Understanding Wind Power Technology: Theory, Deployment and Optimisation
Alois Schaffarczyk (Editor)

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DESCRIPTION

Wind energy technology has progressed enormously over the last decade. In coming years it will continue to develop in terms of power ratings, performance and installed capacity of large wind turbines worldwide, with exciting developments in offshore installations.

Designed to meet the training needs of wind engineers, this introductory text puts wind energy in context, from the natural resource to the assessment of cost effectiveness and bridges the gap between theory and practice. The thorough coverage spans the scientific basics, practical implementations and the modern state of technology used in onshore and offshore wind farms for electricity generation.

Key features:

• 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

• explains the importance of wind resource assessment techniques, site evaluation and ecology with a focus of project planning and operation

• describes the integration of wind farms into the electric grid and includes a whole chapter dedicated to offshore wind farms

• includes questions in each chapter for readers to test their knowledge
Written by experts with deep experience in research, teaching and industry, this text conveys the importance of wind energy in the international energy-policy debate, and offers clear insight into the subject for postgraduates and final year undergraduate students studying all aspects of wind engineering. *Understanding Wind Power Systems* is also an authoritative resource for engineers designing and developing wind energy systems, energy policy makers, environmentalists, and economists in the renewable energy sector.

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**ABOUT THE AUTHOR**

Professor Alois Schaffarczyk, Kiel University of Applied Sciences, Kiel, Germany

Professor Schaffarczyk is a founding member and previous manager of CEwind eG, the consortium for wind energy research between Schleswig-Holstein’s Universities in Germany. He has worked in the field of wind turbine aerodynamics since 1997 and currently teaches courses in the CEwind MSc. Wind Engineering program.

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