Microgrids: Architectures and Control
Nikos Hatziargyriou (Editor)

Hardcover ISBN: 978-1-118-72068-4 March 2014 $123.75

DESCRIPTION

Microgrids are the most innovative area in the electric power industry today. Future microgrids could exist as energy-balanced cells within existing power distribution grids or stand-alone power networks within small communities.

A definitive presentation on all aspects of microgrids, this text examines the operation of microgrids – their control concepts and advanced architectures including multi-microgrids. It takes a logical approach to overview the purpose and the technical aspects of microgrids, discussing the social, economic and environmental benefits to power system operation. The book also presents microgrid design and control issues, including protection and explaining how to implement centralized and decentralized control strategies.

Key features:

• original, state-of-the-art research material written by internationally respected contributors

• unique case studies demonstrating success stories from real-world pilot sites from Europe, the Americas, Japan and China

• examines market and regulatory settings for microgrids, and provides evaluation results under standard test conditions

• a look to the future – technical solutions to maximize the value of distributed energy along with the principles and criteria for developing commercial and regulatory frameworks for microgrids

Offering broad yet balanced coverage, this volume is an entry point to this very topical area of power delivery for electric power engineers familiar with medium and low voltage distribution systems, utility operators in microgrids, power systems researchers
and academics. It is also a useful reference for system planners and operators, manufacturers and network operators, government regulators, and postgraduate power systems students.

CONTRIBUTORS

Thomas Degner
Aris Dimeas
Alfred Engler
Nuno Gil
Asier Gil de Muro
Guillermo Jiménez-Estévez
George Karinotakis
George Korres
André Madureira
Meiqin Mao
Chris Marnay
Jose Miguel Yarza
Satoshi Morozumi
Alexander Oudalov
Frank van Overbeeke
Rodrigo Palma Behnke
Joao Abel Pecas Lopes
Fernanda Resende
John Romankiewicz
Christine Schwaegerl
Nikos Soultanis
ABOUT THE AUTHOR

Nikos D. Hatziargyriou is professor at the Power Division of the Electrical and Computer Engineering Department of the National Technical University of Athens. From February 2007 to September 2012, he was Deputy CEO of the Public Power Corporation (PPC) of Greece, responsible for Transmission and Distribution Networks, island DNO and the Center of Testing, Research and Prototyping. He is Fellow Member of IEEE, past Chair of the Power System Dynamic Performance Committee and Chair of CIGRE SC C6 “Distribution Systems and Distributed Generation”. He is co-chair of the EU Advisory Council of the Technology Platform on SmartGrids. He has participated in more than 50 R&DD Projects, and was coordinator of the EU funded “Care”, “More Care”, “Rise”, “Merge”, “Microgrids” and “More Microgrids” projects. He is author of more than 160 journal publications and 500 conference proceedings papers. His research interests include Smartgrids, Microgrids, Distributed and Renewable Energy Sources and Power System Security.

RELATED RESOURCES

Student

View Student Companion Site

SERIES

Wiley - IEEE

For additional product details, please visit https://www.wiley.com/en-us