Huazhong University of Science and Technology, Wuhan 430074, Hubei Province, China

Abstract

According to the bidding process between hydropower stations and fossil-fuel generating plants in electricity market and by use of Stackelberg sequential game model, the modeling and analysis on asynchronous decision-making process among power generation enterprises under complete information condition are conducted, and the optimal power generation strategy of each power generation enterprise is solved. Comparing the bidding results by Stackelberg game model under complete information with that by Stackelberg game model under incomplete information and Cournot game model under complete information, the impacts of bidding information and preferential policy on bidding process and decision-making of each power generation enterprise are analyzed, and then a conclusion is obtained that different types of bidding markets should be formed under the guidance while power system is in different power supply and demand situations. The correctness of this conclusion is validated by case study results.

Key words [Sequential Game](#) [Stackelberg Model](#) [Incomplete information](#) [preferential policy](#) [electricity market](#)

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通讯作者 李清清 kaiser_lee@163.com

作者个人主页 李清清 周建中 莫莉 张勇传

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