
T2+2™ Industry Overview

# Wind Turbines (Utility)

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While market sizes are hard to estimate, the following provides an example of how to figure out the total addressable market for this technology. While we seek to be as accurate as feasible in the estimate below, it is budget constrained and thus preliminary. We estimate the total market size, at saturation, for the world, and for all competitors, to be approximately:

| *Market Niche Size* | | | |
|---|---|---|---|
| ***Market Size in Dollars*** | ***Growth Rate*** | ***Base Year*** | ***Detailed Basis for Estimate*** |
| $9 billion | 6.7% | 2006 | The 2006 market size for utility-sized wind turbines over 1 megawatt (1000 kW or 1 MW) was estimated at over $9 billion.[1] Given that the tower portion of the turbine is approximately 25% of the cost, and this market was estimated at $2.1 billion in 2005, this suggests a global market size of $8.4 billion for the previous year leading to approximately a 6.7% overall growth for 2006.[2] This would suggest a market size of over $14.2 billion by 2013. |

The market size and growth rate is a function of the number of people in the market and the anticipated rate of buying. As markets transition between emerging, growth, shakeout, mature, and declining, the basis for competition and the number of competitors usually changes, along with the factors influencing adoption of innovation. The number of and growth rate for customers suggests how many units might be sold.[3]

| *Our Current View on the Phase of the Market* | |
|---|---|
| ***Today*** | ***Trend*** |
| Growth | Mature |

The 1 MW wind turbine technology is still growing; however, a chart in the 2005 Frost and Sullivan report "World Wind Energy Generator Markets" shows the large wind turbine market phase to be near the border of late growth to mature.[4,5] None-the-less, with the push for energy independence, we believe that there is room for growth. Our research uncovered that, in 2007, 35% of new U.S. electrical power generation into the grid came from utility based wind energy, making wind's overall contribution to the United States electrical grid approximately 1.2%.[6] It is projected that wind will provide the United States with 20% to

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[1] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).

[2] Ibid.

[3] For a detailed discussion of the "innovativeness dimension," see Everett M. Rogers, *Diffusion of Innovations*, 4th ed. (New York: Free Press, 1995). For further readings related to market phases and innovation, see also James Utterback, *Mastering the Dynamics of Innovation* (Boston: Harvard Business School Press, 1996) and Vijay K. Jolly, *Commercializing New Technologies: Getting from Mind to Market* (Boston: Harvard Business School Press, 1997).

[4] Ron Haruni, "Wind Turbine Market Estimated To Reach $60.9 Billion by 2013," Seeking Alpha web site, http://seekingalpha.com/article/93192-wind-turbine-market-estimated-to-reach-60-9-billion-by-2013 (accessed December 29, 2008).

[5] "World Wind Energy Generator Markets," Frost and Sullivan web site (subscription required), July 14, 2006, http://www.frost.com/ (accessed December 29, 2008).

[6] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).

35% of its electricity by 2030.[7,8] This would imply that the United States will need to increase the percentage of electricity generated by wind by 0.82% and 1.25% each year to meet the target. This is estimated to be approximately 47 terawatt hours which need to be added each year.[9]

Markets can also be described in terms of the basis for competition (best technological performance, best value or the price/performance tradeoff that best matches the end-users' preferences, lowest cost, or best availability or the ability to get the product quickly). This dimension helps to define the context in which a commercialization strategy must be developed.

| *Basis for Competition in the Arena* | |
|---|---|
| ***Today*** | ***Trend*** |
| Best Value | Best Value |

The utility wind turbine market appears to be driven by best value which is the intersection of best performance and lowest cost.[10,11] Our research appears to show that with greater installed capacity, the cost tends to be lower, suggesting a best value approach.[12]

Examples of major players include the following:

| *Examples of Major Competitors in the Arena* | | |
|---|---|---|
| ***Competitor*** | ***Relevance*** | ***Web site*** |
| Vestas | In the year 2005, Vestas had 28% of the market share for wind turbines over 1 MW in size.[13] Vestas has installed over 7,000 large wind turbines 1 MW and larger throughout the world.[14] | http://www.vestas.com |
| General Electric | In the year 2005, General Electric had | http://www.ge-energy.com |

[7] Ron Haruni, "Wind Turbine Market Estimated To Reach $60.9 Billion by 2013," Seeking Alpha web site, http://seekingalpha.com/article/93192-wind-turbine-market-estimated-to-reach-60-9-billion-by-2013 (accessed December 29, 2008).
[8] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).
[9] Ibid.
[10] "World Wind Energy Generator Markets," Frost and Sullivan web site (subscription required), July 14, 2006, http://www.frost.com/ (accessed December 29, 2008).
[11] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).
[12] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).
[13] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).
[14] "Vestas | Results – wind turbine by wind turbine," Vestas web site, http://www.vestas.com/en/about-vestas/results/results-–-wind-turbine-by-wind-turbine.aspx (accessed December 29, 2008).

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| | 18% of the market share for wind turbines over 1 MW in size.[15] GE dominates the North American market for large turbines.[16] | |
| Gamesa | In the year 2005, Gamesa had 13% of the market share for wind turbines over 1 MW in size.[17] Large 2.0 MW turbines made up approximately 73% of Gamesa's 2007 sales with the remainder being 850 kW turbines.[18] | http://www.gamesa.es/en |
| Enercon | In the year 2005, Enercon had 13% of the market share for wind turbines over 1 MW in size.[19] These wind turbine market share was made up of their E-70 and E-82 models.[20] | http://www.enercon.de/en/_home.htm |
| Suzlon | In the year 2005, Suzlon had 6% of the market share for wind turbines over 1 MW in size.[21] Currently, they are building a wind farm which is expected to reach over 1000 MW capacity.[22] | http://www.suzlon.com |
| Siemens | In the year 2005, Siemens had 6% of the market share for wind turbines over 1 MW in size.[23] | http://www.powergeneration.siemens.com |
| Clipper Windpower | Clipper Windpower has been identified as a company that is currently undergoing dramatic expansion in 2008 particularly as it | http://www.clipperwind.com/ |

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[15] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).

[16] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).

[17] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).

[18] "Memoria Anual 2007 Annual Report," Gamesa web site, http://www.gamesa.es/files/File/MemoriaAnual2007_en.pdf (accessed December 29, 2008).

[19] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).

[20] "Enercon," Enercon web site, http://www.enercon.de/en/_home.htm (accessed December 22, 2008).

[21] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).

[22] "Suzlon:Windfarms," Suzlon web site, http://suzlon.com/WindFarms.html?cp=2_4 (accessed December 29, 2008).

[23] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).

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| | relates to the installation of 2.5 MW turbines.[24] | |
| CTC/DeWind | CTC/DeWind is expanding operations and recently installed a 2 MW turbine in the United States.[25] | http://www.dewind.de/ |

| *Examples of Key Stakeholders or Networking Channels with Contact Information* | | |
|---|---|---|
| ***Stakeholder*** | ***Relevance*** | ***Contact Information*** |
| American Wind Energy Association | The American Wind Energy Association is a trade association for the United States wind energy industry.[26] | http://www.awea.org/ |
| German Windenergy Association (BWE) | The German Windenergy Association is a trade association for the German wind energy industry.[27] | http://www.wind-energie.de/en/ |
| European Wind Energy Association | The European Wind Energy Association is primarily a trade association for the European wind energy industry, it has members in 50 countries.[28] | http://www.ewea.org/ |
| Global Wind Energy Council | The Global Wind Energy Council is the largest association for the worldwide wind energy market and has over 1,500 corporate memberships representing all aspects of the wind energy market.[29] | http://www.gwec.net |

Users' abilities to buy the technologies they want are constrained by relevant government regulations and by relevant industrial standards and certification requirements. These requirements indicate test and evaluation procedures that can speed market acceptance if incorporated into concurrent engineering.

| *Examples of Regulations, Standards, and Certifications* | | |
|---|---|---|
| ***Identifier and Promulgator*** | ***Description*** | ***Comments*** |
| Utility Wind Turbine Verification Program (TVP) | While this is neither a regulation nor a standard, this pilot program tests and verifies the performance of wind turbines, this allows utilities to gain valuable first-hand experience in operating larger wind farms.[30] | Participation is voluntary. |

[24] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).
[25] Ibid.
[26] "American Wind Energy Association - the national trade association for the wind energy industry," American Wind Energy Association web site, http://www.awea.org/ (accessed December 19, 2008).
[27] "Home - German WindEnergy Association (BWE)," German WindEnergy Association web site, http://www.wind-energie.de/en/ (accessed December 19, 2008).
[28] "European Wind Energy Association - EWEA: About EWEA," European Wind Energy Association web site, http://www.ewea.org/index.php?id=5 (accessed December 22, 2008).
[29] "Global Wind Energy Council - GWEC: Global Representation," Global Wind Energy Council web site, http://www.gwec.net/index.php?id=16 (accessed December 22, 2008).
[30] Stan Calvert et al., "The EPRI/DOE Wind Turbine Performance Verification Program," United States Department of Energy Office of Scientific & Technical Information web site, http://www.osti.gov/bridge/servlets/purl/459380-CrB1Bj/webviewable/459380.pdf (accessed December 26, 2008).

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| IEC 61400 : IEC wind turbine standards | The International Electrotechnical Commission (IEC) Technical Committee-88 (TC-88) set forth a list of standards relating to various aspects of the wind turbine industry.[31] | These standards are considered to be incomplete.[32] |
| DNV-OS-J101 : Design of Offshore Wind Turbines Structures | The Design of Offshore Wind Turbines Structures standard by DNV mandates the structure for the offshore utility wind turbines.[33] | This certification appears to be required for offshore wind turbines. |
| DNV-OS-J102 : Design and Manufacture of Wind Turbine Blades | The Design and Manufacture of Wind Turbine Blades standard by DNV mandates the structure for wind turbine blades.[34] | This certification does not state if this is currently required. |

Entry barriers are obstacles that remove customer segments from the market for some period of time. They limit the size of the addressable market in general or the market share that can be captured. These barriers must be overcome or avoided to have a successful market entry. Our work to date suggests the following entry barriers may prevent customer segments from buying this type of technology for some period of time.

| *Market Entry Barriers* | |
|---|---|
| ***Name of Barrier*** | ***Description/Why*** |
| ***Cost of Product or Service Too High*** | Wind turbines for the utility wind energy market can be quite costly. Not including the cost of the turbines themselves, which usually runs $1000 per kW, the setup cost for the turbines are $7 million for 150 wind turbines per year.[35,36] The cost of shipping for the turbine towers over land is $175,000 per tower for one thousand miles and the cost by water is approximately $75,000 per tower.[37] Due to the large size of the 1.5 MW and 3 MW turbines, a 350 ton to 600 ton special crane must be rented for $150,000 to $250,000 for the construction or repair of the turbine.[38] With the rising price of large turbines and their installation in recent years, this market barrier could potentially get worse.[39,40] |

[31] "IEC Wind Turbine Standards," American Wind Energy Association web site, http://www.awea.org/standards/iec_stds.html (accessed December 22, 2008).
[32] "Next Generation Power & Energy Article: New DNV standards for wind turbine design," PE Next Generation Power & Energy web site, http://www.nextgenpe.com/pastissue/article.asp?art=271021&issue=215 (accessed December 22, 2008).
[33] Ibid.
[34] Ibid.
[35] Chris Tuttle, "Renewable Energy: Wind Power," U.S. Department of Agriculture web site, http://www.usda.gov/rus/electric/engineering/sem2002/tuttle.htm (accessed December 30, 2008).
[36] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).
[37] Ibid.
[38] Ibid.
[39] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).
[40] "Global Wind Turbine Markets and Strategies, 2008–2020," Emerging Energy Research web site, http://www.emerging-energy.com/user/GlobalWindTurbineMarketsandStrategies20082020710920415_pub/TurbinePromo.pdf (accessed December 30, 2008).

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| ***Supply/Demand Component Mismatch*** | The rapid growth has led to difficulties in obtaining the other parts necessary for installation, leading to delays or cancellation of large wind turbine projects.[41,42] In order for the wind turbine market to reach its potential, the manufacturing of the other components need to increase.[43] Yet the utility wind turbine market has a supply chain that is difficult to scale due to the high investment cost.[44] Some parts can still require up to two year lead time.[45] |
| ***Customers Need Financing*** | In the United States, the Production Tax Credit provided extensive financial assistance for wind energy installations and a drop off in installations is forecast when the tax credit expires.[46,47] |
| ***Regulatory Barriers*** | Regulation can provide a challenge for companies to install large wind turbines. Some of these regulatory barriers include safety, electrical requirements, appearance, and zoning requirements.[48] |
| ***Unappealing Appearance of Wind Turbines*** | A barrier to the wind energy market is the unattractive appearance of large turbines.[49] Furthermore, the noise that turbines produce can make local support for turbines difficult to obtain.[50,51] There is also a concern that large wind farms will lower the property value of surrounding areas.[52] |
| ***Grid Difficulties*** | The difficulties with grid expansion can be a barrier for turbines designed for utility purposes.[53,54] Not only is it necessary to expand the grid to reach these |

[41] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).
[42] Susan Combs, "The Energy Report 2008," Window on State Government web site http://www.window.state.tx.us/specialrpt/energy/ (accessed December 26, 2008)
[43] "Global Wind Turbine Markets and Strategies, 2008–2020," Emerging Energy Research web site, http://www.emerging-energy.com/user/GlobalWindTurbineMarketsandStrategies20082020710920415_pub/TurbinePromo.pdf (accessed December 30, 2008).
[44] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).
[45] Ibid.
[46] Susan Combs, "The Energy Report 2008," Window on State Government web site http://www.window.state.tx.us/specialrpt/energy/ (accessed December 26, 2008)
[47] "AWEA Small Wind Turbine Global Market Study," American Wind Energy Association web site, http://www.awea.org/smallwind/pdf/2008_AWEA_Small_Wind_Turbine_Global_Market_Study.pdf (accessed December 25, 2008).
[48] "State and Local Regulations on Wind Energy," Energy Bible web site, http://energybible.com/wind_energy/government_regulations.html (accessed December 30, 2008).
[49] Seth Slabaugh, "www.windaction.org | Wind farm issues include bird kills and appearance," Industrial Wind Action Group web site, http://www.windaction.org/news/12648 (accessed December 24, 2008).
[50] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).
[51] Chris Tuttle, "Renewable Energy: Wind Power," U.S. Department of Agriculture web site, http://www.usda.gov/rus/electric/engineering/sem2002/tuttle.htm (accessed December 30, 2008).
[52] Susan Combs, "The Energy Report 2008," Window on State Government web site http://www.window.state.tx.us/specialrpt/energy/ (accessed December 26, 2008)
[53] Khanh Q. Nguyen, "Alternatives to grid extension for rural electrification: Decentralized renewable energy technologies in Vietnam," *Energy Policy* 35, no. 4 (2007). http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6V2W-4MBCJPY-2&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=924fbf086ea5fee294a97cfa74234a76 (accessed December 24, 2008).
[54] Susan Combs, "The Energy Report 2008," Window on State Government web site http://www.window.state.tx.us/specialrpt/energy/ (accessed December 26, 2008)

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| | turbines, but the transmission lines need to be specially designed in order to cope with the fluctuations caused by the intermittent nature of the wind.[55] In the past, this has led to blackouts when the wind died down too far although there is some hope that batteries can be used to deal with the intermittent wind market barrier.[56,57] |

There are many barriers that surround the large wind turbine market. These barriers include the high cost of initial investment, grid difficulties, regulatory barriers, the noise produced by wind farms as well as the potential lowering of property value due to being in close proximity to a wind farm.[58,59]

The likelihood of buying at any given point of time is a function of a number of individual decisions. Therefore, there is a distribution, or wave, of possible outcomes, which reflects the probability of individual buying decisions. The market drivers identified below are statistical tendencies that will influence buying by accelerating or retarding buying to a greater or lesser extent.

Market drivers are forces that strengthen or weaken the importance of end-user needs over time. Practice level drivers are micro-economic; they affect the end-user directly. They influence the selection of substitutable goods and thus affect market share. Arena level drivers affect the organizations and industrial sectors in which the end-users work. They influence the overall demand for goods like this technology and its substitutes. They affect when and how much of the total addressable market is actually going to be in the market and buying.

| *Market Drivers* | |
|---|---|
| ***Name of Driver*** | ***Why Significant*** |
| ***Increased Interest in Renewable Energy*** | Utility wind turbines provide a renewable clean energy source which does not pollute and allows electricity to be produced anywhere there is wind.[60] This further decreases the reliance on diminishing foreign fuel reserves which normally supply a portion of electricity.[61] |
| ***Decreasing Space Drives Turbine Size*** | Currently the wind turbine industry is expanding while the demand for energy continues to increase. Eventually, as the most promising locations get wind turbines, the decreasing amount of space available for additional wind turbines puts pressure on the industry to create larger wind turbines so more electricity can be generated in less ideal spots.[62] |

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[55] Ibid
[56] Ibid
[57] Jeff St John, "The Year in Wind: Boom Followed by Gloom," Green Tech Media web site, http://www.greentechmedia.com/articles/the-year-in-wind-boom-followed-by-gloom-5425.html (accessed December 26, 2008).
[58] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).
[59] Susan Combs, "The Energy Report 2008," Window on State Government web site http://www.window.state.tx.us/specialrpt/energy/ (accessed December 26, 2008)
[60] MAKE Consulting, "The Wind Forecast – Macro Perspective," MAKE Consulting web site, http://www.make-consulting.com/fileadmin/pdf/2008/081219_Appetiser_Marcro_Perspective.pdf (accessed December 30, 2008).
[61] Ibid.
[62] ABS Energy Research, "The World Wind Power Report Ed 4 2007," Market Research web site, http://www.marketresearch.com/product/display.asp?productid=1596415&xs=r&SID=68808825-435447744-502110137&curr=USD&kw=&view=abs (accessed December 30, 2008).

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|---|---|
| ***Favorable Regulations*** | In countries where there are good financial incentives, such as the United States, wind energy is experiencing extensive growth.[63] Common financial incentives include feed-in-tariffs (FITs) or rebates. In the United States, the Production Tax Credit provided extensive financial assistance for wind energy installations and a drop off in installations is forecast when the tax credit expires.[64] Renewable Portfolio Standards, which some states in the United States require, mandate that some amount of energy has to come from renewable resources.[65] |

To understand the market, we have provided some metrics and statistics that can help you visualize the demand on a broad scale. Below are some of the quantifiable pieces of data that may be useful in describing the demand for a new technology.

*Appendix*

| *Name of Metric* | *Description* |
|---|---|
| Cost of wind generated energy | On-shore wind energy costs approximately 5 to 8 cents per kilowatt hour.[66] |
| Statistics for Wind Energy | Wind technology produced 20 gigawatts (GW) of energy in 2007 and is experiencing a 30% annual growth in output.[67] After natural gas, wind is the second largest source of new power generation.[68] Denmark produces 20% of its energy from wind.[69] |
| Market penetration of major players | As of 2005, six main competitors dominated the global over 1 MW wind turbine market with 83% of the total. The six main competitors were: Vestas (28%), General Electric (18%), Gamesa (13%), Enercon (13%), Suzlon (6%), and Siemens (6%).[70] |
| Statistics for Wind Energy | Turbines over 1000 kW are primarily used for utility purposes with a few large industrial applications.[71] Approximately 89% of utility wind turbines are in the over 1001 kW range, the remaining 11% were in the medium size range of between 501 to 1000 kW.[72] |
| Database of Incentives | Database of State Incentives for Renewables and Efficiency: http://www.dsireusa.org/ |

[63] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).
[64] Susan Combs, "The Energy Report 2008," Window on State Government web site http://www.window.state.tx.us/specialrpt/energy/ (accessed December 26, 2008)
[65] "awea.org>> Policy: Wind energy policy, transmission & regulation: The Renewables Portfolio Standard: How It Works and Why It's Needed," AWEA web site, http://www.awea.org/policy/rpsbrief.html (accessed December 30, 2008).
[66] Susan Combs, "The Energy Report 2008," Window on State Government web site http://www.window.state.tx.us/specialrpt/energy/ (accessed December 26, 2008)
[67] "Wind Turbine Market Opportunities - Wind Harvest International," Wind Harvest International web site, http://www.windharvest.com/windmarket (accessed December 25, 2008).
[68] "Department of Energy - Wind Energy Could Produce 20 Percent of U.S. Electricity By 2030," U.S. Department of Energy web site, http://www.energy.gov/news/6253.htm (accessed December 14, 2008).
[69] "Wind Turbine Market Opportunities - Wind Harvest International," Wind Harvest International web site, http://www.windharvest.com/windmarket (accessed December 25, 2008).
[70] J. Tracey Livingston, "Emerging Opportunities for Customers and the Competitive Strategy for the Company," Wasatch Wind web site, http://www.wasatchwind.com/images/whitepapers/Emerging%20Customer%20Opportunites%20for%20Space%20Frame%20Towers.pdf (accessed December 29, 2008).
[71] "Wind Turbine Market Opportunities - Wind Harvest International," Wind Harvest International web site, http://www.windharvest.com/windmarket (accessed December 25, 2008).
[72] United States Department of Energy, "Annual Report on U.S. Wind Power, Installation, Cost, and Performance Trends: 2007," U.S. Department of Energy web site, http://www1.eere.energy.gov/windandhydro/pdfs/43025.pdf (accessed December 26, 2008).

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| Resource | Renewable Energy Policy Project includes state reports and an online library: http://www.repp.org/ |