Wind Turbine Systems

US Industry Study with Forecasts for 2018 & 2023

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Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT

General .............................................. 4
Macroeconomic Trends ............................. 4
Consumer Spending Trends ...................... 8
Demographic Trends .............................. 11
Manufacturers’ Shipments ....................... 15
Construction ....................................... 19
Building Construction ........................... 21
Nonbuilding Construction ....................... 23
Electric Power Generation ................. 25
Energy Consumption ............................ 28
Environmental & Other .......................... 30
Regulatory Considerations .................... 30
Government Incentives ........................ 33
State & Municipal ................................ 34
Federal ........................................... 35

WORLD MARKET

General ............................................. 37
Wind Turbine Systems by Region ............. 38
Western Europe ................................... 40
North America .................................... 41
Asia/Pacific ....................................... 42
Rest of World .................................... 44
Wind Turbine Demand by Leading Countries 46

WIND TURBINE SYSTEMS

General ............................................. 48
Wind Power Systems ............................ 50
Types of Wind Power Systems ................ 55
Horizontal Axis .................................. 56
Vertical Axis ...................................... 58
Wind Turbine System Components ............ 61
Nacelle ............................................ 64
Generator & Power Electronics ............. 65
Gearbox & Drivetrain ............................ 67
Frame & Cover ................................... 69
Other ............................................. 70
Rotor System ..................................... 72
Blades ............................................ 73
Hub Assemblies .................................. 77
Pitch Mechanisms & Bearings .............. 77
Nose Cones ...................................... 78
Towers .......................................... 79
Monopole ........................................ 80
Lattice .......................................... 82
Balance of System Components .............. 83

APPLICATIONS

General ............................................. 85
Electric Power Generation by Utilities ....... 86
Owners ............................................ 87
Independent Power Producers ............... 89
Investor-Owned Utilities ...................... 91
Public Utilities .................................. 94
Cooperative Groups ............................ 97
Location .......................................... 99
Onshore .......................................... 99
Offshore ......................................... 100
Distributed Electric Power Generation ...... 103
On-Grid .......................................... 107
Off-Grid .......................................... 111

REGIONAL MARKETS

General ............................................. 114
Regional Demographic & Economic Trends .. 115
Population Patterns ............................ 115
Economic Outlook .............................. 118
Construction Activity ........................... 121
Housing Trends .................................. 123
Regional Demand for Wind Turbine Systems . 126
Northeast ......................................... 130
New England ..................................... 133
Subregional Installed Capacity ............... 134
Renewable Portfolio Standards ............. 136
Middle Atlantic .................................. 139
Subregional Installed Capacity ............... 141
Renewable Portfolio Standards ............. 143
Midwest ......................................... 145
East North Central .............................. 149
Subregional Installed Capacity ............... 151
Renewable Portfolio Standards ............. 153
West North Central ............................. 155
Subregional Installed Capacity ............... 157
Renewable Portfolio Standards ............. 158
South ............................................. 161
South Atlantic .................................. 164
Subregional Installed Capacity ............... 166
Renewable Portfolio Standards ............. 167
East South Central .............................. 169
West South Central ............................. 172
Subregional Installed Capacity ............... 174
Renewable Portfolio Standards ............. 176
West ............................................. 177
Mountain ........................................ 180
Subregional Installed Capacity ............... 182
Renewable Portfolio Standards ............. 184
Pacific .......................................... 188
Subregional Installed Capacity ............... 190
Renewable Portfolio Standards ............. 192

INDUSTRY STRUCTURE

General ............................................. 195
Market Share ..................................... 198
Competitive Strategies ......................... 202
Research & Development ....................... 203
Marketing ......................................... 205
Distribution ...................................... 207
Acquisitions & Divestitures .................... 208
Cooperative Agreements ........................ 211

COMPANY PROFILES

ABB Limited .................................... 214
Acciona SA ....................................... 216
American Superconductor ...................... 217
Ark Alloy ........................................ 219
Bergey WindPower ............................... 220
China Guodian .................................. 222
Cliper Windpower ............................... 223
Daewoo Shipbuilding & Marine Engineering .. 224
Eaton Corporation ............................... 225
Eleryia Foundry ................................ 227
Gamesa Corporación Tecnológica ............. 228
General Electric ................................ 230
GreenEnergy Technologies .................... 232
LM Wind Power ................................ 233
Mitsubishi Heavy Industries .................... 234
Molded Fiber Glass .............................. 236
Nordex SE ....................................... 237
NTN Corporation ............................... 238
Otter Tail ........................................ 240
PPG Industries .................................. 241
SANY Group .................................... 244
Schaeffler Group ................................ 247
SGI Carbon ..................................... 247
Siemens AG ..................................... 249
SKF AB ........................................ 252
Suzlon Energy .................................. 255
ThyssenKrupp AG ............................... 257
Timken Company ................................ 259
TPI Composites ................................ 262
Trinity Industries ............................... 264
UpWind Solutions ................................ 265
Valmont Industries .............................. 266
Vestas Wind Systems ......................... 267
Xinjiang Goldwind Science & Technology .. 269
XERES Corporation ........................... 270
Other Companies Mentioned in the Study . 272-285

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List of Tables

EXECUTIVE SUMMARY
1 Summary Table.......................... 3

MARKET ENVIRONMENT
1 Macroeconomic Indicators .......... 8
2 Personal Consumption Expenditures... 11
3 Population & Households.......... 15
4 Manufacturers’ Shipments .......... 19
5 Construction Expenditures ....... 21
6 Building Construction Expenditures... 23
7 Nonbuilding Construction Expenditures... 25
8 Electric Power Generation ....... 28
9 Energy Consumption .......... 29

WORLD MARKET
1 World Wind Turbine System Demand by Region .......... 39
2 World Wind Turbine Demand by Leading Countries .......... 46

WIND TURBINE SYSTEMS
1 Wind Turbine System Market, 2003-2013 .. 49
2 Wind Turbine System Demand .. 54
3 Wind Turbine System Demand by Type ...... 56
4 Horizontal Axis Wind Turbine System Demand .......... 58
5 Vertical Axis Wind Turbine System Demand .. 61
6 Wind Turbine System Demand by Component ...... 63
7 Wind Turbine Nacelle Demand by Component ...... 65
8 Generator & Power Electronics Demand .. 67
9 Gearbox & Drivetrain System Demand .... 69
10 Nacelle Frame & Cover Demand ...... 70
11 Other Nacelle Components Demand ...... 72
12 Wind Turbine Rotor System Demand by Component ...... 73
13 Wind Turbine System Tower Demand ...... 80
14 Wind Turbine Balance of System Components Demand ...... 84

APPLICATIONS
1 Wind Turbine System Demand by Application ...... 86
2 Utility-Scale Wind Turbine System Demand ...... 87
3 Utility-Scale Wind Turbine System Demand by Owner ...... 88
4 Independent Power Producer Demand for Wind Turbine Systems ...... 91
5 Investor-Owned Utility Demand for Wind Turbine Systems ...... 94
6 Public Utility Demand for Wind Turbine Systems ...... 96
7 Cooperative Group Demand for Wind Turbine Systems ...... 99
8 Distributed Electric Power Generation (Small Wind) Demand for Wind Turbine Systems ...... 107
9 On-Grid Distributed Power Wind Energy (Small Wind) System Demand ...... 110
10 Off-Grid Distributed Power Wind Energy (Small Wind) System Demand ...... 113
11 Midwest Wind Turbine System Demand by Component, 2013 ........ 64
12 East North Central Wind Turbine System Installed Wind Capacity, 2003-2013 ...... 153
13 East North Central Renewable Portfolio Standards by State, 2013-2025 ...... 155
14 West North Central Wind Turbine System Installed Wind Capacity, 2003-2013 ...... 158
15 West North Central Renewable Portfolio Standards by State, 2013-2025 ...... 161
16 South Wind Turbine System Demand ...... 164
17 South Atlantic Wind Turbine System Installed Wind Capacity, 2003-2013 ...... 167
18 South Atlantic Renewable Portfolio Standards by State, 2013-2025 ...... 169
19 East South Central Wind Turbine System Installed Wind Capacity, 2003-2013 ...... 171
20 West South Central Wind Turbine System Installed Wind Capacity, 2003-2013 ...... 176
21 West Wind Turbine System Demand ...... 180
22 Mountain Wind Energy Installed Capacity by State, 2003-2013 ...... 184
24 Pacific Wind Energy Installed Capacity by State, 2003-2013 ...... 191

INDUSTRY STRUCTURE
1 Wind Turbine System Sales by Company, 2013 ...... 198
2 Selected Acquisitions & Divestitures ...... 210
3 Selected Cooperative Agreements ...... 212

List of Charts

WORLD MARKET
1 World Wind Turbine System Demand by Region, 2013 ...... 40
2 World Wind Turbine Demand by Leading Countries, 2003-2023 ...... 47

WIND TURBINE SYSTEMS
1 Wind Turbine System Market, 2003-2013 .. 50
2 Relationship Between New Installed Wind Capacity & Cumulative Installed Wind Capacity, 2003-2013 ...... 55
3 Wind Turbine System Demand by Component, 2013 ...... 64

APPLICATIONS
1 Utility-Scale Wind Turbine System Demand by Owner, 2013 ...... 89

REGIONAL MARKETS
1 Wind Turbine System Sales by Region, 2013 ...... 130

INDUSTRY STRUCTURE
1 Wind Turbine System Market Share, 2013 ...... 200
US Demand to jump 55% annually through 2018

US demand for wind turbine systems is forecast to reach $18.9 billion in 2018, a nearly nine-fold increase over severely depressed 2013 levels. The market for wind turbines tends to be highly volatile due to its reliance on government incentives. The outlook for wind turbine sales is somewhat muddied by the current lack of major federal incentives, as production tax credits were allowed to expire at the end of 2013. However, sales are still expected to rebound significantly as there are other incentives in play, including feed-in tariff payments and various grants from the Department of Energy. In addition, growth will continue to be driven by the need to meet state-level renewable portfolio standards. Other factors supporting growth include emerging offshore applications and the increasing popularity of systems that are taller, more powerful, and also more expensive.

Texas, California & Iowa to remain growth markets

The Northeast had the lowest installed wind energy capacity in the US in 2013, due primarily to a lack of available land for installations. However, through 2018 growth is expected to benefit from the installation of the nation’s first offshore wind farms. In addition, electricity costs in the Northeast are among the highest in the country, which heightens interest in renewable energy sources. In contrast, the South, in particular Texas, has a lot of available land with strong wind resources for wind farm development. In 2013, Texas had the most installed wind energy capacity, more than double the amount of California and Iowa, the second and third largest state markets, respectively. Growth in wind capacity has been particularly strong in these states due to favorable regulatory environments and strong wind speeds. In addition, Texas also benefits from having most of its electricity run through an intrastate electric grid, which is generally easier to update than interstate grids that are subject to more federal controls. The ongoing trend of constructing wind farms in rural areas and delivering the electricity to population centers will provide further impetus for growth.

Average price per unit to continue rising dramatically

The construction of larger, more powerful utility-scale wind turbine systems has caused the average price per unit of these systems to rise dramatically over the past decade, a trend that is expected to continue for the foreseeable future. These larger systems are built to take advantage of stronger, more consistent winds at higher altitudes, so they require taller towers and longer blades. Additionally, because longer blades add a significant amount of weight to the entire system, there is rising interest in constructing blades from higher value materials, such as carbon fiber, which further boosts value gains.
Cooperative Groups

Cooperative groups are also known as cooperative electric utilities, rural electric cooperatives, and community-owned projects. They are owned by their members and established to offer electrical service to those members. In most cases, cooperative groups operate in rural areas with low concentrations of consumers, areas which have historically been viewed as uneconomical for larger utilities. Electric cooperatives account for only about 12 percent of total US electric generating capacity, but operate in almost all states. These groups are incorporated under state laws and are usually led by an elected board of directors. Approximately 20 states regulate cooperatives at a state level. The rest defer control to the members of the cooperative. Electric cooperatives have access to debt financing from groups such as the Rural Utilities Service, a unit of the US Department of Agriculture; the National Rural Utilities Cooperative Finance Corporation; the Federal Financing Bank; and CoBank.

Demand for wind turbine systems among cooperative utility groups is projected to grow more than eight fold through 2018 to $345 million. Gains will be stimulated by ongoing development of wind farms in rural areas, which are the main sections of the US where cooperative groups operate. In addition, although many states have less stringent standards in their renewable portfolio standards, cooperatives are still required to have at least a moderate amount of electricity come from renewable resources. Advances will also be driven by the fact that the memberships of cooperatives are increasingly demanding that their utilities invest in clean energy technologies such as wind energy. Because of this interest, cooperatives may be in a better position to move more quickly on wind energy development than larger organizations that have more levels of bureaucracy.

Further gains will be restrained by the fact that some states either have lower renewable portfolio standards for cooperative utilities or they...
Bergey WindPower is a privately held manufacturer of small wind turbines and related components. The Company also offers design, supply, and installation services for hybrid power systems comprising wind turbines, diesel generators, and photovoltaic arrays.

The Company’s small wind turbines are upwind, three bladed types for use in residential and business power generation applications. These small wind turbines can be utilized in conjunction with solar electric systems. Bergey WindPower’s wind turbines include types for off grid and grid tied end uses. Off grid wind turbines include BERGEY EXCEL 1 1-kilowatt (kW) and BERGEY EXCEL R 7.5-kW models. The Company’s grid tied wind turbines are suitable for use in large rural homes, farms, and small businesses. Bergey WindPower’s grid tied wind turbines include 10- and 5-kW types. For example, the Company’s 10-kW turbines have fixed pitch blade controls and direct drive gearboxes. Bergey WindPower also manufactures towers for wind turbines. These towers are available in heights up to 160 feet and in such styles as guyed lattice, tilt up guyed tubular, monopole, tilt up lattice, and self supporting lattice.

Wind Turbine Systems is a 285-page Freedonia study that offers historical data (2003, 2008, 2013) plus forecasts for 2018 and 2023 for demand by type, component and application, as well as by region of the US. In addition, this study details key market environment factors, evaluates company market share and profiles 36 competitors in the US industry.

### Table IV-7

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