

1. Record Nr.	UNINA9910983076603321
Autore	Wang Jianhui
Titolo	Power Grid Resilience : Theory and Applications // edited by Jianhui Wang
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	9783031739781 3031739787
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (734 pages)
Collana	Power Electronics and Power Systems, , 2196-3193
Disciplina	321.319
Soggetti	Electric power distribution Power electronics Electric power production Cooperating objects (Computer systems) Energy Grids and Networks Power Electronics Electrical Power Engineering Cyber-Physical Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Resilience Definition and Metrics -- Resilience Assessment Framework -- Resilience Vs. Reliability -- Role of Renewables in Grid Resilience -- Power System Restoration -- Distribution System Resilience -- Grid Resilience Improvement Through Microgrids -- Cyber-secured Resilient Future Power Grid -- Case Study: Bulk System Resilience -- Case Study: Distribution Network Resilience -- .
Sommario/riassunto	This book provides comprehensive coverage of the resilience and reliability of power grids. It begins with the definition and theory of power grid resilience and then extends to cover the full spectrum of power grid resilience, ranging from planning to operation including system hardening, mitigation, and restoration. Practical case studies on both the bulk power system and distribution networks are included to illustrate how adaptive measures can be taken to improve the grid

resilience against large-scale events. Power Grid Resilience: Theory and Applications is a state-of-the-art guide that is essential reading for practicing engineers, researchers, and scientists working in the power and energy industry. The book is also useful as a reference for undergraduate and graduate students studying power systems. First comprehensive book on power grid resilience; Provides coverage on resilience from theory to applications; Written by leading experts on grid resilience and reliability.

---