

A Somewhat Powerful Overview

Reviewed by
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POWER SYSTEM ECONOMICS: Designing Markets for Electricity

by Steven Stoft

496 pp., Piscataway, N.Y.: IEEE Press (with Wiley-Interscience), 2002

IN HIS NEW BOOK, STEVEN Stoft presents a textbook for those concerned with power system economics. The apparent target readers are those who are involved with market implementation but are not proficient in economics. Thus, while the book is predominantly theoretical, the exposition is kept simple.

Stoft breaks the treatment into six sections: power market fundamentals, reliability, price spikes and investment, market architecture, market power, and locational pricing. The sections differ greatly in focus and success; for example, the section on market fundamentals tries to survey electricity market basics in about 100 pages. The treatments range from excellent to superficial; on balance, he provides a remarkable survey of the key points.

Pricing The first chapter opens with an inadequate discussion of the possibilities of competition and of the defects of regulation, but it concludes with an excellent overview of the virtues of real-time pricing. Unfortunately, throughout the rest of the book, the rigidity of real-time retail prices is tacitly treated as an immutable barrier to efficiency. The familiar issues of the desirability and feasibility of greater flexibility are ignored.

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The next three chapters nicely summarize basic characteristics of power systems. Then Stoft nicely treats marginal costs, market structure and architecture, and pricing rules.

The treatments of reliability, market architecture, and locational prices are even more successful. The first of those gets off to a bad start by asserting, in effect, that the rigidity of retail prices requires “regulation” to ensure reliability. That is only asserted and seems inconsistent with the economics of maintaining a rigid price. Stoft then does a fine job of examining pricing policies and their implications for long-run capacity investment.

The market architecture section largely deals well with the nature of day-ahead and real-time markets. The locational pricing section neatly sketches the physics and economics of efficient transmission system operation. The concepts of optimal pricing are well delineated.

Treating monopoly The market power section is the shortest and the weakest. It modestly modifies a general structural industrial organizational approach to treat electric power. About half of the discussion is devoted to exposition of the concept of monopoly and measures of its extent. Then Stoft breathlessly deals with existing and potential ways to increase power market competition, the defects of the measures of competition that he discussed, and the problems of monitoring.

The basic problem is that he suggests but never explicitly states the controversies associated with treating monopoly. Stoft shifts from market power to monopoly power without recognizing that many observers argue that most firms fit the technical definition of market power, but only a “large” degree of power constitutes undesirable monopoly. Stoft ignores that distinction (and the problem of determining when the power is sufficient to merit reduction). The use and critique of the standard measures ignore the under-

lying problems of identifying and measuring a monopoly. Most fundamentally, the discussion barely notes that extensive competition in generation was the rationale for restructuring. The premise was that this competition eliminated monopoly power.

Too much summary Throughout the book, the allocation of space is problematic. Stoft is devoted to the point of fanaticism to summarization. A prologue summarizes the book and each chapter has first an overall summary and then a *précis* of each section. That occurs although the chapters are themselves summary. The actual exposition is invariably terse and, in the worst cases, nonexistent.

For example, he claims without explanation, “If the congestion rent is paid to the owners of transmission lines, too few lines will be built” (p. 25). How restricting income produces insufficient income is unclear; the most plausible interpretation is that “if” was erroneously substituted for “unless.”

Conclusion The book is a valuable addition to the extensive literature on public utility economics. The terseness employed may be the book’s greatest drawback in attaining its goals.

The danger is that much of the intended audience will lack sufficient comfort with the underlying economics to grasp his arguments. The problems will be greater for those with a more casual interest. Economists will grasp his arguments, but unless they already are electricity specialists, they will not be aware of the controversies being treated. Since they are not Stoft’s intended audience, others unfamiliar with the area will be unfamiliar with both the theory and the practical problems that Stoft treats.

The book’s greatest weakness is its treatment of the issue of the proper role of government in electricity market design. His title suggests that he ignores Hayek’s justly celebrated warnings about the limits of knowledge. R

