

1. Record Nr.	UNINA9910826960403321
Titolo	Wind energy generation : modelling and control // Olimpo Anaya-Lara ... [et al.]
Pubbl/distr/stampa	Hoboken, NJ, : John Wiley & Sons, 2009
ISBN	1-119-96420-2 1-282-34958-9 9786612349584 0-470-74823-0
Edizione	[1st ed.]
Descrizione fisica	1 online resource (289 p.)
Altri autori (Persone)	Anaya-LaraOlimpo
Disciplina	621.31/2136 621.312136
Soggetti	Wind power Wind turbines Synchronous generators
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Wind Energy Generation; Contents; About the Authors; Preface; Acronyms and Symbols; 1 Electricity Generation from Wind Energy; 2 Power Electronics for Wind Turbines; 3 Modelling of Synchronous Generators; 4 Fixed-speed Induction Generator (FSIG)-based Wind Turbines; 5 Doubly Fed Induction Generator (DFIG)-based Wind Turbines; 6 Fully Rated Converter-based (FRC) Wind Turbines; 7 Influence of Rotor Dynamics on Wind Turbine Operation; 8 Influence of Wind Farms on Network Dynamic Performance; 9 Power Systems Stabilizers and Network Damping Capability of Wind Farms 10 The Integration of Wind Farms into the Power System11 Wind Turbine Control for System Contingencies; Appendix A: State-Space Concepts and Models; Appendix B: Introduction to Eigenvalues and Eigenvectors; Appendix C: Linearization of State Equations; Appendix D: Generic Network Model Parameters; Index
Sommario/riassunto	With increasing concern over climate change and the security of energy supplies, wind power is emerging as an important source of electrical energy throughout the world. Modern wind turbines use advanced

power electronics to provide efficient generator control and to ensure compatible operation with the power system. Wind Energy Generation describes the fundamental principles and modelling of the electrical generator and power electronic systems used in large wind turbines. It also discusses how they interact with the power system and the influence of wind turbines on power system operation.

---