

Suzlon

An Indian Wind Energy Company Goes Global

*Alexandra Barton-Sweeney*¹

*Jaan Elias*²

*Constance E. Bagley*³

*Douglas W. Rae*⁴

Suzlon, an India-based wind energy company, had made quite a splash in its first three-and-a-half years on the international stage. By the end of 2007, the company was the market leader in Asia and had completed projects in fourteen countries across five continents. But many investors believed these first years were just a warm-up for what was to come (the company's market capitalization had doubled since its IPO in 2005). Global demand for wind energy remained strong and Suzlon had added significant capacity.

Indian textile manufacturer Tulsi Tanti founded Suzlon in 1995 to avoid having to rely on India's notoriously unpredictable and expensive electric power grid to power his family's textile operations. After commissioning two wind turbines, Tanti discovered that wind energy was an even better business than textiles. Within six years of its incorporation, Suzlon had become the dominant player in the Indian wind industry.

In June 2004, Tanti hired a Dane, Per Hornung Pedersen, to lead Suzlon's entrance into the global wind market. It had been an opportune time to enter the international wind energy business. The demand for electricity was booming, while environmental concerns over greenhouse gases emitted by coal-fired electrical plants had mounted and the price of fossil fuels had skyrocketed. With little more than a cell phone and the internet, Pedersen set to work building Suzlon's international presence.

While Suzlon pursued wind farm projects in markets Pedersen had targeted, the company also made significant acquisitions. In 2006, Suzlon bought Hansen Transmissions, a Belgian manufacturer of wind turbine gearboxes, and thereby became the world's most vertically integrated wind turbine manufacturer as well as a supplier to some of its competitors.

In 2007, Suzlon purchased REPower, a German manufacturer of large wind turbines, for \$1.8 billion. REPower built some of the world's largest wind turbines, including a 6 megawatt model under development. REPower's large turbines augmented Suzlon's product line and would allow Suzlon to enter the off-shore wind farm market that appeared ready to take-off.

At the beginning of 2008, Suzlon was set to double its manufacturing capacity by year's end. The company was the fifth largest wind turbine manufacturer in the world, but had designs on moving into the top three. Pedersen, therefore, was faced with the challenge of finding additional markets to fuel the company's continued growth.

The Rise of Suzlon

From Textiles to Energy

In the mid-1990s Tulsi Tanti's family-owned polyester yarn business, located in Pune, Maharashtra, had been suffering from rising conventional power costs and frequent outages. India's rapid economic growth had driven increasing energy demand, but the state-owned utilities had not been able to increase power generation capacity because government officials were loath to enact rate increases for capital improvements. In addition, the government required utilities to buy indigenous coal with hefty transportation costs, leaving inadequate funds to increase capacity.

Industrial users bore the brunt of the dysfunctional power-distribution system. Charged more than double per kilowatt hour (kWh) as similar manufacturers abroad and faced with almost daily power blackouts, industrial users like Tanti began to rely on expensive diesel generators to maintain operations. But with the escalating cost of oil, this solution became less and less sustainable.

In 1994, Tanti learned about government incentives for those who invested in wind power. The Ministry of Non-conventional Energy Sources (MNES) had recently instituted a scheme to encourage self-generated renewable energy. As part of the plan, the state of Maharashtra offered an accelerated depreciation benefit of 80 percent, capital subsidies, and exemption from income, excise, import, and concessional taxes for wind power projects. The government incentives were partially supported by a "Clean Energy Fund" funded by taxes on conventional energy. Wind power providers seeking to sell their electricity were given several options: "wheeling" power to the State Electricity Board (SEB), which transferred the power to consumers for 2 percent of sales; or selling power to the SEB, at a "buy-back" rate of Rs2.25/kWh, or directly to a third-party. The SEB could also "bank" the power as a credit for up to six months, allowing producers to use the power as needed without paying the heavy utility taxes.

In the spring of 1994, Tanti ordered two wind turbines, the modern equivalent to windmills, from the German manufacturer, Sudwind, to supply electricity for the family textile business. According to Tanti, "Once we got the machines, I thought that [renewable energy] might be a worthwhile business to enter."⁵

The Shift into Wind Power

Tanti sold off family property to raise \$600,000 to fund his wind energy venture. It was a risky investment. Even with the government incentives, the wind energy industry in India was floundering. Previous wind projects in India had been poorly executed, left to run without adequate funds or staff for proper upkeep. Several projects were never finished and served only as a tax break for the wealthy. Not surprisingly, banks were no longer willing to fund wind energy companies. Tanti realized, however, that wind energy offered a promising opportunity if he could provide what others did not -- a maintenance and service component to wind farms.

With that goal in mind, Tanti secured the rights from German turbine manufacturer, Sudwind, to sell its turbines in India. But before receipt of his first order, Sudwind went bankrupt. Seizing the opportunity, Tanti bought the global rights to Sudwind's machines, hired the manufacturer's engineers, and acquired its research and development center in Germany. Tanti incorporated Suzlon in April 1995, and the family shifted most of its efforts to developing, manufacturing, selling, and operating wind turbines.

With the ability to provide wind turbines, Suzlon brokered deals with the utilities to increase grid capacity. As part of the Indian "wheeling and banking" system, Suzlon would build and maintain a wind farm (a collection of wind turbines); use as much energy as it needed at no cost; and then offer the remaining capacity to the utility at a surcharge, or sell it directly to other corporations. Suzlon also built

wind farms for industrial users: it made wind assessments, secured property rights and financing, and at times leased the property and turbines.

Suzlon's first project was for a ten turbine, 3.5 MW (megawatt),⁵ wind farm for one of the textile mill's vendors, a petrochemicals company called IPCL. Suzlon successfully completed the project in just three months. More projects soon followed as Suzlon developed a track record for quality products and service. But it was in 2000 that Suzlon secured the contract that would propel the company into the big league. Bajaj Auto hired Suzlon to build two wind farms with a combined capacity of 60 MW. According to Tanti, "Within four years, [Bajaj's] costs of electricity are the lowest in their peer group,"⁶ impressing business owners throughout the country.

In less than a decade, Suzlon had become the largest wind energy company in India. By 2003 the company operated research and manufacturing facilities in the Netherlands, India, and Germany, and it controlled more than 50 percent of the Indian wind power market. Tanti began to seek ways to expand his business beyond his home country. In 2003, Suzlon made its first venture abroad, securing a contract with DanMar & Associates for a 24-turbine wind farm in Minnesota. Dan Juhl, founder of DanMar, explained how Suzlon beat out the competition: "Their design and technology was better suited for our wind resources in the US Midwest and 10 percent more efficient than that of competing providers."⁷ With his first international success, Tanti realized that Suzlon might have potential as an international turbine supplier.

Tapping the "Silicon Valley" of Wind Power

Following Suzlon's success in the United States, Tanti looked for ways to fund more ventures abroad. He secured the necessary capital with a \$24 million investment from investment bank Citicorp and venture capital fund ChrysCapital. Ashish Dhawan, Managing Director of ChrysCapital, had high hopes for the fledgling company: "Tulsi Tanti is a visionary and the most ambitious entrepreneur I have met. Suzlon is well-equipped to take advantage of its low-cost manufacturing base and give large global players in the market like Vestas, Enercon, and GE a run for their money."⁸

Soon after, Tanti began his search for a person to lead Suzlon's international expansion. He turned to the cradle of the wind industry, Denmark. The Danish government had invested heavily in wind energy in reaction to the oil crisis of the 1970s. In the 1980s, the government vowed to cut carbon emissions by 22 percent of 1988 levels by 2005, and it funded research at the University of Copenhagen to build larger and more efficient wind turbines. To encourage their use, the government instituted a Feed-in Tariff to guarantee high energy prices for wind farm developers and offered tax exemptions to families who generated wind electricity by purchasing their own turbine or investing in community turbines. By 2004, more than 150,000 Danish families participated in wind turbine cooperatives with 5,500 turbines installed throughout the country.⁹ By 2007, Denmark derived nearly 20 percent of its electric energy from wind. The favorable environment for wind farm development and research had led to the formation of large Danish wind turbine manufacturers and developers, including the world's largest turbine manufacturing firm, Vestas. Dubbed the "Silicon Valley of Wind," Denmark had become the leader in electricity-generating wind capacity.

⁵ Electric capacity is measured in watts. One kilowatt (kW) = 1,000 watts, One megawatt (MW) = 1 million watts, and one gigawatt (GW) = 1 billion watts. Electric consumption is most commonly measured in kilowatt-hours (kWh). A kilowatt-hour means one kW of electricity consumed for one hour. The average U.S. household consumes about 10,000 kWh of electricity each year. Depending on the wind, a 5 MW wind turbine generally produces around 15 million kWh in a year.

Per Hornung Pedersen

Danish businessman Per Hornung Pedersen left his position at NEG Micon, a wind turbine manufacturer, in 2004, after the company merged with Vestas. In between jobs, Pedersen reflected:

My career had been in high-growth and turn-arounds, and I was used to having complex jobs in a changing environment. So, I looked back on all the places where I had been successful and thought about who created the success. I realized that just a handful of people stood out as making a difference. And I thought, “What if one could make an organization that only consists of people who are willing and want to make a difference. How do you create such an environment?” And that was what I wanted to accomplish.

When Tanti contacted Pedersen with the opportunity to build Suzlon’s international business, Pedersen was intrigued, but not without reservations. With years of experience in the wind industry, Pedersen understood that the global wind industry was a relationship business dominated by a small network of long-time developers and suppliers who were reluctant to welcome newcomers. Pedersen recalled:

Suzlon was a scary proposition. As an international manager, all my alarm signals were going off. Everything said, “Be careful! This could be dangerous!” But it was important to me that Citicorp and ChrysCapital were on board. Their due diligence was essential to my taking the job since they don’t just throw \$24 million at someone for fun. And I thought, “There must be substance behind this.”

In June 2004, Tanti and Pedersen joined forces. “[With Pedersen’s] Western European know-how of wind, combined with Indian engineering skills and a low cost base in India,” Tanti believed he had “quite a competitive cocktail.”¹⁰ That summer, Suzlon opened its global headquarters of international marketing and sales in Aarhus, Denmark.

On October 17, 2005, Suzlon went public on the Bombay Stock Exchange. Shares were oversubscribed by 43 times within ten minutes and the company quickly grew to a market capitalization of \$8 billion. Virtually overnight, Suzlon had become the tenth largest wind power company in the world. CitiCorp’s bankers characterized their initial stake in the company as one of their best investments ever.

With the Wind at Their Backs

The year 2004 proved to be a fortuitous time to push into the global market for wind-generated electricity. A number of factors combined to make governments, electrical utilities, and independent power producers eager buyers of wind turbines and wind farms. Electrical demand was growing at unprecedented rates. Environmental concerns about the influence of greenhouse gases on global warming made renewable energy sources more attractive, and the cost and supply of fossil fuels was proving erratic.

Jump in Global Demand for Electricity

In 2004, total global electricity consumption was expected to increase 47 percent over the next ten years, requiring a massive amount of new capacity. With developed nations in Europe, Japan, and the United States anticipating a modest rise in their electrical needs, most of the increased consumption was coming from developing countries such as China, India and Brazil. Market liberalization in the developing world had brought industrialization and industrialization required power.

For example, China’s electrical demand grew by 10 percent in 2004 alone, straining the country’s energy grid. Chinese officials were searching for ways to generate more electricity from whatever sources

possible. Besides building one of the world's largest hydroelectric facilities, Chinese utilities were opening one new coal-powered electrical generating plant nearly every week.

Concerns over Greenhouse Gases

Using coal, natural gas or oil to generate electricity poured massive amounts of CO₂, a greenhouse gas, into the atmosphere, thereby leading to global warming. Wind power was an attractive alternative.

The link between CO₂ and global warming first came to the public's attention during the 1980s. Scientists published studies showing that CO₂ trapped heat in the atmosphere, leading to higher global temperatures. Experts posited that if left unchecked, increased CO₂ concentrations would lead to significant climate change and environmental damage.

During the 1990s, these reports inspired a series of U.N. sponsored conferences on the threat of global warming. These meetings culminated in a 1997 conference in Kyoto, Japan, where representatives of nearly every nation on earth met to hammer out an agreement to reduce emissions of CO₂. The resulting accord, ratified by over 130 nations, did lead to CO₂ reduction programs in a number of (primarily European) countries. However, many countries opted out of binding commitments. First, developing countries, including China and India, argued forcefully and successfully that they should not be subject to CO₂ restrictions, because this would hamper their ability to industrialize. Then, a few industrialized countries, such as the United States and Australia, refused to ratify the accords. They argued that the developing countries should shoulder some of the burden of reducing CO₂ emissions. President George W. Bush also questioned the existence of a scientifically proven link between greenhouse gases and global warming and expressed concern about the economic cost of reducing emissions.

During the 2000s, however, even countries that were not bound by the Kyoto Accords bowed to world-wide public pressure to develop renewable sources of energy (such as wind, solar and hydro). In early 2005, Chinese officials passed a law requiring utilities to generate at least 3 percent of their electricity from renewable sources. In the United States, the federal government passed a production tax credit (PTC) to aid wind power developers, and 24 states mandated that utilities produce a percentage of their electrical output from renewable sources. Despite a powerful coal lobby, the Australian government declared a Mandatory Renewable Energy Target (MRET) for its utilities in 2001.

The Erratic Future of Fossil Fuel

The inflation-adjusted price of oil reached its lowest point in history in late 1998. Since that time, oil and natural gas prices had skyrocketed and the future cost of fossil fuels remained unpredictable. While coal prices remained steady, transportation costs to bring coal to power plants rose with the price of oil and substantially increased the price on delivery.

In contrast, wind farms could be constructed quickly and bring predictable returns on investment. Because average wind speeds remained fairly stable over the years, wind power was the only form of energy with calculable costs of 95 percent certainty over 20 years. Therefore, utilities and investors found that wind power provided a price hedge against the steadily increasing price of fossil fuels. Many analysts argued that wind power was cheaper than fossil fuels once the price of oil increased above \$40 a barrel. Wind also provided a security hedge against the supply of fossil fuels. Most of the major oil and natural gas reserves were located in unstable parts of the world, creating concern about the possibility that supplies could be disrupted.

Wind Turbine Supply Bottlenecks

Because of these factors, the demand for wind power worldwide had skyrocketed. In 2001, there had been \$2 billion in capital expenditures on wind turbines. By 2004, expenditures had increased to \$25 billion.

By 2007, the global installed capacity for wind was 76 GW. This figure was expected to more than double over the next three years, representing a capital investment of \$180 to \$200 billion.

In the mid-2000s, one major constraint on the development of the wind industry was coming from the inability of the turbine manufacturers to keep up with demand. Wind turbines were made up of hundreds of parts, many of which were developed for other industries. For example, bearings originally developed for the airline industry had become crucial to the functioning of wind turbines. However, bearings manufacturers had been unable to keep up with demand from wind turbine manufacturers, creating a bottleneck. Other components, such as gearboxes, castings and forgings, were also in short supply, so orders were often delayed.

Suzlon's "Economy of Scope"

Despite being a newcomer to the international turbine market, Suzlon's experience in India gave the company substantial expertise in most areas related to developing wind farms. This "economy of scope" meant Pedersen could meet a variety of needs for prospective clients and adjust projects to fit a customer's requirements.

Technology

The comeback of wind turbines had been accompanied by an increased level of sophistication in their design and a research community dedicated to their improvement. As part of its purchase of Sudwind, Suzlon had taken over the company's research and development facility in Germany. Suzlon operated a separate wind research facility in the Netherlands and thereby remained plugged into the latest thinking and research in turbine technology. In addition, Suzlon had dedicated resources to product and process engineering in India.

Product

To fit the needs of its customers in India, Suzlon offered a full line of turbine sizes (with the exception of the largest turbines capable of providing more than 3.5 MW). Suzlon's manufacturing base in India insured that it had a low cost structure for the manufacture and transport of components.

Site Engineering

To build a wind farm, wind engineers conduct site specific surveys of wind speeds to determine the appropriate turbines to install and their placement. Knowing specific wind speeds is important because wind turbines have different minimum wind speeds ("cut-in speeds") at which they can begin generating electricity and maximum wind speeds ("cut-out speeds") before they must be shut down for safety. With its experience in building wind farms in India, Suzlon had the expertise to do the necessary surveys.

Financing

Constructing a wind farm can be costly. Prices vary depending on the turbine size, but the average price for large turbines is \$1000 per kW electrical power installed. In addition, installation on a wind farm averages another \$1,000 per kW. Installation costs include transformers to convert current from the turbines into current for the grid; telephone wires for remote control and surveillance of the turbine; cables to transport the power to the power line; and concrete foundations and road construction, which can vary depending on soil conditions. (In contrast, construction costs of fossil fuel power plants are about \$1,300 per kW, or \$650 million for a 500 MW unit.)

Financing, therefore, was a crucial component of building a wind farm. Again, Suzlon's experience in India gave it experience in working out financing deals for potential wind farm developers. Suzlon also could act as a co-developer for a farm if the client so desired.

Construction

Suzlon's experience in India had given it experience not only in building turbines, but in installing them in the field. Providing transportation and construction services was a considerable undertaking given the enormous size of wind turbines and their towers. For example, the nacelle weighs 70 metric tons, while the rotor diameter is 88 meters. (In comparison, a Boeing 747 airplane is 65 meters from front to end.) Towers for the largest turbines could extend more than 20 stories in height. Simply transporting these materials to a site could be an ordeal. On many occasions, developers had to demolish and reconstruct homes just to pass through. Suzlon's skill in transportation and construction allowed the company to offer "turn-key" projects to clients.

Service

Tanti had insisted on a first class service organization to keep Suzlon's wind farms running. The standard lifespan of a turbine is 20 years. Just like any other machine, however, it can fail prematurely. Access to land-based turbines was difficult since they were 300 feet in the air; offshore sites posed additional problems. In order to install or repair a turbine, a special crane was required with rental costs of more than \$25,000 per day. Each day a turbine did not operate could cost up to \$8000 in lost generation.

Pedersen Plots Suzlon's Global Expansion

Despite its substantial experience in India, Suzlon remained a newcomer on the international scene with the "liability of newness." Building wind farms was a substantial undertaking with costs running into the hundreds of millions of dollars. Therefore, developers preferred to partner with companies and people who had a track record and proven reliability. Pedersen observed, "It is very much a relationship business, in which credibility is paramount in these large and relatively complex deals."

A number of wind projects had been proposed throughout the world in 2004, but Pedersen wanted to be selective and focus the company's efforts to build credibility and relationships. He surveyed the international scene with an eye towards identifying those areas where Suzlon could successfully complete a project and then gain follow-on business. Among his most important considerations were: Is the country's electrical demand growing? Does the government's policy favor the development of wind power? Does the country have wind resources? What other sources of electricity does it have? What sort of infrastructure does it have (e.g., transmission lines, access to the grid, roads, cranes)? Is there room in the market for Suzlon? Would Suzlon operate only as a supplier or would it have to participate in the development of wind farms?

"Politics Always Matter"

In addition, Pedersen noted, "Politics always matter." A careful evaluation of the presence and reliability of government policies to support wind energy as well as the stability of the current regime was critical to deciding which markets to enter. Pedersen explained:

We must consider where each country will be over the next couple decades. When we go into a market, our products have an estimated lifetime of at least twenty years so we are making a commitment to service them for those years. We therefore think twice about sending our people to a country that may become unstable during that time.

From his analysis, Pedersen identified several major markets that looked attractive for Suzlon: the United States, China, Australia and selected markets in Europe.

Pedersen was troubled by the “stop and go” approach to supporting wind energy in the United States. Congress would authorize the Production Tax Credit for a year or two and then the authorization would lapse for a period before Congress would once again pass the credit. This created a boom and bust cycle. Despite this, Pedersen decided to focus on a core group of key customers in the Midwest, the South, and the West. Suzlon decided to target small projects initially to build a track record with a long-term goal of building relationships with large developers such as FPL and Babcock & Brown. Because the main players in the U.S. were developers, Pedersen knew that Suzlon should enter only as a turbine supplier to avoid “sawing the branch it was sitting on” by directly competing with its customers.

Because China was a major growth market, Pedersen was willing to accept lower profitability with smaller projects in exchange for the chance to get a foothold in the country. Suzlon would enter the Chinese market first by building a local factory to meet the 70 percent local content rule. Then it would co-invest with utilities to develop projects. Although the Chinese government made sure that bids for large wind projects over 100 MW were won by Chinese turbine manufacturers, Suzlon could target smaller projects of about 50 MW. To compete with other manufacturers, Suzlon offered high quality products at low prices, a pricing strategy Pedersen hoped to support by co-investment and co-development projects.

To get a foothold in Australia, Pedersen established credibility with an introductory project in the region. Geographically, Pedersen chose to concentrate efforts on Victoria and New South Wales, Australian states where wind power was the strongest. Suzlon sold directly to both developers and utilities with a focus on price per kWh. It also provided project finance services and development assistance.

In Europe, Pedersen believed there was less opportunity in mature markets such as Denmark and Germany where the major players dominated. However, several of the large companies had rocky relationships with developers and utilities. This created an opening for Suzlon. Pedersen focused on low volume turbines in a limited geographical area, specifically Scandinavia and the Baltic. To entice developers, Suzlon priced its products at 5 to 10 percent below the competition; it offered project finance services; it outsourced maintenance to avoid the overhead of service operations; and it developed partnerships through selected projects. Because developers in the European market were active in a number of countries, Pedersen knew that building strong relationships with developers could lead to add-on business across borders.

Building a “Culture of Commitment, Integrity, and Keeping Promises”

According to Pedersen, the wind power industry had a “culture of commitment, integrity, and keeping promises.” The quality of people Suzlon hired was crucial to its success since there were relatively few entities working on large projects. As Pedersen explained:

In the U.S., there are only about 50 main customers. If you hire the right people with the right contacts, then the doors will open. Then, of course, we would have to deliver, but at least the first five minutes are secured. If we came as complete unknowns from India, it would be very difficult to get access to these people.... Our customers in the U.S. know that when Andy Cukurs, our leader of U.S. operations with ten years of experience, says something, he means it.

Because success in the wind industry was built largely on relationships, Pedersen believed that Suzlon would have to set up a sales office and service operation in most countries it entered. To do so, he planned to hire local talent. Pedersen commented:

We need local people to understand the local power industry, rules, and regulations, as well as make local contacts. Relatively intelligent people can learn about wind turbines, but the

important part is that they have project knowledge because we are not selling wind turbines, we are selling projects.

To ensure that deals reflected the realities of a specific project, Pedersen insisted that Suzlon's attorneys work closely with its managers. Contracts could be exceedingly complex with involved warranties and limitations of liability. But nonetheless at every stage of the negotiation, Pedersen wanted the lawyers consulting with the managers who would eventually have to implement any agreement: "Our contracts are something like 200 to 300 pages. But when there is a problem, it's not the lawyers that fix it. We have to fix it."

Outpacing the 2004 Plan

By 2008, Suzlon had become an international force in turbine manufacturing, with nearly 8 percent global market share and annual revenues of \$1.7 billion. Overall, Suzlon had experienced faster growth than expected in what Pedersen considered an aggressive business plan. As the company gained projects in the key markets that Pedersen had outlined in his 2004 plan, Suzlon was also able secure projects in other countries as well. These included Spain, Italy, Portugal, Turkey, Brazil, and South Korea. As of late October 2007, the total book order for that year was \$4.1 billion (3,251MW in sold capacity), with \$500 million in domestic orders (369 MW) and \$3.6 billion in international orders (2882 MW).

Suzlon had maintained its majority market share in India despite increasing competition from foreign developers, and it had plans to build the world's largest wind farm, a 1000+ MW project in Maharashtra. While holding its own in India, Suzlon was steadily expanding its business in China, the U.S., and Australia.

- In the U.S., Suzlon had sold 2 GW of turbines with another 3 GW expected over the next three years, accounting for 61 percent of the company's international orders. In 2007, Suzlon won its largest U.S. contract for 700 MW of capacity for PPM Energy, one of the largest wind power developers in North America. To supply the U.S. market, Suzlon had built a manufacturing facility in Minnesota.
- In China, Suzlon had constructed manufacturing facilities in Tianjin. From this base, Suzlon could now supply Chinese wind projects with an annual production capacity of 600 MW.
- Despite Australia's bias toward coal production, Suzlon was able to garner two large contracts in the country, a 132 MW project in New South Wales for Sydney's Renewable Power Ventures (RPV). It also secured a repeat order from AGL Energy for a total of 166 MW in new wind power.

In addition to gaining projects across the globe, Suzlon made some key acquisitions. In 2006, the company purchased Hansen Transmissions International. Hansen was the second largest supplier of wind turbine gearboxes globally, as well as the manufacturer of other industrial gearboxes. Hansen was headquartered in Edegem, Belgium, but had facilities in Australia, South Africa, the United Kingdom and the United States as well. Even though the largest customers of Hansen were other wind turbine manufacturers, Pedersen noted that he didn't consider these companies to be competitors -- the competition was other methods of generating electrical energy, like coal. "It doesn't matter if we supply other manufacturers because we just want to make the cake bigger. Our help in expanding the industry will result in a win-win situation for all."

In 2007, Suzlon once again pulled off a major acquisition, purchasing REPower Systems AG for \$1.8 billion. REPower was headquartered in Hamburg, Germany and had considerable research and manufacturing facilities in Germany as well. The company specialized in large turbines (< 3.5 MW) and was developing a mammoth 6 MW turbine. The large turbines were well-suited for the steady, strong

flow of wind that occurred offshore. In Europe and the United States, a number of offshore projects were being discussed and many considered this the next frontier for wind energy.

Suzlon's success did not go unnoticed. In 2007, Tanti was recognized as one of the "Heroes of the Environment" by TIME magazine for Suzlon's "contribution to the fight to mitigate climate change."¹¹ In addition, Suzlon's acquisition of REPower was declared the "Global Renewable Energy M & A of the Year" by Ernst & Young.

Considering New Markets

In 2007, Suzlon management had set ambitious goals to be among the top three turbine manufacturers in the world by 2010. Although the company was the market leader in profitability, it was not in volume. Suzlon was planning to more than double its manufacturing capacity (to 5700 MW) by the end of 2008. The company also targeted increasing the percentage of its revenues derived from projects outside India to 80 percent by January 2009.

Once again, Pedersen had to decide where to go next. One possibility was South Africa. A developer had recently requested bids for a turnkey 50 MW wind farm in the region. Although similar projects in Tanzania had been met with difficulty securing proper roads and construction equipment, Suzlon had significant experience with projects in developing parts of the world as a result of early challenges in India and its recent venture into Brazil. However, expanding into South Africa was risky and could constrain Suzlon's ability to bid on projects elsewhere. Furthermore, winning the project would require staffing its first office on the African continent and finding qualified local personnel.

With so many other opportunities throughout the world, did it make sense to enter a market that might be more than a decade away from substantial reliance on renewables? Should Suzlon work harder to sell additional projects in Turkey? What about the emerging wind industry in Romania and other countries in Eastern Europe? Or the rising energy demand in South America in countries like Chile or Venezuela? There could even be opportunities in oil rich countries such as the United Arab Emirates as Middle Eastern financiers were beginning to invest in renewable energy. On the other hand, even though the economic size of the current market opportunity in Africa was modest, Pedersen noted, "If we make the right move now, we might capture the entire African continent."

To view the exhibits for this case, please go to <http://cases.som.yale.edu/suzlon>

This case has been developed for pedagogical purposes with the co-operation of Suzlon and Per Pederson. The case is not intended to furnish primary data, serve as an endorsement of the organization in question, or illustrate either effective or ineffective management techniques or strategies.

Thanks to the Center for Business and the Environment at Yale for help in conducting research for this case.

Copyright 2008 © Yale University. All rights reserved. Reprinted with permission of Yale University School of Management. To order copies of this material or to receive permission to reprint any or all of this document, please contact the Yale SOM Case Study Research Team, 135 Prospect Street, PO Box 208200, New Haven, CT 06520.

Endnotes

- ¹ Case Writer, Yale School of Management.
- ² Director of Case Study Research, Yale School of Management.
- ³ Visiting Associate Professor of Business Administration, Yale School of Management.
- ⁴ Richard S. Ely Professor of Management & Professor of Political Science, Yale School of Management.
- ⁵ Kushan Mitra, “Is Suzlon Built to Last?,” *Business Today*, May 21, 2006.
- ⁶ *Ibid.*
- ⁷ Naazneen Karmali, “Wind Man,” *Forbes*, June 9, 2006.
- ⁸ Mitra, “Is Suzlon Built to Last?”
- ⁹ Mattias Akselsson, “The World’s Leader in Wind Power,” *Scandinavica.com*, September 2004.
- ¹⁰ Suzlon Energy, Ltd., <http://www.suzlon.com>.
- ¹¹ *Ibid.*