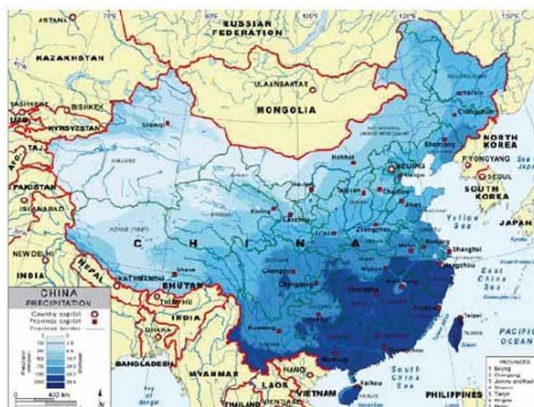


Executive Summary

International Markets

Food and beverage sector - Water efficiency and waste water treatment, China



For individual support on doing business in China, specific questions about market opportunities and to receive the full report, please contact plj@dhigroup.com or re@gate2growth.com

Business support is free of charge.

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Introduction

INNOWATER is a public private innovation partnership of innovation agencies, water associations, technology specialists, innovation experts and eco-innovative cluster organisations from Belgium, Cyprus, Denmark, the Netherlands, Spain and the UK, coordinated by the European Water Partnership. INNOWATER is supported by the EC Europe Innova Programme.

The overall objective of INNOWATER is to establish and implement a water innovation partnership that develops and tests new and better support tools and delivery mechanisms for innovative SMEs and first-user industries. A key objective of the project has been to develop a portfolio of tools to assist SMEs in the development of appropriate business models which support growth into international markets¹.

A new model was developed for gathering international market intelligence that is relevant to, and easily accessible by, European SMEs. It uses a small team of independent third party experts to build on existing and available market intelligence to undertake specific in country fact finding missions on behalf of the SMEs, with subsequent feedback and business planning support provided by way of follow up.

The International Business Trip to China was undertaken in May 2013 to identify and evaluate opportunities for European SMEs to participate in providing solutions for the food and beverage production industry.

The main objectives of the trip were to:

- Identify specific innovation needs for which there is a benefit to China in sourcing solutions from European suppliers;
- Identify opportunities that can realistically be met by European SMEs (alone or in consortia);
- Understand the drivers and barriers to the uptake of new technologies in this market;
- Map practical next steps for establishing communication between innovators in Europe and end users in China.

Background to food and beverage sector in China

China is one of the largest consumers of food and beverage in the world, and it is also one of the largest producers in these sectors. China's major cities of Beijing and Shanghai are the leading consuming hubs. The food and beverage sector in China includes processed agricultural products, other food manufacturing, and beverage manufacturing. The market in China has been increasing during the last decades driven by urbanization, disposable incomes, changing urban lifestyles and retail distribution. In particular, high growth has been seen in the process industry (dairy and dry foods), wine, seafood and meat. The food and beverage sector has seen a global growth estimated to 6.7 % driven by emerging markets like China. The food and beverage sector in China generates a high value of about 1000 billion CNY or 124 billion EUR equal to value of the chemical or power generation sectors of China².

According to information from the China National Food Industry Association (CNFIA) there are an estimated 500.000 industries in the Food and Beverage sector in China. The sector is sub-divided in a number of sub-sectors such as dairies, slaughterhouses, breweries or dry food production among others. The sector is composed of large state-owned enterprises, large international industries (often organized in Joint Ventures with Chinese companies) and a large number of medium and small privately owned and operated companies.

Water is an essential resource for these types of industries for cleaning, cooling, heating and as an ingredient in products. According to CNFIA, water supply and waste water treatment may be managed by (i) the industry themselves with its own sources of water and treatment plans, (ii) the municipality whereby industries may obtain water from a municipal water supply and discharge the waste water to a municipal waste water treatment plant and (iii) industrial parks where which supplies water and has facilities to treat the waste water. The industrial water use in China is increasing

¹ See www.innowater.eu for detailed information on all support tools produced by the Innowater project.

² National Bureau of Statistics, 2008

significantly- estimates suggest more than a 50% increase within the next 10-20 years as the domestic market for food products increases. The industrial sector accounts for 20% of water use in Beijing (2005) of which 6% is used by the food and beverage industry.

400 out of 600 cities in China face water shortages to varying degrees, including 30 out of 32 of the larger mega-cities. With industries located in or close to urban areas this puts a high pressure on industries to be water efficient.

Drivers and Barriers of Innovation

The key drivers for the implementation of innovative water management systems solutions are very political. The “Most Stringent Water Management System” announced by the State Council early 2013 sets out water usage, efficiency ratios for water usage for industry and agriculture and water quality measures for each province.

The central government has set the food and beverage industry the target to reduce its water consumption by 30% for each Chinese Yuan of industrial value of the production and 10% of the pollutions discharged. According to market forecasts (GWI) the food and beverage sector is expected to double its capital expenditures from 2007 to 2016, and the market for equipment and services are expected to increase almost at similar rates.

Additional market drivers are the price of water and energy. While the price is not yet at the level of full cost recovery the price has gone up significantly over the past 10 years through regulations of the National Development and Reform Commission and is expected to increase even more in areas which are very water scarce. A number of other pieces of legislation and regulations puts additional pressure on industries, including the “Water Pollution and Control Law” requiring industries to comply with waste water emission standards; the “Circular Economic Law” requesting industries to reduce their water use through regulation and an incentive scheme. The “Strategic Industry Development Plan” identifies sectors like environment and IT as strategic sectors for development in China- which raises the potential for European SME’s to find Chinese partners.

However, there are also significant barriers to the uptake of new technology including:

- Need for high degree of localization of products;
- There is a very high focus on capital acquisition costs, where many European technologies are more attractive when looking at life-time costs;
- Complex and un-transparent legal and political system;
- Low protection of IP rights and a culture of copying technology;
- Language and cultural challenges necessitates local partners;
- Rising labour prices and the difficulty in finding enough skilled workers;
- Difficulty to find t reliable local partners;
- Difficulty to obtain local funding from private or public sources in China;
- Difficulty to move money/capital out of China;
- Huge and fragmented market

Potential Opportunities for European SMEs

Consultation with stakeholders from a variety of different organisations and review of available literature has identified potential broad opportunities for European SMEs in the following areas:

- Groundwater Exploration;
- Drilling and Pumping;
- Desalination for industries located in coastal areas
- Water Monitoring and control systems- sensors, water audit tools
- Point-of-Use Water Treatment System;
- Biological Flocculation and Aeration
- Water Saving Technologies and Equipment;

- Industry Wastewater Treatment- in particular de-nitrification and phosphorus removal
- Sludge treatment and disposal equipment
- Biogas systems for industrial production units
- Wastewater Recycling (in particular MBR) systems

Key Stakeholders

A range of stakeholders are relevant to involve when looking at entry in to China

Principal amongst these are:

- “Gatekeepers” in China: Ministry of water resources, Ministry of environmental protection, National Development and Reform Commission;
- “Sponsors” in China: EU SME centre, EU-China Chamber of Commerce, EU member country embassies, Technology transfer partners;
- “Sponsors” in EU: Clean Tech Clusters, innovation support system, export promotion and support systems, China Europe Water Platform, EU China Policy Dialogue Support Framework ;
- National and local supply chains, e.g. local component suppliers and manufacturers;

Potential Routes to Market

There are a number of ways by which SMEs may interact with the market but options include:

- Find a local based investor with a lot of market knowledge (such as the European development funds);
- Establish a local office and use the available EU Delegation and member country resources (such as EU SME centre and embassies);
- Use technology transfer companies to help find first customers and establish networks.

Market development will require investment in time on the ground in China, developing these relationships and gaining additional market intelligence.

Critical Success Factors

Both technological and non-technological attributes will be important for SMEs entering the market. All technological solutions need to be appropriate and/or adapted for the Chinese market. Valued characteristics include:

- Low initial capital investment;
- Long life time is not required or desired if it is cheap to produce and easily replaced;
- Focus on a physical and easily understandable product, not large systems or services;
- Focus on solving a very specific problem;
- Strong local partnerships – it is not possible to do it alone.

Concluding Comments

The Chinese food and beverage industry was chosen due to the huge potential it has for European SMEs. Stronger regulation and a growing economy combined with water scarcity drives the need for better water saving, cleaning and reuse technologies.

While European technology can help leapfrog water treatment in the sector, China is a difficult and alien market to enter. One of the most precise descriptions of the market we heard was from a Danish investment fund manager who said “In China everything is possible, but nothing is easy”.

It is important for a company considering entering China, that they make sure they have a good fit for local needs. This means the right product and the right business model. What works in Europe, does not necessarily work in China.

Finally it is critical that they can find the all-important local partners to help navigate the dark waters of the Chinese market.