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ISBN	1-5231-4611-7 1-63081-478-4
Descrizione fisica	1 online resource (xxviii, 366 pages) : illustrations, maps
Collana	Artech house titles in power engineering
Disciplina	621.31
Soggetti	Smart power grids
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro; Smart Grid Redefined: Transformation of the Electric Utility; Forward; Preface; Acknowledgments; 1 Introduction; Background; Sequence of Chapters and Their Description; Chapter 2-Smart Grid Redefined; Chapter 3-Distribution Automation: Path to the Self-Healing Grid; Chapter 4-Energy Storage: Electric Value Chain Disruptor; Chapter 5-Distributed Energy Resources: The Challenge of Integrating Supply and Demand Diversity; Chapter 6-Microgrids: Fragmentation of the Grid; Chapter 7-Data Analytics: Bringing Intelligence to the Grid Chapter 8-Electric Transportation: First Mover to a Mobile Carbon-Free FutureChapter 9-Smart Homes and Buildings: The Final Frontier; Chapter 10-Electric Utility Transformation; Chapter 11-Transformed Utility Springboard to a Smart City; Conclusions; Reference; 2 Smart Grid Rede ned; Introduction; De ning the Smart Grid; Dimensions of the Smart Grid; Distributed Energy Resource; Energy Storage; T & D Automation; Advanced Operational and Decision Support Systems; Microgrid; Data Analytics; Electric Transportation; Smart Meters; Smart Homes and Buildings; Demand Response and Energy Ef ciency CommunicationsCybersecurity; Advances in Technical Architectures and Computing; Ongoing Challenges and the Future; Case Studies; Case Study #1: United States-AEP Ohio gridSMART Demonstration Project; Case Study #2: Grid4EU; How Smart Grid Will Transform the Utility Industry; This Is Transformation: The Entire Utility Needs to Change for

the Conversation to Be Real; References; 3 Distribution Automation: Path to a Self-Healing Grid; Introduction; TA versus DA; DA and Its Connection to the Self-Healing Grid; Smart Grid Dimensions That Make DA Self-Healing; Smart Meters; Big Data and Analytics Communications Privacy and Cybersecurity; Core Components of DA; Advanced Sensing and Measurement; Advanced Control Methods; Dos and Don'ts of DA; Ongoing Challenges and the Future; Case Studies; Case Study #1: Duke Energy, DA; Case Study #2: Stedin, The Netherlands, DA; How DA Can Transform the Utility Industry; Conclusions; References; 4 Energy Storage: Electronic Value Chain Disruptor; Introduction; Electric Energy Storage-What Is It and Why Is It Important?; Definition of Key Terms and Concepts Associated with Energy Storage; Electric Energy Storage Types and Applications; Pumped Hydro

Sommario/riassunto

Written by a leading expert in the utility field, this practical new resource guides professionals in the evolution of the Smart Grid and offers insight into distribution automation, storage, and microgrid. This book highlights the journey to electric utility 3.0 and provides solid examples and includes real-world case studies. Readers find guidance on new energy storage solutions and electric value chain disruptors. Professionals also learn how to overcome challenges related to integrating supply and demand diversity -- Provided by the publisher.
