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Titolo	Wind Power Technology [[electronic resource]] : An Introduction // edited by Alois Peter Schaffarczyk
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-031-20332-1
Edizione	[2nd ed. 2023.]
Descrizione fisica	1 online resource (579 pages)
Collana	Green Energy and Technology, , 1865-3537
Disciplina	621.312136
Soggetti	Wind power Offshore structures Fluid mechanics Power electronics Wind Energy Offshore Engineering Engineering Fluid Dynamics Power Electronics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	The History of Wind Energy (Jos Beurskens) -- The International Development of Wind Energy (Klaus Rave) -- Wind Resources, Site Assessment and Ecology (Hermann van Radecke) -- Aerodynamics and Blade Design (Alois P. Schaffarczyk) -- Rotor Blades (Malo Rosemeier) -- The Drive Train (Hans Kyling) -- Tower and Foundation (Torsten Faber) -- Power Electronics and generator Systems for Wind Turbines (Friedrich Fuchs) -- Control of Wind Energy Systems (Reiner Schütt) -- Grid Integration (Clemens Jauch) -- Offshore Wind Energy (Christian Keindorf). .
Sommario/riassunto	This textbook provides in-depth treatment of all systems associated with wind energy, including the aerodynamic and structural aspects of blade design, the flow of energy and loads through the wind turbine, the electrical components and power electronics including control systems. It explains the importance of wind resource assessment techniques, site evaluation and ecology and describes the integration of

wind farms into the electrical grid. The reader will also become familiar with the offshore technology, the youngest and most promising aspect of wind energy. The completely revised and updated new edition provides new sections on fatigue design, analytical models for structural analysis and topology optimization. The book is written by experts in research, teaching and industry. It conveys the importance of wind energy in the international energy policy debate and offers clear insight into the subject for all students learning about wind engineering. Problems with solutions are perfect for self-study. It is also an authoritative resource for engineers designing and developing wind energy systems, energy policy-makers and economists in the renewable energy sector. The translation of some chapters was done with the help of artificial intelligence (machine translation by the service DeepL.com). A subsequent human revision was done primarily in terms of content.
