CEWP China Water Sector Market
IE Expo CEWP session, Shanghai May 2018
CEWP

August 2018

*How to do water business in China – The drivers, barriers and strategies*
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Introduction

The first CEWP PI Business and Innovation Event was held at the IE Expo in Shanghai on May 4th. A number of leading European Companies such as Veolia, Sues and Ecolab shared their business experiences with the audience on how to successfully operate at Chinese water market. Together with a numbers of up and coming European SME the speakers gave their view on how to overcome the market access for European companies. In both the company sessions and the panel discussions the key driver was the vast and expanding market opportunities and success factor was adaption, innovation and a high quality product. The major challenges facing EU business was seen as finding the right partners, financing the entry to the market, strategic choices in a vast market and adaption to local requirements. The recent market development has shown that major companies such as Veolila and Suez held a market leading position a decade ago in China, now local companies have developed comparable technical and management capability and have greater access to finance and political support so are harder to compete against. The findings of this workshop will form part of the basis for the CEWP PI Business and Innovation Program in the coming years, 2018-2021.
Executive Summary

China-Europe work shop “How to do water business in China – The drivers, barriers and strategies”

The IE expo China, ran from May 3 to 5, 2018 in Shanghai. During these three days, 66,580 visitors from 59 countries and regions came to the Shanghai New International Expo Centre (SNIEC) to catch up on the latest environmental technologies and solutions for the Asian market. The trade show witnessed new all-time highs with regard to exhibitors and floor space: 1,762 companies presented their solutions for water, waste, air and soil in an exhibition space of 128,000 square meters.

Zhao Lijun, President of the China Environment Chamber of Commerce, said: "The growth witnessed by IE expo China reflects the enormous economic power behind the Chinese market for environmental technologies." Peter Kurth, President of the Federation of the German Waste, Water and Raw Materials Industry (BDU), concurred: "China is increasingly developing into a driving force of the environmental sector. The numerous governmental initiatives currently in the works underscore the will of the country to establish a sustainable circular economy."

With hundreds of exhibitors including many new comers to the sector, who had previously been in heavy industry or defence fields it was clear the way that Chinese State Enterprises have been put onto a war footing, commanded to deliver Ecological Civilisation in China, and they are going about this through a very commercial model with special Chinese characteristics. It’s time for Europe to get on board!

The EU-China PIANO project held an event at the Expo on the morning of 4 May “What can Europe offer China in terms of water innovations?” This event, to a packed room of some 60 people, included the views of leading European Companies such as Veolia and Cambi on their experiences in China, a review of the support from the New Ecology and Environment Ministry to innovation promotion and a review of the activities and findings of the PIANO project.

In the Afternoon was the CEWP China-Europe workshop “How to do water business in China – The drivers, barriers and strategies”. In this we heard from Larger companies such as SUEZ, Veolia and Ecolab, from smaller companies such as NKE and Ijinus with monitoring and control systems and HTCCycle with Sludge process technologies. Wsstp and the French water association described their strategies. The CEWP presented the Chinese Water policy framework that is driving technological and business responses and on trends in the China Water Sector Market and discussed the opportunities, barriers and strategies by different sub sectors of the market. The findings of this this will be adapted as an output for the CEWP business pillar in coming months.

In both sessions panel discussions were held identifying some of the key challenges facing EU business in terms of finding the right partners, financing the entry to the market, adaption to local requirements. Though major companies such as Veolia and Suez held a market leading position a decade ago in China, now local companies have developed comparable technical and management capability and have greater access to finance and political support so are harder to compete against. There does need to be international effort in certain areas to ensure that local and foreign companies are able to compete on a level playing field. However European companies still hold key advantages in Technical leadership and quality and there is hunger amongst the leading Chinese companies to work with them. It is just that the negotiations will be tough, European companies must be very selective in their focus and Chinese buyers need to be persuaded of value through the project lifecycle, not just initial cost. Some of the findings from this work could feed into future EU innovation promotion strategies.
1. Programme

On Friday May 4, 2018 at IE Expo 2018 at the Shanghai New International Expo Centre (SNIEC) the China-Europe water platform (CEWP) organized an afternoon workshop titled “How to do water business in China – The drivers, barriers and strategies”. This reviewed the Chinese water market and held discussions to jointly formulate a strategy to improve the market access for European companies.

Final Program:

Session one – Business opportunities for European companies in China
13:00-13:10 On-site Registration and Networking
13:10-13:20 Welcome and setting the scene by Mr. Anders Kjær, CEWP
13:20-13:40 Water Visions and Challenges in Europe and China by Dr. Jian Kun Sheng, WssTP member – Expert presentation prepared by Durk Kroll
13:40- 14:00 Water Market Trends in China by Mr. Simon Spooner, Atkins International - Expert presentation

Session two - European access to the Chinese water market
14:00 - 15:00: Presentations by European Companies on how to succeed in the Chinese market

1. Veolia, Dr. Chen Xiaohua, Process & Application Director APAC Municipal/Engineering Director SEA & Australia Municipal
2. SUEZ Asia, Mr. Ollivier Ramus, Managing Director for Water Industry
3. Ijinus, Mr Olivier Le Strat, President
4. NKE, Mr. Jean-Claude Le Bleis, President
5. France Water Team, Mrs Emilie Fillol
6. Nalco Water Greater China, Dr. Jian Kun (JK) Shen, Director Marketing
7. AVA Green, Mr. Uwe Kuhnle, CEO

15:00 - 16:00 : Panel discussions on better access to Chinese water market - SUEZ Asia, Veolia China, Arcadis China, Ijinus, NKE, Nalco Water, HTCycle Chaired by Atkins International

Session three: Interactive Dialogue and Recommendations on a well-functioning and open water market in China
16:00 – 16:20 Summing up by Simon Spooner
16:20 - 16:30: Exchange of ideas, Conclusions and Next steps chaired by Nordic Technologies A/S
1.1. Session - Introduction

1.1.1. CEWP Introduction
Anders Bergløv Kjaer introduced the structure and approach of CEWP.

1.1.2. WSSTP Introduction
Dr. Jian Kun Sheng presented the WssTP "Water Visions and Challenges in Europe and China" which described some of the challenges that China is facing regarding water resources and then outlined a framework for engagement with China. WssTP considered this in the context of how they are working with the EU to develop the topics of the EU’s horizon 2020 programme for the water sector and how this can interface with joint programmes to address the water challenges facing China.
1.1.3. PIANO Project and China Water Sector Market

Mr Simon Spooner, China Water Business Expert for CEWP, introduced the approach of the PIANO project, the Analytical framework applied, the General Drivers and Barriers to market entry and then some specific Barriers related to the Sub Sectors of

1. agricultural water management,
2. municipal water management,
3. industrial water management,
4. river basin management and flood control
5. water for energy

Finally, some strategies for overcoming these Barriers

Analytical Framework:

- Major policies driving change.
- Technological Responses
- Incentives that support innovation
- Business models for delivering the change.
- Procurement models
- Agents for delivery

Drivers: China Policy Framework

China has established a much more robust environmental focus to its entire economic development model. This works down from high level policy to how projects and development is planned and financed. The implementation by different levels of government and state enterprises is coordinated and focussed by the Communist Party through the cadre assessment systems, setting KPIs for environmental performance and making these important priorities for all concerned.

1. Ecological Civilisation
2. Major Laws – Water Reform, 3 Redlines, Env Protection
3. Five Year Plans (13th)
5. Ministerial Reorganisation – MEE + MNR
6. State owner Enterprises re-focussed on War footing
7. PPP Finance and Regulation
8. Party Cadre Performance assessments

These policy initiatives are driving a technological response. More advanced, sustainable solutions are required, making a transition to a circular economy and for people living in a society with more in understanding and harmony with the natural ecology.
Technology Response

1. Higher environmental Standards – Clean Tech
2. Circular economy
3. Nature Based Solutions
4. Integrated solutions
5. Monitor, Model, Control – SMART Infrastructure

For EU companies wanting to engage in this new economy in China there are a number of barriers that they must understand and overcome.

Barriers: General

- Market understanding / language
- Market / public acceptance of new technologies
- Promoted / Closed lists for imports and market access
- Localisation of technology – adapt to China
- Certification and approval of technologies - ETV
- Identification of Clients
- Procurement routes
- Business registration and Banking
- Reliable Partners for distribution, installation, training and operation.
- IPR Protection and copying
- Financial and Human Capacity of Company

There is assistance available from EU supported programmes to help to overcome these barriers and thrive in China.

The Success Factors for Overcoming Barriers

[Diagram showing the success factors for overcoming barriers]

- Understood Market
  - Identified their valuable IPR
  - And registered it.
- Time
  - Identified a complementary partner
- Adapted Products
  - Understood local needs
  - Adapted product or service
  - Adapted their business model
- Right Partner
  - Understood regulations and licensing requirements
  - Differences in perception of their product

The EU-SME Centre has produced a number of guidance documents to help to understand the barriers and the routes to overcoming them. These are available from their website.
The Analysis of the different market sub-sectors was presented with the opportunities, barriers and strategies for overcoming those barriers discussed.

A copy of the ppt and a detailed report on the China water sector market is available from the CEPW website.

1.2. Session 2 – Presentations by Industry

Full slide decks related to these presentations are available from the CEPW Website. The key points are summarised below.

1.2.1. Veolia

Dr. Chen Xiaohua of Veolia introduced Veolia’s operations in China over the last 20 years to the present day. This demonstrated how much tougher environmental standards (especially water quality standards, discharging, discharge and river quality) have been introduced in China and a much stronger regulatory environment established for enforcement. This is driving new and more advanced technological solutions which require greater levels of management and organisation to implement as well as new financial models and relationships. To succeed you have to bring something new to the market and be able to work with local partners to deliver that technology in a cost effective manner.

1. Veolia has been successful in Chinese Market thanks to its technologies.
   These technologies are either compact, highly efficient and cost effective, or unique in the market to solve the client’s problem. These technologies are very suitable for China.

2. Our mission is to resource the world. We contribute to improving access to resources as well as preserving and replenishing them.

3. We shall be the leader to meet the challenges of the 21st Century. They are more megacities, more water stressed areas and more demand on water and energy; universal access to essentials, development of circular economy.

4. Our solutions for our customers are: high quality of drinking water, sanitation of waste water proves to be imperative to preserve the quality of rivers and seashores.

5. Our solution for cities will be resilience of cities, inclusive cities, circular cities, livable cities and smart cities.

1.2.2. SUEZ

Mr. Ollivier Ramus, SUEZ Asia Managing Director for Water Industry presented an introduction to SUEZ in China. SUEX have been in China more than 20 years and have a number of Municipal and industrial projects there. He gave as a case study their current focus on industrial parks.

All around China local governments have been establishing industrial parks to attract investment and development. Many are labelled as Green or ECO parks. Reality of how sustainable and successful they really are varies greatly.

The ideal is that a well planned industrial park can enable circular economy action by which the wastes from one enterprise can be the raw material for another with coordinated and shared materials and energy processing, handling and exchange systems.

SUEZ is a pioneer in introducing the technology required to make this happen. Ideally integrating hard process engineering and centralized treatment with nature based solutions such as wetlands and agricultural production. This also requires innovative business models and cooperation between the enterprises, government and service providers. Tighter standards and requirements to meet environmental improvement objectives are driving this transformation. Older heavy, single industry industrial zones are being decommissioned and replaced with integrated industrial parks.

SUEZ are very selective about which projects they engage in. They are approached for thousands of projects, consider hundreds and actually involve themselves in a just 20 cities, 10 parks and about 60 individual industrial sites across China. Must be very selective and the main key to success is the quality of relationships with the local government and enterprises.
1.2.3. **Ijinus**
Mr Olivier Le Strat, President of Ijinus introduced their Internet of Things enabled water sensor technologies which they developed in the French farming sector and are now applying in the Chinese water and wastewater sectors as well as for SMART Cites applications. They currently produce their equipment in France and are importing to China and selling through local partners. They are moving to a local manufacture model to allow for growth and to overcome the many restrictions and difficulties of import-export procedures.

As relatively new entrants to China they found the language and cultural barriers to be significant. Their biggest challenge is in communicating the concept that through the use of their products the customer can achieve much greater value over the life cycle of their investment, but that the solution is not minimum capital cost – rather maximum lifecycle value. By knowing the state of a system and condition of components operation can be more efficient, quality higher and maintenance more targeted.

To keep ahead in the market they realize that they must keep innovating. The Chinese competitors learn fast and develop so they must always be able to offer a better, more reliable and better quality product.

1.2.4. **NKE**
Mr. Jean-Claude Le Bleis, President of NKE introduced their multiparameter probe technologies for environmental monitoring and their drone based deployment systems for aquatic and marine settings. New entrants to China they mostly sell through a partnership with SUEZ. As 1 of only 3 producers of underwater drone technology they currently hold a unique range of products that clients in China will have to come to them to obtain.

1.2.5. **France Water Team**
Emilie FILLOL of Aqua Valley introduced the France Water Team network. This is an association of French water industry, academia and government to promote innovation, skills development and internationalisation (exports) to improve their members and the French water sector’s competitiveness. They associate with other water networks, clusters and partnerships across Europe and around the world.

1.2.6. **NALCO**
Nalco Water are part of the large US based Ecolab Company. They are suppliers of water, energy and air improvement solutions and services for industrial and institutional markets. In China they are mostly marketing water saving and hygiene products. Dr. Jian Kun (JK) Shen, Marketing Director introduced their products and strategies.

1.2.7. **HTCcycle**
Mr Stepan Kusche, Chief Technology Officer of HTCcycle introduced their company, product and strategy. HTCcycle have developed a Hydrothermal Carbonisation process for the treatment of sewage sludge. This batch processes sludge at about 170 - 250 °C and 20 atm pressure at which point in a period of a few hours the sludge will be converted to a mixture of a Bio-coal residue and an easily separated fluid portion very rich in phosphorous and nitrogen nutrients. These can be converted into valuable products. Bio-coal into activated carbon for use in tertiary wastewater treatment processes and then incinerated or used as a soil conditioner. The Liquid residual can be separated and processed to extract the phosphate mineral Struvite, Ammonia, ammonium sulphate and Phosphoric acid. These are each high value products. The is no bio gas production, but the energy content of the Bio-coal is high if incinerated.

HTCcycle have established manufacture of a pilot plant in China with pressure vessels produced by a local partner and are now in the process of seeking partners and investors to scale up the process and implement at multiple sites in Chinese cities.

The proposal is that their process is better able than any other sludge treatment process, to energy efficiently convert the waste material of Sewage Sludge into a range of high value products that form part of a circular economy.
2. Panel Discussions

Topic: Better access to Chinese water market - SUEZ Asia, Veolia China, Ijinus, NKE, FWT, Nalco Water, Chaired by Prof Simon Spooner, Atkins International.

SUEZ: We would be happy if we had the same rules between Chinese and foreign companies applied in the same way. But this is not the case.
The new PPP based contracting environment should be an opportunity for us, but in fact it is more of a barrier. The local competitors have very different access to finance and are able to bid at lower capital prices. However, their solutions, though lower capex compared to ours, represent much poorer value over the contract period. The Clients still need to be educated about this.

VEOLIA: We are facing more and more competition from local companies. They may lack the technology but they have cashflow and local political relationships. They are increasingly then licensing in the technology they require. Despite continuing to grow our water and wastewater concession business, in the last decade we have gone from No.1 to No.7 by market share in China. BEWG, BJC, Sound Group etc have overtaken. They have access to PPP finance for new projects in ways that we are no longer able to match. We are now in a consolidation phase, growth and expansion has ended.
We are very cautious in the tender invitations that we consider. Generally we are doing smaller projects.
NALCO: Chinese buyers are not so sophisticated. Basing decisions on low price and personal preferences rather than considered analysis of long term value. We have to channel our development to working in partnership with major SOEs. We can then provide consultancy and support, not just equipment sales.

Ijinus: There needs to be more fairness in public bidding processes. We have problems of competitors directly copying our product and bidding against us at lower price, however so far we can still win due to better quality, reliability and functionality of our established product. We also need to see lifecycle costing not just CAPEX to be the scoring indicator in bidding processes.
The Policy to move to “made in China 2025” will drive investment in quality by Chinese manufacturers associated but policies could also drive out foreign technologies.

NKE: As a smaller company we can only tackle limited geographies at a time – Beijing, Shanghai. Chasing too many foxes is a problem. Which are the real opportunities, how to focuss on those, which partners to trust.
Audience Engagement: Overcoming barriers of certification and acceptance of new technology.

Izabela Ratman Klosinska of Environmental Technologies Verification Body Institute for Ecology Of Industrial Areas (ETV) raised a point: ETV provide an innovative service on performance verification for accessing overseas markets. They can provide certification of the effectiveness of a process as an accredited Inspection Body providing standardisation. Could a global performance document be used in tendering processes? Would this be seen as useful by members of the panel?

Responses from Panel (consolidated): Would be useful if we could be sure that the Chinese local Environmental Protection Bureaus or other regulators would accept such certification as valid. There are already ISO standards and certification processes, but these are not always accepted. It is sometimes necessary to run certification trials and get recommendations from different government institutes or expert panels, which can be expensive and uncertain in outcome.

A trustworthy and reliable certification process would be useful, but cannot be dropped into place in China based on a European model. This is a point to take further through CEWP for consideration and possible discussion with relevant Chinese partners.

Where EU institutions work closely with Chinese institutions to support business – e.g. EU-SME Centre and EUCCC forming partnerships with CWEC or MEE FECO 3ipet, we have to be very careful to ensure that EU Companies are being introduced to potential clients or partners and not simply to similar companies in China – who are actually most likely competitors and only interesting in stripping ideas and technologies to use themselves. Thus though it is recommended to engage with 3ipet etc, the EU should do so carefully and establish practical working relationship procedures.

2.1. Summing up

Though the water market in China is becoming larger, richer and more sophisticated, it is not necessarily getting any easier for EU companies to access. New areas are opening, especially in Sponge Cities and Sludge management, while older and more established areas such as municipal water supply and wastewater treatment are becoming closed out by local competition.

The new PPP approach can open new opportunities to enter into consortia with Chinese partners to bid for and deliver core infrastructure projects. But the “Chinese Characteristics” of the new domestic PPP approach are very hard for foreign players to engage with directly. The EU may want to consider how EU Export Finance vehicles and Financial Expertise through Trade departments, might be developed that would help EU companies to engage with Chinese SOE’s on a more level playing field with state backed access to finance.

Huge Chinese SOE companies have developed and are dominating areas of the market. Building partnership, or supply chain relationships with them may be more productive than directly competing. These companies have access to various forms of finance that they can bring to compete for PPP contracts.

There are particular barriers for EU companies when trying to engage with the SOE’s for major infrastructure projects. Much of the high value, specialist expertise of EU companies is most relevant to the early planning, feasibility and preliminary design phases of a project. The core construction and operation will be done by locals at commodity prices. However, these early stages are often poorly funded. Until there has been financial close and authorisation of the scheme no one wants to spend much money. It is normal practice that design institutes will undertake the early stages of work for free, on the understanding that if the project proceeds, they will get a bonus payment and a large part of the detailed design phase. It is very difficult for EU companies to engage in this business model. This is also a reason why projects in China may be poorly conceived and rushed, because nobody really invested the time and attention to optimising the plan and design at the early stages when the most value can be added.

If the EU were able to help EU companies to engage at this stage of projects and find ways to manage some of the associated financial risks, as well as pushing / educating Chinese government
to modify procedures to better fund these project stages and to consider life cycle value at this stage, then the opportunities for EU companies could be greatly enhanced.

In China, EU companies will be seen as part of their European and National characteristics, not as individuals. Just as in Europe we will tend to group together all Chinese companies even if they are actually from very different regions and cultures. It is therefore important that the EU and the member state governments provide a degree of support and branding to their industries so that they can engage with China on a more equal footing.

China provides various degrees of strategic support to their industry, much of this type of support is against European ethical preferences and normal practice but may actually be very effective. We have to consider how we work so as to achieve a level playing field, this means China changing and Europe changing to find common ground.

3. Questions / Suggestions

A final session was held asking the participants to submit questions or proposals on Post it notes for the CEWP to consider and to address in the next meeting in Qingdao at the end of June. The objective being that these will be developed to inform EU policy for engagement with the China water sector.

1. Push for projects to be selected upon global life cost cycle and performance (European supplier tend to be better when evaluated on long term performance rather than short term costs)
   i. Second comment on same topic: Make public bidding price evaluation based performance based criteria (price+quality+reliability)
2. What is great challenge for EU companies entering China?
3. Which Chinese city has best conditions for investment or doing business?
4. Push for Chinese government to be more favourable to international companies on investment, tax policies (currently seems to favour SOEs)
   i. Make green cards, longer work permits easier to obtain
5. Establish a Joint EU-China process (with EU support to China) to evaluate and certify water technologies to ensure best solutions make it to market
6. Can EU provide export finance support to help EU companies to engage in PPP contracts in China
7. EU engage with 3ipet and other innovation promotion organizations to form stronger networks and ensure connections are made to clients and not to competitors.
Appendices
Appendix A. Copies of Presentations

These may be downloaded from the CEWP website.
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