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Nota di contenuto	Microgrid: Architectures and Control; Contents; Foreword; Preface; List of Contributors; 1 The Microgrids Concept; 1.1 Introduction; 1.2 The Microgrid Concept as a Means to Integrate Distributed Generation; 1.3 Clarification of the Microgrid Concept; 1.3.1 What is a Microgrid?; 1.3.2 What is Not a Microgrid?; 1.3.3 Microgrids versus Virtual Power Plants; 1.4 Operation and Control of Microgrids; 1.4.1 Overview of Controllable Elements in a Microgrid; 1.4.2 Operation Strategies of Microgrids; 1.5 Market Models for Microgrids; 1.5.1 Introduction 1.5.2 Internal Markets and Business Models for Microgrids1.5.3 External Market and Regulatory Settings for Microgrids; 1.6 Status Quo and Outlook of Microgrid Applications; References; 2 Microgrids Control Issues; 2.1 Introduction; 2.2 Control Functions; 2.3 The Role of Information and Communication Technology; 2.4 Microgrid Control Architecture; 2.4.1 Hierarchical Control Levels; 2.4.2 Microgrid Operators; 2.5 Centralized and Decentralized Control; 2.6 Forecasting; 2.6.1 Introduction; 2.6.2 Demand Forecasting; 2.6.3 Wind and PV Production Forecasting; 2.6.4 Heat Demand Forecasting 2.6.5 Electricity Prices Forecasting; 2.6.6 Evaluation of Uncertainties on Predictions; 2.7 Centralized Control; 2.7.1 Economic Operation; 2.7.2

Sommario/riassunto	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.