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Collana	Electrical engineering series
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Soggetti	Smart power grids Electric utilities - Cost effectiveness Demand-side management (Electric utilities)
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Nota di contenuto	Table of Contents; Title; Copyright; Preface; List of Acronyms; 1: Demand Response in Smart Grids; 1.1. Introduction; 1.2. Background on demand side management and demand response; 1.3. Benefits offered by demand-side management; 1.4. Types of demand response programs; 1.5. Demand response performance, measurement and verification; 1.6. The challenges: aligning economics and intelligence; 1.7. Bibliography; 2: Active Consumer Characterization and Aggregation; 2.1. Introduction; 2.2. Overview of the interaction between aggregator and other system players 2.3. Consumption modeling and flexibility forecasting 2.4. Algorithms for electricity market price forecasting; 2.5. Optimization algorithm for designing demand response-based offers for the market; 2.6. Software architecture of the aggregator toolbox; 2.7. Numerical results on simulation experiments; 2.8. Bibliography; 3: Distributed Intelligence at the Consumer's Premises; 3.1. Introduction; 3.2. Functional architecture; 3.3. Software architecture; 3.4. Classification of distributed energy resources; 3.5. Optimization algorithm for appliance scheduling

3.6. Results on testing the implementation of the software architecture
3.7. Bibliography; 4: Distribution Control Center: New Requirements and Functionalities; 4.1. Introduction; 4.2. Functional specifications, including strategies; 4.3. Architectures of distribution system automation and control; 4.4. Active and reactive power control in medium-voltage active distribution grids; 4.5. Validation of demand response products; 4.6. New operational planning applications for the medium-voltage control center; 4.7. Bibliography
5: Distribution Network Representation in the Presence of Demand Response
5.1. Introduction; 5.2. Requirements for distribution network monitoring and control; 5.3. Load areas; 5.4. Load areas: study cases; 5.5. Appendix: active-reactive relationships; 5.6. Bibliography; 6: Communication Needs and Solutions for the Deployment of Demand Response; 6.1. Introduction; 6.2. Requirements; 6.3. Network architecture and communication technologies; 6.4. A communications solution for demand response; 6.5. Summary on communications for demand response; 6.6. Bibliography
7: System-level Benefits of Demand Response
7.1. Introduction; 7.2. System benefits; 7.3. Review of system benefits; 7.4. Summary; 7.5. Bibliography; 8: Techno-economic Analysis of Demand Response; 8.1. Introduction; 8.2. Techno-economic analysis: identification of potential business cases for demand response in a networked business; 8.3. Techno-economic analysis of demand response: examples; 8.4. Conclusions; 8.5. Bibliography; 9: Socioeconomic Aspects of Demand Response; 9.1. Introduction; 9.2. Social aspects of demand response
9.3. Key elements of the ADDRESS project from the perspectives of participants
