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“THE RENEWABLE ENERGY INDUSTRY IN EUROPE: BUSINESS AND INTERNATIONALIZATION MODELS. A FOCUS ON THE CHINESE MARKET

Aim of the paper

This article analyses the number, type and presence of European companies

- Italian,
- Spanish,
- French,
- German,
- Dutch,
- Rumanian,
- Bulgarian
- English

operating in the renewable energies industry in international markets, with a focus on China.

Country	Engines	Keywords	Ministries, associations, fairs, data bases	Number of firms
Germany	Google	German renewable energy companies, German renewable energy associations of federations, German renewable energy industry, German wind/solar/bioenergy/geothermal associations	German Renewable Energy Federation – German Wind Energy Association	126
Netherlands	Google	Dutch renewable energy companies, Dutch renewable energy associations of federations, Dutch renewable energy industry, Dutch wind/solar/bioenergy/geothermal associations		58
Spain	Google – Yahoo	Spanish renewable energy companies – renewable energy Spain	Ministerio de Industria, Energía y Turismo – l'Instituto para la diversificación y ahorro de la energía – IDAE – U.S. Commercial Service – Agenzia ICE	103
France	Google – Yahoo	French renewable energy companies – renewable energy France	Ministère de l'écologie, du développement durable et de l'énergie – Agence de l'Environnement et de la Maîtrise de l'Energie – Syndicat des énergies renouvelables – U.S. Commercial Service – Agenzia ICE	71
Bulgaria	Google	Renewable energy companies Bulgaria – RES operators Bulgaria – RES producers Eastern Europe, Associations	South-East European Exhibition & Congress EE&RE – International Technical Fair – SunE – Agenzia ICE – Investbulgaria	96
Romania	Google	Renewable energy companies Romania – RES operators Romania – RES producers Eastern Europe, Associations	Romenvirotec e Enreg ENERGIA REGENERABILA – Agenzia ICE – OPCOM	91
UK	Google	Renewable energy companies UK	Free Index	197
Italy	Google	Renewable energy companies Italy	Legambiente	191
China	–	–	Academic articles, Official Chinese government documents, List of participants in national and international exhibitions.	170

Table 3. Energy sectors and percentage composition.

Production type	Germany	Netherlands	Spain	France	Bulgaria	Romania	Italy	UK	China
Wind energy	37.30	50.00	38.83	38.03	25.00	46.10	37.20	33.50	32.00
Biomass energy	28.50	50.01	41.75	39.44	19.70	36.20	37.70	38.10	9.00
Solar energy	23.81	34.48	63.11	63.38	83.30	75.80	83.80	81.70	76.00
Geothermal energy	15.87	10.34	3.88	15.49	4.10	8.70	35.10	45.70	6.00
Hydroelectric power	6.35	13.79	6.80	30.99	7.20	27.4	13.60	10.70	12.00
Marine energy	n.f. ^a	n.f.	3.88	16.90	1.00	-	-	8.10	3.00

Note: ^aNot found.

Table 5. Activity of the firms in the supply chain (percentage on the number of firms in each country).

Activity of the firm in the supply chain	Germany	Netherlands	Spain	France	Bulgaria	Romania	Italy	UK	China
Production of components	37.30	27.59	21.36	15.49	27.00	18.60	32.00	15.00	48.00
Plants (design, construction, installation, maintenance)	35.71	32.76	70.08	100.00	85.40	80.00	90.00	100.00	78.00
Energy production	13.49	13.79	28.16	28.17	31.20	38.40	42.00	100.00	32.00
Distribution and Services	34.92	37.95	18.45	18.32	32.20	29.60	63.00	30.00	24.00
R&D	1.59	8.62	33.98	25.35	2.00	7.60	40.00	7.00	35.00

Table 6. Activity of the firms in the energy supply chain (percentage on the number of firms in each country).

	Germany	Netherlands	Spain	France	Bulgaria	Romania	Italy	UK	China
<i>Wind energy</i>									
Production of components	44.68	10.34	12.50	29.63	16.00	7.10	30.00	15.00	n.f. ^a
Plants (design, construction, installation, maintenance)	29.79	37.93	95.00	88.89	79.10	66.60	87.00	100.00	n.f.
Energy production	8.51	10.34	35.00	29.63	41.60	42.80	34.00	100.00	n.f.
Distribution and Services	40.43	65.52	2.50	14.71	20.80	30.90	70.00	88.00	n.f.
R&D	–	10.34	32.50	33.33	4.10	14.20	39.00	11.00	n.f.
<i>Biomass energy</i>									
Production of components	22.22	5.00	11.64	42.86	52.60	15.10	24.00	5.00	n.f.
Plants (design, construction, installation, maintenance)	44.44	15.00	67.44	100.00	68.40	72.70	81.00	100.00	n.f.
Energy production	30.56	35.00	30.23	42.86	15.70	30.30	33.00	100.00	n.f.
Distribution and Services	41.67	40.00	11.63	32.14	31.50	30.30	70.00	27.00	n.f.
R&D	2.78	10.00	41.86	25.00	–	12.10	42.00	4.00	n.f.
<i>Solar energy</i>									
Production of components	46.67	41.38	26.15	31.11	23.70	15.90	32.00	9.00	n.f.
Plants (design, construction, installation, maintenance)	40.00	27.59	78.46	91.11	78.70	66.60	85.00	99.00	n.f.
Energy production	13.33	10.34	21.33	31.11	31.20	34.70	23.00	99.00	n.f.
Distribution and Services	23.33	27.59	12.31	27.78	32.50	33.30	72.00	30.00	n.f.
R&D	3.33	34.50	30.77	22.22	2.50	5.70	40.00	5.00	n.f.
<i>Geothermal energy</i>									
Production of components	25.00	–	–	45.45	25.00	–	25.00	8.00	n.f.
Plants (design, construction, installation, maintenance)	35.00	–	75.11	45.45	75.00	50.00	90.00	100.00	n.f.
Energy production	10.00	–	50.00	45.45	–	37.50	19.00	99.00	n.f.
Distribution and Services	60.00	66.67	–	27.27	25.00	37.50	76.00	24.00	n.f.
R&D	–	33.33	75.00	36.36	–	12.50	34.00	4.00	n.f.
<i>Hydroelectric power</i>									
Production of components	25.00	–	14.29	40.91	28.50	8.00	23.00	5.00	n.f.
Plants (design, construction, installation, maintenance)	75.00	–	100.00	95.45	71.40	84.00	85.00	100.00	n.f.
Energy production	25.00	25.00	42.86	40.91	57.10	52.00	42.00	100.00	n.f.
Distribution and Services	37.50	62.50	28.57	27.27	14.20	16.00	85.00	10.00	n.f.
R&D	–	12.50	14.29	27.27	–	16.00	54.00	5.00	n.f.
<i>Marine energy</i>									
Production of components	n.f.	n.f.	–	33.33	100.00	–	–	31.00	n.f.
Plants (design, construction, installation, maintenance)	n.f.	n.f.	–	41.67	100.00	–	–	100.00	n.f.
Energy production	n.f.	n.f.	–	33.33	–	–	–	100.00	n.f.
Distribution and Services	n.f.	n.f.	–	25.00	–	–	–	6.00	n.f.
R&D	n.f.	n.f.	100.00	33.00	100.00	–	–	100.00	n.f.

Note: ^aNot found.

Specifically, European enterprises appear to encounter difficulties in approaching the Chinese market, which is rapidly developing as a result of the latest five-year plan setting energy and climate change targets and policies.

Indeed, the number of European firms investing in China is low due to their small size, high cultural distance and inadequate management strategies.

CALEFFI Hydronic Solutions

Revenues from sales (2013)	172.596.390 EUR
Net income (2013)	11.096.027 EUR
Total assets (2013)	333.701.272 EUR
Employees (2013)	703
Independence Indicator	D
No. of companies in corporate group	18
No. of registered shareholders	2
No. of participating companies recorded	18
Stock exchange	Not listed

Source: AIDA (Bureau van Dijk), 2015.

Note: D: Company with a recorded shareholder with 50% direct ownership.

In China

- 1998 agent in exclusive (he operates with its own company of 40 employees - offices in Tianjin, Shanghai, Guangzhou, Chengdu, Xi'an, Dalian, Qingdao, Taiyuan)
- no production in China



Figure 5. Examples of Chinese buildings constructed with Caleffi products. From top to bottom, left to right: (1) SOHO; (2) Huamao Centre; (3) Water Cube; (4) Sunrise Kempinski Hotel; (5) Beijing Legendale Palace Hotel; (6) Headquarters of the State oil company; (7) Headquarters of the Central Military Commission.

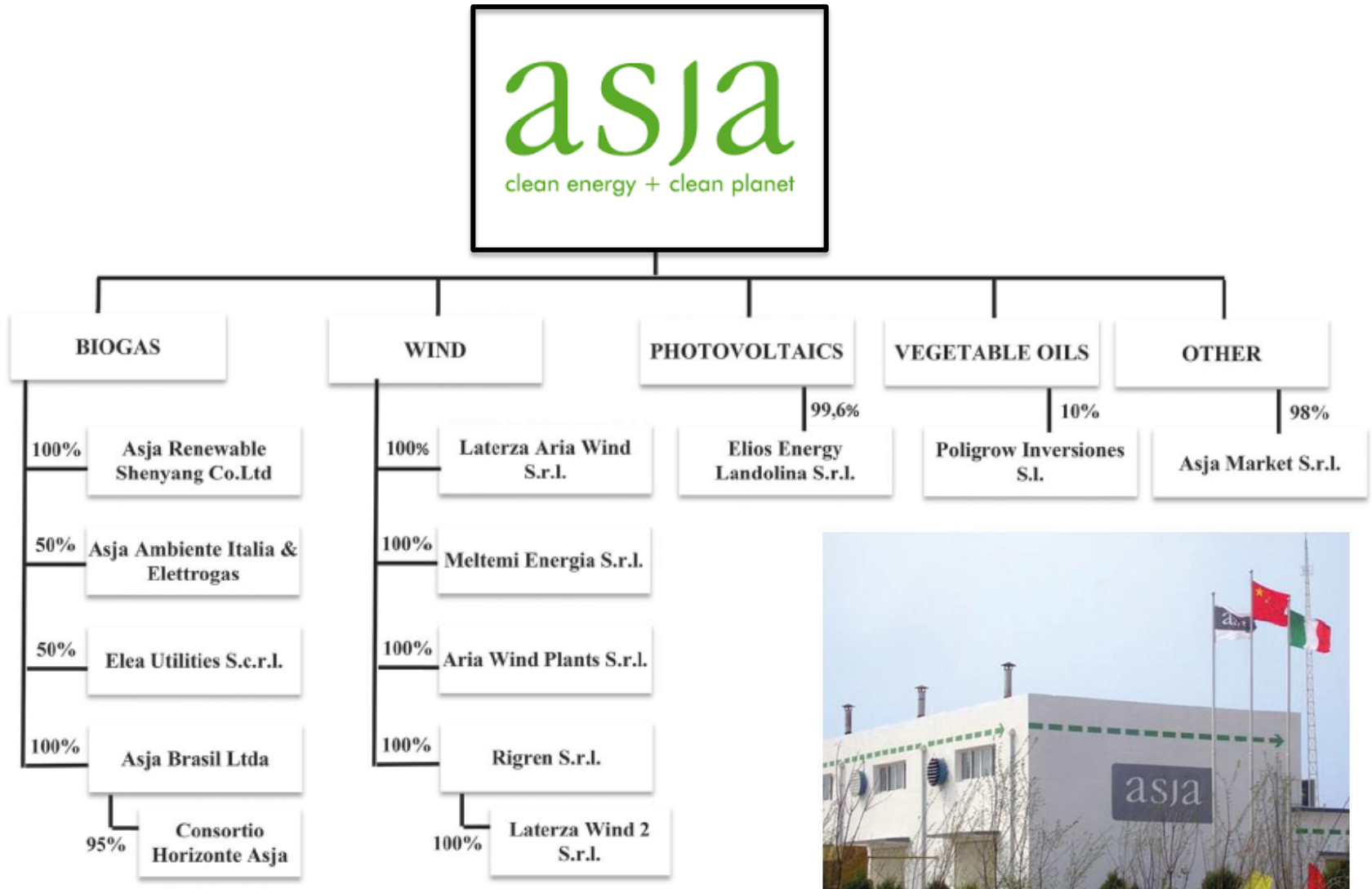


Table 7. Asja Ambiente Italian Spa- information on company size and the group in 2013.

Revenues from sales (2013)	66.433.353 EUR
Net income (2013)	1.339.885 EUR
Total assets (2013)	215.132.785 EUR
Employees (2013)	111
Independence Indicator	D
No. of companies in corporate group	1.929
No. of registered shareholders	4
No. of participating companies recorded	25
Stock exchange	Not listed

Source: AIDA (Bureau van Dijk) 2015.

Note: D: Company with a recorded shareholder with 50% direct ownership.

asja
clean energy + clean planet

Table 8. Asja Renewables Shenyang key figures, 2012–2014 (million renminbi).

	2012	2013	2014
Total revenues	6.37	5.44	6.61
Annual growth in %		-14.7	+21.5
No. of employees	12	12	14

Source: 2013, 2014 Reports on Operations and Consolidated Financial Statement
Company data.

Conclusions

- Due to the small size of businesses, gaining bargaining power requires **aggregations or establishing networks** operating under an umbrella brand (Trianel – Juwi).
- Two essential capabilities are **knowledge of the culture** and **developing strong relationships at the local level**. Cultural orientation, particularly in China, is a prerequisite for establishing strong business relationships and building trust, which in the Asian culture is considered an antecedent of relationship building (contrary to relationships between Westerners – Harris and Dibben 1999)

The results of the analysis of the two case studies (Asja and Caleffi) confirm the importance, for the definition of a successful business model, of collaborations between various actors located in China and their key role in the success of many activities along the value chain. Moreover, expertise, product quality and innovativeness help entrepreneurs operate successfully in China, even when the companies are smaller in size.