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Feature article

# India is on the move

In the follow-up to the “Rebooting India” feature from the July/August issue of *Renewable Energy Focus*, Sarosh Bana dissects the various elements and dynamics of India’s budding energy market compared to other countries.

**F**ORESEEING SOLAR to become a mainstream energy source in India, Ajay Goel, CEO of Bangalore-based **Tata Power Solar**, says the build-up of solar power capacities was hampered by the disinclination of companies to invest in manufacturing in the absence of long-term policy support that could have made these capacities viable, as well as increased demand and access to financing options.

Policy mismanagement does not appear to be India-specific. The US has been particularly affected by this drawback that decimated its wind farm installations by 90 per cent in 2013, from a record of 13,000 MW the previous year, according to data released by the **Global Wind Energy Council** (GWEC).

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A panel testing shed at a Tata Power solar complex in India.

The US, with 61,000 MW of wind capacities, is next only to China's 91,000 MW in the list of 85 countries surveyed by GWEC with cumulative wind capacities of 318,000 MW. India also reflected the global downturn where 45,000 MW of wind generating capacities were installed worldwide in 2012, but slumped to 35,000 MW in 2013. This was only the second time in 25 years that installed capacity had shown negative growth.

Other impediments in India are the mandatory forecasting for projects with severe penalty for deviation from scheduled generation, increased credit risk due to delayed payments by discoms, lower-than-expected increase in Feed-in Tariffs (FiTs) in some states, severe evacuation constraints, and the steep Rupee depreciation that has affected foreign currency borrowings and cost of turbines using imported components and raw material.

While wind energy accounts for 8.24 per cent of India's overall electricity capacity, this share is 33.8 per cent in Denmark, followed by 24.6 per cent in Portugal, 20.9 per cent in Spain and 17.3 per cent in Ireland. Denmark is targeting 50 per cent wind by 2020, primarily from offshore wind farms.

Similarly, the global solar power industry is expected to get a boost from Saudi Arabia — the world's largest exporter of crude — which plans to harness solar energy to meet almost 30 per cent of its total energy requirement by 2032 by investing \$109 billion to produce 41 GW of solar energy by that time.

Wind turbine manufacturers such as **Suzlon**, **Vestas** and **Enercon** (renamed **Wind World**) have captured the largest market shares of wind power installations in India in the past, experts say.

"Over the past couple of years, many new entrants such as **Regen**, **Gamesa** and **GE** have established their installation base in India," said Ramesh Kymal, chairman and managing director of **Gamesa Wind Turbine Pvt Ltd**, the India subsidiary of Spain's Gamesa Corporación Tecnológica SA.

In 2013-14, Suzlon regained its top spot in the country, with a share of 19.4 per cent, edging past Gamesa's 19.1 per cent. The shares of Wind World were 17.03 per cent, Regen, 15.9 per cent, GE India, 9.6 per cent, INOX Wind, 7.2 per cent, and Vestas, 3.9 per cent.

Venkataraman Rajaraman, director

of infrastructure and project finance at Fitch Group's India Ratings & Research, in Chennai, says India has pushed ahead relatively successfully on renewable energy. Most global original equipment manufacturers have set up production units in the country, and wind developers have been helped in land acquisition by the respective state governments. But he says the sector is constrained by high costs of importing capital equipment, which is heavily debt funded.

"Many developers have not hedged these exposures, rendering them vulnerable to exchange and interest rates," Rajaraman notes. "Universally, solar power is expensive and unviable but for policy support from governments, and availability of debt too is generally more difficult than for other renewables."

## Manufacturers leverage renewables

Amit Kumar, executive director, energy & utilities, PricewaterhouseCoopers Pvt. Ltd (PwC), says the high net worth beneficiaries of accelerated depreciation had been manufacturers of textiles, cement, steel and automobiles who used renewable energy as captive power for their power-intensive industries. They enjoyed the benefits on their host business and were less concerned about improving power generation and Plant Load Factor (PLF). Others, including smaller investors, also invested in wind turbines to minimise their income tax liabilities.

"Projects were set up in areas of low wind density, and this resulted in low generation," Kumar points out. "In short, the focus was more on earning profits and less on improving generation."

However, Kumar expects the shift from the tax benefit-based investment to the IPP-based model for wind power to represent the next generation growth phase.

"IPPs are keen now to invest in this matured market that also has access to proven technology and skill-sets," Kumar explains. "They have far less risky investment options now and are increasingly developing wind farms, each of an installed capacity

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