Chinese investments in Europe in the green sector: some evidence

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Session B: Investment Patterns and Incentives from Emerging Economies – Country Perspectives on Policy Frameworks, Business Challenges and Opportunities

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PARTNERING OPPORTUNITIES BETWEEN **EUROPE** AND **CHINA** IN THE RENEWABLE ENERGIES AND **ENVIRONMENTAL** INDUSTRIES

Key facts

- 4 year project, approved in 2013
- more that 60 researchers involved
- financial budget (718.000 euro) to support mobility scheme of researchers

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MARIE CURIE ACTIONS

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Economics focus: policy framework

As a result of specific **industrial policy** measures, the green industry in China has been growing on size and competitiveness, also expanding abroad through **FDI**.

European countries are among the preferential target destinations for Chinese investors in the green related industries.

The **economic diplomacy** efforts and **cooperation dialogue** developed so far with China on the environment issues has contributed to **strengthen** partnering opportunities.

China green policy

12th Five-year plan: measures to face environmental issues in key policy areas ("economic restructuring", "social equality", "energy and environment")

3rd Plenary Session of the 18th Communist Party of China: confirmed and strengthened measures to support China commitment for environmental issues (put at the top priority of reforms).

12th Five-Year Plan for National Economic and Social Development: clean energy will take the leading role in energy development

12th Five-Year plan on Inward and Outward: active internationalization projects in natural resources field are promoted "in order to secure sustainable, stable, economic, and safe supply of energy and natural resources".

Europe - China cooperation

From **climate change**, **energy security** to **environmental security,** linking development, economic growth, international security issues.

Channels of cooperation	Specific Programs
• The Environment Policy Dialogue, at ministerial level. Since 2003 meetings have been taking place regularly, alternating between Brussels and China. • Bilateral cooperation mechanism on forests (BCM), beetwen the Chinese State Forestry Administration and director level at the EC (since 2009); • The Climate Change Partnership, developed by Directoral General of the EC on climate action.	• **EGP**, The EU-China Environmental Governance Program(2011-2015) In partnership with the Chinese Ministry of Environmental Protection, EGP aims to contribute to the strengthening of environmental governance in China through enhanced administration, public access to information, public participation, access to justice and corporate responsibility in the environmental field (http://www.ecegp.com/index_en.asp) • **ESP**, The EU-China Environmental Sustainability Program Launched in September 2012, the project aims to support China's efforts to meet the environmental and climate change targets defined in the 12th Five Year Development Plan. The specific objectives focus on the achievement of environmental sustainability through improved water quality and the prevention and control of heavy metal pollution and implementation of sustainable solid waste management.

Europe, China, FDI, Green Tech

1- Going green: Chinese OFDIs in the European Renewable Energy sector

Paper presented at the China Goes Global Conference, SJTU, Shanghai, August 2014

2- The Impact of Environmental and Institutional factors on Chinese Green investments in Europe: Home and Host country effect

Paper to be presented at the EM MNE Conference, CBS, Copenhagen, October 2014

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Chinese OFDIs in the RE in Europe

Purpose - We investigate Chinese OFDI in the EU, in the **renewable energy** (RE) sector to understand:

(a) how the institutional, market, technological, and human capital factors of host country affect the location choice in the RE sector;

(b) what are the differences of the determinants of location decision in the RE sector among overseas subsidiaries with different functions.

Methodology - Mofcom database of greenfield and non-greenfield Chinese investments abroad is used. A six fixed-effects logit analysis is performed.

Data

Research target: Chinese firms in the RE sector with foreign subsidiaries in EU by the end of 2013 (Greenfield and M&A)

Dataset: 202 location choices by 132 Chinese firms in renewable energy sector in the EU countries from 2004 to 2013

Country	N. of Chinese OFDI	Country	N. of Chinese OFDI
Austria	1	Luxembourg	19
Bulgaria	21	Romania	4
Belgium	2	Sweden	3
Poland	1	Slovakia	1
Denmark	4	Spain	9
Germany	88	Hungary	3
France	5	Italy	15
Netherlands	11	United Kingdom	10
Czech	5	Total	202

Finding and Discussion

1. Politically stable environment can attract Chinese RE OFDI, which shows a different pattern compared to general Chinese OFDI (Kang & Jiang, 2011; Kolstad & Wiig, 2012; Ramasamy, *et al*. 2012).
2. Chinese RE OFDI tend to flow to countries with good control of corruption, with a policy of encouraging foreign ownership of companies, and low trade barriers. Rule of law has a negative impact on the choice.
3. Market size and market affluence are pulling factors for Chinese RE OFDI. Richer countries are preferred destinations.
4. Technological asset-seeking motivations drive Chinese OFDI
5. a higher level of human capital has a negative and significant influence on the investment location decisions

Finding and Discussion

In our database we can aggregate data into three major overseas functions: manufacturing, R&D, sales and services.
Overseas subsidiaries with different functions respond differently to host country factors.

1. Sales/services subsidiaries are attracted by Countries with politically stable environment
2. Manufacturing subsidiaries are attracted by: good control of corruption, low trade barriers; encouraged foreign ownership; richer market. They are are more technological asset-seekers.
3. R&D subsidiaries are attracted by larger market and are the most non-human capital asset-seekers

Chinese OFDI in the Green industries 綠 |greeen

Purpose – We examine the impact of environmental and institutional factors of home and host countries on green OFDI to:

1. map where Chinese firms are targeting investment opportunities in Europe
2. find out characteristics of home and host regions, affecting Chinese decisions to invest abroad

Methodology - Mofcom database of greenfield and non-greenfield Chinese investments abroad.

1. Map of *Where to Where*
2. Seven fixed-effects logit models

Data

Research target: Chinese firms in the green sector with foreign subsidiaries in EU by the end of 2013 (Greenfield and M&A).
Green sector selection was made using NACE codes (14 sectors).
Dataset: 338 location choices by 251 Chinese firms in green sector in the EU countries from 2004 to 2013.

Country	**N. of Chinese OFDI**	**Country**	**N. of Chinese OFDI**
Austria	1	Luxembourg	16
Belgium	9	Netherlands	24
Bulgaria	20	Poland	8
Czech	6	Portugal	1
Denmark	6	Romania	8
Finland	2	Slovakia	1
France	18	Spain	17
Germany	129	Sweden	15
Hungary	4	United Kingdom	30
Italy	21		
Lithuania	1	*Total*	*338*

Econometric model

8 relevant variables at environmental and institutional level measuring home country impetus to Chinese green OFDI

2 variables to measure the **regional-level environmental** effects of the **home** country:

power consumption - wastewater/sulfur dioxide emission

3 variables to measure **the regional-level institutional** effects of the **home** country:

government management - rule of law -financial service

3 variables, measuring the **institutional effects of the host country**:

political stability - rule of law - prevalence of trade barriers

Finding and Discussion

- **Environmental factors** of home country play a key role in green OFD
- Environmental **escape** for market and technology is an important mechanism through which green firms were motivated to adopt an OFDI strategy
- **Home** and **host** institutions significantly affect Chinese green OFDI
- **Poor governance** and **weak institution** of home country facilitate green firms to escape stifling regulatory constraints
- High quality **financial service** provides green firms the convenience to invest abroad
- Chinese green firms are more attracted to countries with poor governance, weak institutions and low trade barriers.

Key conclusions

Policy development and recent inputs provided by the Chinese Government confirm that the "going green" trends will increase in the near future.

There is a great potential for EU countries and firms to benefit from China's need of green technology, resources and expertize.

At **policy level**, EU countries should try to play a more pro-active role and leverage Chinese willingness to invest in green technology.

The flows of "fresh" resources brought by Chinese investors, together with the possibility to have direct and easier access to the Chinese market, could be used by EU to contrast the crisis and the unbalanced growth within member States.

Key conclusions

Attraction policies or cooperation initiatives should be more effective and selective, i.e. targeting specific geographical locations of investors in China.

- Environmental escape for market and technology is an important mechanism to motivate FDI strategies.
- Chinese provinces could be a better target, rather than China as a whole, for bridging capitals and industrial projects in EU.

Key conclusions

At **firm level**, European firms in the green sector could take advantage of the growing Chinese interest in environmental technology and should actively try to promote partnership with Chinese firms.

Even SMEs could play a role. They could help and support Chinese investors - even in the light of barriers created by poor rule of law - offering services, consultancy, to explore the European market, or acting as sub-suppliers of goods and services in a very challenging arena for Chinese firms.