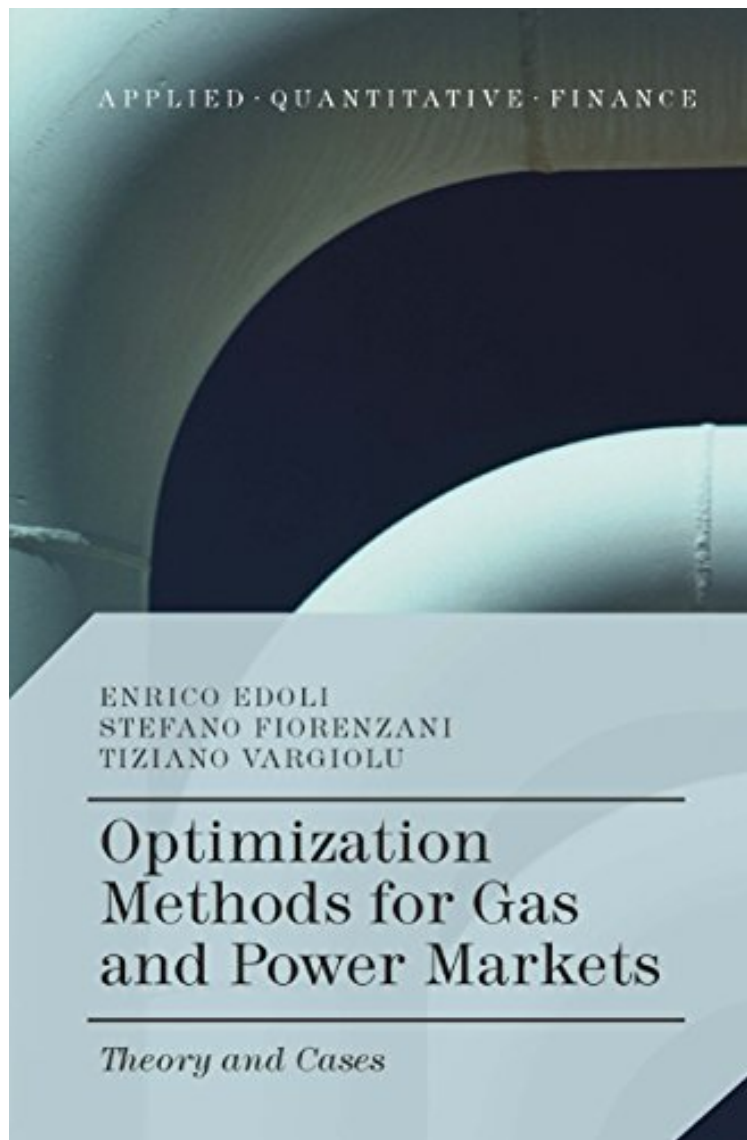


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## Optimization Methods for Gas and Power Markets: Theory and Cases (Applied Quantitative Finance)

*Enrico Edoli, Stefano Fiorenzani, Tiziano Vargiolu*  
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**Enrico Edoli, Stefano Fiorenzani, Tiziano Vargiolu : Optimization Methods for Gas and Power Markets: Theory and Cases (Applied Quantitative Finance)** before purchasing it in order to gage whether or not it would be worth my time, and all praised Optimization Methods for Gas and Power Markets: Theory and Cases (Applied Quantitative Finance):

As power and gas markets are becoming more and more mature and globally competitive, the importance of reaching maximum potential economic efficiency is fundamental in all the sectors of the value chain, from investments selection to asset optimization, trading and sales. Optimization techniques can be used in many different fields of the energy industry, in order to reduce production and financial costs, increase sales revenues and mitigate all kinds of risks potentially affecting the economic margin. For this reason the industry has now focused its attention on the general concept of optimization and to the different techniques (mainly mathematical techniques) to reach it. Optimization Methods for Gas and Power Markets presents both theoretical elements and practical examples for solving energy optimization issues in gas and power markets. Starting with the theoretical framework and the basic business and economics of power and gas optimization, it quickly moves on to review the mathematical optimization problems inherent to the industry, and their solutions; all supported with examples from the energy sector. Coverage ranges from very long-term (and capital intensive) optimization problems such as investment valuation/diversification to asset (gas and power) optimization/hedging problems, and pure trading decisions. This book first presents the readers with various examples of optimization problems arising in power and gas markets, then deals with general optimization problems and describes the mathematical tools useful for their solution. The remainder of the book is dedicated to presenting a number of key business cases which apply the proposed techniques to concrete market problems. Topics include static asset optimization, real option evaluation, dynamic optimization of structured products like swing, virtual storage or virtual power plant contracts and optimal trading in intra-day power markets. As the book progresses, so too does the level of mathematical complexity, providing readers with an appreciation of the growing sophistication of even common problems in current market practice. Optimization Methods for Gas and Power Markets provides a valuable quantitative guide to the technicalities of optimization methodologies in gas and power markets; it is essential reading for practitioners in the energy industry and financial sector who work in trading, quantitative analysis and energy risk modeling.

'Energy markets are extremely competitive markets. Optimization of business decisions is fundamental for performance maximization. This book represents an excellent synthesis of optimization theory and practice applied to a wide and significant range of cutting-edge business problems characterizing power and natural gas markets.' - Domenico De Luca, CEO, Axpo Trading and Member of Executive Board Axpo Group 'Optimization methods play an important role when making decisions and managing risk in today's liberalized energy markets. When planning a power plant or entering a structured gas contract, stochastic control is the key mathematical tool to assess the inherent risk. The authors of this book present an excellent account of the problems and methods for optimization in energy and power markets. The scope ranges from a rigorous theoretical analysis of the control problems, through numerical methods and to in-depth discussions of relevant practical case studies. This book is unique in providing a solid mathematical analysis of various optimization problems, yet never losing the market practice out of sight. It will be an invaluable reference for both academics and practitioners in power and gas markets.' - Fred Espen Benth, Professor of Mathematical Finance at the University of Oslo, Department of Mathematics and Deputy Manager

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