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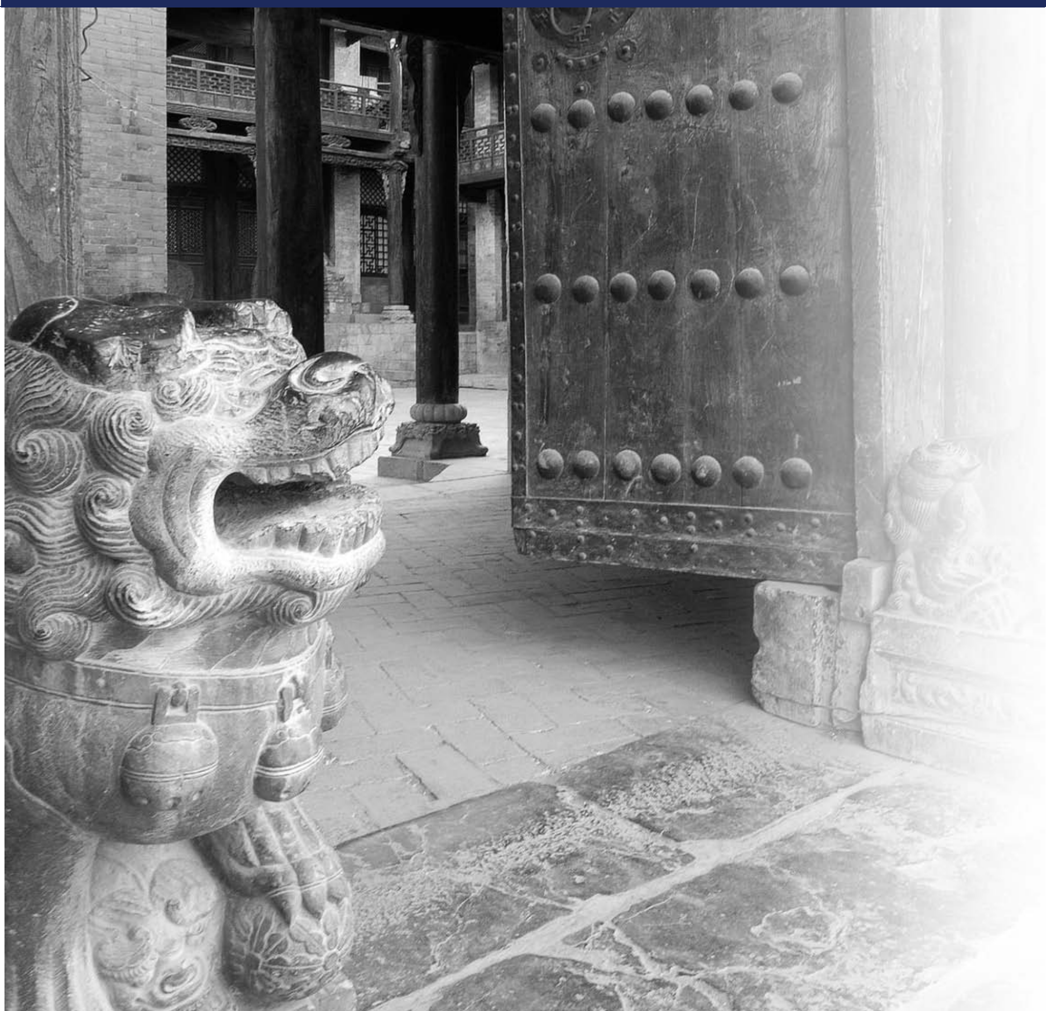
The Next Goldmine for Chemicals in China:

Opportunities in Renewable Energy

By **Simon Zhang** and **Roger Meng** | March, 2015



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China's newly emerging industries will play a key role in the "new norm" economy over the next decade and drive 15% of GDP by 2020. For chemical suppliers, these emerging industries will not only present windfall opportunities, but will also attract significant competition. In this article, we will focus on one of the key emerging sectors, Renewable Energy, to review the opportunities and challenges foreign chemical players face in China's emerging industries. While the focus will be on Renewables, the lessons within are relevant to many emerging industries grappling with the Chinese market.

As one of the seven emerging industries supported by the Chinese government, the Renewables sector is projected to contribute over 15% of all the energy needs in China and shift from "government-driven" to "market-driven" by 2020. For chemical companies supplying the industry, Renewables in China will balloon to an over RMB 100 bn market in the same timeframe and take nearly half of global demand. For foreign chemical suppliers looking to meet this demand, however, there will be greater competition posed by a growing medium-end market dominated by "good-enough" Chinese suppliers. Already, these "good-enough" producers have begun eating away foreign players' market share. Between the emerging paradigm shift and encroaching local players, both of which we will explore further, foreign chemical suppliers will need to reassess their medium and long-term strategies. Namely, do they want to defend their high-end market positioning and/or enter the medium-end market by offering a brand "B" product? Also, what initiatives can the foreign companies focus on now to fortify their market positioning?

The Renewables Boom in China: The largest market globally will be increasingly driven by the market

In only 15 years, China built itself into the global manufacturing hub for photovoltaic and wind systems. Now, the country focuses on consuming and installing these technologies domestically, effectively becoming the no. 1 installer of PV and wind systems in 2014. While the path to development and ubiquity for Renewables in China has not been smooth, the government has taken a clear stance on its support for the industry's development over the next 5 years.

With the government publicly announcing their support for Renewables, and President Xi's pledges for environmental protection, the concerns over future market uncertainty are now significantly diminished. Already, the government's commitment is helping the industry push beyond installation goals set back in 2012. PV installations, for example, were then targeting a 10 GW installment base by 2015, but the figure already reached 27 GW in 2014. As such, the government has revised its goal for 2020 to 100 GW of installed PV, or double 2012's projected goal.

In addition to becoming the largest market globally, China's Renewables market will experience a paradigm shift from "government-driven" to "market-driven" over the long term, with positive changes sure to follow. With the shift to market-driven, the regulatory environment will also improve. One such improvement will be the focus of subsidies shifting from supply-side based on

Chart 1: A Shifting Paradigm in China's Renewables Industry

	"Gov. Investment Driven"	"Relatively Market Driven"
Regulation	Emerging; Piloting	Structured; Systematic
Investment Parties	Led by gov. spending (incl. SOE)	Balanced investment of public and private
Market Mechanisms	Piloting; Subsidies; Trial-and-error	Fewer subsidies; Mature pricing mechanisms
Business Model / Financing	Under developed	Varied (BOT, TOT, PPA etc.)
KSF	Mainly price competitiveness	Efficiency, know-how, service
Leading Players	SOEs; Well-connected players	Competitive Players

Source: InterChina interview and analysis investment to demand-side based on the power generated.

As we can see in Chart 2, advances in technology, economies of scale and material costs will help lower the cost of PV and wind power generation to the point of competitiveness with coal (~RMB 0.4/kWh) by around 2020. PV technology, for example, will increase conversion efficiencies to over 20% by 2020. When combined with decreasing material costs and economies of scale, technological advancements will help reduce the cost of PV modules from 3.5-4 RMB per kilowatt hour to ~0.6 RMB/KWh by 2020. As Renewables' price competitiveness comes closer in line to coal, government-provided subsidies are expected to be gradually phased out.

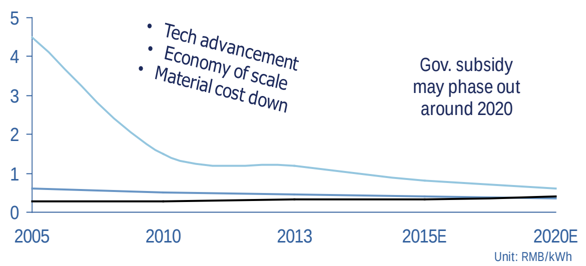
Furthermore, though the subsidies are being phased out, the Renewables regulatory environment will become more structured and systematized. Within this maturing environment, private investments, in lieu of government investments, will fuel industry growth. Given the emerging market-driven paradigm, efficiency, know-how, and service will become key success factors for players across the market.

Chemical Suppliers to the Renewables Industry – The rise of local competitors

Given the short development histories of the photovoltaic and wind sectors in China, MNCs' high-quality, premium-priced products have dominated the chemical supply market for the past 10-15 years. Until now, demand for such products often failed to warrant localized production when also factoring in IPR issues, meaning most MNC products sold in China are being imported.
With the increased government and national attention on Renewables, many Chinese companies have been enticed into competition. For example, for 30 commonly used chemicals in the PV and wind sectors (e.g. Electronic paste, PET, PVF, PPO, and EVA for photovoltaic, and coating, blade resin, glass fiber and adhesives for wind etc.), there are around 100 – 150 Chinese players, including both Renewables-specialized and diversified players who recently entered the market. In many cases, local players surprised the incumbents with their speed to market for "good-enough" products, thereby winning valuable market share. Chart 3 illustrates the speed to which Chinese players made this progress and the degree of domination their progress has afforded them. Here it is important to clarify the meaning behind a "good-enough" product.

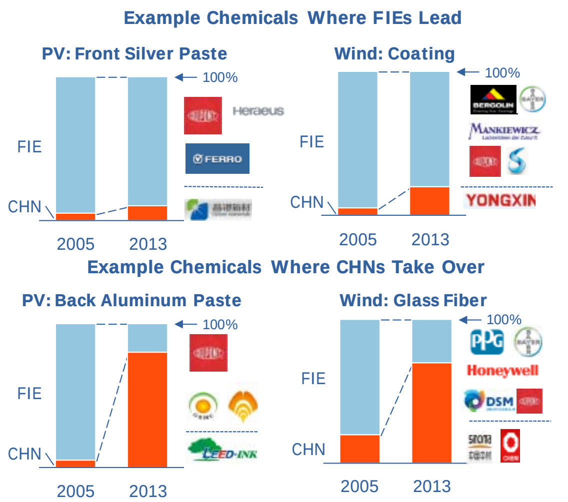
At the beginning of the Renewables industry in China, many local producers failed to offer products that met the minimum standards demanded by customers. As such, customers were often left with few choices beyond MNCs' high-end products. Over the course of the last 10 years though, the technical specifications of locally-produced products have risen to the point of acceptability for many customers. Statistics

Chart 2: The Power Generating Cost of PV & Wind vs. Coal-fire



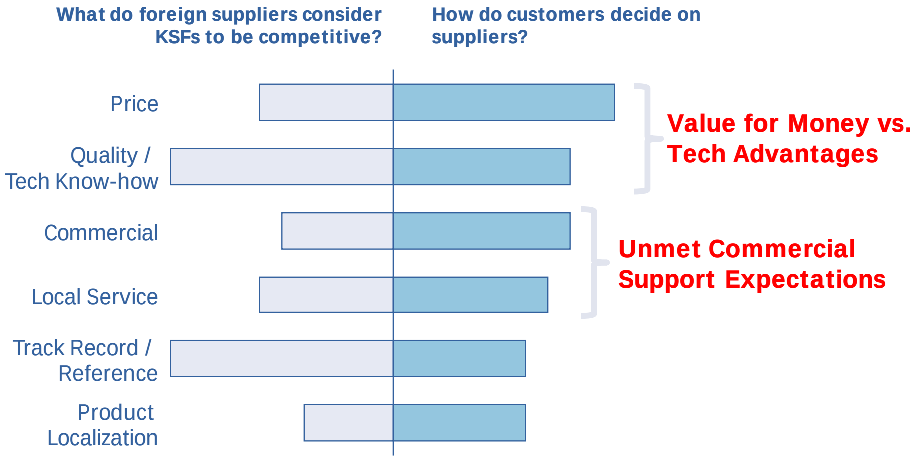
Source: InterChina interview and analysis; Academic journal *Electric Power Science and Engineering*

Chart 3: Examples of Chemical Product Market Shares



Source: InterChina interview and analysis

Chart 4: Perception vs. reality for Customers and Suppliers



Source: InterChina interviews and analysis

from SIPO, the State Intellectual Property Office of China, show that there were nearly 100 patents

submitted by leading Chinese chemical suppliers in the Renewables sector during 2010 – 2014. Increased competitive pressure from locals is being felt by foreign players. In one example, the Chief Engineer for a leading foreign wind blade maker shared with us that ”domestic glass fiber has edged out foreign products. The quality of the product may fluctuate, but the overall trend is better and cheaper product.” While the quality of MNCs' high-end products has also improved over the same period, a choice between premium and medium-end now exists where it didn't just a few years ago.

The downward cost pressure in the renewable sectors has accelerated the market acceptance of good-enough quality, mainly from Chinese players. In the case of PV modules, for example, prices have decreased by 85% in the past ten years, largely due to the decreases in the price of polysilicon and improvements in conversion efficiency rates (9% to 16% from 2005 to now). Now, the price decrease of the chemicals is set to play an important role in the proliferation of Renewables. Already, the price of PET for example, has been almost halved in the last five years.

A detailed review, conducted by InterChina, of chemical company customers in the Renewables value chain confirmed this trend and added several other factors for explaining the rise of local competitors. According to our interviews, the most important purchasing factor remained value-for-money, but supportive conditions have become increasingly important in the purchasing process, e.g. commercial terms and local service. The Purchasing Director of a top 5 Chinese PV module maker commented that “foreign chemical suppliers' company payment terms are usually very rigid. For similar products, the one with friendlier payment terms is preferred.” Additionally, for imported products, customers usually not only complained about long lead times, but also the lack of or slow after-sales services and suppliers' HQ response times.

While local players began offering good-enough products, MNCs have implemented various initiatives to strengthen their competitiveness in China, including localizing production and reducing IPR concerns. Despite the efforts, MNCs are being cornered in the high-end segment where technological advantages have a relatively more important weighting in the decision-making process.

As a result, the medium-end, good-enough segment has increased much faster than overall demand growth. In other words, the high-end segment is at risk of being further eroded by Chinese players now offering acceptable quality products. Again, MNCs need to answer the following questions: 1) do they defend their high-end market positioning and/or enter the medium-end market by offering a Brand “B” product? And what initiatives can multinationals focus on now to fortify their market position?

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The Road Ahead for MNCs

Each MNC is likely to have a slightly different answer to the first question above. But according to market demands, and in addition to the traditional initiatives of chemicals players, MNCs should focus on two new critical initiatives: 1) Adopting innovative measures beyond quality to strengthen product sales, and, if a Brand "B" strategy is decided, 2) looking into M&A as a solution.

As mentioned earlier, foreign suppliers need to increase customer loyalty by targeting the developing needs of the customer. One way may be to offer supplemental services like guiding customers through the application of the chemicals in the customer's production process. Such supplemental services could help reduce lead times and provide greater opportunity to demand more favorable commercial terms.

In a non-industry example, a US medical device company developed a distributor financing scheme through a partnership with an online peer-to-peer financial services company in order to improve the ailing working capital situation of its distributors (hospitals do not pay their bills for 6 – 12 months or more). The support of the financing company helped all parties push for sales and lock in the company's products in bundled deals. Chemical companies in the Renewables industry could look internally and externally for ways to improve sales dynamics. In addition to organic strategies, there are also inorganic ways to both shore up defenses and go on the offensive. A strong M&A strategy could speed up the penetration of foreign companies into the local market and reduce the risk of local players encroaching on market share.

Even though inorganic growth may be the best path for an FIE, there are several challenges to overcome for a successful M&A strategy. Firstly, the Chinese market is less predictable than Western markets due to governmental influence, which makes target valuation more difficult and future trend forecasting more important. Secondly, as PV and wind are emerging sectors within Renewables, FIEs need to make careful strategic choices in their plan of attack. Thirdly, there are fewer eligible targets in the Renewables sector than in mature sectors, though from our experience qualified targets are becoming more common. Finally, foreign companies need to carefully handle IP issues in M&A dealings.

Conclusion

To summarize, few companies can be a global leader in the chemicals market for Renewables without a success story in China. Now is the time to re-think market segments and strengthen competitive advantages beyond product quality, and in the medium term, explore the possibility of acquiring a local Brand "B" company that will provide further market segment protection.

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