Deregulation Of Electric Utilities

This book addresses the fundamental issues underlying the debate over electric power regulation and deregulation. After decades of the presumption that the electric power industry was a natural monopoly, recent times have seen a trend of deregulation followed by panicked re-regulation. This important book critically analyses this controversial area from a legal and economic perspective.

On January 1, 1998, California will be the first state to deregulate its electricity industry. Deregulation is expected to reduce the high rates paid throughout the state by allowing competition, not regulators, to determine rates. Deregulation will dissolve the monopoly of the electricity industry by allowing customers to choose who will supply their electricity. Competition will emerge in the generation market, where transactions between consumers and suppliers will be free and open. Under regulation, most customers do not have a choice in their electricity supplier. Their supplier is usually determined by their geographic location. This thesis researches the differences between the

regulated and deregulated rate structures and provides a cost comparison for a Navy organization classified as a large commercial/industrial user of electricity. There are many aspects of deregulation that are not yet determined, but the initial comparison indicates deregulation may save Navy installations money. If deregulation progresses as planned, additional future saving may occur.

The electricity market has experienced enormous setbacks in delivering on the promise of deregulation. In theory, deregulating the electricity market would increase the efficiency of the industry by producing electricity at lower costs and passing those cost savings on to customers. As Electricity Deregulation shows, successful deregulation is possible, although it is by no means a hands-off process—in fact, it requires a substantial amount of design and regulatory oversight. This collection brings together leading experts from academia, government, and big business to discuss the lessons learned from experiences such as California's market meltdown as well as the ill-conceived policy choices that contributed to those failures. More importantly, the essays that comprise Electricity Deregulation offer a

number of innovative prescriptions for the successful design of deregulated electricity markets. Written with economists and professionals associated with each of the network industries in mind, this comprehensive volume provides a timely and astute deliberation on the many risks and rewards of electricity deregulation.
Traditionally protected as monopolies, electric utilities are now being caught in the fervor for deregulation that is sweeping the country. Nearly forty states have enacted or are considering laws and regulations that will profoundly alter the way the electric utility industry is governed. Concerned citizens are beginning to ponder the environmental implications of such a change, and while many fear that the pressure of competition will exacerbate environmental problems, others argue that deregulation provides a tremendous opportunity for citizens to work toward promoting cleaner energy and a more sustainable way of life.In Reinventing Electric Utilities, Ed Smeloff and Peter Asmus consider the challenges for citizens and the utility industry in this new era of competition. Through an in-depth case study of the Sacramento Municipal Utility District (SMUD), a once-troubled utility that is now

widely regarded as a model for energy efficiency and renewable energy development, they explore the changes that have occurred in the utility industry, and the implications of those changes for the future. The SMUD portrait is complemented by regional case studies of Portland General Electric and the Washington Public Power Supply System, the New England Electric Service, Northern States Power, the Electricity Reliability Council of Texas, and others that highlight the efforts of citizen groups and utilities to eliminate unproductive and environmentally damaging sources of power and to promote the use of new, cleaner energy technologies.The authors present and explain some of the fundamental principles that govern restructuring, while acknowledging that solutions will depend upon the unique resource needs, culture, and utility structure of each particular region. Smeloff and Asmus argue that any politically sustainable restructuring of the electric services industry must address the industry's high capital cost commitments and environmental burdens.Throughout, they make the case that with creative leadership, open and competitive markets, and the active participation of citizens, this upheaval offers

a unique opportunity for electric utilities to lessen the burden of electricity production on the environment and reduce the cost of electric services through the use of more competitive, cleaner power sources.While neither technological innovation nor the magic of the market will in and of itself reinvent the electric utility industry, the influence of those dynamic forces must be understood. Reinventing Electric Utilities is an important work for policymakers, energy professionals, and anyone concerned about the future of the electric services industry.
A perceptive account of the deregulation of the electric power industry.

Electric Utilities and Transportation
Deregulation and Stranded Costs
Electric Utilities and Independent Power
The End of a Natural Monopoly
Electric Utilities: Deregulation and Stranded Costs
A Survey of Major Concepts and Issues
Analysis of Electricity Markets with Equilibrium Models
Deregulation and the Future of Electric Power
Understanding Electric Utilities and De-Regulation
An Assessment
A Primer on Electric Utilities, Deregulation,

and Restructuring of U.S. Electricity Markets

The latest practical applications of electricity market equilibrium models in analyzing electricity markets Electricity market deregulation is driving the power energy production from a monopolistic structure into a competitive market environment. The development of electricity markets has necessitated the need to analyze market behavior and power. Restructured Electric Power Systems reviews the latest developments in electricity market equilibrium models and discusses the application of such models in the practical analysis and assessment of electricity markets. Drawing upon the extensive involvement in the research and industrial development of the leading experts in the subject area, the book starts by explaining the current developments of electrical power systems towards smart grids and then relates the operation and control technologies to the aspects in electricity markets. It explores: The problems of electricity market behavior and market power Mathematical programs with equilibrium constraints (MPEC) and equilibrium problems with equilibrium constraints (EPEC) Tools and techniques for solving the electricity market equilibrium problems Various electricity market equilibrium models State-of-the-art techniques for computing the electricity market equilibrium problems The application of electricity market equilibrium models in assessing the economic benefits of transmission expansions for market environments, forward and spot markets, short-term power system security, and analysis of reactive power impact Also featured are computational resources to allow readers to develop algorithms on their

own, as well as future research directions in modeling and computational techniques in electricity market analysis. Restructured Electric Power Systems is an invaluable reference for electrical engineers and power system economists from power utilities and for professors, postgraduate students, and undergraduate students in electrical power engineering, as well as those responsible for the design, engineering, research, and development of competitive electricity markets and electricity market policy.

The handbook focuses on a complete outline of lithium-ion batteries. Just before starting with an exposition of the fundamentals of this system, the book gives a short explanation of the newest cell generation. The most important elements are described as negative / positive electrode materials, electrolytes, seals and separators. The battery disconnect unit and the battery management system are important parts of modern lithium-ion batteries. An economical, faultless and efficient battery production is a must today and is represented with one chapter in the handbook. Cross-cutting issues like electrical, chemical, functional safety are further topics. Last but not least standards and transportation themes are the final chapters of the handbook. The different topics of the handbook provide a good knowledge base not only for those working daily on electrochemical energy storage, but also to scientists, engineers and students concerned in modern battery systems.

The cable television merry-go-round of regulation, deregulation, reregulation is another example of good intentions gone bad. In areas with true competition the

service was better and the rates lower. Most areas however, had no true competition and as such required regulation to prevent a monopoly from overcharging the public for poor service. Wisconsin faces the same problems that these other industries faced plus a few specific to the electric utility business. Wisconsin must create a system whereby the transmission system and the residential customers remain under utility control. Competition for electricity supply is already started and it must be allowed to move forward without the meddling of regulators. If regulators get too involved through bidding systems, calculating avoided cost, or other tampering with the market system, problems will be created. These problems will take the form of lawsuits which will accomplish little but create wealth for attorneys. Regulators must also continue with a successful method of integrated planning to prevent overcapacity. Accomplishing this transformation from a regulated monopoly to a competitive environment will be very difficult for all parties involved. This means the utilities, the regulators, the consumers, and the independent producers. They all must leave their old way of doing business behind and have the courage to move forward. Deregulation of Electric Utilities reviews the main issues relating to the changing environment in the utility industry. Topics covered in depth include compensation for stranded costs, efficiency gains, institutional design, pricing, economics of scale, and network externalities. In addition, this book assesses early experiences in electricity deregulation in continental Europe, New Zealand, North America, and the United Kingdom.

This timely study evaluates four generic proposals for allowing free market forces toreplace government regulation in the electric power industry and concludes that none of thederegulation alternatives considered represents a panacea for the performance failures associatedwith things as they are now. It proposes a balanced program of regulatory reform and deregulationthat promises to improve industry performance in the short run, resolve uncertainties about thecosts and benefits of deregulation, and positions the industry for more extensive deregulation inthe long run should interim experimentation with deregulation, structural, and regulatory reformsmake it desirable.The book integrates modern microeconomic theory with a comprehensive analysis ofthe economic, technical, and institutional characteristics of modern electrical power systems. Itemphasizes that casual analogies to successful deregulation efforts in other sectors of the economyare an inadequate and potentially misleading basis for public policy in the electric power industry,which has economic and technical characteristics that are quite different from those in otherderegulated industries.Paul L. Joskow is Professor of Economics at MIT, author of ControllingHospital Costs (MIT Press 1981) and coauthor with Martin L. Baughman and Dilip P. Kamat of ElectricPower in the United States (MIT Press 1979). Richard Schmalensee, also at MIT, is Professor ofApplied Economics, author of The Economics of Advertising and The Control of Natural Monopolies, andeditor of The MIT Press Series, Regulation of Economic Activity.

The restructuring and deregulation of the power utility industry is resulting in significant competitive, technological and regulatory changes. Independent power producers, power marketers and brokers have added a new and significant dimension to the task of maintaining a reliable electric system. Power System Restructuring and Deregulation provides comprehensive coverage of the technological advances, which have helped redesign the ways in which utility companies manage their business. With the aid of practical case studies, an international panel of contributors address the most up to date problems and their solutions in a cohesive manner, making this book indispensable to graduates and engineers in the power

industry field. Presents state of the art techniques in power industry restructuring Includes applications of new technology in power industry deregulation Includes practical examples of changes in load forecasting techniques and methods International contributors offer a global perspective detailing power utility restructuring and deregulation from various countries

This primer is offered as an introduction to utility restructuring to better prepare readers for ongoing changes in public utilities and associated energy markets. It is written for use by individuals with responsibility for the management of facilities that use energy, including energy managers, procurement staff, and managers with responsibility for facility operations and budgets. The primer was prepared by the Pacific Northwest National Laboratory under sponsorship from the U.S. Department of Energy?s Federal Energy Management Program. The impetus for this primer originally came from the Government Services Administration who supported its initial development.

Other important topics include the impact of air pollution control regulations on the industry and current trends in the utilization of new technologies by power

producers.

This book illuminates the role of technological stagnation in the decline of the American electric utility industry in the late 1960s and 1970s. Unlike other interpreters of the industry's woes, Professor Hirsh argues that a long and successful history of managing a conventional technology set the stage for the industry's deterioration. After improving steadily for decades, the technology that brought unequalled productivity growth to the industry appeared to stall in the late 1960s, making it impossible to mitigate the economic and regulatory assaults of the 1970s. Unfortunately, most managers did not recognize (or did not want to believe) the severity of the technological problems they faced, and they chose to focus instead on issues (usually financial or public relations) that appeared more manageable. Partly as a result of this lack of attention to technological issues, the industry found itself in the 1980s challenged by the prospects of deregulation and restructuring.

Deregulation is a fairly new paradigm in the electric power industry. And just as in the case of other industries where it has been introduced, the goal of

deregulation is to enhance competition and bring consumers new choices and economic benefits. The process has, obviously, necessitated reformulation of established models of power system operation and control activities. Similarly, issues such as system reliability, control, security and power quality in this new environment have come in for scrutiny and debate. In this book, we attempt to present a comprehensive overview of the deregulation process that has developed till now, focussing on the operation aspects. As of now, restructured electricity markets have been established in various degrees and forms in many countries. This book comes at a time when the deregulation process is poised to undergo further rapid advancements. It is envisaged that the reader will benefit by way of an enhanced understanding of power system operations in the conventional vertically integrated environment vis-a-vis the deregulated environment. The book is aimed at a wide range of audience- electric utility personnel involved in scheduling, dispatch, grid operations and related activities, personnel involved in energy trading businesses and electricity markets, institutions involved in energy sector financing. Power engineers, energy

economists, researchers in utilities and universities should find the treatment of mathematical models as well as emphasis on recent research work helpful.

The California Electricity Crisis
Electric Shock
Operation of Restructured Power Systems
Lithium-Ion Batteries: Basics and Applications
The Deregulation of Electric Utilities in California and Its Effect on Navy Installations
Markets for Power
Deregulation of Electric Utilities in Wisconsin
CBO Papers
Regulation and Deregulation
Trading, Performance and Information Technology
Community Impacts of Deregulation

This report-style reference is designed to serve as a strategic planning tool. The author provides a complete analysis of eery aspect of the current competition-driven market. Current trends in the utilization of new technologies by power producers is also examined.

Electricity is one of the largest and most vital industries in the U.S. economy, with sales exceeding $200 billion annually. While electricity represents the backbone

of commerce, industry, and household production, the structure of the industry has been changing in rather dramatic ways. After being heavily regulated for more than a century by local, state, regional, and federal authorities, deregulation is taking center stage. In general, deregulation results in lower prices, more product choices, and more rapid technological advances. Conversely, rate regulation has inherent flaws, including the encouragement of waste and inefficiency, and a retarding of innovation. There is little doubt to the contributors of this book that putting regulation aside offers enormous efficiency gains in the production of electricity. But can market forces handle the delicate matter of transmitting electricity when the simple model of supply and demand must be more precise than other goods and services? How much regulation does the electric industry need? The essays in this timely collection explore these difficult questions and propose a new, market-based plan to improve America's electrical future. Published in cooperation with The Independent Institute.

Most Americans still do not understand electric utilities, and many consumers

have only a vague grasp of the intricacies of regulation and deregulation. This is a paradox of sorts; regulation, in particular, seems easy enough to grasp. The real difficulty lies in understanding how power companies have manipulated the regulators. If you think utility deregulation has done away with electric utility monopolies, think again! Deregulation is a myth-it's business as usual for the power companies. For most of America, utility deregulation has yet to become a reality. Even if it does, electric companies will still swindle those they serve. Why? One reason: deregulation allows the utility giants to retain control of the transmission and distribution of electricity. Utility cheating has gone unchecked for more than a century. Author Joe Seeber has caught the electric companies red-handed, from fudged financials and courtroom trickery to meter manipulation and outright fraud. He paints a compelling portrait of an industry wired for greed-and argues that it's time someone pulled the plug.
After political leaders mismanaged the electricity crisis, California now faces an electricity blight while it struggles to recover from its self-imposed wounds. The California Electricity Crisis focuses

on policy decisions, their consequences, and alternatives: the saga California has faced and is still facing.
Written originally as a manual for the Federal Energy Commission to train regional rate regulators, this is a clear, comprehensive primer on the principles of economics and finance underlying the regulation of electricity markets and the deregulation of electricity generation.

Electricity is a quirky commodity: more often than not, it cannot be stored,

easily transported, or imported from overseas. Before lighting up our homes, it changes hands through specialized electricity markets that rely on engineering expertise to trade competitively while respecting the physical requirements of the electric grid. The Current Economy is an ethnography of electricity markets in the United States that shows the heterogenous and technologically inflected nature of economic expertise today. Based on ethnographic fieldwork among market data analysts, electric grid engineers, and citizen activists, this book provides a deep dive into the convoluted economy of electricity and its reverberations throughout daily life. Canay Özden-Schilling argues that many of the economic formations in everyday life come from work cultures rarely suspected of doing economic work: cultures of science, technology, and engineering that often do not have a claim to economic theory or practice, yet nonetheless dictate forms of economic activity. Contributing to economic anthropology, science and technology studies, energy studies, and the anthropology of expertise, this book is a map of the everyday infrastructures of economy and energy into which we are

plugged as denizens of a technological world.

Power interruptions of the scale of the North American Blackout of 2003 are rare, but they still loom as a possibility. Will the aging infrastructure fail because deregulated monopolies have no financial incentives to upgrade? Is centralized planning becoming subordinate to market forces? Understanding Electric Utilities and De-Regulation, Second Edition provides an updated, non-technical description that sheds light on the nature of the industry and the issues involved in its transition away from a regulated environment. The book begins by broadly surveying the industry, from a regulated utility structure to the major concepts of de-regulation to the history of electricity, the technical aspects, and the business of power. Then, the authors delve into the technologies and functions on which the industry operates; the many ways that power is used; and the various means of power generation, including central generating stations, renewable energy, and single-household size generators. The authors then devote considerable attention to the details of regulation and de-regulation. To conclude, one new chapter examines aging infrastructures and

reliability of service, while another explores the causes of blackouts and how they can be prevented. Based on the authors' extensive experience, Understanding Electric Utilities and De-Regulation, Second Edition offers an up-to-date perspective on the major issues impacting the daily operations as well as the long-term future of the electric utilities industry.

The study identifies the source of the effort to deregulate and restructure investor owned electric utilities, and determines that fundamental errors have been made in the initial efforts to deregulate and restructure the electric utility industry. The study explores the knowledge and experience of state electric utility regulators. Through the case study, strategies and actions which may be taken by the management of investor owned electric utilities to minimize the effects of fragmentation for electric utilities facing the possibility of deregulation and restructuring are identified. The study results emphasize the importance of management involvement in determining how deregulation and restructuring will be implemented in the industry so that investor and customer interests are protected.

Reinventing Electric Utilities
A Survey of Major Concepts and Issues, July 1981
Technology and Transformation in the American Electric Utility Industry
Electric Utilities
California Electricity Crisis
Electricity Economics
Restructured Electric Power Systems
Impact of Deregulation
Electricity Deregulation
Electricity Markets and Techno-Economics