

1. Record Nr.	UNINA9910555048703321
Autore	Burton Tony <1947->
Titolo	Wind energy handbook / / Tony Burton [et al.]
Pubbl/distr/stampa	Hoboken, NJ : , : John Wiley & Sons, Inc., , [2021] ©2021
ISBN	1-119-45115-9 1-5231-3735-5 1-119-45116-7
Edizione	[Third edition.]
Descrizione fisica	1 online resource
Altri autori (Persone)	JenkinsNick <1954-> BossanyiErvin SharpeDavid GrahamMichael
Disciplina	621.312136
Soggetti	Wind power Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	The wind resource -- Aerodynamics of horizontal axis wind turbines -- Further aerodynamic topics for wind turbines -- Design loads for HAWTs -- Conceptual design of horizontal axis wind turbines -- Component design -- The controller -- Wake effects and wind farm control -- Onshore wind turbine installations and wind farms -- Wind energy and the electric power system -- Offshore wind turbines and wind farms.
Sommario/riassunto	"Fully revised and updated, this third edition addresses key developments in the wind technology since the second edition was published in 2011. Completely new sections on model predictive control; use of estimators for fault detection and fatigue monitoring; active power control; and wind farm control. After a brief introduction, the authors discuss the wind resource. Particular reference is made to wind turbulence due to its importance in wind turbine design. A discussion on the basis of the aerodynamics of horizontal axis wind turbines follows, incorporating general momentum theory and dynamic

stall, and an analysis of their performance. The book goes on to assess the requirements for establishing design loads. Burton et al. also set out the various design options for horizontal axis wind turbines, discussing variable speed operation and reviewing alternative blade materials and their properties. They explain the functions of the wind turbine controller and describe some of the possible analysis techniques. The text also reviews the development of wind energy projects with particular emphasis on environmental impact, and considers how wind turbines interact with the electrical power system."

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