China And The U.S.: Adversaries Or Allies?

With an increased presence in the U.S. market, Chinese turbine manufacturers may prove to be significant drivers of domestic growth. However, challenges abound.

BY EDWARD D. EINOWSKI

The booming Chinese economy has begun to impact the U.S. wind industry. Beginning with a major push in 2005, China now has the world’s largest installed capacity of wind power, and its turbine manufacturers are among the top producers. In the last several years, Chinese manufacturers have moved to expand into the U.S. by selling turbines and equipment, raising capital, and directly investing in U.S. wind companies and projects.

The path forward has not been trouble free. Criticism in 2009 by Sen. Charles Schumer, D-N.Y., regarding the use of the Section 1603 grant for a Texas wind project utilizing Chinese turbines, recent concerns over accounting irregularities at Chinese wind developer A-Power Energy, and the commencement of arbitration proceedings by American Superconductor against Chinese turbine manufacturer Sinovel alleging theft of intellectual property all serve to highlight the challenges Chinese companies face in moving into the U.S.

Such problems are not unique to Chinese companies, though. Long-established U.S. companies have had – and no doubt will continue to have – their share of being involved in political debates, U.S. Securities and Exchange Commission accounting issues and intellectual-property disputes. One could even say such developments with respect to Chinese wind companies constitute a sort of “welcome” to the rough-and-tumble world of U.S. capitalism.

If the industry can find ways of understanding and meeting these challenges, there could be great opportunities for collaboration to the mutual advantage of all. What follows is a discussion of how to meet those challenges and capitalize on the opportunities.

Foreign investment as a key driver. It is important to remember that the U.S. wind energy industry reached its current state of development largely as the result of foreign investment. Modern wind turbine technology was refined in Europe in the 1980s and 1990s and then imported to the U.S. as the wind industry took off in the last decade.

Most of the largest U.S. wind developers are owned by European companies – Horizon EDPR (Portuguese), enXco (French) and Iberdrola Renewables (Spanish), among others. It is difficult to see how the U.S. wind industry could have grown to its present size without such European investment.

Until the recent recession, much of this investment was driven by a strong European economy coupled with a strong euro against the dollar, providing the Europeans with capital to deploy at favorable exchange rates. The European embrace of wind energy in the 1980s and 1990s, while the sector remained undeveloped in the U.S., also provided an advantage in terms of knowledge and expertise.

Currently, a similar dynamic can be observed with respect to the Chinese. The country’s embrace of wind energy to promote domestic energy security, favorable environmental impacts and economic development enabled its wind industry to grow at a remarkable pace. Coupled with the significant capital China has accumulated from foreign trade and encouragement of overseas investment in renewable energy by the Chinese government, the result may well be a repeat of foreign investment as a significant driver of the continued growth of the U.S. wind industry. Indeed, as the European economy continues to suffer – reducing available investment funds – Chinese investment may be one key to maintaining the vitality of the U.S. wind industry.

Cost, return and subsidy matrix. The price for wind energy in the U.S. has dropped significantly – by as much as 50% in some markets – since the recession took hold. The ability of U.S. developers to continue in the face of this price decline has largely been due to a corresponding decline
in turbine prices, which constitute approximately 80% of wind project capital costs. Similar declines in construction contract pricing have also played a role.

Although the rate of return on wind projects has been squeezed, the returns nevertheless remain attractive. These factors have combined to enable the industry to move forward (albeit at a reduced pace) in the face of the economic downturn.

Further, the price decline has brought wind much closer to parity with the benchmark price for energy produced from natural gas. Wind prices still depend on federal tax subsidies, but the decline demonstrates that wind energy harbors potential for price competitiveness. In time and with continued moderation of capital costs, the industry may be able to move away from the federal tax subsidies and the periodic disruptions they cause as Congress waivers on extensions.

Increased competition from Chinese turbine manufacturers entering the U.S. may prove a key factor in moderating capital costs and moving the industry further toward unsubsidized price parity. However, to get to that point, some significant challenges must be addressed.

**Proving the product.** The starting point is for the Chinese turbines to be certified by recognized and widely accepted certification agencies. A number of Chinese turbine manufacturers have already obtained such certifications, while others are in the process and expect to complete certification in the near term. Such certifications are key to the acceptance of these companies’ turbines by U.S. developers, as well as by the banks and financial institutions that provide financing.

Other performance issues must also be addressed. One key metric is to prove that the turbines will actually perform up to standard in the U.S. environment. A widely referenced standard is to demonstrate the reliability of the turbines with 100 years of operating data (i.e., demonstrate the availability of 100 turbines operating for one year). To that end, many Chinese turbine manufacturers are seeking access to wind project development assets (site leases, permits and power purchase agreements (PPAs)) that can serve as the platform for the installation and demonstration of their turbines.

This presents opportunities for U.S. wind developers to collaborate with the turbine manufacturers. Such collaboration can take several forms: the outright sale of assets to the Chinese companies, the formation of joint ventures to construct and operate the assets, or the provision of favorable vendor financing.

**Integrity of intellectual property.** In order to move from manufacturer-owned demonstration projects to the sale of turbines to independent developers, the Chinese will need to address concerns about their intellectual property.

> Few U.S. wind developers will be willing to sign significant orders for Chinese turbines unless they can be assured that the technology utilized will not result in patent infringement claims.

Although demonstration projects will likely be a key element in order for Chinese turbine manufacturers to enter into the U.S. market, this method does not appear to be a long-term strategy. Unlike the solar energy market, where vertical integration (solar panel manufacturers also developing and owning projects) is more the norm, the wind industry has shown strong resistance to such vertical integration.

Established turbine manufacturers in the U.S. have generally avoided long-term involvement in the ownership and operation of wind projects, because their customer base – independent wind developers – have proven resistant to purchasing turbines from vendors that compete with them for PPAs and project sites.

Further, project development is a drastically different business from manufacturing – most prefer to stick with their main business and expertise by exiting the development business as soon as possible. Therefore, it seems likely that the wind industry will continue along its historic lines where manufacturing and development are distinct segments.

**Supply chain.** Chinese manufacturers also need to address supply chain concerns. Even the most reliable,
well-made turbine will encounter problems in the ordinary course of operation. The ability to provide prompt warranty service and necessary parts is extremely important. No wind operator wants extended periods of lost production while awaiting repairs or replacement parts. This will involve an expanded presence in the U.S. as Chinese manufacturers establish spare-parts inventories in the U.S. and provide the workforce that can accomplish repair work quickly.

Avoiding political fallout. An expanded presence in the U.S. to deal with supply-chain concerns also helps to address some significant political challenges that Chinese manufacturers face. Since the recession, wind – and renewable energy, in general – has been a focus of economic stimulus efforts in the U.S. If the Chinese manufacturers only seek to import their products from China without creating positive economic impacts in the U.S., in terms of employment and an increased tax base from U.S.-based economic activity, the predictable result will be significant political fallout. This is especially true in areas where the U.S. wind industry is still dependent on the federal tax subsidies currently needed to maintain price competitiveness.

The challenge for the Chinese manufacturers is to optimize the balance between the favorable cost structure of their China-based manufacturing operations and the creation of significant jobs and related economic benefits in the U.S. The natural evolution of their non-China-based operations should facilitate this, as one would expect that the cost of shipping completed turbines from China will, in time, erode any pricing advantage they enjoy.

The development of turbine assembly facilities in the U.S., the procurement of blades and other components made in the U.S. (whether by a U.S. company or by the U.S. branch of a Chinese company) and the employment of a significant number of Americans to staff U.S. operations will all be crucial to achieving this balance and warding off the political fallout that might otherwise result.

Strategic investors. In addition to Chinese turbine manufacturers, there are a number of non-manufacturing Chinese companies that seek to invest in the U.S. wind industry, either by acquiring wind projects or development companies or by providing financing. These investors have examined a number of investment opportunities over the last year, but have not pursued as many as might have been expected.

A major concern relates to the state of the U.S. economy. Since the advent of the recession, projects with PPAs have been an increasingly rare commodity. And although some Chinese companies have explored merchant operations, they have generally come to the same conclusion as domestic developers – namely that merchant wind projects are too risky in most markets.

In addition, many Chinese companies have focused on the Section 1603 U.S. Treasury Department cash grant, because it provides a path to a federal subsidy that is not dependent on having a U.S. tax appetite. Because the cash grant expires at the end of the year, it is becoming increasingly difficult to find good projects that can qualify.

The ability to utilize production tax credits (PTCs) (which are the more valuable subsidies for high-capacity factor projects) remains, but the need to monetize the PTCs through tax-equity transactions is a concern for many Chinese investors.

This concern has to do with the fact that tax-equity transactions involve bringing in true equity partners. Many Chinese companies have a strong desire to maintain control over their investments and are concerned that bringing in tax-equity partners will undermine this objective. To some extent, this concern can be addressed by a better understanding of the role of tax equity.

Indeed, most tax-equity investors are financial institutions whose primary connection to the energy industry is via the tax-equity investments and whose desire to be in the electric business does not go beyond the benefits derived from such investments.

But the fact that any tax-equity partners are needed to efficiently utilize the PTCs remains a concern for many Chinese investors. It seems a concern that will be addressed only in the fullness of time as the Chinese become more accustomed to dealing with this aspect of making wind work in the U.S.

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