



# Wind Vista

## Visit to Suzlon's Vankusawade and Toseghar sites

By Bhavya Laul

**A** day-long visit organised by Suzlon Energy last month to its Vankusawade and Toseghar wind power sites in Maharashtra proved to be an informative as well as visually appealing experience.

It took the group four hours to reach the Vankusawade site from Pune, through hilly terrain, the last stretch along a bumpy, muddy access road. The first view of the site was spectacular, with rows of slow-whirring turbines dotting the dusty red and green landscape. There was virtually no habitation, barring the Suzlon employees, who greeted us warmly.

The Vankusawade site is a part of Suzlon's sprawling Satara Wind Farm, one of the highest wind parks set up by the company. It stands at an elevation of about 1,000 metres above the Koyna Reservoir, 40 km from the town of Satara. The wind farm's total installed capacity as of March 2015 stood at 570.15 MW, spread across 824 wind turbine generator units of different ratings, ranging from 350 kW to 2,100 kW. Some of the key sites at the farm are Vankusawade, Bothe, Gude and Sadawaghapur.

The windy and chilly Vankusawade site has hundreds of old, weather-worn turbines with lattice towers and brownish

blades. Some turn in slow motion, a few are silent, completely non-functional. Most of these turbines are of 350 kW rating spread across a vast land area, which makes the site suitable for repowering.

Amidst these turbines is located the Satara Knowledge Center, which was inaugurated in November 2009 and plays a vital role in imparting training to company employees. After a brief tour of the site (and plenty of photo opportunity), we were ushered into the knowledge centre for an information session on the mechanics, machinery and operation of wind turbines. The knowledge centre also houses a 1.25 MW and a 1.5 MW wind turbine simulator used for training purposes. We had the opportunity to see the turbine machinery and components up close. Wearing canary-yellow helmets and gloves with rubber grips, we shakily climbed up the ladder to the nacelle. Standing on the machine platform, we could see how each of the components – the generator, bearings, shafts, gearbox, etc. – function.

Some time later, we visited the Toseghar site, about half an hour away. The sight here was completely different, dramatic in its own way. White, tubular modern turbines stood tall across the skyscape. These were Suzlon's new S9X



# Snapshot of the Satara Wind Farm

## Site details

Main sites	Vankusawade, Bothe, Gude and Sadawaghapur
Major towns in the vicinity	Satara, Patan and Karad
Elevation	Around 1,000 metres above mean sea level
Land ownership	Land for wind farm sites is private land, government land and forest land

## Wind mast data

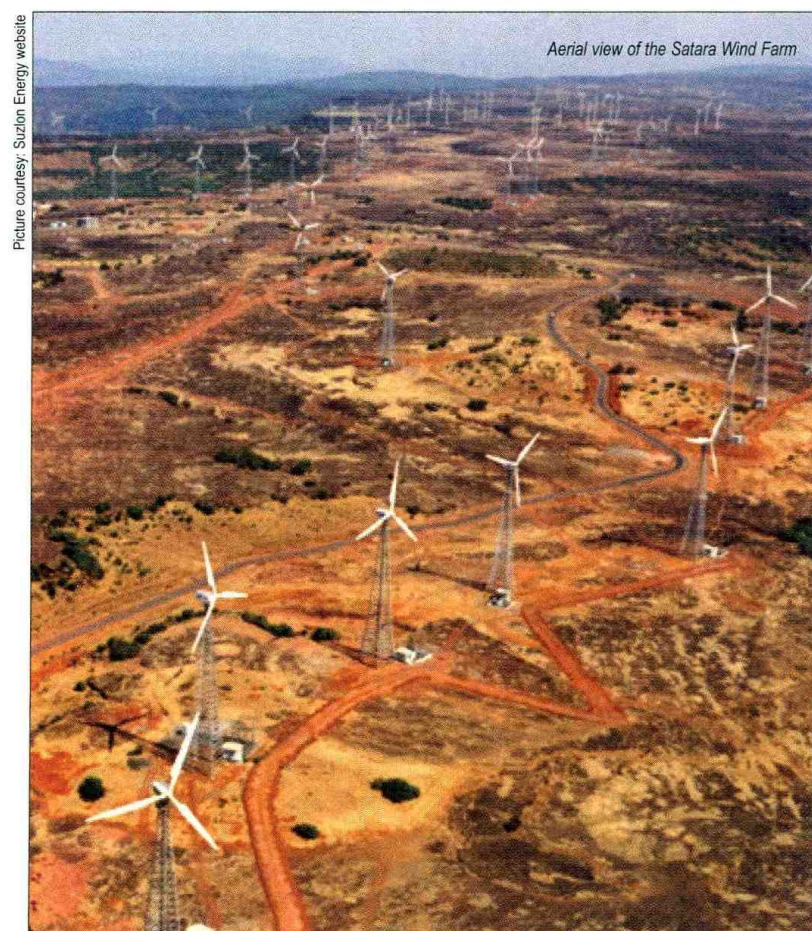
NIWE mast location	Vankusawade
Measuring period	June 7, 2001 to August 19, 2004
Measured mean annual wind power density	249 W per square metre (measured at 50 metres mast height)
Mean annual wind speed	5.68 metres per second (measured at 50 metres mast height)

## Installation details

Installed wind park capacity (as on March 2015)	570.15 MW
Total no. of WTGs	824
Product mix	350 kW (556 units), 600 kW (37 units), 1,000 kW (7 units), 1,250 kW (105 units), 1,500 kW (58 units) and 2,100 kW (61 units)
Project commencement year	First turbine of 350 kW was commissioned at Chalkewadi on November 18, 1998 for Ghodawat Industries Limited

NIWE: National Institute of Wind Energy

Source: Suzlon Energy



machines. Compared to the 350 kW Vankusawade turbines, these 2,100 kW turbines were gigantic, their huge blades slicing the air in wide powerful sweeps. We entered the base of the tower where the monitoring and control systems are stationed.

According to Suzlon, the S9X suite can operate effectively even in a lower wind spectrum. The key design features of this turbine are

a doubly fed induction generator converter with variable speeds; a larger swept area with rotor diameters of 95 metres and 97 metres; and hub heights of 80 metres, 90 metres and 100 metres.

On the way back, we walked down to the picturesque Toseghar Falls near the site, a delightful end to an interesting and informative visit. ■