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Nota di contenuto	Chapter 1. Overview of flexible load control -- Chapter 2. Data center flexible load control for renewable energy integration -- Chapter 3. Data center load control based microgrid operation via robust multi-objective optimization -- Chapter 4. Collaborative control of data center and hydrogen storage system for renewable energy absorption -- Chapter 5. Flexible industrial load control for renewable power system operation -- Chapter 6. A demand-supply cooperative responding control of industrial load and renewable power system -- Chapter 7. Electric vehicle flexible charging load control for renewable power system operation -- Chapter 8. Battery swapping control for centralized electric vehicle charging system with photovoltaic -- Chapter 9. Coordinated Operation Between Electric Vehicle Charging Stations and Distribution Power Network Considering Energy and Reserve -- Chapter 10. Flexible integrated load control based comprehensive energy system operation -- Chapter 11. Data-driven distributionally robust scheduling of community comprehensive energy systems considering integrated load control -- Chapter 12. Concluding remarks.

This book addresses the pressing challenges faced by renewable power system operation (RPSO) due to the increasing penetration of renewable energy and flexible load. These challenges can be divided into two categories. Firstly, the inherent uncertainties associated with renewable energy sources pose significant difficulties in RPSO. Secondly, the presence of various types of flexible load, along with their complex constraint relationships, adds to the operational complexities.

Recognizing the growing emphasis on the economic and low-carbon aspects of RPSO, this book focuses on the key issues of flexible load control. It mainly consists of following categories: (1) The control of data centers, a booming flexible load, to enhance RPSO through renewable energy integration and advanced robust multi-objective optimization. (2) The introduction of flexible industrial load control, employing effective demand-supply cooperative responding strategies for RPSO. (3) The exploration of electric vehicle flexible charging load control and centralized electric vehicle charging system control in the context of RPSO. The book also covers the emerging field of flexible integrated load control for renewable energy-based comprehensive energy system operation. Aimed at researchers, engineers, and graduate students in electrical engineering and computer science, this book provides a valuable resource for understanding and implementing flexible load control in the context of RPSO.
