The Economics of Electricity Markets
Darryl R. Biggar, Mohammad Reza Hesamzadeh

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DESCRIPTION

Bridges the knowledge gap between engineering and economics in a complex and evolving deregulated electricity industry, enabling readers to understand, operate, plan and design a modern power system

With an accessible and progressive style written in straightforward language, this book covers everything an engineer or economist needs to know to understand, operate within, plan and design an effective liberalized electricity industry, thus serving as both a useful teaching text and a valuable reference. The book focuses on principles and theory which are independent of any one market design. It outlines where the theory is not implemented in practice, perhaps due to other overriding concerns. The book covers the basic modelling of electricity markets, including the impact of uncertainty (an integral part of generation investment decisions and transmission cost-benefit analysis). It draws out the parallels to the Nordpool market (an important point of reference for Europe). Written from the perspective of the policy-maker, the first part provides the introductory background knowledge required. This includes an understanding of basic economics concepts such as supply and demand, monopoly, market power and marginal cost. The second part of the book asks how a set of generation, load, and transmission resources should be efficiently operated, and the third part focuses on the generation investment decision. Part 4 addresses the question of the management of risk and Part 5 discusses the question of market power. Any power system must be operated at all times in a manner which can accommodate the next potential contingency. This demands responses by generators and loads on a very short timeframe. Part 6 of the book addresses the question of dispatch in the very short run, introducing the distinction between preventive and corrective actions and why preventive actions are sometimes required. The seventh part deals with pricing issues that arise under a regionally-priced market, such as the Australian NEM. This section introduces the notion of regions and interconnectors and how to formulate constraints for the correct
pricing outcomes (the issue of "constraint orientation"). Part 8 addresses the fundamental and difficult issue of efficient transmission investment, and finally Part 9 covers issues that arise in the retail market.

- Bridges the gap between engineering and economics in electricity, covering both the economics and engineering knowledge needed to accurately understand, plan and develop the electricity market

- Comprehensive coverage of all the key topics in the economics of electricity markets

- Covers the latest research and policy issues as well as description of the fundamental concepts and principles that can be applied across all markets globally

- Numerous worked examples and end-of-chapter problems

- Companion website holding solutions to problems set out in the book, also the relevant simulation (GAMS) codes

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比利·比格

Dr Biggar 是澳大利亚领先的批发电力市场及公用事业监管经济方面的专家。自 2002 年以来，他一直为澳大利亚能源监管机构和澳大利亚竞争与消费者委员会提供经济咨询。他还为其他政府机构提供咨询，包括澳大利亚能源市场运营商、澳大利亚能源市场委员会和新西兰电力管理局。他发表了许多有关电力市场和公用事业监管的学术期刊文章，并定期为政府机构和行业提供培训课程。他对批发电力市场中的市场力量评估，以及与批发市场设计相关的问题特别感兴趣。

哈萨姆扎德

Dr Hesamzadeh 是瑞典 KTH 罗雅尔技术学院电气工程学院电力系统分部的助理教授。他是电力市场中市场力量建模的世界领导者，特别是在传输规划的背景下。他的特殊兴趣领域包括电力系统规划和设计、批发电力市场经济学和数学建模与计算。哈萨姆扎德目前正在进行他的博士后学位，专注于电力市场的经济学。
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