

Winds of change

In China, the development of wind power projects is proving difficult for foreign investors.
BY SARAH STOKOE AND STÉPHANE GASNE

Never a nation to do things by halves, China has been doubling its wind power capacity every year since 2006 and is now the world's fourth largest wind energy producer after the United States, Germany and Spain, generating more than 12 GW at the end of 2008.

The industry has benefited from the introduction of supportive government measures to lower greenhouse gas emissions, reduce the country's high dependence on coal and ensure energy security. It is proving popular with foreign investors and companies eager to capitalise on the growth, however, as this article sets out, there are a number of obstacles in their way.

To begin with, China's wind industry remains heavily protected and the government has recently come under fire for unfairly excluding foreign companies from competing for renewable energy projects financed by China's economic stimulus programme. According to Jörg Wuttke, the president of the European Union Chamber of Commerce in China, four global manufacturers - Vestas Wind Systems (Denmark), Gamesa (Spain), GE Energy (U.S.) and Suzlon Energy (India) - were disqualified early in the bidding process for the award of 25 large wind turbine construction contracts on various technical grounds, while Chinese companies that had never built a turbine were approved. Aside from green protectionism, foreign companies interested in China's blossoming wind power sector must also consider certain technical issues which affect productivity and potential return on investment, as well as a number

Chinese regulators instituted a subsidy to compensate grid companies' connection costs.

of policy and regulatory constraints resulting from the implementation of the Renewable Energy Law enacted in 2006.

Technical Issues

While the rapid growth in China's wind power capacity looks impressive on paper, it is less so in reality as renewable targets set for large power generation companies are not measured adequately and a considerable proportion of China's wind plants are unproductive due to slow grid connection.

1.1 Renewable Targets Measurement

Power companies - such as China's big five state-owned generation companies: Huadian, Guodian, Huaneng, Datang and China Power Investment - which have over 5 GW of production capacity are required to derive at least 3% of their total installed capacity from non-hydro renewable energy sources by 2010, and 8% by 2020. As a result, such companies have made massive investments in wind power plants because they are easier to operate than biomass units and also substantially cheaper to install than solar panels. The issue is that the above-mentioned targets are measured based on installed capacity rather than on how much energy is actually generated from renewable power sources. This has led large power companies to buy the cheapest wind turbines available, with little consideration for quality and the output level of wind-generated electricity.

1.2 China's Electricity Grid

In 2002, China's State Council approved a struc-

tural reform of the country's power industry whereby power generation was separated from power transmission and distribution. Power generation companies now undertake power generation alone while power grid companies are in charge of power transmission, distribution and retail services. While power generation activities are open to foreign investment, the grid management remains under the control of three main state-owned companies: the State Grid Company, Inner Mongolia Grid and China Southern Grid, each of them operating through subsidiaries in a given geographical area.

The Renewable Energy Law provides a framework designed to secure the development of renewable energy which includes (i) compulsory grid connection for renewable energy production facilities and (ii) arrangements to divide the costs of renewable energy generation and grid connection between utility companies and electricity end users.

As part of the cost-sharing mechanism, Chinese regulators instituted a subsidy to compensate grid companies' connection costs. This subsidy is funded through a provincial trading system designed to share the incremented cost of renewable energy compared to the standard price paid for coal-fired power nationwide. Unfortunately, this system has not provided sufficient incentives. The National Development and Reform Commission ("NDRC"), China's economic planning agency, is said to have ordered a number of fund transfers among provincial state grid companies. China's grid operators remain under-resourced and the grid is not fully developed or operational as a result. In this regard, experts estimate that in 2007, the State Power Grid Corporation distributed only one tenth of the energy that China's wind farms were theoretically able to produce at full capacity.

In 2008, according to data from the state-run China Wind Energy Association, more than 20% of the country's commissioned wind projects did not generate any electricity because the equipment had not yet been grid-connected. Project owners have encountered up to 12-month delays in equipment hook-up, which may also be due to a bottleneck caused by a steep ramp up of wind farms. This problem will likely be exacerbated by the National Energy Administration's plan to start building six mega-power wind farms of 10 GW each. In view of the above, access to the grid is a major impediment in the development of effective China-based wind power projects. Project developers must be particularly cautious in locating wind farms not too far away from the transmission network, as the costs of extending cables to collect wind-generated electricity may be excessive for the grid operator, as is reportedly the case in Inner Mongolia for instance.

This being said, funds from the stimulus package should be allocated to upgrade grid infrastructure, and this may potentially remedy lagging interconnections and delays in tariff revenues for project operators.

Bloomberg



2. Green Protectionism

In addition to the technical reasons which are to be taken into account in the overall efficiency of wind power in China, other concerns for foreign companies stem either from classic foreign investment requirements such as those outlined below. They also arise from specific industry-related rules and policies which form part of China's bid to become the world leader in renewable energies.

2.1 Equity Ownership

The construction and operation of power stations using new sources of energy (including wind energy, solar power, biomass, etc.) is encouraged by China's foreign investment policies and foreign companies may establish wholly foreign-owned enterprises ("WFOEs") in such industries.

In practice however, wind farm project operation is always undertaken through joint-venture project company structures with a local partner.

One of the reasons is that foreign-controlled projects are not eligible for approval under the Clean Development Mechanism ("CDM") in China. Setting-up joint-ventures in which the Chinese party holds a majority stake is thus required to qualify for CDM and for the project company to benefit from certified emission reduction ("CER") revenues.

In order to benefit from the CDM mechanism while at the same time keeping under control a significant part of the projects, some foreign investors have set up a project company as a joint venture with a local Chinese partner for turbine assembly and wind farm operation and a manufacturing WFOE for the production of wind turbine components (such as blades or gearboxes) to be sold to the joint venture. The number of such wind turbine components manufacturers remains however low: only 9 of the 67 market operators in 2009.

2.2 Driving Domestic Market Development

In 2008, China's Ministry of Finance issued measures aiming to support technical innovation in wind power equipment. Under these measures, the government will grant a subsidy of 600 Chinese Yuan ("CNY") per kilowatt for the first newly-produced 50 units with a capacity of at least 1 MW.

This subsidy must be used for research and development purposes and is to be shared equally between the manufacturers of key parts and companies that assemble the finished product, provided they are Chinese-

funded or have a majority Chinese ownership.

Likewise, the domestic market also benefits from the Notice Concerning Certain Requirements for Wind Farm Construction Management which requires that at least 70% of the equipment for any wind farm project must be sourced in China. Foreign companies have made strategic investments to meet such 'localisation requirement' and to maintain their market position in the field of turbine components: Nordex (Germany) has located two of its three manufacturing centres in China and has established its company headquarters in Beijing, Gamesa's turbine manufacturing factory in Tianjin is the company's second largest foreign venture after the United States and Vestas is also present in Tianjin (manufacturing of blades and wind turbine assembly).

However despite such large-scale investments, foreign turbine manufacturers continue to be shut out of state wind energy projects.

According to recent estimations, 80% of the wind industry's market is concentrated in large state-owned enterprises and the market share of domestic manufacturing firms now exceeds that of foreign companies.

On top of this, the "Buy Chinese" edit released in May by the NDRC and eight other ministries should guarantee a steady growth of the domestic market.

The jointly released notice requires that only Chinese products and services may be used for government procurement of stimulus projects, except when certain products or services are not available within the country or may not be bought on reasonable commercial or legal terms.

2.3 Focus on Large Capacity Turbines

This spring, the government banned the use of turbines below 1 MW (i.e. 1000 kW) in the bidding process of a majority of wind power concession projects. The practical consequence is that this restriction narrows the range of turbine options available for developers and de facto excludes 850-kW units, popular for European manufacturers. Furthermore, the exemp-

tion from import VAT and custom duties previously available to any import of wind turbines of less than 2,5 MW has been removed since 1 May 2008 - indicating a shift in China's favourable tax treatment from wind turbines in general to large generating capacity ones only.

3. Tariff of Electricity Generated From Wind Farms

3.1 Previous Tariff Structure

Under the Renewable Energy Law, the Chinese Government chose two separate pricing methods: the 'feed-in tariff' (i.e. government fixed pricing) and 'competitive tendering' (i.e. government-guided pricing). Unlike biomass and solar energy, for which a feed-in tariff was applicable, potential investors of wind power projects above 50 MW were selected through a competitive bidding process, with power price and domestic component sourcing as key criteria in bid assessments.

As a consequence, large power generation enterprises frequently submitted artificially low prices in

their bids, with limited regard to profitability in part because they were able to get high returns on coal and hydroelectric power generation and also because they are less constrained by profit-seeking objectives than private companies. In fact, private-sector bidders have won no government-led wind power concession projects since 2003.

In addition, tariff calculation under the competitive tendering system was unclear. It essentially encompassed a series of costs and reasonable profit formula based on the project company's feasibility study report for the tendered project, along with a comparison with other bids and existing pricing for other similar-type projects.

Market participants quickly suggested that a fixed feed-in tariff depending on geographical wind exposure be adopted.

It is too early to predict whether this significant move will lure new investments, but it is certainly a step in the right direction for participants in China's wind power industry.

THE NEW POWER IN TEMPORARY POWER.

SPECIALISTS IN PROVIDING TURNKEY SOLUTIONS IN TEMPORARY RENTAL POWER PROJECTS OF 10MW AND GREATER.

WE ONLY SPECIFY THE BEST – AND THAT'S CATERPILLAR

One Network. One Call.
+65 6515 2036 | 24/7 Support

www.apacenergy.com
enquiry@apacenergy.com

APac Energy