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Titolo	Electricity Markets with Increasing Levels of Renewable Generation: Structure, Operation, Agent-based Simulation, and Emerging Designs / / edited by Fernando Lopes, Helder Coelho
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Descrizione fisica	1 online resource (327 pages) : illustrations, tables
Collana	Studies in Systems, Decision and Control, , 2198-4182 ; ; 144
Disciplina	381.456213
Soggetti	Energy systems Computational intelligence Energy policy Energy and state Energy Systems Computational Intelligence Energy Policy, Economics and Management
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Overview of Wholesale Electricity Markets -- Market Prices in a Power Market with more than 50% Wind Power -- Incentivizing Flexibility in System Operations -- Requirements for Strategic Reserves in a Liberalized Market with Wind Power -- Renewable Generation, Support Policies and the Merit Order Effect: A Comprehensive Overview and the Case of Wind Power in Portugal -- Demand Response in Electricity Markets: An Overview and a Study of the Price-effect on the Iberian Daily Market -- Multi-Agent Electricity Markets and Smart Grids Simulation with Connection to Real Physical Resources.
Sommario/riassunto	This book describes the common ground between electricity markets (EMs) and software agents (or artificial intelligence generally). It presents an up-to-date introduction to EMs and intelligent agents, and offers a comprehensive description of the research advances and key achievements related to existing and emerging market designs to reliably and efficiently manage the potential challenges of variable

generation (VG). Most EMs are unique in their complex relationships between economics and the physics of energy, but were created without the notion that large penetrations of variable generation (VG) would be part of the supply mix. An advanced multi-agent approach simulates the behavior of power markets over time, particularly markets with large-scale penetrations of renewable resources. It is intended as a reference book for researchers, academics and industry practitioners, but given the scope of the chapters and the highly accessible style, the book also provides a coherent foundation for several different graduate courses.