



BOOK REVIEW

International Energy Markets: Understanding Pricing, Policies, and Profits, by CAROL A. DAHL. (PennWell, 2004), 587 pages, ISBN 0-87814-799-3.

Professor Dahl has provided the most significant general energy-economics textbook since Griffen and Steele (1986). It is aimed at providing economics students with an introduction to both the character of international energy systems and the basic analytic tools that economists use to understand them.

Dahl's structure in serving these twin tasks provides chapters that treat specific fuel markets or transformations in significant detail and then includes development of analytic tools where deemed appropriate. Introductory chapters on energy (1) and energy history (2) include an exposition of forecasting equations (2). A coal chapter (3) also introduces supply-demand analysis, elasticities, and excise-tax incidence. In a chapter on supply and cost curves (14), resources across energies are discussed and levelized costs are derived. Electricity is addressed with two chapters: one on natural monopoly and rate-of-return regulation, with a section on peak-load pricing (4); and one on models of deregulation and privatization, with a nice set of case studies (5). Oil is treated in three chapters: the global crude-oil market and OPEC, with a cartel analysis (6); resource extraction, intertemporal pricing, and resource taxation (12); refining and transportation with a simple refinery linear program (14). Natural gas gets three chapters: an excellent transactions-cost-based analysis of the evolution of the US industry and commercial structure (7), the Asian LNG market with a monopsony analysis (10), and a discussion of the Western European natural-gas market with a game-theoretic oligopoly analysis (11). Environmental issues are addressed in two chapters: one on environment and pollution with an analysis of optimal pollution (8); and a chapter on climate developing the public-goods analysis and providing a brief economic analysis of technical-efficiency measures (9). Chapter 15 describes energy futures and options markets and provides a binary-tree evaluation of an option. The book concludes with essays on energy and IT (16) and managing in a multicultural world (17).

Manifestly, the book's coverage is huge and, inevitably, somewhat uneven. Several chapters contain apt, extended essays: energy's human history (1); case studies in electricity liberalization (5); evolution of the US natural-gas industry (7); discussion of oil products, refining, and transportation (14). The discussion of transaction costs and industrial organization of the US natural-gas industry is particularly admirable. The chapters on IT and multicultural management, though perhaps unexpected, are interesting. Most chapters provide a wealth of appropriate data and web references to much more. On the other hand, there is

no discussion of energy poverty or resource economies, issues that are becoming increasingly prominent.

Some subjects are skimmed and will require supplemental reading. Oil-market security policy is not discussed. The treatment of demand-side policy, tucked into the climate chapter (9), is cursory and must be supplemented from the literature, starting perhaps with the US National Laboratories' *Clean Energy Scenarios*. The graphical treatment of wholesale electricity doesn't reach the modern analysis of capacity planning and dispatch as in Appendix E of Sally Hunt's *Making Competition Work in Electricity* or of congestion pricing as in Hogan's primer on *Competitive Electricity Market Design*.

The device of introducing analytic tools in specific chapter contexts is ambitious, and works better when the example data are representative, as in the refinery LP model (though the conversion technologies should be fully separated from the distillation slates, making them available across the product slate). The OPEC-cartel analysis, in particular, would be improved with data from the actual global balance, and elasticities from the literature, such as Gately (2004). In one case, I think the analytic tool introduced is not appropriate to the issue. The salient feature of the Japan-led LNG market is, not buyers' monopsony collusion against sellers, but buyer-seller collusion against enduser customers (in which the key is the coordinating role of the trading companies on both sides of each deal). Japan provided Stackleburg leadership for Korea and Taiwan LNG contracting that was not broken until the entry of China, with much more contentious internal markets, as a buyer.

One final issue: the role of markets is sometimes introduced with phrases like, "Economists often favor markets in a capitalist economy for allocating scarce resources. They feel that market discipline helps to create efficiencies and minimize costs." (p. 4). This is, I think, too pallid an evocation of 229 years of hard work in understanding the role of markets in achieving good social outcomes. It ill-serves the student to believe this is the best we can do. (Besides, who cares what economists feel?) Today, I think it is accurate and responsible to state and show that: (a) a transparent, competitive market in which social costs are fully internalized to the decisions of the competing agents achieves an efficient solution efficiently; (b) the feasibility of implementing such a market depends on the technology, the physical scope of exchange, the distribution of information, and political interests; (c) policies – the socialization of market structure – can remedy market failures; (d) but the policy advocate needs to be intrinsically suspicious of their potential for perverse incentives and self-serving capture.

However, these exceptions should not detract from the fact that Professor Dahl has attempted, and largely succeeded, in a hugely ambitious and useful endeavor – a wide-ranging introduction to the energy flows and resources, technologies, institutions, and governance issues in international energy markets.

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