

Multi-Objective Optimal Bidding Approach for both Small & Large Customers in Competitive power Market

Publisher: IEEE [Cite This](#) PDF

Manisha Saini ; Ajay Bhardwaj ; Sarfaraz Nawaz **All Authors** ...

1

Cites in Paper

54

Full Text Views

Alerts

Manage Content Alerts

Add to Citation Alerts

Abstract

Document Sections

I. Introduction

II. LITERATURE REVIEW

III. PROBLEM FORMULATION

IV. SIMULATION AND RESULTS

V. CONCLUSION

Authors

Figures

References

Citations

Keywords

Metrics

More Like This

Downl PDF

Abstract:

In the present scenario of the electricity energy market, power generation firms seek to maximize revenue by optimizing the bid in the electricity market. In a competitiv... [View more](#)

▼ Metadata

Abstract:

In the present scenario of the electricity energy market, power generation firms seek to maximize revenue by optimizing the bid in the electricity market. In a competitive market, Strategic bidding allows each participant to improve his individual profit; however, this has a detrimental effect on public benefit. This study presents a mechanism for developing a strategic bid for electricity producers and users in a pool co-style energy market. The system is dispatched to maximize social welfare, with each supplier/large consumer bidding a linear supply/demand function. Price takers require a proper bidding structure to identify the best bidding tactics. As a result, the model must be thought of as a two-level optimization issue. Price takers submit strategic bids to the Independent System Operator (ISO) at the lower level, while the ISO Market Clearing Price (MCP) is used to maximize social welfare at the upper level in a day-ahead power market to maximize social welfare at the upper level using a pay-as-bid mechanism in a sealed auction in the competitive power market. On the IEEE-30 bus system, the proposed method's efficiency was tested. Four different evolutionary algorithms such as NSGA-II, NSGA-III, MOGWO, and MOPSO were used to address the problem from two separate perspectives for solving proposed multi-objective problems. The result section presents a comparative analysis of the total profit and market clearing price, showing that the NSGA-III algorithm offers superior results than other methods.

Published in: 2023 IEEE 8th International Conference for Convergence in Technology (I2CT)

Date of Conference: 07-09 April 2023

DOI: 10.1109/I2CT57861.2023.10126351

Date Added to IEEE Xplore: 23 May 2023

Publisher: IEEE

► ISBN Information:

Conference Location: Lonavla, India



 Contents**I. Introduction**

Deregulation of the electricity system ushered in a rebellion that forever altered the appearance of the Electricity market. The entry of new competitors into the market resulted in a significant improvement in the reliability of the system. Consumers had the option of prefer their own operators; something will not do in a controlled market, thanks to the competition that was brought about by regulation. As a result of the market's incorporation of participants, they were able to use creative approaches to get them more cost-effective and consistent, with the goal of increasing profits. Several bodies, such as the independent system operator (ISO) and the power exchange, were created to ensure the efficient working of the power souk. The loosening of the power souk, open network access, and deregulated energy souks, among other things, began in the 1980s in the United Kingdom and a few other nations [3].

Authors	▼
Figures	▼
References	▼
Citations	▼
Keywords	▼
Metrics	▼

More Like This

Evolutionary computation techniques for power market equilibrium determination
2006 IEEE Power Engineering Society General Meeting
Published: 2006

FPGA Implementation of Pseudo Random Number Generators for Monte Carlo Methods in Quantitative Finance
2008 International Conference on Reconfigurable Computing and FPGAs
Published: 2008

[Show More](#)

IEEE Personal Account

CHANGE
USERNAME/PASSWORD

Purchase Details

PAYMENT OPTIONS
VIEW PURCHASED
DOCUMENTS

Profile Information

COMMUNICATIONS
PREFERENCES
PROFESSION AND
EDUCATION
TECHNICAL INTERESTS

Need Help?

US & CANADA: +1 800
678 4333
WORLDWIDE: +1 732
981 0060
CONTACT & SUPPORT

Follow



About IEEE *Xplore* | Contact Us | Help | Accessibility | Terms of Use | Nondiscrimination Policy | IEEE Ethics Reporting | Sitemap | IEEE Privacy Policy

A public charity, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2024 IEEE - All rights reserved, including rights for text and data mining and training of artificial intelligence and similar technologies.

IEEE Account

- » Change Username/Password
- » Update Address

Purchase Details

- » Payment Options
- » Order History
- » View Purchased Documents

Profile Information

- » Communications Preferences
- » Profession and Education
- » Technical Interests

Need Help?

- » US & Canada: +1 800 678 4333
- » Worldwide: +1 732 981 0060

[» Contact & Support](#)

[About IEEE Xplore](#) | [Contact Us](#) | [Help](#) | [Accessibility](#) | [Terms of Use](#) | [Nondiscrimination Policy](#) | [Sitemap](#) | [Privacy & Opting Out of Cookies](#)

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.

© Copyright 2024 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.