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Debating Europe

Are Europe's wind and solar industries still attractive for Chinese companies?

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Chinese foreign direct investment (FDI) in Europe has been rising exponentially since 2007. According to UNCTAD, it overtook FDI inflows in 2015, reaching US $140 billion. In the period between 2000 and 2014, the energy sector in Europe was the biggest recipient of Chinese FDI (28 percent), followed by the automotive, agricultural and real estate sectors. This policy brief reflects on the present state of Chinese FDI in the European solar and wind sectors, and concludes with some recommendations for European, and especially German, stakeholders.

The renewable energy sectors, particularly wind and solar, are some of the most attractive destinations for Chinese foreign investment. Between 2009 and 2014, Chinese companies carried out 238 projects in the European Union – 194 in the solar sector and 44 in the wind energy sector.[1] Greenfield investments were the dominant form of entry (88 percent). Germany was the main destination (47 percent), followed by Luxembourg, Italy, the Netherlands, Spain and the United Kingdom. While the number of investments in European wind and solar industries decreased in 2011 and 2012, today there is renewed interest from Chinese firms. In the wind sector, this interest relates to the potential of offshore wind, where Chinese companies can become suppliers of components. In the solar sector, investments relate to energy storage technologies, in particular batteries.[2]

The primary reasons for this development track are the acquisition of technology and know-how, the sharing of experience, and market access, as well as the development of international management teams and reduction of risk. For instance, FDI establishes business relations, which help during broader international expansion of these companies. Furthermore, Chinese government policy, which set ambitious targets for wind and solar development without being able to guarantee subsequent increased capacity, has given misleading signals to companies: As the Chinese grid infrastructure and existing energy mix is unable to absorb all the renewable energy produced domestically, companies suffer from so-called curtailing, making it less attractive to continue domestic investment and limiting domestic consumption markets for renewable energy.

THE SOLAR SECTOR AND CONSOLIDATION OF CHINESE PRESENCE IN EUROPE

Only recently has solar energy seen a growing market in China, as manufacturing was initially developed to meet rising demand in Europe and North America.[3] In 2008, China became the largest

1 Louise Curran, Ping Lv, Francesca Spigarelli (2016), Chinese investment in the EU renewable energy sector: Motives, synergies and policy implications, in Energy Policy, Available online 15 September 2016.
2 Interview with a German Government Agency, Beijing, 10/11/2016.
3 Kathryn Hochstetler and Genia Kostka (2015), Wind and Solar Power in Brazil and China: Interests, State–Business Relations, and Policy Outcomes, in Global Environmental Politics, 15:3, p. 87.

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STIFTUNG MERCATOR

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producer of solar photovoltaic (PV) modules in the world. China's cheap, low-quality solar cells flooded the international and domestic market, bankrupting European companies. As preferential policies in Western countries diminished in 2013, and the United States and the European Union introduced anti-dumping measures against Chinese solar PV, the Chinese solar sector found itself struggling to deal with increasing overcapacity.

In this context, interest in investment grew and many European solar companies were bought by Chinese companies, which explains why Europe's own solar industry is currently very small. Some examples were the takeover of solar PV producers *Avancis* and *CTF Solar* by China National Building Materials Group Corporation (CNBM) and Hanergy's takeover of *German Solibro* in 2012 and 2014, respectively. In these cases, the German companies were taken over shortly before filing for bankruptcy, and were sometimes purchased below their market price.[4]

The motivation for such mergers and acquisitions and other forms of foreign direct investment in the solar sector are, on the one hand, "market-seeking" to reduce domestic overcapacities, but also "technology-seeking", a good example being thin-film solar cells. CNBM's primary goal was the acquisition of CIGS thin-film solar cells technology, because producing CIGS cells without know-how is almost impossible.

There are several factors influencing the choice and destination of investment. The institutional development of the home and host regions, the policy framework surrounding FDI of the host country, political stability, bilateral relationships between China and the European Union member states, and notably, existing Chinese communities living overseas, as in the case of the large amount of FDI in Romanian small and medium-sized enterprises. One of the reasons that Chinese FDI is higher in Europe than in the US is that US legislation restricts access for Chinese companies.

On the other hand, some EU member states such as Germany, Italy and Romania have regulations and policies supporting renewable energy development. These countries thereby offer favourable conditions for Chinese investments. Once subsidies stop or change, solar investors in particular are likely to move to a different country.
For equipment manufacturers, investment decisions are often related to the host countries' industry, which explains why Germany is very appealing for Chinese companies. In the past, Chinese companies used to buy components from Germany, creating a certain degree of dependence. Now the same Chinese companies are trying to internalize German technologies through FDI, incorporating them into their own value chain to reduce costs and risks. As a consequence, the European solar PV producer market has shrunk considerably, and Chinese companies have consolidated world markets and technological know-how.

CHINA'S EMERGING WIND INDUSTRY

Over the past ten years, China's wind industry has emerged dramatically on to the domestic and international stage. In 2000, China's installed wind power capacity produced only 344MW, none of the Chinese wind companies were top global players, and China's wind power industry was strongly dependent on the import of foreign technologies. However, China's wind power industry has experienced unprecedented growth due to energy security, environmental and technological drivers. It has also been motivated by the relative affordability of wind (as compared to solar energy) and the goal of building up internationally competitive enterprises. The Chinese government at different administrative levels offered financial incentives, promoted supply and demand side subsidies, and furthered technological upgrading.[5]

In 2015, China's newly-installed wind power capacity amounted to 30GW and China's *Xinjiang Goldwind* became the world's leading company for newly-installed wind power capacities, surpassing the top European companies like *Vestas*, *Siemens*, *Gamesa* and *Enercon*, and the US firm, *General Electrics*. In line with its domestic rise, China's wind industry expanded overseas. Outward direct investment into

4 Interview, Solar company, 01/02/2016.
5 See for example Kathryn Hochstetler and Genia Kostka (2015), Wind and Solar Power in Brazil and China: Interests, State–Business Relations, and Policy Outcomes, in Global Environmental Politics, 15:3.



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foreign wind industries increased significantly all over the world and Chinese wind companies today seriously challenge the technological competitiveness of established European firms.

INTERNATIONALIZATION OF CHINA'S WIND INDUSTRY IN EUROPE

China's outward investments into the European wind industry only started after 2009. Today, investments in wind energy are diverse in terms of target countries, investors, and their motivations. Chinese investors include state-owned and privately-owned companies and they invest in countries ranging from Western Europe (such as Denmark, Germany, Ireland, the Netherlands, Spain and the United Kingdom) to Central and Eastern European countries (such as Poland, Serbia, Bulgaria and Romania).

There are four main motivations for Chinese wind companies to invest in Europe:

1. Chinese companies aim to upgrade their technological know-how through joint-development contracts or the acquisition of foreign companies. *Xinjiang Goldwind* acquired a 70 percent stake of the German wind-turbine maker *Vensys* in 2008. *Goldwind* thereby gained access to a permanent-magnet direct-drive technology for wind generators, which is particularly crucial for offshore wind energy due to its greater resilience and lower weight. Much of *Goldwind*'s success can be explained by the acquisition of *Vensys'* direct-drive generators. The 'Made in China 2025' strategy and the goal of developing internationally competitive large enterprises have led to expectations that investments into European high-tech segments will further increase.

2. Chinese investments into the European wind industry are motivated by Research and Development (R&D) opportunities. The Chinese company *Envision Energy* installed a 3MW turbine in 2015 at a national test center in Denmark. The environment at the test site offers optimal conditions of average wind speed, allowing researchers to monitor the energy output and plot power curves. Other companies, such as *CSIC Haizhuang* in Denmark, have also opened R&D centers in Europe.

3. Internationalizing in Europe is seen as a way to improve the image of Chinese wind technologies. By carrying out tests in Europe and making use of European expertise, companies hope to gain international certification, addressing the still existing quality concerns about Chinese wind technologies.

4. Chinese companies seek international expansion given the economic slowdown at home. Buying projects in Europe and operating them with their own technologies is assumed to be one of the most efficient ways to expand and export their own technologies. For example, in 2011, Sinovel Wind Group Corporation signed a contract with the Irish company *Mainstream Renewable Power* to build 1GW wind energy projects in Ireland supplied with Chinese technologies.

ARE EUROPEAN WIND INDUSTRIES IN DECLINE?

In contrast to the European solar sector, which has significantly shrunk, European companies are still amongst the top developers for wind technologies, such as A*dwen, Enercon, Gamesa, Siemens* and *Vestas*. However, even in the wind sector, dramatic transformations are taking place. Opinions still differ on the current quality of Chinese wind technologies, but experts assume that investments by Chinese wind companies in Europe will continue to increase, as will their competitive advantages. The combination of the Chinese government's efforts to build up whole value chains at home, to develop its upstream industries and technological advantages in line with its 'Made in China 2025' strategy, and its advantageous rare earth processing capabilities (crucial components for direct-drive permanent magnet generators), all mean that the European wind industry is likely to face fiercer competition in the future.

PULL FACTORS IN EUROPE

Many investments by Chinese wind and solar industries are successful and lead to fruitful projects and cooperation on both sides. However, engaging in overseas investment is still a difficult undertaking for many Chinese companies. The following section highlights some of the main pull factors at home and in the host countries for attracting Chinese investments in Europe.

In 2015, Li Keqiang emphasized that China will invest an additional US $1 trillion globally in the next ten years. It can be expected that China's engagement with Europe will increase with regard to high-tech investments, because the investment hurdles in the Unites States are

comparatively high. However, the attractiveness of European countries varies. On the host country level, preferential renewable energy policies, such as in Germany and Bulgaria, are attractive factors for Chinese companies. Additionally, despite the growing number of Chinese investments, many Chinese companies are still relatively new actors on the global market. The vast range of different regulatory and policy frameworks in each European member state, as well as the varying local business conditions and administrative procedures, require long learning timelines and in-depth preliminary research by the Chinese investors. Companies therefore perceive complex bureaucracies as hampering factors. On the other hand, a host country's economic strength and the possibility of access to other European markets are often cited as favorable conditions.[6]

A factor that has often been overlooked relates to the Chinese overseas community such as in Romania, which has a history of Chinese FDI predating the financial crisis. Romania was the largest Central and Eastern European recipient of Chinese investment until 2005. In September 2016, almost 12,000 companies with Chinese participation were registered in Romania, making up about 6 percent of all foreign investors.[7] Strong networks are expected to attract more Chinese investments, as is the presence of good infrastructure and highly qualified workers.

At the bilateral level, companies also consider the relationship between China and the host country in their investment decision, for example through a bilateral investment treaty, which is in place for 27 EU member states. A politically and economically stable relationship is considered an important precondition.

There are several implications of the rising presence of Chinese investors in European renewable sectors.

At the policy level:

- The EU-China bilateral investment treaty needs to find a balance between ensuring competitiveness of European enterprises (in particular in light of large Chinese subsidies) and international climate goals.
- Stable economic and political conditions are crucial. Chambers of commerce should be providing guidance on the impact of Brexit on the European investment climate.

At the company level:

- Chinese companies should have clear investment strategies in terms of target industries and investment types. Support in the form of information on host country conditions and industries can be offered in a target-oriented way.
- Long-term relationships should be built between Chinese and European companies, or European companies need to make clear assessments on the investor's identity before engaging in any deal.

At the research level:

- Chinese companies are cited as flexible players on the global arena. This renders it crucial to have more in-depth understanding of failed investment decisions and of the pull factors in order to better understand the way location decisions are made.

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6 For more information see also Die Chinesische Handelskammer in Deutschland e.V. (2015), Geschäftsklimaindex 2015 – Chinesische Unternehmen in Deutschland.

7 Oficiul Național al Registrului Comerțului, Romania (2016).

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