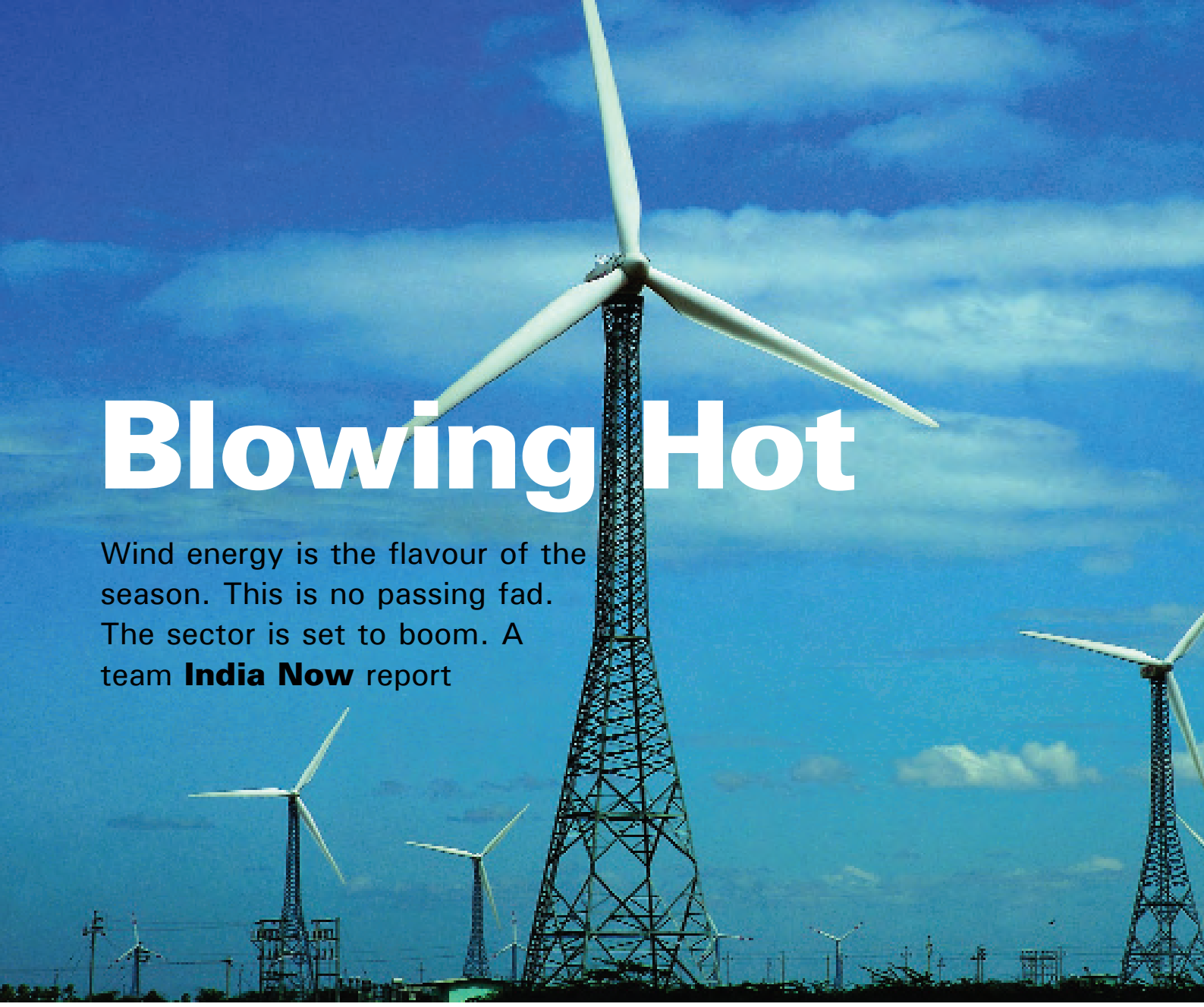

Blowing Hot

Wind energy is the flavour of the season. This is no passing fad. The sector is set to boom. A team **India Now** report

WIND SUPER POWER: Last year, India overtook Denmark and emerged as the fourth largest wind energy market in the world

IT is one of the fastest-growing industries, exciting international venture capitalists (VCs), private equity firms, MNC behemoths, non-resident Indian investors, Indian public sector giants, and private sector majors. Even celebrities like actor Aishwarya Rai and cricketer Sachin Tendulkar have put their money in it. Wind power generation is a sunrise industry today, attracting investors by the droves.

International and domestic majors who have invested - or plan to invest - in the burgeoning wind energy sector include GE, the $150 billion US giant, leading Danish wind turbine maker Vestas, Indian public sector majors Oil & Natural Gas Corporation (ONGC), Hindustan Petroleum Corporation Ltd (HPCL), Nuclear Power Corporation and MMTC, NRI entrepreneur C. Sivasankaran, private sectors players Reliance Energy and Sulzon Energy, and VCs and private equity companies Bessemer Venture Partners and ChrysCapital.

This is not surprising, considering the phenomenal growth of the wind energy sector in the country. The Brussels-based Global Wind Energy Council (GWEC), which opened a chapter in New Delhi in April, says India was the strongest market for wind energy in Asia in 2005.

Last year, India overtook Denmark and emerged as the fourth largest wind energy market in the world (after Germany, Spain and the US), with a capacity of 4,430 MW. It saw the addition of 1,430 MW of new installed capacity in 2005. Globally, total installed capacity of wind power is almost 60,000 MW.

"Wind power will continue to grow rapidly at an average rate of 18 per cent per year up to 2010," says Arthouros Zervos, chairman, GWEC. "This will take the total installed capacity up to 134,800 MW worldwide by 2010, reaching 17,800 MW of new installations in 2010."

International wind markets grew by a hefty 40.5 per cent in 2005 (adding 11,500 MW to installed capacities). The investment involved in generating equipment alone was nearly $15 billion.

The Asian market for wind energy is expected to register an annual growth rate of 23.5 per cent up to 2010, and

total capacity should touch 20,100 MW (from 7,000 MW last year). India will lead, followed by China, Japan, South Korea and Taiwan.

About 50 countries have regulations governing development of renewable energy like wind. With the sharp escalation of crude oil prices, many more countries are expected to set up wind farms.

India was among the first nations to set up a Ministry for Non-Conventional Energy Sources. Says Vilas Muttemwar, Minister for Non-conventional Energy Sources: "We are witnessing unparalleled growth in the wind energy sector in India. Nearly all the installed capacity has come from the private sector, without which this development would not have been possible."

Ramesh Kymal, chairman of the Indian Wind Turbine Manufacturers Association (IWTMA), notes that though the official potential for wind power in India has been assessed at around 45,000 MW, the industry projects it as high as 100,000 MW.

India, which has in the past been acknowledged as the new 'wind superpower', has an ambitious programme for wind energy generation. According to the Planning Commission, India's power generation capacity is expected to go up from the present 130,000 MW to about 630,000 MW by 2031.

Non-conventional sources — including wind, small hydro-electric and bio-mass projects — will account for about 80,000 MW, with wind alone contributing about 45,000 MW. The ministry estimates that by 2012 - when total power capacity is expected to rise to 240,000 MW - wind will contribute about 12,000 MW.

About 160 sites have been identified in over a dozen states as potential wind farms. Surveys are being conducted in the rest of the country to estimate the potential for wind power generation.

Besides the relatively low cost of wind power — about 7.5 cents a unit — capital costs are also competitive. According to industry estimates, it costs a little over $1 million for one MW of wind power. The central government - and even some of the state governments — offers a slew of concessions to entrepreneurs putting up wind farms. These include tax write-offs, accelerated depreciation, soft loans, and incentives for foreign investments. Among non-conventional energy sources, wind power comes right at the top in terms of costing, tax benefits, even technical barriers in terms of transmission and distribution.

Returns on wind energy projects are superior to bonds and government securities, and don't have the risks and the volatility of the stock markets. Many high net worth individuals are believed to have invested in the growing number of wind energy farms that are being set up in states like Tamil Nadu, Karnataka, Maharashtra, and Rajasthan.

Public sector majors have also unveiled investment plans in this sector. State-owned ONGC, which is the country's leading oil exploration and production firm, plans to set up wind power projects in Gujarat, Karnataka, Tamil Nadu and Andhra Pradesh. It will start with 50 MW projects in Gujarat and Karnataka. ONGC has tied up with Power Trading Corporation, another state-owned firm, to lift wind energy from its plants.

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According to N.K. Mitra, ONGC's director (offshore), the company will invest about $8.7 million for the two windmills in Gujarat and Karnataka. Power generated out of these windmills will be cheaper than conventional grid power, leading to major savings for the company.

HPCL is also looking at states like Maharashtra, Karnataka and Andhra Pradesh, for its wind park projects. The company has identified over half a dozen sites. Like ONGC, it plans to sell power to the national grid or to state electricity boards. HPCL, which operates several refineries, plans to invest over $200 million for these projects, which could add up to a neat 500 MW of power.

Nuclear Power Corporation, which operates 15 nuclear power units with a total capacity of 3,360 MW, is putting up a 50 MW windmill project near its plant in Tamil Nadu.

MMTC, a leading state-owned mines and commodities trading firm, has been quick off the mark. According to S.D. Kapoor, chairman-cum-managing director, the company's first wind farm should be operational later this year. MMTC plans to invest about $55 million for its wind power project, which will have a 50 MW capacity.

NRI businessman C. Sivasankaran has even more ambitious plans for wind energy. He envisages an investment of $135 million for the first set of windmills, which should generate about 150 MW of power.

GENERATING BILLIONS OUT OF WINDMILLS

*FOR **Tulsi Tanti, chairman and managing director of Suzlon Energy Ltd,** 2006 has been a remarkable year. From a virtually unknown person, recognised only within professional and personal circles, he has catapulted to national and international limelight.*

Pitch-forked to the 'Billionaire's club', following the successful initial public offering (IPO) of Suzlon - the issue was oversubscribed 45 times - the 48-year-old industrialist made it to the Forbes Billionaires list (global ranking: 562, net worth: $1.4 billion), and also to India's Richest 40.

Later, following a spurt in the price of the Suzlon scrip, his wealth (and standing in billionaires' lists) soared, touching $3.7 billion. Besides his fluctuating wealth, Tanti made it to the headlines with his daring acquisitions and overseas investments: he paid a whopping $560 million to acquire Belgium-based Hansen Transmissions International, making it the second largest overseas acquisition by an Indian corporate.

Tanti also announced he would be investing $60 million in a wind turbine generator manufacturing facility in China, one of the largest Indian investments in the country. Suzlon Energy (Tianjin) Ltd aims to build seven plants, a technology centre and other facilities. The Pune-based company has also won a $40 million contract for a wind farm project in China, which is one of the strategic international markets (together with the US, Australia and Europe) for Suzlon.

Tanti, whose family-owned textile units in Gujarat suffered because of massive power cuts, diversified into wind energy in 1994. He has built Suzlon into an $850 million conglomerate, with global ambitions. It ranks as the world's eighth-largest producer of wind energy equipment in terms of installed capacity, and is also one of the lowest-cost producers in the world.

Tanti is bullish about the prospects of wind energy both in India and in other international markets. Excerpts from an interview with India Now:

What are the reasons for the fast pace of growth being witnessed in the wind energy sector in India?

It is a combination of factors that is driving the growth of wind energy in India and around the world. Foremost among these are increasing oil and gas prices, combined with growing environmental concerns, such as global warming.

With steadily escalating fuel prices, and steadily increasing demand from the world's developing economies, there is a growing recognition of the need to diversify energy sources for energy security in the long run. Wind energy, with its enormous global potential, has emerged as a resource of choice for power generation. In addition to this, international treaties like the Kyoto Protocol have placed the onus of environmental protection on countries as a whole, leading to policy level support for renewable energy sources, and wind energy among them.

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Do you see the industry continue to grow at the current pace — last year it grew by 45 per cent — over the next few years?

BTM Consult ApS, a renowned specialist in the renewable energy space, in its report on the global wind energy sector (World Market Update - 2005), projects an average growth rate of annual new installations until 2010 at over 16 per cent, and the average growth rate for cumulative installations until 2010 at 21 per cent.

The report puts the new capacity to be added between 2006 and 2010 in the region of 89,500 MW; taking the cumulative wind power capacity across the globe to over 148,000 MW by end-2010.

Many public sector undertakings are also entering the wind energy sector, but most of them have plans for smaller capacity power plants. Do you see the emergence of larger wind energy units in the coming years?

We believe the industry will see an increasing shift towards large wind parks over the coming years. The industry is already witnessing increasing participation from large energy companies and utilities across the world.

This can mainly be attributed to the ability of large companies to marshal the necessary financing and manage the immense logistical exercise of setting up a large wind farm. Large wind farms also help consolidate operations and maintenance activity, translating to better operating efficiencies in the long run.

Does Suzlon, which has been on an overseas acquisition spree, plan to start generating power out of wind?

Our overseas acquisitions have been driven by our strategic plans and backward

integration strategy aimed at achieving greater control over our value chain. Suzlon Energy Ltd focuses on its core area of expertise - the research, development and manufacture of wind turbines — and has no plans at present to venture into power generation.

Do you see wind energy becoming competitive — in terms of cost per MW of power generated — compared to coal, gas and nuclear power? What are the current costs in India for generating power out of wind? Is the future of the industry linked to oil prices?

Wind energy is already a highly competitive energy source, as is witnessed in the growth of installations worldwide, and the rapid growth of the industry as a whole. The approximate cost in India for a unit of power generated from wind is 7.6 cents - a price that is very competitive in comparison to conventional sources.

We do not believe that the future of the wind power industry is dependent on oil prices alone. Wind energy has today developed to a stage where it is not only viable, but also commercially attractive. We believe the industry is set on a strong growth track due to the recognition of the inherent strengths of wind energy technology, namely potential, rapid installation, modular expansion, cost effectiveness, zero fuel costs, non-polluting and sustainability.

What are the major challenges before the industry, both in India and abroad?

The greatest challenge the industry faces today is in its supply chain. The growth of the wind energy sector is limited not by demand, but supply of critical wind turbine components leading to delays in manufacture and project execution.

At Suzlon, we have recognised the challenge early and implemented an aggressive backward integration strategy — using in-house R&D, strategic alliances and acquisitions to bring the supply chain of critical wind turbine components such as rotor blades, generators and gearboxes under our control.

Sivasankaran has already acquired about 500 hectares of land in Tamil Nadu for his proposed wind farm, which will have about 150 windmills.

The Anil Ambani-controlled Reliance Energy, which already has a small wind farm project in Karnataka, plans several other projects in other coastal states. According to Ambani, the group will invest over $13 billion in various power projects - with a total capacity of 16,000 MW - including wind, thermal, gas, solar and nuclear. VCs and private equity companies have also been looking at the sector with interest. Recently, Bessemer Venture Partners, a US-based private venture capital firm, invested $21 million in the Shriram group of Chennai, which plans to expand its wind energy business. Earlier, ChrysCapital — a leading investment firm focussed on India, which manages $1 billion through four funds - invested a similar sum in Suzlon Energy, the Pune-based wind energy giant that has been making waves globally (see box).

Suzlon, of course, is busy with its frenetic pace of growth, both internationally and domestically. The company is involved in supplying turbines to windmills in Dhule in Maharashtra, where one of the world's largest wind power projects with a capacity of over 1,000 MW is coming up. Suzlon had earlier built Asia's largest wind farm - with a 500 MW capacity — in Kanyakumari in Tamil Nadu.

The technology to harness electricity out of wind is also improving. Turbines these days are taller, have longer blades and are also environment friendly. Unlike other conventional and even non-conventional sources, wind supply is virtually unlimited, so the cost of 'raw material' is zero.

Not surprising then, that several entrepreneurs are eyeing the wind energy sector in India seriously. And their dreams and designs are fortunately not being dismissed as hot air by financiers.