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Wind in China's sails for clean energy race

Mainland closing in on US in output capacity

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The giant wind turbines that are now commonplace across the mainland have helped China leapfrog to be the world's second-biggest generator of the clean energy.

But while the country's wind power generation capacity has doubled in each of the past four years, uncertainties remain about the quality of its technology and whether the growth is sustainable.

China has risen from eighth in the global wind power ranks in 2005 to second last year, with only the United States producing more wind power, according to the World Wind Energy Association.

Buoyed by government policies that favour investment in lower-cost domestically-made equipment, the number of home-grown manufacturers of wind turbine generators has doubled to 80 over the past three years. But like other mainland manufacturers, wind turbine makers face a tough battle over quality standards and reputation.

Domestic turbine makers have muscled out foreign makers with Vestas, Gamesa, Suzlon and GE plunging from 53 per cent of the market in 2006 to 11 per cent last year.

Local players Sinovel Wind, Xinjiang Goldwind Science & Technology and Dongfang Electric meanwhile have seen their share increase to 60 per cent last year from 40 per cent in 2006. The remaining 29 per cent share is split between smaller domestic makers.

So far they are primarily selling equipment in the home market, but with substantial excess production capacity, overseas expansion has become an increasingly important growth strategy. Major problems to be overcome are a lack of a proven track record on quality and

protectionism abroad.

Since wind turbines are subject to damage and wear-and-tear caused by extreme weather, experts say it will take quite a few more years for mainland-made turbines to earn a reputation for reliability.

In 2006, Typhoon Saomai damaged all of the 28 turbines on a wind farm in Cangnan, Zhejiang province. Other storms caused heavy damage to wind farms in Fujian and Guangdong over the past few years.

"Mainland turbines are cheap, but it will take at least 10 years of operation to give them a full quality test," said China Wind Energy Association vice-president Shi Pengfei.

Robert Todd, a banker at HSBC specialising in the renewable energy sector, said it would take time for mainland manufacturers to build up familiarity and "bankability" - the confidence of international banks in their equipment's effectiveness and quality - in overseas markets.

Protectionism is another challenge. Governments in the US and Europe, which are increasing subsidies to encourage renewable energy consumption and stimulate their economies, favour domestic equipment suppliers, given the equipment industry creates badly needed jobs.

"In some cases, Chinese companies will have to set up manufacturing bases [overseas] in the same way foreign firms have to set up manufacturing bases in China ... [and] there will be local content issues," said Simon Currie, partner and head of the global energy unit of international law firm Norton Rose.

Zhou Fengqi, senior adviser at the National Development and Reform Commission's Energy Research Institute, said the nation's installed wind power generating capacity totalled 26 giga-watt (GW) at the end of last year and is planned to skyrocket to 150 GW by 2020. Each 1 GW of capacity is sufficient to power around one million mainland homes.

"Just Goldwind, Sinovel and Dongfang together had a combined production capacity of 8 GW last year, while the other 70-something market players have 4 GW," he said. "Many industrial-equipment makers have diversified into the sector, but clearly the domestic market cannot sustain so many makers."

Now among the world's seven-largest wind-turbine makers, the big three mainland producers are ready to take on their more experienced international rivals, according to some industry observers.

Despite being "technology followers," their low-cost manufacturing capability and support from the state have made them potentially global majors.

According to Fengqi, as greater economies of scale are reaped, the cost of onshore wind turbines has fallen to about 4,600 yuan (HK$5,300) per kilo-watt this year on the mainland, from 5,400 yuan last year. Their prices are at least a sixth cheaper than their foreign rivals, analysts said.

To cultivate a competitive domestic wind-power-equipment industry, Beijing in 2005 stipulated that turbines sold domestically must have at least 70 per cent local content. It repealed the rule early this year to take account of the fact that domestic makers already dominate the market and are expanding abroad where protectionist sentiment is growing.

Norton Rose's Currie said: "I don't believe it is going to be that long before Chinese manufacturers are seriously competing with the big European firms ... five years from now, we'll find that a number of major Chinese makers will be supplying to Europe, Australia and the US."

Xinjiang Goldwind, the mainland's second-largest wind-turbine-generator maker, is reviving an aborted attempt to raise funds by issuing shares in Hong Kong, and planned to use some of the money to expand overseas sales.

Chief financial officer Sun Liang said the company aimed to have 30 per cent of sales coming from overseas markets by 2012, compared with less than 1 per cent last year.

It unveiled a plan in May to inject US$5.5 million into a newly set up United States unit and US$2 million to set up an Australian operation. It has obtained a US$6 billion credit facility from China Development Bank to boost international sales.

It said in its May preliminary listing prospectus that annual compound growth in the US, Australia and Europe markets are forecast by researcher BTM Consult to be between 16.7 per cent and 23.3 per cent.

To overcome scepticism about their equipment, mainland producers have followed a familiar route, licensing and acquiring foreign technology as well as working with foreign engineers.

For example, Goldwind licensed German maker Repower Systems' technology in 2002, and then Vensys Energy in 2003. In early 2008, it bought 70 per cent of Vensys for €41.24 million (HK$464.43 million) to

boost its capability to build more powerful and expensive turbines.

It also uses components from Finland's The Switch to improve reliability and efficiency while rival Sinovel uses key electrical components made by American Superconductor Corporation.

Todd said it would not be surprising to see more overseas acquisitions by state-backed mainland makers to speed up market penetration.

"The ability to develop the technologies further and establish a distribution platform will be a key parts of the international ambitions of Chinese equipment players," he said.

To further reinforce their credentials, mainland makers are also seeking international quality recognition.

Simon Feng Yuan, wind power business development leader at Norwegian quality certification and risk management services provider Det Norske Veritas (DNV), said demand for its service has been growing rapidly since 2008. But he said it will take time for mainland firms to get used to international practices.

He noted many mainland manufacturers considered the certification process as some kind of a judgmental process, while in Europe it is thought of as a key supplementary help to improve quality.

"Since most mainland firms licensed foreign technology, complying with the standards should not a problem, but often the documentation submitted by them is not thorough due to a lack of understanding of the standards," he said.

Currie said it would be easier for mainland producers to target eastern European nations, where there is less protectionism and the demand for lower prices is greater.

Where international bank financing is not easy to obtain, he said support from mainland state banks could be tapped to bank-roll these projects.