

An Electric Power Trading System: Network-based Framework and Simulator with Learning Capabilities

Toshiyuki Sueyoshi^{1, 2, *} and Gopalakrishna R. Tadiparthi³

¹Department of Management, New Mexico Institute of Mining and Technology, Socorro, NM 87801, USA

²Department of Industrial and Information Management, National Cheng Kung University, Tainan, Taiwan

³Department of Computer Science, New Mexico Institute of Mining and Technology, Socorro, NM 87801, USA

Received August 2005; Revised June 2006; Accepted August 2006

Abstract—Software has been developed for studying and understanding a price change of the US wholesale power market (Sueyoshi and Tadiparthi, 2005). The software can be used as an effective decision making tool by traders for simulating and modeling of the power market. It can be also considered as a worthy effort towards creating a framework for assessing new trading strategies in a competitive electricity trading environment. This paper covers the broad areas of simulation, trading strategies and machine learning as well as the procedure to use the software. An effort has been made to find the best strategic technique for traders in supply and demand sides.

Keywords—Electricity markets, Agent-based models, Simulation software, Machine learning

* Corresponding author's email: toshi@nmt.edu