

1. Record Nr.	UNINA9910438087703321
Titolo	Handbook of Risk Management in Energy Production and Trading // edited by Raimund M. Kovacevic, Georg Ch. Pflug, Maria Teresa Vespucci
Pubbl/distr/stampa	New York, NY : , : Springer US : , : Imprint : Springer, , 2013
ISBN	1-4614-9035-9
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (506 p.)
Collana	International Series in Operations Research & Management Science, , 0884-8289 ; ; 199
Disciplina	333.79068
Soggetti	Operations research Decision making Energy systems Energy policy Energy and state Operations Research/Decision Theory Energy Systems Energy Policy, Economics and Management
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Energy Markets -- Introduction to Price Models for Energy -- Price Dynamics in Electricity Markets -- Price-Driven Hydropower Dispatch Under Uncertainty -- On Cutting Plane Algorithms and Dynamic Programming for Hydroelectricity Generation -- Medium-Term Operational Planning for Hydrothermal Systems -- Stochastic Optimization of Power Generation and Storage Management in a Market Environment -- Risk Measures in Multi-horizon Scenario Trees -- Controlled Islanding as Robust Operator Response under Uncertainty -- Complementarity and Game-theoretical Models for Equilibria in Energy Markets: Deterministic and Risk-averse Formulations -- Optimal Planning and Economic Evaluation of Trigenation Districts -- Renewable Energy and its Impact on Power Markets -- Copula-Based Hedge ratios for Renewable Power Generation -- Investment in Stochastic Electricity-Production Facilities -- Pricing of Energy

Contracts: From Replication Pricing to Swing Options -- Energy Derivatives with Volume Controls -- Risk Hedging Strategies under Energy System and Climate Policy Uncertainties -- Comparative Assessment of Accident Risks in the Energy Sector.

---

Sommario/riassunto

This book presents an overview of the risks involved in modern electricity production, delivery and trading, including technical risk in production, transportation and delivery, operational risk for the system operators, market risks for traders, and political and other long term risks in strategic management. Using decision making under uncertainty as a methodological background, the book is divided into four parts, with Part I focusing on energy markets, particularly electricity markets. Topics include a nontechnical overview of energy markets and their main properties, basic price models for energy commodity prices, and modeling approaches for electricity price processes. Part II looks at optimal decisions in managing energy systems, including hydropower dispatch models, cutting plane algorithms and approximative dynamic programming; hydro-thermal production; renewable; stochastic investments and operational optimization models for natural gas transport; decision making in operating electricity networks; and investment in extending energy production systems. Part III explores pricing, including electricity swing options and the pricing of derivatives with volume control. Part IV looks at long-term and political risks, including energy systems under aspects of climate change, and catastrophic operational risks, particularly risks from terrorist attacks.

---