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Titolo	Applications of modern heuristic optimization methods in power and energy systems // edited by Kwang Y. Lee, Zita A. Vale
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Descrizione fisica	1 online resource (888 pages)
Collana	IEEE Press series on power engineering ; ; 96
Disciplina	621.31
Soggetti	Electric power systems - Mathematical models
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Overview of applications in power and energy systems -- Power system planning and operation -- Power system and power plant control -- Distribution system -- Integration of renewable energy in smart grid -- Electricity markets.
Sommario/riassunto	"This book describes the use of metaheuristic applications in the analysis and design of electric power systems. This includes discussion of optimum energy and commitment of generation (nonrenewable & renewable) and load resources during day-to-day operations and control activities in regulated and competitive market structures, and transmission and distribution systems. Emphathies are given to applications rather than theory and the organization of book are based on applications rather than tools. The book begins with an introduction and overview of applications in power and energy systems before moving on to planning and operation, control, and distribution. Further chapters cover the integration of renewable energy and the smart grid and electricity markets before the editors provide their final conclusions. In the competitive electricity market along with automation, heuristic optimization methods are very useful. As electric utilities are trying to provide smart solutions with economical, technical (secure, stable and good power quality) and environmental goals, there

are several challenging issues in the smart grid solutions such as, but not limited to, forecasting of load, price, ancillary services; penetration of new and renewable energy sources; bidding strategies of participants; power system planning & control; operating decisions under missing information; increased distributed generations and demand response in the electric market; tuning of controller parameters in varying operating conditions, etc. Risk management and financial management in electric sector are concerned with finding an ideal trade-off between maximizing the expected returns and minimizing the risks associated with these investments"--

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