Discover cutting-edge developments in electric power systems

Stemming from cutting-edge research and education activities in the field of electric power systems, this book brings together the knowledge of a panel of experts in economics, the social sciences, and electric power systems. In ten concise and comprehensible chapters, the book provides unprecedented coverage of the operation, control, planning, and design of electric power systems. It also discusses:

- A framework for interdisciplinary research and education
- Modeling electricity markets
- Alternative economic criteria and proactive planning for transmission investment in deregulated power systems
Payment cost minimization with demand bids and partial capacity cost compensations for day-ahead electricity auctions

- Dynamic oligopolistic competition in an electric power network and impacts of infrastructure disruptions

- Reliability in monopolies and duopolies

- Building an efficient, reliable, and sustainable power system

- Risk-based power system planning integrating social and economic direct and indirect costs

- Models for transmission expansion planning based on reconfiguration capacitor switching

- Next-generation optimization for electric power systems

Most chapters end with a bibliography, closing remarks, conclusions, or future work. *Economic Market Design and Planning for Electric Power Systems* is an indispensable reference for policy-makers, executives and engineers of electric utilities, university faculty members, and graduate students and researchers in control theory, electric power systems, economics, and the social sciences.

---

**ABOUT THE AUTHOR**

**James Momoh** was chair of the Electrical Engineering Department at Howard University and director of the Center for Energy Systems and Control. In 1987, Momoh received a National Science Foundation (NSF) Presidential Young Investigator Award. He is a Fellow of the IEEE, a Distinguished Fellow of the Nigerian Society of Engineers (NSE), and a Fellow of the Nigerian Academy of Engineering (NAE). His current research activities for utility firms and government agencies span several areas in systems engineering, optimization, and energy systems' control of terrestrial, space, and naval complex and dynamic networks. He has authored more than 225 technical papers in refereed journals, transactions, or proceedings, as well as several textbooks.
LAMINE MILI is Professor of Electrical and Computer Engineering at Virginia Tech. An IEEE Senior Member, Dr. Mili is also a member of the Institute of Mathematical Statistics and the American Statistical Association. He is a recipient of a 1990 NSF Research Initiation Award and a 1992 NSF Young Investigator Award. His research interests include risk assessment and management of critical infrastructures, cascading failure modeling, power system planning, power system analysis and control, electric load forecasting, bifurcation theory and chaos, nonlinear optimization, and robust statistics as applied to engineering problems. Dr. Mili is the cofounder and coeditor of the *International Journal of Critical Infrastructures*.

IEEE Press Series on Power and Energy Systems

To purchase this product, please visit https://www.wiley.com/en-ca/9780470472088