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Nota di contenuto	Wind Resource Assessment; 8.5.5 Flow Inclination and Complex Terrain (Sodar and Lidar); CONTENTS; Preface; 1. Introduction; 1.1 Where do Winds Come From?; 1.2 Key Characteristics of the Wind; 1.2.1 The Temporal Dimension; 1.2.2 The Spatial Dimension; 1.2.3 Other Characteristics of the Wind Resource; 1.3 Wind Power Plants; 1.4 Purpose and Organization of this Book; 1.5 Questions for Discussion; Suggestions for Further Reading; PART 1 Wind Monitoring; 2. Overview of a Wind Resource Assessment Campaign; 2.1 Site Identification; 2.2 Resource Monitoring; 2.2.1 Wind Monitoring Campaign Design 2.2.2 Measurement Plan 2.2.3 Monitoring Strategy; 2.2.4 Quality Assurance Plan; 2.3 Wind Resource Analysis; 2.3.1 Data Validation;

2.3.2 Characterizing the Observed Wind Resource; 2.3.3 Estimating the Hub Height Resource; 2.3.4 Climate Adjustment; 2.3.5 Wind Flow Modeling; 2.3.6 Uncertainty in Wind Resource Assessment; 2.3.7 Project Design and Energy Production; Suggestions for Further Reading; 3. Siting a Wind Project; 3.1 Site Selection; 3.2 Regional Wind Resource Information; 3.2.1 Wind Resource Maps; 3.2.2 Wind Measurements; 3.3 Field Surveys; 3.4 Tower Placement; 3.4.1 Dedicated Towers
3.4.2 Existing Multi-Use Tall Towers3.5 Permitting for Wind Monitoring; 3.6 Land Lease Agreements; 3.7 Questions for Discussion; Suggestions for Further Reading; 4. Monitoring Station Instrumentation and Measurements; 4.1 Basic Measurements; 4.1.1 Horizontal Wind Speed; 4.1.2 Wind Direction; 4.1.3 Air Temperature; 4.2 Additional Measurements; 4.2.1 Vertical Wind Speed; 4.2.2 Heated Anemometers; 4.2.3 Delta Temperature; 4.2.4 Barometric Pressure; 4.2.5 Relative Humidity; 4.2.6 Global Solar Radiation; 4.3 Recorded Parameters and Sampling Intervals; 4.3.1 Average; 4.3.2 Standard Deviation
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5.8 Site Commissioning

Sommario/riassunto

A practical, authoritative guide to the assessment of wind resources for utility-scale wind projects-authored by a team of experts from a leading renewable energy consultancy. The successful development of wind energy projects depends on an accurate assessment of where, how often, and how strongly the wind blows. A mistake in this stage of evaluation can cause severe financial losses and missed opportunities for developers, lenders, and investors. Wind Resource Assessment: A Practical Guide to Developing a Wind Project shows readers how to achieve a high standard of resource a
