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SUSTAINABILITY

CLIMATE LEADERSHIP AND THE 2017 EU-CHINA SUMMIT
The 12th EU-China Business Summit

BREAKING INTO THE 'ENERGY INTERNET' ERA IN CHINA
An analysis of China's smart grid development

ENVIRONMENTAL REGULATION: THREAT OR OPPORTUNITY
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EU-CHINA SUMMITRY, SUSTAINABILITY AND SUCH

Mats Harborn
President of The European Union Chamber of Commerce in China

I have now had the pleasure of serving as President of the Chamber for just over two months. During this time, I have met with many members and going forward I hope to learn more about the opportunities and challenges you face in the Chinese market. Needless to say, my tenure as president so far has been an exciting and eventful period. Along with the launch of our annual *Business Confidence Survey* in late May, one of the highlights to date has been participating at the 19th EU-China Summit that took place in Brussels from 1st-2nd June.

This year's summit was one of the most important in recent memory. The range of topics discussed by the two sides served to highlight the breadth, depth and importance of the bilateral relationship, including: the business environment in China and Europe, regional and global challenges, competition policy, investment, energy cooperation, connectivity, customs, trade, agriculture, research and innovation, tourism, maritime affairs and climate change. Since bilateral dialogues are ongoing in these areas, European business has an important opportunity to influence policy and help establish a fairer and more sustainable business environment in China. Since the European Chamber takes an active role in related proceedings, we strongly encourage members to become even more active than they already are, by utilising their respective Working Groups and helping to formulate relevant policy recommendations. The more we succeed in this endeavour, the more we will see members' interests reflected in the outcomes of discussions.

One of the most important issues raised during this year's summit was climate change. Since the US President, Donald Trump, has announced plans to withdraw the US from the Paris Accord, there is much that the EU and China can to do to provide forward-looking leadership on this critical global issue. European business takes sustainability, in its widest sense, very seriously. This is in part because leadership on economic, social and environmental sustainability is important for opening up new business opportunities and increasing existing operational efficiency. Environmental protection is already on the Chinese authorities' agenda, from initiatives like the establishment of eco-cities, and it is very much a priority for EU companies as well. These businesses recognise the importance of environmental conservation by adapting, innovating and inventing in the interests of sustainable development.

For European enterprises to be able to take advantage of sustainable development opportunities in the Chinese business environment, it is important that all companies can compete on a level playing field, in order to guarantee that they can continue to innovate. As found in this year's *Business Confidence Survey*, a high percentage of respondents see environmental rules and regulations being enforced more stringently for foreign-invested enterprises than they are for purely domestic companies. While in the short term this means that fully compliant companies face higher costs, in the longer term, it is the ones that are not required to improve and become more competitive that lose the most.

Beyond the environmental cost this creates, it also more broadly distorts markets. Unfortunately, while larger European companies often have the financial wherewithal to ride out such challenges, many smaller businesses risk being pushed out of the market by uneven enforcement. That is why the Chamber continues to push for even-handed enforcement of all rules and regulations, including environmentally-related ones.

European business is keen to help China meet its commitments under the Paris Accord and to improve both its business and physical environment. We do so by offering the most sustainable products and services as well as by sharing best practices for related regulatory frameworks. This issue of *EURObiz* sheds light on important topics raised during the EU-China Summit.

CLIMATE LEADERSHIP AND THE 2017 EU-CHINA SUMMIT

The 12th EU-China Business Summit

Climate change is becoming an increasingly pressing issue for countries around the world. With the recent abdication of climate leadership by a major developed country, there is a void to be filled. **Renato Roldao**, a consulting Director on Climate Change at **ICF**, explores the different opportunities for EU-China cooperation on climate change and green technology.

Climate change, the *Paris Agreement under the United Nations Framework Convention on Climate Change (the Paris Agreement)* and the efforts that China and the European Union (EU) are undertaking, in order to renew and enhance their leadership role, were very high on the political agenda at the recent EU-China Summit[1] that took place in Brussels in early June. Both sides are now expected to follow through on their commitments and act in ways that are in line with the *Paris Agreement*[2] and the *2030 Agenda for Sustainable Development*.[3]

EU and China are spurring these 'agendas' forward, well beyond their own borders and economies. The role of these two economic blocks is expected to accelerate the promotion of low carbon development and climate resilience worldwide.

Opportunities for increased EU-China cooperation

Something more important than the unsigned, but discussed, joint statement was the summit's reiteration of their commitments[4]. Some of the areas that have been under discussion and that can open up new opportunities for EU and China cooperation include:

- **Long-term, low greenhouse gas (GHG) emission development strategies:** The EU and China are expected to cooperate on the formulation of mid-century, long-term, low GHG emission development strategies by participating in regular technical dialogues that include mitigation and adaptation solutions, capacity-building and climate legislation.

- **Emissions trading (ETS):** The EU and China recognise the importance of ETS as a cost-effective climate policy tool and agree to further enhance and reinforce bilateral cooperation-based activities regarding ETS.

- **Energy efficiency:** Building upon a strong foundation and prior achievements made in the bilateral Industrial Energy Efficiency and GHG Emission Reduction Working Group, the EU and China are expected to expand bilateral collaboration on energy efficiency to include energy labelling, minimum energy performance standards for appliances and energy performance of buildings with the aim of aligning existing requirements with international standards.

- **Clean energy:** The EU and China are expected to accelerate the exchange of best-practices and share their experiences on clean energy production, including knowledge on renewables, highly efficient combined heat and power (CHP), successful grid integration, energy regulation and market design. This also includes the integration of clean energy source and market-based support mechanisms. The EU and China are willing to strengthen collaboration on smarter and more resilient energy infrastructure and storage capacity. This is important for integration into the grid and large-scale utilisation of renewable energy. This collaboration can mutually reinforce work done under the Clean Energy Ministerial[5]/ Mission Innovation[6] that took place in Beijing this year and will be hosted in Europe in 2018.

- **Low-emission transport:** The EU and China recognise how low-emission transport is key to shifting towards a low carbon society and economy. They are expected to launch an expert dialogue on fuel economy and CO_2 emission standards for light and heavy-duty vehicles, including vehicles that are low and zero emission. Decisions on these issues are timely and can unlock new opportunities to accelerate decarbonisation of the transportation sector. At the same time, some European countries and car manufacturers just made headlines announcing they will be banning either the use or manufacturing of fuel engine vehicles.

- **Low-carbon cities:** Recognising that cities and towns are key actors in the fight to mitigate and adapt to climate change, the EU and China are expected to reinforce the EU-China Low-carbon Cities Partnership, by mobilising resources to allow Chinese cities to benefit from EU technical and managerial experience. The EU and China will attempt to increase the number of Chinese and European cities' pairings, with a strong focus on sustainable urbanisation.

- **Climate-related technology:** The EU and China recognise the global dimension of technological and scientific collaboration, underlining the benefit of multilateral cooperation in line with commitments to Mission Innovation and its aim to accelerate the clean energy transition. They are expected to enhance collaboration on climate related scientific research and to cooperate on technological innovation, including development and deployment of low greenhouse gas emission technologies such as carbon capture, utilisation and storage (CCUS) and

1 See http://www.consilium.europa.eu/en/meetings/international-summit/2017/06/01-02/

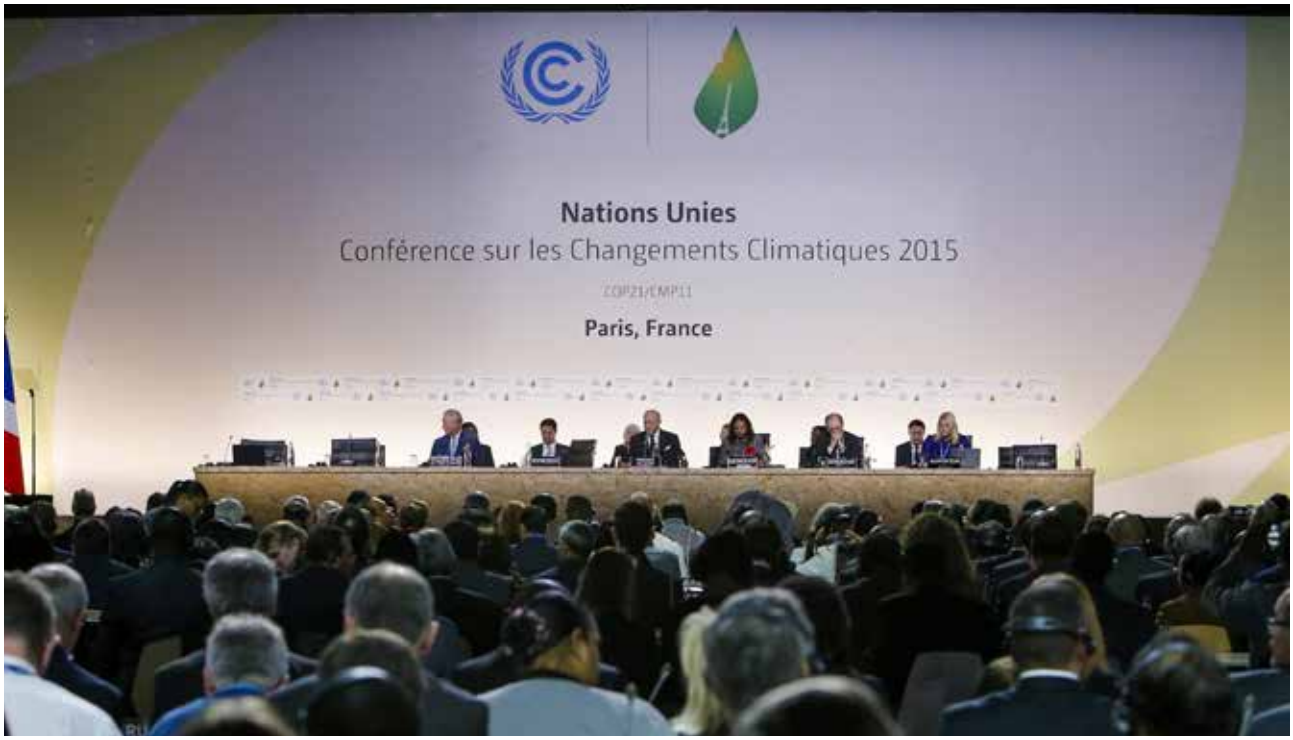
2 See http://unfccc.int/paris_agreement/items/9485.php

3 See https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf

4 See https://eeas.europa.eu/delegations/china/27424/eu-officials-vow-paris-will-endure_en and http://mp.weixin.qq.com/s/gNV6Zizw4h2ICczSxq76tQ

5 See http://www.cleanenergyministerial.org/

6 See http://mission-innovation.net/



adaptation solutions.

- **Investment in climate and clean energy projects:** Recognising the need for climate and clean energy project financing, the EU and China are expected to work together to implement the *Memorandum of Understanding* signed by the Chinese Ministry of Finance and European Investment Bank in 2016 to broaden the scope of EIB investment in sectors such as low greenhouse gas emissions in public transport, climate resilience, energy efficiency, renewable energy and forestry.

- **Cooperation with other developing countries:** The EU and China are expected to explore possibilities for triangular cooperation[7] on sustainable energy access, energy efficiency and low greenhouse gas emission development.This should take place in developing countries and should assist with combating climate change, with a particular focus on Africa, least developed countries and small island developing states, as reflected in these countries' national climate plans, strategies and policies.

In summation, the EU and China consider climate action and the transition to clean energy as more important than ever. This message came across strong and clear during the summit, but even more so at the recent G20 meeting in Hamburg[8]. The EU-China Summit and the G20 were both good demonstrations of political unity[9].

Climate change is exerting stress on ecosystems and infrastructure, to the point of threatening hard-won developmental gains. Its detrimental impact on water, food and national security have increased social and political fragility, with climate change being considered a root cause for instability and population displacement. A potential solution is the consideration of climate change in all investment decisions (either public or private). The EU and China are expected to reinforce International Civil Aviation Organization (ICAO) and International Maritime Organization (IMO) cooperation to ensure aviation and shipping industries help in combating climate change, through domestic and international policies and measures.

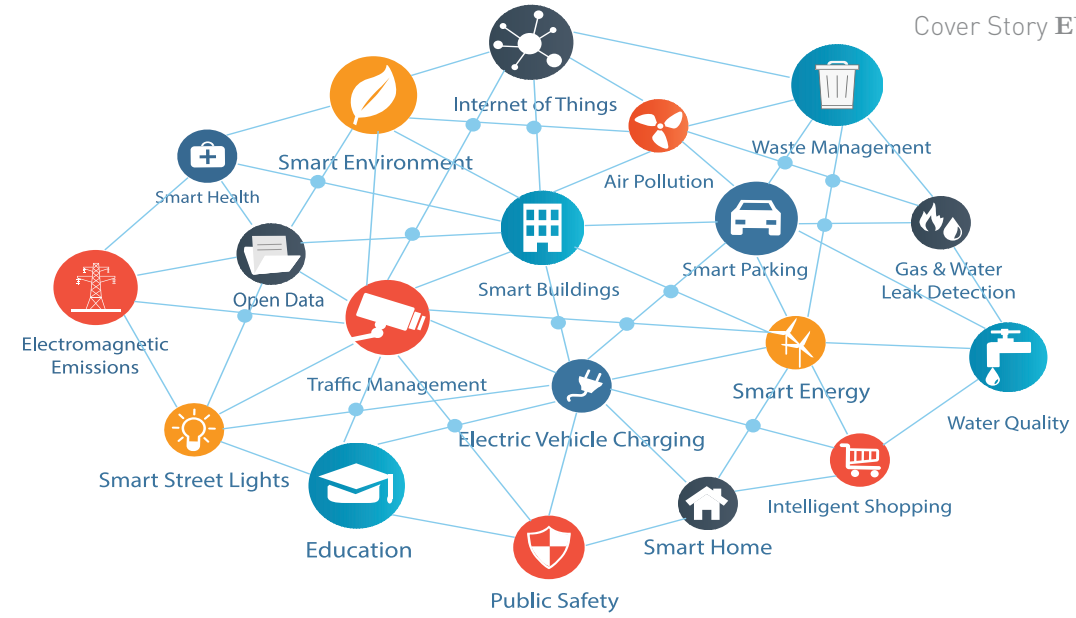
In conclusion, all opportunities listed above will require intensive involvement from multiple Directorate-Generals (DGs) of the European Commission, the EU Parliament and also EU Member-States, as well as multiple ministries and regional governments from China. It is important to tackle climate change and reform energy systems as they are significant drivers of job creation, investment opportunities and economic growth.

Renato Roldao**, Consulting Director – Climate Change at ICF and Member of the European Chamber's **Carbon Market Sub-working Group.

7 See http://www.oecd.org/dac/dac-global-relations/triangular-cooperation.htm

8 See http://www.hamburg.com/g20-2017/ and http://www.china.org.cn/opinion/2017-07/07/content_41171970.htm

9 See https://www.theguardian.com/world/2017/jul/08/g20-climate-change-leaders-statement-paris-agreement



BREAKING INTO 'ENERGY INTERNET' ERA IN CHINA

An analysis of China's smart grid development

The integration of energy and information was first introduced as a concept nearly 10 years ago and since then it has become desired for its cleaner and more efficient use of energy. Recent developments in China on smart grid development just might make this a reality. **L.E.K Consulting**, sheds light on recent energy internet advancements and its potential for growth in China's energy industry.

'Energy internet' – an open platform

The concept of the energy internet was first introduced by Jeremy Rifkin in his book, *Third Industrial Revolution,* published in 2012. The author outlined four main features in the energy internet:

1. Leveraging renewable energy as a primary energy source;

2. Allowing large-scale distributed power generation and energy storage;

3. Enabling wide-area energy sharing and a energy prosumer (producer and consumer) to emerge; and

4. The "electrification" of the transport system.

The energy internet could bring about a new model inside the energy industry. This model, through the close integration of energy and information, would ensure a cleaner and more efficient use of energy. It could enable a two-way exchange of both energy and information by leveraging advanced information technology, intelligent terminals and systems that can upgrade traditional power grids into new intelligent platforms.

Recent development of the energy internet in China

In China, the State Grid Corporation of China has proposed the concept of a "Global Energy Internet". It was based on having a smart grid connected to an ultra-high voltage power grid that could potentially deliver clean energy worldwide.

However, most experimentation in this field has been carried out by distributed energy and micro-grid integration. For example, GCL's distributed micro-energy network and ENN's pan-energy network have both been able to establish regional smart energy networks capable of balancing energy needs within the network, achieved by companies trying to extend their reach within their industrial value chain.

Drivers of energy internet

Energy internet advancements can be attributed to the increased emphasis on sustainable development, the continuous breakthroughs in energy technology, the gradual opening up of the power market, as well as continued regional economic and energy integration.

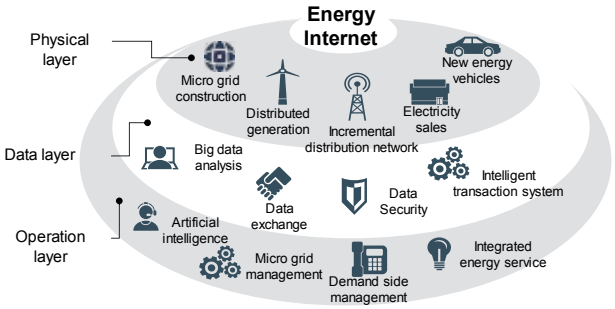
Sustainable development: China raised its own emission reduction targets in the *Paris Agreement under the United Nations Framework Convention on Climate Change,* with a goal of reducing greenhouse gas emissions by 40-45 per cent from 2005 levels and raising the proportion of non-fossil energy consumption to approximately 15 per cent. We expect China's renewable energy capacity to grow at a compound annual growth rate (CAGR) of 7.6 per cent, reaching a 2,300 GW capacity by 2035. The installed capacity of renewable resources will account for 65 per cent of total capacity.

Breakthroughs in energy technology: photovoltaic (PV) and wind power efficiency levels have continually been raised. The current average domestic cost of PV is at 0.7 CNY / kWh and is expected to decline by 10-20 per cent per annum. It is expected that PV and wind, in most regions of China will achieve grid parity by 2020.

Gradual opening up of the power market: power industry reform has allowed for the separation of distribution and retail. It has pushed innovative business development and encouraged cross-sector companies to introduce new technologies and ways of thinking to further accelerate energy internet development.

Opportunities in developing energy internet

That the energy internet will create opportunities in three distinct layers – the physical layer, data layer and operation layer.

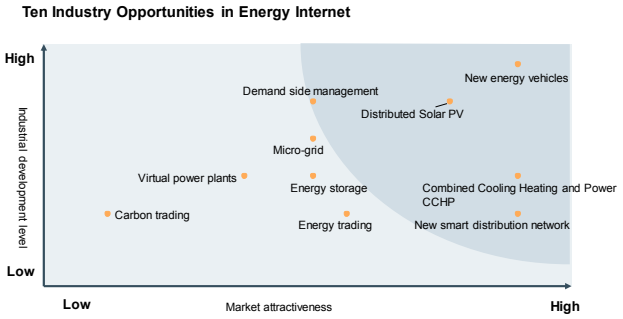


At the physical layer, integrated energy networks (including power, gas and heating) will provide business opportunities in distributed energy development, micro grid construction, new smart distribution grid, electricity retail, electrical vehicle charging infrastructure, etc.

At the data layer, accelerated technological development formed the foundation of the entire energy data value chain. Business opportunities lie in energy data collection, data exchange, data analysis, data security and intelligent transaction systems (carbon trading, power trading).

At the operation layer, market players need to be user-centric and be able to leverage a 'connected network' to realise business value for end customers. This is a great opportunity to provide value-added services and solutions, including those in maintenance and operations, demand side management and integrated services.

Based on the current stage of development and market attractiveness, we have identified 10zz future market opportunities that could arise in the near future:



Sectors including combined cooling heating and power (CCHP), distributed solar PV, a new smart distribution grid, electric vehicle charging infrastructure and demand side management (DSM) are increasing.

1. CCHP installed capacity will continue to grow at an annual rate of 17.5 per cent reaching 250 GW in 2035. Therefore, power companies, oil and gas companies and professional and technical services companies will all have various opportunities to position themselves.

2. China's PV market currently accounts for 20 per cent to 30 per cent of the global increase in capacity. It is expected that by 2035, distributed PV installed capacity will reach 300 GW, of which large and medium-sized projects (> = 1MW) will account for 60 per cent of it.

3. Power sector de-regulation will allow new smart distribution grids to open to competition, especially those at new industrial parks, existing infrastructure expansions, and new commercial centres that were previously monopolised by grid companies. By around 2035, new smart distribution grids will produce approximately 555 GW in China.

4. The electric vehicle sector has become one of the fastest growing industries. We expect there will be more than 30 million electric vehicles in use with annual sales topping 5 million by 2025.

5. Demand side management refers to energy management activities that aim to minimise costs through effective measures that guide end-users to optimise power usage, improve consumer efficiency and optimise resource allocation. For example, in East China, the commercial adjustable load accounts for 16 per cent while the residential adjustable load accounts for 13 per cent.

In addition to the previously listed opportunities, energy storage, microgrids, energy trading, virtual power plants and carbon trading are also trending in the right direction within the power industry and should warrant some level of exploration.

How to capture these opportunities?

For traditional grid companies, the energy internet brings about real challenges, as they continue to open up new distribution grids for competition. Therefore, it is necessary for traditional power grid companies to retool their business model and engage in active innovation. Traditional grid companies have to actively manage this transition and improve in the face of fierce market competition.

For power generating companies and others, as they move away from a 'back office' role to having increasingly direct contact with clients, there is a need to develop a more diversified business model to cater to different client needs. Their focus should be placed upon clean energy, demand response and distributed energy segments.

For new energy companies, the energy internet could bring about increased economic benefits that reward first-movers. This provides a window of opportunity for new energy companies to leverage inherent operation flexibility developed through years of fierce market competition, and to actively launch groundbreaking projects and set industry standards. Such initiatives would ensure they are in a good position to compete with traditional energy giants.

For equipment companies, the energy internet has raised the bar on offerings to be more intelligent and interoperable just as stipulated in the Made in China 2025 initiative. The first priority should be to better integrate the energy sector with the Internet by collaborating with other companies and co-developing intelligent solutions.

For internet and IT companies, the focus should be on how to collect and extract value from big energy data. There is a need for internet and IT companies to explore data integration possibilities with other industries to realise the potential of this sector. Eb

The closing

Facing such great challenges and opportunities, the energy industry must embrace the 'change' mindset. Companies that are able to adapt and take advantage of the new opportunities will be rewarded with exponential growth in this burgeoning new market.

L.E.K. Consulting *is a global strategy consulting firm with offices across Europe, the Americas and Asia-Pacific. They counsel clients on key strategic issues, leveraging their deep industry expertise and using analytical rigor to help them make informed decisions more quickly and to solve their toughest and most critical business problems. They may be contacted at, inquiry@lek.com.*

EC-LINK OPPORTUNITIES

Networking opportunities EC-Link provides China-European stakeholders

Cities are facing overcrowding issues all across China, and in tandem with recent problems related to climate change, the country is quickly looking for solutions. One potential way to address these environmental issues pertains to the development of eco-cities. **EC-Link** outlines joint European-China efforts to implement a sustainable low-carbon city-based solution to ecosystem issues across China.

China's recent interest in developing eco-cities is part of its larger move towards low-carbon development, with an aim to mitigate climate change and prevent the collapse of already crowded mega-cities racing towards their population ceilings. The Europe China Eco Cities Link (EC-Link) project is funded by the European Union with its main objective to support Ministry of Housing and Urban-Rural Development (MoHURD) in implementing a sustainable low-carbon urbanisation agenda. The project is part of the EU-China Urbanisation Partnership, launched by President Barroso and Premier Li in May 2012.

The project supports MoHURD in three key activities:

1. The demonstration of best practice approaches towards implementing low-carbon solutions is one of these projects. Best practice low-carbon solutions will be identified and made available. Toolboxes are developed based upon European and Chinese eco-city practices.

2. The creation of innovation-based testing grounds, should occur in the following nine sectors: compact urban development, clean energy, green buildings, green transportation, water management, solid waste treatment, urban renewal and revitalization, municipal financing and green industries.

3. The project also supports the establishment of 'knowledge networks', so-called CNUs (City Network Units).

In December 2016, MoHURD and EC-Link arranged a series of workshops across several sectors. These workshops revealed a broad Chinese interest in how European cities have organised themselves to more adequately address environmental challenges and to enable comprehensive city planning and operations. These and other key topics were discussed in Xixian, an hour's drive from Xi'an's city centre, in early June 2017 and in Zhuhai late the same month.

The EC-Link workshop in Xixian/Fengxi New Town, on 6th-7th June, was focused on green construction. The goal was to dive deeper into the various opportunities and challenges associated with green building methods and solutions that might be interesting for China. One much discussed topic was energy passports for buildings as part of a larger initiative to classify and measure their energy efficiency. In another workshop in Zhuhai, from 21st to 23rd June, numerous European city representatives were invited including Barcelona, Dundee (Scottish Cities Alliance), Hamburg, Liverpool and Valencia. Many European initiatives were presented ranging from multi-national central European directives, such as the Energy Performance of Buildings Directive (EPBD) to local municipal actions. EC-Link is not just pointing out European good practice examples for Chinese city representatives but also attempting to provide them with sufficient context to understand the magnitude of what a successful European solution can do.

How is this relevant? China's cities are bracing themselves for continued domestic population growth, which includes an additional amount of housing that accountant for as many as 300 million people. Providing sufficient housing is an enormous challenge, with a litany of other issues that stem from a population increase including resource consumption and a stressed urban transportation system. Integrated planning and less resource intense buildings can yield huge savings, lower pollution levels and prevent urban areas from collapsing. Many Chinese cities are pushing ambitious green agendas, as is the case in Fengxi New Town and Zhuhai. Local representatives are passionately presenting new building projects such as geothermal pumps.

Interest in European products and expertise is still high on Chinese cities' agendas. Challenges faced by Chinese municipal leaders and institutions are significant. There are still many cooperation opportunities for European companies and institutions with Chinese cities.

How is EC-Link bringing together cities? One vector is through city network units (CNUs) which were first implemented in the past two events held in Xixian and Zhuhai and are intended to be used in upcoming events. Cities are grouped by common interests and are given opportunities to exchange on those subjects. European experts provide sufficient context to help them make sense of what other cities are presenting.

Bringing cities together is challenging. Each city can be considered an ecosystem and different cities are facing different challenges. Cities all need to prepare for climate change, and make their infrastructure resilient to its often-disastrous effects, such as severe flooding. For instance the concept of a sponge city, a permeable city where water can be absorbed before it can accumulate enough to become a problem, is an innovative concept that could be applied in cities across the world. Eb

***EC-Link** is funded by the European Union. In cooperation with the Ministry of Housing and Urban-Rural Development (MoHURD). The project is implemented by a European consortium led by GIZ and the Chinese Society for Urban Studies (CSUS). The EC-Link team is located in the offices of the CSUS. The views expressed are those of the team and do not necessarily reflect those of the European Delegation or MoHURD. Feel free to write to them directly at eclink@chinasus.org.*

POLLUTION SOLUTIONS IN THE CHINESE HEATING SECTOR

Reducing pollution and increasing efficiency with european wet combustion gas boilers.

China's rapid growth has led to high levels of air pollution. While there are many contributors, burning solid fuels to heat buildings has directly contributed to the dangerous decline in air quality. **Gregory Zdaniuk**, Senior Engineering Manager at **ENGIE China**, describes how wet combustion can reduce harmful emissions and increase efficiency in the Chinese heating sector.

China's rapid industrial growth has led to unprecedented levels of air pollution. A recent study[1] of four months of hourly air quality data concluded that, in that period, "92 per cent of the population of China experienced >120 hours of unhealthy air (US EPA standard), and 38 per cent experienced average concentrations that were unhealthy". The data collected during the spring and summer of 2014. The situation in winter is usually worse. The main contributor to high pollution levels is the combustion of solid fuel by power stations, industry and buildings. Aware of the severity of the situation, the Beijing city authorities are making huge efforts to tackle pollution. Following a ban on new coal installations in the Beijing Municipality, on 1st April, 2017, strict nitrogen oxides (NO_x) emission[2] standards for gas boilers were released, a significant development for the energy sector. The imposed NO_x limit of 30 milligrams per normal cubic metre (mg/Nm^3) (corrected to 3.5 per cent of oxygen (O2) content), is significantly stricter than equivalent European Union (EU) directives. Other Chinese cities such as Chengdu are adopting similar emission standards.

This article describes how 'wet combustion' can reduce NO_x emissions from gas boilers, increase efficiency and looks at the first project to adopt this method in China.

There are two approaches to reducing NO_x emissions: post-combustion methods and combustion control techniques. Post-combustion methods address NOx emissions after formation, while combustion control techniques prevent the formation of NO_x during the combustion process. Post-combustion methods tend to be more expensive and are generally not used on boilers smaller than 10 megawatts (MW).

NO_x emissions in gas combustion are mainly due to thermal NO_x, the reaction of nitrogen and oxygen molecules present in the air which sustains combustion. Thermal NO_x formation increases exponentially with flame temperature. Therefore, the primary method of NO_x control consists of reducing the temperature of the flame by either:

- Improving flame distribution to reduce hot spots;
- Altering the air/fuel ratio and amount of excess O_2;
- Adding flue gas recirculation (FGR);
- Using staged combustion; or
- Injecting water or steam into the flame zone.

However, it is difficult to sufficiently lower the flame temperature while maintaining flame stability and boiler efficiency.

Water vapour pump combustion system

Adding steam or water during fuel combustion changes the stoichiometry of the reaction and dilutes the calories generated. Both phenomena causes the combustion temperature to be lower, thus reducing thermal NO_x.

The water vapour pump (WVP) system is a wet combustion process that consists of pre-heating and saturating the ambient combustion air with heat and humidity recovered from flue gases. To implement this, two spray towers are placed in the air stream: one in the fresh air intake and the other one between the condenser and chimney stack, as per Figure 1.

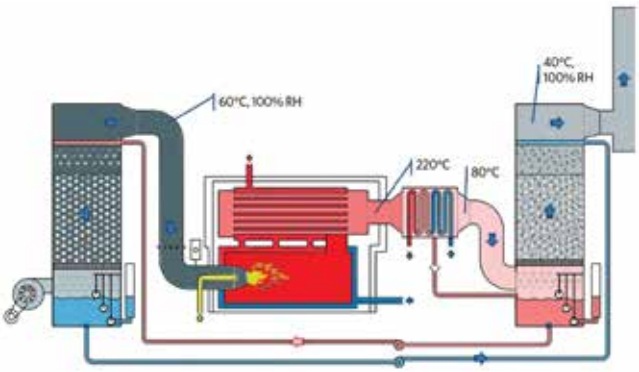


Figure 1. WVP system schematic

A WVP system has the following characteristics:

- It recovers significantly more heat from exhaust gases compared to a regular condensing boiler. As a result, it is much more efficient.
- The WVP system creates very low flame temperatures, meaning it can easily achieve the strict 30 mg/Nm^3 NO_x limit.
- Its carbon monoxide (CO) (another harmful pollutant) emissions are negligible. This can be an issue for dry, ultra-low NO_x combustion.
- The extensive removal of moisture occurring in the exhaust tower means that the WVP will not generate a plume at the chimney stack's outlet.

1 Rohde RA, Muller RA (2015) Air Pollution in China: Mapping of Concentrations and Sources. PLoS ONE 10(8): e0135749. https://doi.org/10.1371/journal.pone.0135749

2 Nitrogen Oxides (NO*) is a family of gases formed during combustion. Breathing NO_x can cause severe effects on the respiratory, cardiovascular and immune systems. High levels of NO_x in the atmosphere can also lead to acid rain.

First project in China

Over the last 15 years, WVP systems have been deployed in several European countries. In Europe, where NO_x limits are less strict, the system is often installed as an energy saving measure.

In 2016, Beijing United Gas Engineering and Technology (Buget) was awarded a contract by a college in Beijing to renew its boiler house. This consisted of decommissioning their coal-fired boiler house and installing a new gas-fired system within the same building envelope. The scheduled completion date was before 1st April, 2017, when the applicable NO_x emission limit was still 80 mg/Nm^3. However, the college and Buget decided to explore solutions that were cleaner and achieved a better life-cycle cost. Following a technical and economic assessment, it was decided for the first time that the WVP system should be implemented in China.

The system designed by Buget (Figures 2 and 3) is comprised two 5.6 MW gas-fired condensing boilers supplying heat to the 160,000 m^2 campus. The heat distribution network is designed for a flow and return temperature of 70°C/50°C. The boilers' duty and standby arrangement meant only one was fitted with the WVP system; the second one was fitted with a standard low NO_x burner rated at 80 mg/Nm^3.

Figure 2. WVP Burner.

Figure 3. WVP combustion air spray tower

This project required close collaboration between all stakeholders to ensure that critical aspects of this type of technology were understood and that the design could be transposed to Chinese norms and standards. Commissioning works finally concluded in March 2017, with the NO_x emissions measured at 23 mg/Nm^3 (corrected to 3.5 per cent O_2 content), well below the 30 mg/Nm^3 limit. Overall boiler efficiency was measured at 107 per cent (at a return temperature of 45°C) and CO emissions were measured at 0 mg/Nm^3.

Conclusions

The WVP is a proven combustion technology able to achieve ultra-low NO_x emissions (<30 mg/Nm3) with a considerably higher level of efficiency and with a lower life cycle cost compared to a conventional condensing boiler. It can be retrofitted to an existing boiler without any significant loss of capacity, whereas dry, low NO_x burner retrofits may require a derating of capacity.

This is an efficient solution that has a role to play in addressing global air pollution problems. European cities exposed to considerable NO_x pollution cannot be complacent, especially when the right technology is already available.

***ENGIE**, formerly known as GDF SUEZ, was officially renamed as ENGIE on 24th April, 2015. ENGIE is a world leader in the global energy market, and is ranked 89th in the 2016 Fortune 500 list. The business of ENGIE includes natural gas industry chain, power generation, distributed energy, energy services, customer service, etc., and has operations in 70 countries. The Group achieved revenues of € 66.6 billion in 2016 and has 153 090 employees throughout the world.*

ENVIRONMENTAL REGULATION: THREAT OR OPPORTUNITY?

How environmental regulations affect foreign companies in China

China's and the European Union's (EU) commitment to the 2015 *Paris Agreement on Climate Change*, could lead to further environmental regulations and more environmental restrictions on companies than the ones currently faced. **Carlos Mínguez**, **Francisco Martínez Boluda** and **José Clerigues**, lawyers at **Uría Menéndez**, analyse how environmental regulations affect companies and the challenges companies operating in the EU and China may face in the near future.

In the past three decades, public awareness of climate change and environmental protection has grown rapidly and will presumably continue to grow. The European Union (EU) is committed to making Europe the most climate-friendly region in the world (as expressed by Jos Delbeke, European Commission, Director General for Climate Action). To do so, a significant amount of environmental legislation has been passed in recent years by the European Parliament and European Council.

Even if the EU takes the lead in environmental protection, China has shown in recent years that it is more than capable of holding an environmental leadership position. Showcasing this, in 2014, an important amendment to the *Environmental Protection Law* was passed and in 2015 China (and the EU) became party to the *Paris Agreement under the United Nations Framework Convention on Climate Change (Paris Agreement on Climate Change)* which set an admirable goal of "holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels" (Article 2.1.a). Both China and the EU have confirmed their commitment to the agreement, despite President Trump's announcement that the United States would withdraw from the *Paris Agreement on Climate Change* (in accordance with Article 28, the withdrawal cannot happen before 4th November, 2020).

Some say environmental regulations inhibit company performance, specifically those in the industrial sector. In the EU, industrial facilities sometimes need to obtain more than one permit (from various public authorities) to legally operate, they must limit specific types of emissions, and operators have to introduce into their production process so-called "best available techniques" (in essence, the most effective and advanced stage in the process of trying to limit pollutant discharge). On the contrary, environmental regulations benefit scientific progress, human health and the environment as a whole.

The 21st century has seen the rise and consolidation of renewable energy sources. Market entry for this industry has been at the expense of thousands of primary sector jobs, however this renewable expansion has also created a lot of new positions. The EU has stated that by 2050, greenhouse gas emissions will be reduced by 80 per cent below 1990 levels. This goal will be achieved, by progressively reducing electricity dependency in industrial sectors dedicated to burning fossil fuels such as coal and by instead promoting the use of renewable sources of energy. This change in the energy mix is something that some countries of the EU are currently experiencing. For example, the coal mining sector in Spain employed around 30,000 workers in 1995. Today, there are fewer than 2,000. State aid for this sector is coming to an end.

On the other side of the globe, China is the world's largest coal producer and consumer. Much of the electricity produced in China comes from burning coal. The downside of this industrial sector is the generation of carbon dioxide and nitrous oxide; gases that are responsible for global warming and climate change. At this time, both China and the EU are responsible for almost 40 per cent of the world's greenhouse gas emissions.

Environmental protection is on the Chinese government's agenda and companies should be prepared to include it in theirs, especially if they have not already done so. Environmental protection can also play an important role in companies' competitiveness. The rise of healthy lifestyles and the increased public awareness of environmental matters have led to new business opportunities that have strengthened product development. Michael Porter, a Professor at Harvard University, outlined two basic strategies in order to achieve success in the market: cost leadership and differentiation. Companies can invest in green technology to accomplish both: they may create a cost leadership strategy (for instance, energy savings as a result of LED implementation) or a differentiation strategy by, for example, using environmentally-friendly products throughout the production chain and as a by-product obtaining a green label (all of which can have a positive impact on the clients' perception of the company and can confer tax relief or exemptions).

Ultimately, environmental regulation can be seen, using SWOT analysis, not as a threat but as an opportunity. Respecting the environment and aiming to increase profits may not be at cross purposes, but rather complementary. It cannot be ruled out that if climate change worsens, governments may gradually prioritise the reduced consumption of natural resources by, restricting company activities, e.g. reducing or prohibiting a company from using underground water in its industrial processes. In this scenario, not only citizens are impacted but companies as well. It is, therefore, necessary to overcome the mistaken belief that companies are only self-interested and not interested in the state of the planet. We should all be on the same side in this battle against environmental deterioration.

The challenges that companies face are remarkable, specifically in the industrial sector. We live in an era of change and development. Irreparable losses or considerable benefits may arise depending on how each company decides to deal with environmental matters. Eb

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THE FOUR HORSEMEN OF THE AIRPOCALYPSE

What the harbingers are of Beijing's end of 'clear' days

Air pollution is found in many countries around the world. The effects on people's health are just now being fully understood and knowing how and where pollutants are produced can contribute to crafting a solution. **Liam Bates**, co-founder and CEO of **Kaiterra**, uses the city of Beijing as a test case to examine the often hard to pin down sources of air pollution in China.

Introduction

Each city's pollutants are unique. In this article, Beijing's pollutants are the ones being discussed.

It is extremely difficult to determine the pollution source once it is in the air. If one was to read 10 studies on Chinese pollution sources, you would find they all reach different conclusions.

For this reason, there is no consensus on who exactly the worst polluters are. One report says cars are the main contributor, while another says coal.

While this may be a complicated subject area to explore, one can hazard a guess as to what the four main pollution contributors are in Beijing.

Motor vehicles

Cars, trucks, buses, trains, motorcycles and other gasoline powered vehicles all contribute to motor vehicle pollution. There are between five and six million cars in Beijing with most of them spending more time on the road idling than moving. Despite having a fairly well-planned transportation infrastructure, Beijing's congestion is the main reason traffic pollution is thought to be so severe.

Why is congestion considered the main culprit behind automotive pollution? The simple answer is that having more cars on the road means more pollution, however a more complex explanation is commute time. Every car on the road lengthens the amount of time everyone spends commuting. The more time spent on the road with the car running idle, the more pollution is injected into the atmosphere.

How bad is it?

Thankfully, as of 1997, Beijing has banned the use of leaded gasoline, reducing the amount that you may happen to breath while outside in the open air.

Particulate matter in the form of sulphates and nitrates can induce or agitate conditions like asthma or bronchitis. However, these effects on peoples' health are well known and are not particularly unique to vehicular pollution.

The most direct effect on health, and the largest danger associated with vehicle pollution, is proximity. A factory smokestack releases a large number of harmful compounds that can adversely affect one's health, however some of them can be broken down and disappear long before they reach the fragile alveoli. At the street level, a person is much more likely to inhale carbon monoxide, which prevents the body from carrying oxygen through the bloodstream. In high doses carbon monoxide will result in death, but most inhale low-level amounts that may result only in tiredness and cognitive issues. These more milder symptoms will clear up over time, but breathing it in every day may eventually have a cumulative effect on the body.

In conclusion, most of the urban dwelling populace resides more closely to a major roadway than a factory or power plant. Due to this, car exhaust might have a much larger impact on health than what the data might suggest.

Coal combustion

President Xi Jinping has pledged to phase out the use of coal, with some optimistic reports claiming the first coal-free day will arrive as early as 2020. The last of Beijing's coal-fired power plants were shuttered in 2017. If analysts like Tian Miao are correct in claiming coal is "the greatest evil in the air quality game", then blue skies might become a common sight again in Beijing before the beginning of the next decade.

Even though Beijing stopped relying on coal, pollution blowing in from the south brings in particulate matter from newly-constructed coal plants in Hebei, as well as other coal-hungry areas like Tianjin, where plant closures have not yet been slated. Considering how long PM 2.5 can hang in the air and how far it can travel, many are sceptical that closing the four coal-burning power stations in Beijing has had any more than a superficial effect.

How bad is it?

Burning coal is one of mankind's most effective methods of producing air pollution. Carbon particles stay in the air for a long time and can spread easily from their point of origin. The longer these particulates remain in the atmosphere, the more likely it is for them to react with sunlight and other compounds, creating what's called a 'photochemical smog.' This is a major source of ozone, which can cause significant respiratory damage.

Most carbon compounds aren't particularly harmful on their own, but there are two things to consider:

1. Some fall into the "ultrafine" category, meaning they are small enough to pass through your lungs and into your bloodstream; and

2. Heavy metals and pesticides easily cling to these types of particulates.

Industrial pollution

Traffic and coal pollution is fairly homogenous in its

chemical composition, but industrial pollution is more complicated and unfortunately it is where the majority of 'trace elements' in Beijing come from.

There are a number of reasons profiling industrial pollution is more complicated than either coal or traffic emissions:

1. There are many industrial processes that pollute, and accurately testing and monitoring all of these factories are impractical.

2. Heavy industry has a hidden impact on power grid demands, resulting in a pollution increase from the large amount of electricity consumed.

3. Factories have a vested interest in alters their emissions data, hence the recent reports of more clandestine industrial practices, such as waiting until night-time to turn on smoke stacks.

What is known, is that Beijing is flanked on all sides by Hebei factories, a province that produces more steel than the entire United States. Polluting operations such as coking or cement production are large contributors. To understand the impact these projects have, one has to look no further than data showing seven out of China's 10 most polluted cities are located relatively close to an industrial source.

How bad is it?

Most heavy metals in the air come from industrial processes. The main metals found in Beijing's air are aluminium, potassium, calcium, titanium, iron and zinc.

All of these metals are toxic at high enough levels, and most of them are at least irritating to the respiratory tract, leading to acute cases of sore throats, wheezing, coughing, etc. Some metals, like iron, can corrode mucous membranes in the digestive and respiratory tract, leading to problems ranging from stomach ulcers and internal bleeding to pneumonia-like symptoms from diminished lung function.

Secondary aerosol particulates

Primary aerosols find their way into the air fairly regularly it can include: construction site dust, smoke from power plants, factories and car exhaust.

Secondary aerosols are what happens when those same particles, are excited by the sun, and by interacting with one another can change their chemical state. This can mean gasses turning into particles or particles turning into gasses. There are three factors that influence the frequency of these reactions:

1. Amount of sunlight – Increased sunlight means more energy for the gas-to-particle reaction to take place.

2. The amount of time these particles spend in the atmosphere – The longer these particulates spend in the atmosphere, the more reactions that can take place.

3. Air movement – If the particulates are held static by mountains or valleys, that also determines the number of chemical reactions that happen.

How bad is it?

This is a difficult question to answer as aerosol particulates are still being researched extensively in the scientific community.

However, this chemical process is one of the main sources of ground-level ozone (which is actually a gas, not an aerosol). Even at low levels, ozone diminishes lung function, meaning that when levels are high, one is still likely to feel short of breath and have tightness in their chest.

In conclusion

Even if air pollution is a global issue, solutions must be localised. Each city's pollution profile is unique, which also means that each city's pollution control policy decisions must be tailored. There is no one-size-fits-all answer that can be applied to all regions affected by air pollution. As a result, the only way to make effective recommendations is to identify pollution at its source.

What most cities and regions have now, is a dataset which does not provide enough granular information. More data is needed to provide a clear and detailed picture of what localised pollution looks like.

With the rise in affordable air quality monitoring and connected products, the goal of acquiring the right type of data is within reach. Eb

A similar article may be found at originstech.com

Liam Bates *is the CEO and co-founder at Kaiterra Technology. Kaiterra is focused on developing smart devices to monitor and map air quality, both indoors and outdoors, with the goal of better understanding and thus reducing the world's air pollution. Bates, along with his wife, recently made Forbes Magazine's 30 Under 30. He began producing air quality monitoring devices after his wife relocated to China and developed asthma. He may be contacted at liam@kaiterra.com.*

THE NEW SIDE OF SSR IN CHINA

A new opportunity for European business

Supply-side Structural Reform (SSR) has been an integral part of China's economic success in recent years. Billed as a panacea for recent economic issues, such as overcapacity and pollution. **The Foshan Hi-tech Industrial Development Zone** (**FHIDZ**) outlines this policy's effect on European business and how it can best be utilised in China.

Supply-side Structural Reform (SSR) has been the key governmental reform policy ever since it was introduced by President Xi Jinping in 2015. Scholars and businessmen have seen this as "new reform dividends" for the Chinese economy in the coming years. The SSR is considered to be the guiding policy and cure-all for economic issues in China. This includes being perceived as the solution to overcapacity, pollution and any stumbling blocks that may arise as China tries to follow the China Manufacturing 2025 blueprint. Since this issue is relevant today, this article attempts to examine what SSR policy means for European business in China and how companies should take advantage of upcoming reforms. This article will examine Foshan City, a manufacturing base in South China that is ready to upgrade its industries from a labour-intensive manufacturing city to a hi-tech one, a city ready to compete internationally in manufacturing technology.

SSR background and contents

After 30 years of reform, China has witnessed high-speed growth and has become a middle-income country (MIC). In recent years, China's economy has entered a 'new normal' characterised by overcapacity in traditional industries, an oversupply of low and middle-end products, lack of high-end products, overstock of real estate and accumulation of local government bad debt.[1] China has to carry out further reform to solve this problem and lead its people out of the middle-income trap.

Proposed in November 2015 by President Xi Jinping, SSR has been a key component of China's *13th Five-Year Plan (*13FYP*)* spanning from 2016 to 2020. SSR aims to address the underlying causes behind slowed economic growth, by reducing non-effective low-end supply, and by improving productivity by expanding higher end supply.[2] In 2017, in order to nurture long-term growth potential, the SSR focuses on cutting overcapacity, destocking, deleveraging, reducing costs and consolidating in areas with weak growth.[3]

1 http://theory.people.com.cn/n1/2016/0216/c402459-28127989-3.html

2 https://www.linkedin.com/pulse/how-successful-chinas-supply-side-structural-reform-allan-zhang

3 http://news.xinhuanet.com/english/2016-12/16/c_135911568.htm

Under SSR guidelines, the Chinese government has put forward five important tasks, which include: cutting overcapacity, improving Total Factor Productivity, reducing the cost of doing business, destocking property and improving financial risk prevention.

In order to cut overcapacity, the Chinese government should take measures to facilitate SOE reform, speed up the expansion of the One Belt One Road (OBOR) initiative, and upgrade industry infrastructure by eliminating backwards capacity and 'zombie' companies.

To increase Total Factor Productivity, the government has called for technologic development, implementation of high-level equipment, financing system reform, industrial innovation, enhanced labour force quality and improvement in the market economy.

In terms of relieving the burden these reforms will have on companies, it is recommended that structural tax reform, resource product price reform, pension system reform, administrative simplification and interest rate reform take place.

When destocking property, the following measures should be carried out: hukou regulatory reform, the Two-Children Policy to be carried out comprehensively nationwide, the government buying back commercial housing in order to increase the basic housing supply and land system reform for the purpose of increasing the supply of land.

To prevent further financial risks from arising, measures should be undertaken.

Foshan as the manufacturing base in South China

SSR has led to a series of industrial upgrades in China, especially in a city like Foshan, where manufacturing dominates. Opportunities present themselves as the government continues to restructure their economy and factories automate workshops.

Foshan is located at the heart of the Pearl River Delta, and the city has had ties with many international trading partners and is considered famous for its household appliances, ceramics, clothing and textile industry. It has been at the forefront in China in terms of productivity, development and sustainability and in recent years it has been regarded as a showpiece in market-led development[4]. As Foshan is seeing rapid growth, the local government has been playing a significant role in facilitating this and other economic developments by extensively planning, instituting new changes in infrastructure and by building up institu-

4 http://www.asiaglobalinstitute.hku.hk/en/wp-content/uploads/2016/06/EGM_WP_Chapter1_ONLINE_0.pdf

tions. Most importantly, it has built what is called, hard and soft infrastructure, that has attracted and retained foreign investment, transient workers and educated talent.[5] Foshan is a region with immense amounts of foreign investment, as it has more than 7,000 foreign-invested enterprises with a total foreign investment of over US dollar (USD) 18 million.[6]

In early 2017, Xinhua News published that the regional gross domestic product (GDP) in Foshan was Chinese Yuan Renminbi (CNY) 863 billion in total, increasing by 8.3 per cent compared to last year, and the gross output value of industries in Foshan reached CNY 2.13 trillion in 2016. In current years, the implementation of the Enterprises Intelligent Manufacturing Upgrade Project has driven nearly a thousand enterprises to utilise robotic and intelligent equipment. The local government hosted the 2016 Science International Federation of Robotics Conference successfully. Foshan currently invests in a number of main advanced manufacturing industries, such as machinery equipment, vehicles and spare parts, fine chemicals, high-end electronic information, new energy, new materials, biomedicine, energy saving and environmental protection, household appliances, ceramic materials, textiles and clothing, and furniture. Statistics show that the equipment manufacturing industry in Foshan added CNY 147 billion, at an increased rate of 12 per cent, and the locally advanced manufacturing industries output value reached CNY 1 trillion with an average annual growth rate of 18 per cent.[7] This figure implies that, in general, the SSR has contributed to the sustainable development in Foshan.[8] As the only comprehensive reform pilot city to transform and upgrade the manufacturing industry in China, Foshan worked harder on attracting foreign investment during last year. The report has shown investment in the manufacturing industry increased 22.9 per cent, which from CNY 141.8 billion, and industrial technology investment was CNY 55.4 billion, an increased rate of 43.4 per cent.[9] Apart from that, since last year, following the SSR, the Foshan product quality has improved significantly after it established requirements for benchmarks, standards, and quality.[10] In addition, Foshan has reduced tax and fees to relieve enterprise costs by around CNY 28 billion last year.

Implications for European business in China

By examining SSR's implications, European companies can better understand the recent changes to China's macroeconomic environment and how the Chinese government continues to shape policy for the purpose of continuing economic growth. This is a good opportunity for European business to take advantage of high-end products and technology to sell in the Chinese market, given that China's purchasing power has grown. On the other hand, European companies' must continue to innovate in order to compete in this period of rapid technological development. China, being the world's second largest economy, and due to the advancement of e-commerce and implementation of Internet Plus, can benefit industries both upstream and downstream. China is currently at a stage of technological transformation (known as the Internet Plus upsurge),[11] which significantly encourages online trading. As China's e-commerce network continues to improve, European companies can take advantage of this development and expand their sales channels. In conjunction with lower production costs and improved efficiency, supply-demand matching issues can be quickly remedied.[12]

Having a large economy with lots of capital, China is predicted to lead many other countries in the region to improve industiral technology in the years to come. European companies should take advantage of this opportunity to stay ahead of the technological curve.

Under the SSR, cities like Foshan in China are actively working on urban upgrading. Foshan has been approved to launch the pilot comprehensive reform on manufacturing industry upgrading and transformation.[13] In Foshan, there will be more innovative projects undertaken and more business opportunities available for foreign investment. Eb

***Foshan Hi-tech Industrial Development Zone (FHIDZ)**, a national-level high-tech industrial development zone, was established with the approval of the State Council in December 1992. The FHIDZ is dedicated to building a "Golden Valley of Chinese Wisdom Manufacturing". It has become the major engine for technological innovation and the industrial upgrading of Foshan City. It is also an important component of the PRD National Indigenous Innovation Pilot Zone and has attracted 61 Global Fortune 500 related enterprises, 44 listed companies and 380 enterprises with an output value of more than CNY 100 million.*

5 http://www.asiaglobalinstitute.hku.hk/en/wp-content/uploads/2016/06/EGM_WP_Chapter1_ONLINE_0.pdf

6 http://foshan.made-in-china.com/info/business.html

7 http://www.fs-hitech.gov.cn/en/

8 http://www.wyw.cn/histroynews/60866/

9 http://www.marketwatch.com/story/chinas-supply-side-structural-reform-releases-fresh-vitality-of-made-in-foshan-2017-03-10

10 http://en.foshannews.net/News/201704/t20170421_6205341.html

11 http://www.pressreader.com/china/china-daily/20150910/281809987673461

12 http://www.foshan.gov.cn/english/government/News/FoshanNews/201602/t20160202_5519897.html

13 Ibid

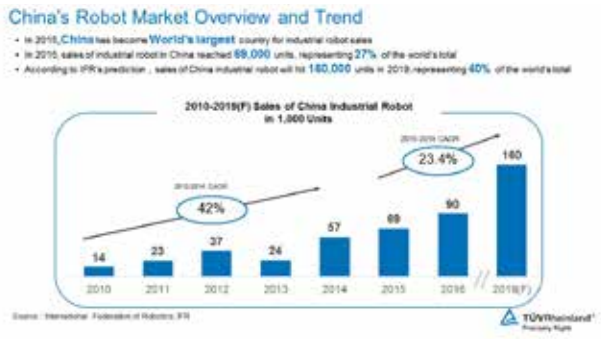
CHOOSING THE RIGHT ROBOTS

How to utilise the CRS system to achieve succes in China

China has faced problems in robotics. There have been inconsistencies found between domestic policy and international standards. To better understand this industry issue, **Xinhua Zhao**, Vice General Manager of **TÜV Rheinland Greater China Commercial Service**, analyses current issues that face China's robotics industry and helps to outline improvements to China's robot certification system.

In recent years, under the influence of rapid market demand and national innovation policy, a large number of Chinese domestic companies have entered the research and development (R&D) and manufacturing areas of robotics. Since 2013, China has become the top seller of industrial robotics. In this booming industry, robot product quality and safety is increasingly being seen as an important consideration for factories. In order to ensure robot quality, the Chinese government has created its own robot certification system to standardise industry development.

The International Federation of Robotics has predicted in the next three years that China will dominate the global industrial robotics market, with sales continuing to grow reaching 160,000 units and accounting for 40 per cent of global sales, in 2019.



The main problems in china's robot industry

Despite notable progress in the robotics sector, China still faces a higher number of challenges compared to those faced in more developed countries. Key components need to be imported, and industry standards have yet to be regulated. Both problems constrain the sound and rapid development of the robotics industry.

1. Weak manufacturing capability of necessary components, results in a dependency on imported goods

These imported components are essential for robot quality and performance. China has made some progress in robot R&D and is now capable of producing their own AC/DC servo motor and drive systems, photoelectric encoder, ball screw, hydraulic elements, and harmonic reducers. However, in general, China still has weak R&D and manufacturing capability, a low level of technology, and inferior performance in assembling key robotic components. This has begun limiting the development of China's robotic industry.

Robotic components including the reducer, servo motor, actuator and controller account for approximately 70 per cent of the total cost for an articulated industrial robot. Currently, a large number of parts such as precision reducers, servo motors and actuators necessary for the production/integration of industrial robots in China have to be imported. This is especially the case for precision reducers and precision sensors with reliable performance, as few Chinese enterprises are capable of large-scale production of this product. In 2015, approximately 75 per cent of all precision reducers were imported from Japan while over 80 per cent of servo motors and actuators were imported from either Japan, the US or Europe. Though some enterprises have successfuly sought comparable local products, performance, stability, quality and reliability are yet to be generally seen during mass production. This problem, if it remains not dealt with, will prevent improvement in quality and performance of Chinese robots. More importantly, the high import costs of industrial robots will undermine the competitiveness of Chinese robot products and risk hollowing out the industry. If China can make breakthroughs as soon as possible in terms of key parts and components, the manufacturing cost of robots could be reduced by a large margin.

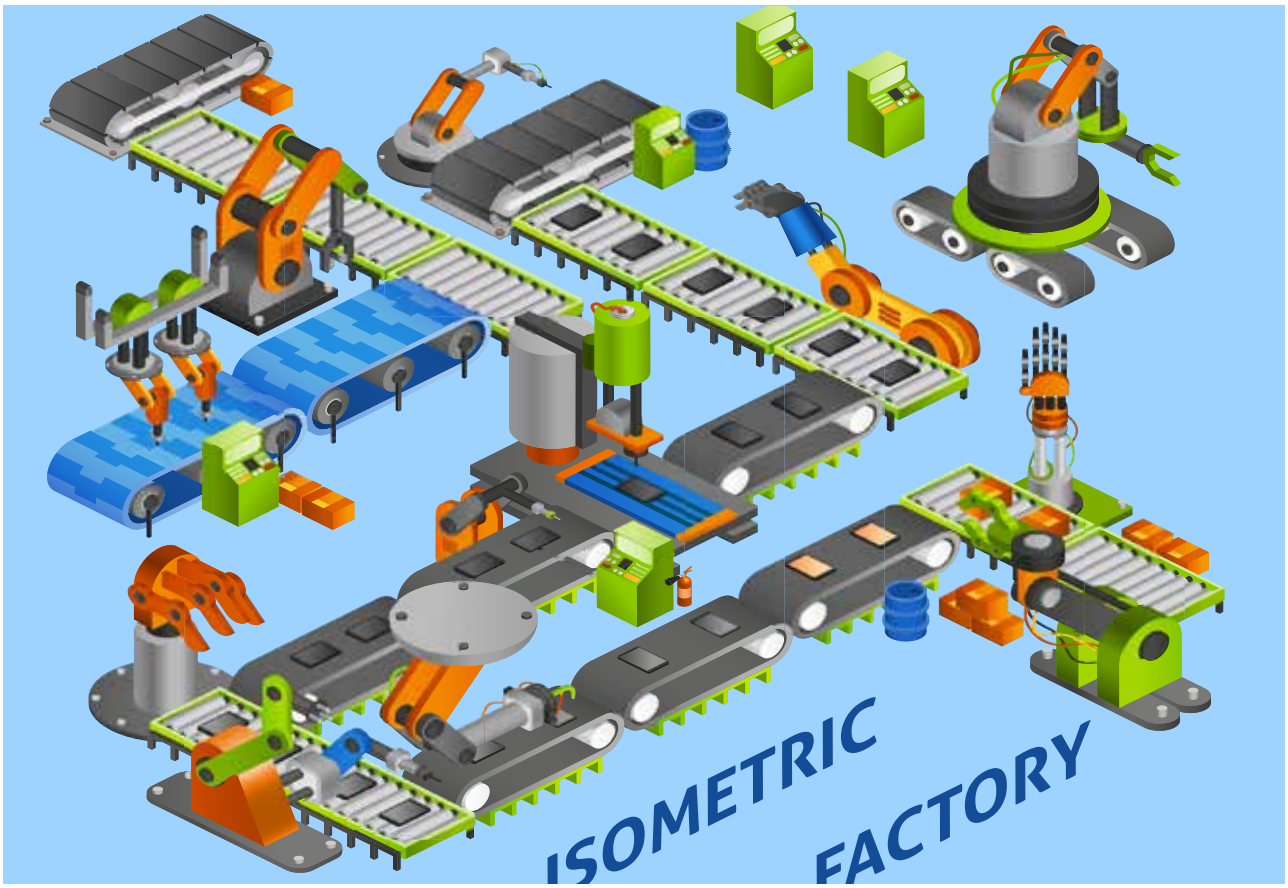
2. Industrial standards have yet to be regulated

To improve product quality, a set of agreed upon standards must exist. For a long time, the spotty quality and reliability of robots has been a major bottleneck hindering development of China's robot industry. One of the main reasons there has been a lack of product quality has been the absence of industrial standards. In China, robot industry standards are mainly formulated by adopting related international standards or assembled by Chinese standardisation commissions. Due to this, China did not, for a long time, have well-established standards for the robotics industry. Although the national standards refer to international standards, with some modifications, it still does not fully meet these requirements. In recent years, China has vigorously promoted the testing and certification of robots, which helps accelerate the establishing of a necessary Chinese robot standardisation organisation. With the formation of this organisation, a set of national robot standards, industrial standards and institutional standards could help build a sound set of robotic industry manufacturing standards. At the same time, creating a robust set of standards could help domestic criteria more closely represent existing international standards.

China robot certification

On 2nd November, 2016, the International Robot Testing & Certification Summit 2016 was held in Shanghai, during which the National Development and Reform Commission, the General Administration of Quality Supervision, Inspection and Quarantine, the Ministry of Industry and Information Technology and the Certification and Accreditation Administration of the People's Republic of China launched the China Robot Certification (CR) mark and issued the first batch of robot product certificates in China. This action marked the formal establishment of a robot testing and certification system in China.

In China, the industrial robot industry is now in the formation stage while the service robot industry is in its preliminaries. After the launch of China Manufacturing 2025, there will be increased demand in the manufacturing industry and an increased application of industrial robots and robot manufacturing



systems in China. Since industrial robots are mainly used for producing high-precision products when human involvement in the production line is necessary, it is crucial to ensure the safe use of robots.

In accordance with the *[2015] No. 360 Document of National Development and Reform Commission,* i.e., the *Notice of the Office of the National Development and Reform Commission on Issuing The Implementation Plan for the Industrialization of Key Industrial Robot Technologies,* the National Robot Test and Assessment Centre (NRTAC) was established in early 2015 under the guidance of the National Development and Reform Commission, the Ministry of Industry and Information Technology, the Standardisation Administration of People's Republic of China, the Certification and Accreditation Administration of People's Republic of China, and China's Robot Industry Alliance. The public service platform for robotic testing and inspection of the NRTAC, based in Beijing, is built and operated by the Research Centre for Computer and Microelectronics Development of MIIT (China Software Testing Centre or CSTC) and Beijing CCID Certificate Authority Co., Ltd. CCID Testing and Certification Centre Co., Ltd. is an enterprise under CSTC that serves as the platform for testing robotics.

The public service platform for robot testing and inspection of the NRTAC is a third-party institution established by China that certifies, tests, calibrates, standardises, trains, and consults on robotic products and robot systems. The testing, certification, and standard formulation of robots is the bulk of the work currently. Certification is aimed at controlling the production quality through testing. The journey from testing to certification is appropriate for improving quality. The implementation of a robot test and certification scheme will help realise China Manufacturing 2025 targets that discuss robots with self-owned intellectual property rights. Eb

Source: 2017 White Paper on Development of China's Robot Industry

EUROPEAN CHAMBER LOBBYING HIGHLIGHTS

Discussing Foreign Affairs with European Commission Vice President Federica Mogherini

In Beijing, on 20th April, former European Chamber President Jörg Wuttke and Vice President Sara Marchetta had a briefing with Federica Mogherini, High Representative of the Union for Foreign Affairs and Security Policy and Vice-President of the European Commission. They discussed China's business climate and political developments, as well as the China Manufacturing 2025 Initiative. Ms Mogherini makes a point of meeting with representatives of the European Chamber during her annual visits to China in order to learn directly from European Union (EU) companies on how the European Commission can assist them in addressing market access challenges. This trip brought her to Beijing to prepare for the then forthcoming EU-China Summit held in Brussels on 1st–2nd June.

Catching up with the Shanghai Municipal Commission of Commerce

On 27th April, former Vice President Mick Adams presented the Chamber's position paper and report on the China Manufacturing 2025 Initiative to Madam Shang Yuying, Director General of the Shanghai Municipal Commission of Commerce. Madam Shang stated that the central authorities had recognised Shanghai's achievements in the development of its pilot Free Trade Zone (FTZ) over the last four years with Shanghai's next step being the continued opening up of the economy and the implementation of regulations that create a fair, transparent and predictable business environment. Regarding the local implementation details of *Notice on Several Measures on Promoting Further Openness and Active Utilisation of Foreign Investment (State Council Document No. 5)*, she confirmed that the Shanghai government would release a document containing 33 articles with each district government and department subsequently issuing more detailed implementation plans. Former

Vice President Adams thanked Madam Shang for her feedback and outlined some market access barriers that European businesses continue to face. Former Vice President Adams expressed his wish in wanting to see more concrete progress in addressing market access, and the full implementation of *State Council Document No. 5*, both inside and outside of the Shanghai FTZ.

Exclusive Dialogue with SAIC and CAA on Advertising Regulations

Also on 20th April, the Chamber hosted an exclusive dialogue on advertising legislation and regulation to help members better understand how the *Advertising Law* and the *Interim Measures for the Administration of Internet Advertising* would be enforced. The dialogue was moderated by Ms Elizabeth Pei, Chair of the Chamber's Government Affairs Forum. Mr Zhang Guohua, former Director General of Department of Advertising Regulation of the State Administration for Industry & Commerce (SAIC) and Chairman of China Advertising Association (CAA) delivered introductory remarks. Other representatives from the SAIC and CAA provided detailed presentations regarding the legislation's intent and fielded questions from multiple industries during the Q&A session.

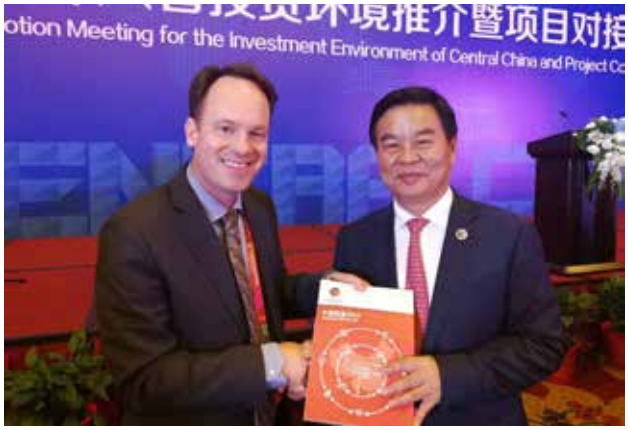
A Working Dinner with European Commission Vice President Jyrki Kaitanen

During a high-level dinner with European Commission Vice President Jyrki Kaitanen on 15th May, European Chamber President Mats Harborn outlined the longer-term continuity of China's economic development as well as the challenges involved in understanding where real opportunities for European companies are presently to be found in the market. Former President Wuttke also provided insight into the Belt and Road Forum and its outlook leading up to the 19th Party Congress in the Fall. Challenges and opportunities associated with the Belt and Road Forum were discussed, as well as the need for continued engagement secure an ambitious EU-China Comprehensive Agreement on Investment, which includes a strong market-opening component.

The Central China Expo with Vice Premier Wang Yang and Vice Governors

European Chamber Secretary General Adam Dunnett led a delegation of member companies from the pharmaceutical industry to attend the 10th Central China Expo in Hefei, Anhui province on 16th May. Anhui provincial Vice Governor Xie Guangxiang, who is responsible for supervising the healthcare sector, hosted a meeting with European Chamber representatives. Following Mr Dunnett's introduction of the Chamber and its Pharmaceutical Working Group, each representative introduced their company and expressed a willingness to further cooperate with the Anhui Provincial Government to promote the wellbeing of patients within the province. Vice-Governor Xie and European Chamber representatives also exchanged views on the province's ongoing healthcare reforms.

During the Expo, Mr Dunnett also participated in a private session hosted by Vice Premier Wang Yang to discuss the state of the region's foreign investment



business environment. After the discussion, he presented the Chamber's report on the China Manufacturing 2025 Initiative to the Vice Governor of Hunan province, Mr He Baoxiang (pictured).

OPPORTUNITIES AND ACCESS IN GREEN TECH

Advice for European SMEs in China's energy, water and environment tech sectors

Despite rising levels of pollution, China still relies heavily on fossil fuels to provide the majority of its energy needs. Recently, however, the Chinese government has made headway in growing the green tech sector. **Domenico Di Liello**, Knowledge Centre Coordinator at the **EU SME Centre**, outlines different opportunities available to European businesses operating in an ever-greening Chinese economy.

Since its founding in 1949, China has relied heavily on fossil fuels to provide energy to its citizens and industry. Coal, in particular, has served the country as their main source of power for more than half a century. Due to its vast availability and low price, it rapidly became the core of the nation's energy policy. Today, almost 40 years after the launch of economic reforms, coal still provides 64 per cent of domestic energy demand.[1]

Utilising this much fossil fuel has had a devastating effect on the environment.

Chinese government policies

In 2006, China overtook the US as the world's largest emitter of CO_2[2], a position it still holds firmly some 10 years later.[3] Domestically, the quality of the water, soil and air is severely compromised: around 80 per cent of the groundwater in the mainland's major river basins are unsafe for human contact[4]; the latest figures from the Ministry of Environmental Protection and the Ministry of Land and Resources tell that 16.1 per cent of China's surveyed land is polluted by heavy metals such as cadmium, arsenic, lead and mercury.[5] Chinese cities, especially in the northern part of the country, are often surrounded by toxic smog stemming, from industrial discharge, the burning of coal and car emissions.

Pollution's combined costs are huge, annually approaching 10 per cent of China's gross domestic product (GDP) over the past decade, with air pollution accounting for approximately 6.5 per cent, and soil degradation for the remaining 1.1 per cent.[6]

The good news is that the Chinese government has declared war on pollution as part of its broader plan to promote the country's transition towards a low carbon economy. In fact, China's commitment to a low carbon future started just before the Copenhagen summit in 2009, where the country pledged to cut its carbon intensity by 40-50 per cent, relative to 2005 levels, by 2020. Recently, in the 13th Five-Year Plan(13FYP), Chinese authorities reaffirmed their commitment by introducing 15 per cent energy intensity and 18 per cent carbon intensity reduction targets relative to 2015 levels, in accordance with the previous *12th Five-Year Plan*(12FYP). [7]

These measures, together with all other policies and campaigns Beijing has launched to strengthen and extend its efforts in promoting environmental protection, energy efficiency and low carbon growth, are expected to provide green tech sector opportunities for domestic and foreign players. These new opportunities can be found in areas of conventional and renewable energy, water, air and soil pollution and waste management.

Naturally, not all sectors are equally accessible to foreign companies.

Factors such as market structure, the degree of competition, barriers to entry etc., will determine market access in the green tech sector.

European SME business opportunities

Based on our analysis, which can be found in the 2017 update of the *China Green Tech Report*,[8] we have detected opportunities in the following areas:

- **Conventional energy:** The coal industry welcomes technology that is able to improve water efficiency in mining and wastewater treatment after usage. Moreover, advanced technologies, such as turbine bypass systems or fault monitoring systems will be in greater demand due to China's next-generation power plants. The gas, oil and nuclear sectors will offer niches where SMEs can offer products and services.
- **Renewable energy:** SMEs should be looking into areas such as waste to energy and waste to heat, which is where the main opportunities are. In more mature industries, like wind or solar, SMEs should be able to leverage engineering knowledge and find business prospects.
- **Water:** Innovative urban water design, energy-efficient water saving technologies, secondary water supply systems, water reclamation technology and other solutions have seen growing demand in China and are expected to continue growing in the future. However, when it comes to the rural and agricultural sector, SMEs might find it difficult to enter the market as it is still under strict government control, it relies heavily upon national funding and, due to

1 National Bureau of Statistics of China, 2016.

2 Source: http://www.nytimes.com/2007/06/20/business/worldbusiness/20iht-emit.1.6227564.html

3 http://www.globalcarbonatlas.org/en/CO2-emissions

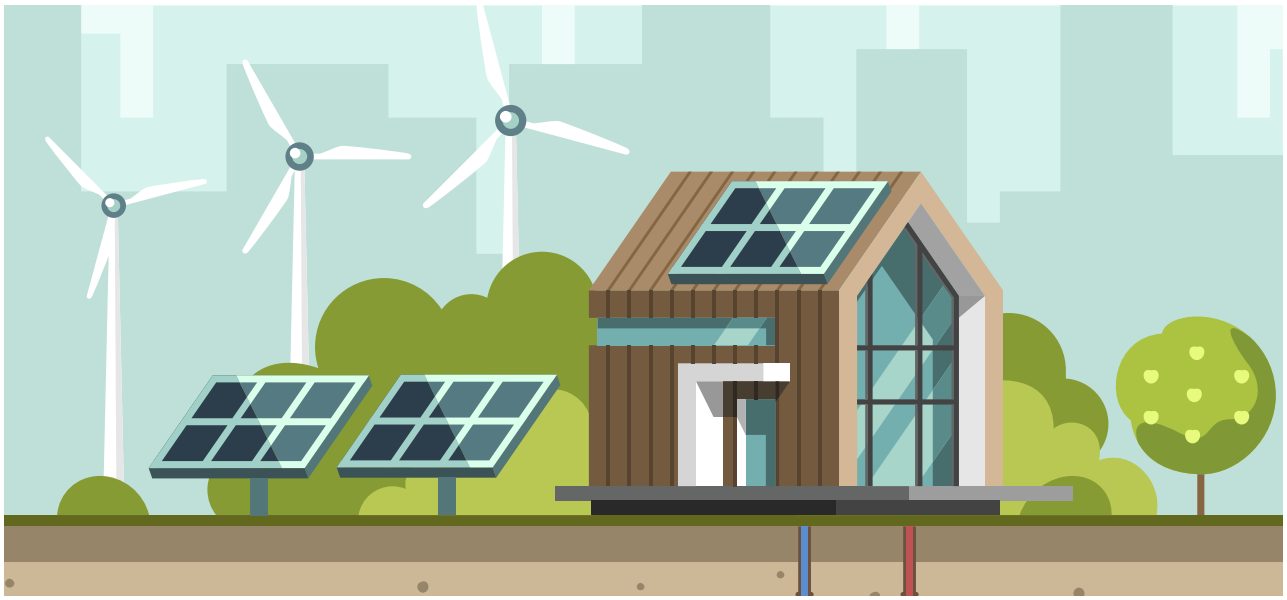
4 http://www.scmp.com/news/china/policies-politics/article/1935314/80-cent-groundwater-chinas-major-river-basins-unsafe

5 http://chinawaterrisk.org/notices/new-soil-ten-plan-to-safeguard-chinas-food-safety-healthy-living-environment/

6 Knight Z., Robins N., Chan W., Natural Capital – Identifying implications for Economies, HSBC, 2014.

7 The XII FYP introduced targets of 16% reduction of energy intensity and 17% reduction of carbon intensity relative to 2010 levels http://www.eastasiaforum.org/2016/11/10/transforming-china-into-a-low-carbon-economy/

8 http://www.eusmecentre.org.cn/report/green-tech-market-china-update-2017



the location of the project, EU SMEs might need to cooperate with local governments that have limited experience in project management or technological innovation.

- **Environment:** Air, soil and waste management, especially in the industrial sector, can provide new opportunities for companies that offer engineering and mechanical solutions able to increase resource use efficiency and reduce emissions in compliance with new and more stringent standards approved by the government. Engineering and mechanical solutions will find demand in sectors that deal with air pollution control, operations and compliance, energy recovery, increased capacity, upgrades and retrofits. In sectors such as construction and smart cities, SMEs will find potential leads in areas such as top-level design, green buildings, green transportation, recycling systems for industrial parks, comprehensive governance in the urban environment etc. Soil pollution, on the other hand, although potentially rich in opportunities, is still in its infancy, with the majority of business remaining in the hands of domestic players. Similar reasons make the industrial hazardous waste sector not particularly appealing to EU SMEs. Nevertheless, potential leads can be found in hazardous waste classification, collection and management.

Market access advice

Finally, prior to market access, SMEs should take all necessary steps to ensure they are ready for Chinese green tech sector integration. Conducting market research to identify opportunities, build awareness of potential threats, understanding local competition, protecting intellectual property rights, profiling potential partners, adapting products and services to meet local requirements are all fundamental tasks that need to be undertaken before joining China's green tech market.

About the EU SME Centre

The EU SME Centre *in Beijing provides a comprehensive range of hands-on support services to European small and medium-sized enterprises (SMEs), getting them ready to do business in China.*

Our team of experts provides advice and support in four areas – business development, law, standards and conformity and human resources. Collaborating with external experts worldwide, the Centre converts valuable knowledge and experience into practical business tools and services easily accessible online. From first-line advice to in-depth technical solutions, we offer services through Knowledge Centre, Advice Centre, Training Centre, SME Advocacy Platform and Hot-Desks.

The Centre is funded by the European Union and implemented by a consortium of six partners - the China-Britain Business Council, the Benelux Chamber of Commerce, the China-Italy Chamber of Commerce, the French Chamber of Commerce in China, the EUROCHAMBRES, and the European Union Chamber of Commerce in China.

To learn more about the Centre, visit website www.eusmecentre.org.cn

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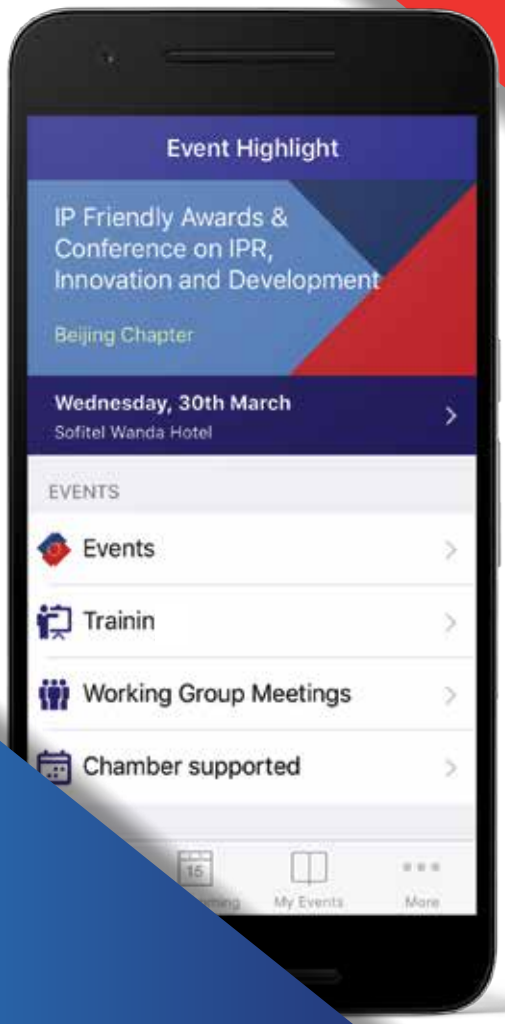

TOP FEATURES

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PROTECTING YOUR IP

How European companies can protect their IP while transferring technology to China

European companies are increasingly wanting to engage in technology transfers with Chinese companies. However, there is a risk associated with long-term partnerships. **The China IPR SME Helpdesk** explains how European companies can devise solutions to minimise issues pertaining to intellectual property and how one can safeguard themselves when engaging China.

Many European companies are keen to come to China. While in the past, European companies came to China to take advantage of low-cost manufacturing for export, more recently, they have come to enter the Chinese domestic market, establish R&D, engage in cooperative development, take advantage of a skilled workforce, establish suppliers and develop long-term partnerships in China. In order to achieve this, they are often willing to 'transfer' key technologies and designs to Chinese subsidiaries of European firms, joint-venture (JV) partners or Chinese manufacturing and service companies. One of the challenges facing European companies that decide to come to China is how to devise a creative solution to minimise intellectual property (IP) risk associated with these technology transfers.

A technology transfer happens in a number of different ways. European companies most commonly transfer technology by licensing their patents, designs, software, trade secrets, and know-how. Technological ownership may be transferred, but this type of transfer is less common. A common misconception is that a technology transfer is limited to high technology transfers. However, many European companies, using contract manufacturing to manufacture low technology, consumer, or industrial products, for example, based on product design, must deal with many of the same risks to IP as their high technology counterparts.

Thinking of transferring technology? – The first step

Small and medium-sized enterprises (SMEs) that are new to China or are considering bringing new technology to China should first check the *Catalogue for Prohibited and Restricted Technology Imports (the 'Technology Import Catalogue')*, published by the Ministry of Science and Technology (MOST) and the *Foreign Investment Catalogue*, jointly published by the Ministry of Commerce (MOFCOM) and the National Development and Reform Commission (NDRC).

Imports of technology to China are divided into "freely importable", "restricted" and "prohibited" categories. Restricted and prohibited technologies are listed in the *Technology Import Catalogue,* with technologies not mentioned in the *Technology Import Catalogue* deemed freely importable. In most cases, technology is deemed freely importable, with only certain technologies related to economic policy development or national security, classified as restricted or prohibited. If a technology will later be exported, SMEs should check the corresponding *Catalogue for Prohibited and Restricted Technology Exports (the 'Technology Export Catalogue'*) and whether there are any relevant regulations governing the item's importation into the destination country.

Whenever technology is brought into China via foreign direct investment (FDI), such as with the establishment of a joint-venture or wholly foreign-owned enterprise (WFOE), it is important to consider the *Foreign Investment Catalogue* to determine what restrictions, if any, apply to the establishment of the Chinese entity. For example, foreign investment in design and manufacturing of civil aircraft equipment is limited to JVs. For technology transfers, in the form of an FDI, the permitted form of FDI will be critical when determining what contractual and non-contractual solutions one will need to protect SMEs' IP.

What can companies do to protect themselves?

Picking the right partners

It is important to recognise that part of the motivation for a Chinese company to participate in a technology transfer is to obtain foreign technology and know-how. This fact is not a secret and SMEs should not treat it like one. Consequently, as a first step to protect IP in a technology transfer, it is important to make sure SMEs choose the right partners. Essentially, the ideal partner will be complementary, but not in a position to directly compete with European SMEs. In order to make an informed decision, SMEs need to take a closer look at how they conduct business as well as their potential Chinese partner.

Structure

Once European SMEs select the right partner, structuring the technology transfer is crucial to effectively protecting IP assets. IP risk associated with a particular technology transfer will vary depending on whether SMEs are licensing, setting up a JV or setting up a WFOE. In all three of these situations, SMEs need to prevent their IP from being inadvertently leaked, intentionally misappropriated or misused by a related or unrelated Chinese party.

Contracts

In addition to structure, the other thing needed to successfully protect IP in technology transfers is to make sure the IP owner has all the relevant contracts in place and that they are airtight. It is recommended that companies use IP licensing with Chinese partners; in addition to establishing each party's rights, the IP license ensures that the technology that was transferred was documented in case issues arise later on. This is especially necessary since Chinese companies also contribute technology and IP has become difficult to identify or differentiate.

Improvements: One of the most negotiated parts of a technology transfer agreement's IP clause is the provision for improvement creation and the ownership of improvements

made by Chinese enterprises. This is because improvements to transferred technology are often extremely valuable and form the basis of cooperation. As a result, the foreign party typically wants to own all improvements made to the technology by the Chinese party. However, there are a couple of important points under Chinese law, on improvements, SMEs need to know:

1. Commissioned IP belongs to the commissioned party unless the contract states the commissioning party owns IP. Therefore, it is important the contract states clearly what IP is to be developed and who will own it.

2. Improvements are owned by the party that makes the improvements and cannot be automatically 'granted-back' to the other party without some form of compensation, or without reciprocation e.g., granting a license to the other party's improvements. This means that the typical automatic ownership of improvements being owned by the foreign party will be unenforceable.

3. A Chinese party cannot be restricted from making improvements to a transferred technology and using these improvements. This means that a Chinese party can make improvements and any such restrictions will be unenforceable.

The implications of these three rules create many problems for European companies looking to transfer technology to China. Since the Chinese party is permitted under Chinese law to make and use improvements, European companies have to think twice about what technology they are willing to bring to China and allow the Chinese party to improve on. It is important to discuss the technology transfer with an experienced lawyer who can help IP owners come up with effective ways to structure contractual terms in order to address development, ownership, and use of improvements.

Confidentiality: It is important to include strong confidentiality provisions in the technology transfer contract. European companies often go to great lengths to protect confidential information, trade secrets and know-how, including using key-card access, closed-circuit TV, virtual data rooms, and sophisticated document tracking measures. While these measures may be expensive and difficult to administer, they should be seriously considered if critical IP is transferred.

Reverse engineering: In addition to dealing with issues related to technological improvement, European companies must also think about reverse engineering. This is technology acquired through the process of taking apart and studying an existing product on the market. Reverse engineering is permitted under Chinese law and not considered a theft of trade secrets. As a result, well-drafted technology transfer contracts should include a provision limiting or prohibiting a Chinese party from engaging in reverse engineering.

Takeaway messages

- European SMEs who do not think carefully about how to guard against IP risk, when transferring technology to China, may unwillingly suffer a loss of competitiveness and market share.

- SMEs should refer to the *Catalogue for Prohibited and Restricted Technology Imports* (the *Technology Import Catalogue*) and the Foreign Investment Catalogue to make sure they will be allowed to bring technology into China.

- To protect IP in a technology transfer, it is important to make sure SMEs choose the right partners at the outset. It is recommended that companies use IP licensing when dealing with Chinese partners.

- The IP risk associated with a particular technology transfer will vary depending on whether the SME is licensing, setting up a JV, or setting up a WFOE. However, in all three situations, the goal is the same - to prevent IP from being inadvertently leaked, intentionally misappropriated or misused by a related or unrelated Chinese party.

China IPR SME Helpdesk Team

The China IPR SME Helpdesk *supports small and medium-sized enterprises (SMEs) from European Union (EU) member states to protect and enforce their Intellectual Property Rights (IPR) in or relating to China, Hong Kong, Macao and Taiwan, through the provision of* ***free information and services****. The Helpdesk provides jargon-free, first-line, confidential advice on intellectual property and related issues, along with training events, materials and online resources. Individual SMEs and SME intermediaries can submit their IPR queries via email (question@china-iprhelpdesk.eu) and gain access to a panel of experts, in order to receive free and confidential first-line advice within* ***3 working days****.*

The China IPR SME Helpdesk is co-funded by the European Union.

To learn more about the China IPR SME Helpdesk and any aspect of intellectual property rights in China, please visit our online portal at http://www.ipr-hub.eu/.

CHINA IPR SME HELPDESK

HELPING BUSINESS LEADERS TO THINK BIG

Company limitations that prevent them from taking an active role in global governance

While the influence of large non-state actors in improving societal and environmental issues is increasingly relevant, the ability to mirror such thinking is often hampered by a company's developmental stage and geographical location. In this article, **David Herbinet**, **Mazars'** Global Head of Audit & Assurance, and **Julie Laulusa**, **Mazars'** Managing Partner in Shanghai and Mainland China help us to think big in big business.

In a more interconnected world, one of the key issues is "a lack of global governance", according to Unilever's Chief Executive Officer, Paul Polman. Tackling large societal issues is a commitment Polman has made since he took over the reins at Unilever in 2009. As a result, he has stopped updating the stock market on quarterly performance in order to foster a longer-term perspective and has launched initiatives like the sustainable living plan which focus on reducing calories in certain food products, cutting energy usage, as well as backing the call for a price on carbon.

The task of addressing societal and environmental issues is even more difficult when we factor in rapid global economic and technological development that call into question traditional conceptions of corporate growth and leadership. This is especially true in emerging economies where the economy is transitioning rapidly from heavy industry to service and E-commerce. Access to higher education and digital development is creating new shareholder expectations. Urbanisation in rural areas and the creation of middle-class consumers with greater purchasing power, as well as increased and more sophisticated product demands, means business leaders are constantly having to rethink their business models and readjust growth projections.

A fresh look at leadership

With such substantial change taking place, there is an increased need to develop and encourage leadership skills that embrace wider issues in a more sustainable manner, if short-termism is to be avoided. These skills can be inculcated and can help foster the appropriate values in the next generation of young business leaders. These young professionals are the most likely to be involved in start-ups and e-commerce ventures, while their older counterparts flock to the traditional business sectors. The younger generation instead, sees their roles in various businesses as lasting on average between 5 to 10 years rather than a more classic long-term position.

By looking at such issues through the lens of the boardroom business structure we can identify common values and tools that could be used to develop a successful and sustainable framework for company stakeholders, and society at-large. An important factor in establishing such a culture, is challenging how leaders emerge by questioning the entire framework put in place for recruitment, rewards and promotion. It is about moving the focus away from rewarding short-term performance over long-term vision, to exploring systems that encourage the emergence of leaders that contain workplace qualities like vision, conviction, courage and respect. It is important to have diversity not only in gender but also in age, culture and experience at the boardroom level. It is important to also have variety in the workplace in order to identify and empathise with societal needs and environmental issues. Adopting a framework that embraces these issues is an important factor in a company's ability to attract future talent and is more likely to look to good leadership and levels of diversity as benchmarks for what constitutes a good company to work for.

A focus on education

In this respect, executive education has an increasingly important role to play in such a narrative. A more progressive approach to executive education can help emphasise a deeper understanding of societal and environmental issues in order to equip leaders with appropriate tools conducive to long-term thinking and decision making. This approach holds particular resonance when taking into account the number of different tools used to measure company profitability, despite having no credible key performance indicators (KPIs) for measuring how well decisions were made. Certainly, an approach that favours quantity over quality does little to measure the effect of corporate decision making on peoples' lives and the environment, both of which are important elements of sustainable business growth and board culture.

At the granular level, we can note that pressure on leaders for the purpose of improving short-term performance increasingly results in a trickle-down effect that creates a more stressful work environment and can have an adverse impact on the mental and physical health of employees. By refusing to nurture its human capital, a company's effectiveness and its ability to compete is likely to be reduced. Developing a framework that encourages boards to adopt principles that can help them identify and deal with the wider impact of their decisions, including corporate governance codes, relating to areas such as tax transparency and social compliance, now more relevant than ever.

Articulating a shared value model

Finding a way to better articulate a model representing the competitive benefits of being positively active in today's society would be a huge step forward. This is particularly pertinent at a time when the interplay between developed and emerging markets is becoming increasingly obscured and economies that have been driving global growth are slowing down. As a result, business leaders need to have a much clearer vision of how to achieve growth and identify future market opportunities. This is not only about identifying new markets, but leaders having the vision and courage to take risks. There is an argument that companies focus too much on managing risk, which often sees cash-rich companies buy back shares. The counter argument would be that not using cash to enhance long term value is in itself a risk, as it minimises a company's opportunity to grow. Good leaders understand there is no growth without risk, but also that market development and growth is the answer to societal needs. Eb

Mazars *is an international, integrated and independent organisation, specialising in audit, accountancy, tax, legal and advisory services. As of 1st January, 2017, Mazars operates throughout the 79 countries that make up its integrated partnership. They draw on the expertise of 18,000 professionals to assist major international groups, SMEs, private investors and public bodies at every stage of their development.*

EUROPEAN CHAMBER IN THE MEDIA

The European Chamber's Business Confidence Survey 2017 Launch

The European Chamber held a press conference for the release of our *Business Confidence Survey 2017* (*BCS*) on Wednesday, 31st May, 2017, in Beijing. In total, 64 journalists registered with 40 ultimately attending in addition to four TV interviews taking place on the morning of the press conference. An additional 10 journalists participated in two embargoed media sessions a week before the launch. Each of the Chamber's six chapters also organised either press conferences or media roundtables to discuss survey results with the local media.

Key themes addressed in *BCS* media coverage are:
- Lack of reciprocity;
- Regulatory barriers that impede investment;
- The need to complete negotiations for the Comprehensive Agreement on Investment (CAI);
- China closing the innovation gap with Europe;
- The need to complete negotiations for the Comprehensive Agreement on Investment (CAI);
- The impact of the new Chinese Cybersecurity law on European companies;
- The possibility of forging closer ties between the EU and China, as a result of changes in US foreign policy; and
- The Ministry of Commerce's response to the *BCS*'s results.

During the Ministry of Commerce's (MOFCOM's) press conference on 8th June, MOFCOM spokesperson Sun Jiwen responded to a question about concerns held by European companies regarding China's business environment and referenced the *BCS*.

Sun responded that China is resolutely committed to opening up, stating that once the door is open it will never close and, in fact, will open even wider. He was quoted by Xinhua as stating: "China always welcomes EU investment. However, China and EU differ in the development stage and industrial structure. In terms of opening up, they are varied in key areas, intensity and pace. It is unadvisable to make simple comparisons and demand reciprocal access. It is important to make balanced interests."

Former President Joerg Wuttke's interview with SCMP on EU-China Relations During the EU-China Business Summit

Former President Joerg Wuttke gave an exclusive interview with SCMP to discuss the state of EU-China relations. Former President Wuttke commented that after Macron's victory in France, Germany and France have begun working together to try and unify the EU and that it would be unwise for China to antagonise the organisation. He also stated that China should be more active in moving forward with reform.


Unlike 'flip-flopper' Trump's US, a united EU won't be a pushover, China told

Business advocate tells Beijing not to antagonise Europe, which will be more difficult to negotiate with than the US

Media Roundtable During the M&A Conference in Shanghai

The European Chamber held a media roundtable as part of the *M&A Conference 2017* on 14th June in Shanghai. It was attended by nine journalists from eight news outlets. SCMP published a quote from the Shanghai General Manager, Ioana Kraft, on the lack of progress being made in developing the Shanghai free port.

Frustrated, EU chamber calls for real steps to build Shanghai free port

After three years of slow development at Shanghai FTZ, the EU Chamber of Commerce is urging officials to take concrete steps to build a free port

In a rare display of frustration over the minimal progress of Shanghai's much-hyped free-trade zone (FTZ), a major European Union business lobbying group has advocated that the city takes concrete steps in loosening customs regulations to build a "free port" in the mainland's commercial capital.

Ioana Kraft, the General Manager of the European Union Chamber of Commerce's Shanghai office, said on Wednesday that incentives related to port development were highly anticipated by European businesses operating in Shanghai, which could have a substantial impact on foreign companies and the local economy.

"We don't see any credit given to or importance attached to the free-trade zones," she told reporters in a media briefing. "For those zones elsewhere in the country, we see them as development zones, rather than real free-trade zones."

She added that the initiative to build a free port might bring some additional incentives to the zone.

Nanjing Chapter Holds a Reception for EU Ambassador to China

On 12th June, 2017, in conjunction with the *BCS* launch the Nanjing Chapter organised a welcome reception for EU Ambassador Hans-Dietmar Schweisgut, in conjunction with his meeting with the Secretary of the Jiangsu Provincial Committee, Li Qiang. Over 90 representatives from government, media and the business community attended the event.

EUROPEAN CHAMBER EVENTS GALLERY

BEIJING CHAPTER


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2


3

4

Annual General Meeting 2017 (1)
The Chamber's Annual General Meeting took place on 12th May and the European Chamber's Executive Committee was confirmed.

EU-China Partnership for Clean Energy Transition (2)
On 16th May, the Chamber hosted a seminar on the Sino-European partnership regarding the clean energy transition. We thank our sponsor Vestas.

Business Confidence Survey 2017 Launch Event (3)
On 31st May, the European Chamber and Roland Berger Strategy Consultants co-organised the launch of the13th edition of the European Business in China: *Business Confidence Survey 2017*.

The EUCCC Cup & Summer Festival (4)
On 10th June, the Chamber held a football tournament, with approximately 600 people in attendance. We thank our sponsor BMW, Finnair, Kerry ERS Logistics, Scout Real Estate, Sennheiser, Abacare, Airbus, Arrail, Blueair, Bluestar AMG, Harrow, IMC, MTR, and The China Guide.

NANJING CHAPTER


1


2

EU Ambassador Hosts Welcome Reception (1&2)
On 12th June, the European Chamber Nanjing chapter held the welcome reception of the EU Ambassador Dr Hans Dietmar Schweisgut. It is the first time an EU Ambassador has visited Jiangsu or Nanjing.

During the reception, Dr Schweisgut shared his opinion on EU-China relations and European Business in China. This event was followed by an attendance at the Kunqu Opera.

Over 100 participants joined this reception, including the majority of the chapter's members, Chinese enterprises and local government officials.

SOUTH CHINA CHAPTER

1


2

Factory Tour at Siemens Shenzhen Magnetic Resonance (1)
The European Union Chamber of Commerce South China Chapter, held a factory tour at the Siemens Shenzhen Magnetic Resonance Ltd. on 15th June, 2017.

European Business in China - Business Confidence Survey Launch 2017 Guangzhou (2)
The European Union Chamber of Commerce in China along with Roland Berger launched the *Business Confidence Survey 2017*, on 12th June, in Guangzhou.

SHANGHAI CHAPTER

1

2017 China Healthcare Outlook (1)

On 10th May, the Shanghai Chapter held the 2017 China Healthcare Outlook Conference, which informed participants on the state and current trends of the healthcare industry.

2

Understanding China's Cybersecurity Law: Implications for foreign businesses in China (2)

On 24th May, the Shanghai Chapter hosted a Cybersecurity Conference, where speakers and attendees shared their views on the new Cybersecurity Law.

3

M&A Conference 2017: The art of the cross-border deal, - where is deal activity heading?

The Annual M&A Conference took place in Shanghai on 14th June. In this Conference, a panel of experts in M&A deals, debated the current status of mergers and acquisitions. We would like to thank our sponsor, Luther Law.

SOUTHWEST CHAPTER

1

Southwest Chapter of European Chamber launched *Business Confidence Survey 2017* press conference (1)

The European Chamber, together with Roland Berger, released the annual *Business Confidence Survey 2017* in Chengdu on 14th June, 2017.

2

Panel discussion was held for the public launch of the Business Confidence Survey 2017 (2)

The panel discussion brought in over 100 guests from consulates, local government and member companies. Mr Adam Dunnett, Secretary General, European Union Chamber of Commerce in China, and Mr Paul Sives, Southwest Chapter Chairman, European Union Chamber of Commerce in China, presented on the national and south-west part of the survey results respectively.

A panel discussion was held at the end with Ms Sally Huang, General Manager of Southwest Chapter moderating the discussion.

TIANJIN CHAPTER

1

2017 Business Confidence Survey Launch and Mid-Year Cocktail Reception (1)

European Chamber launched the 2017 Business Confidence Survey in Tianjin on 8th June. Special thanks to United Family Healthcare for the generous sponsorship and support leading up to the launch event.

2

European Chamber Tianjin Chapter hosted the 2017 Badminton Tournament (2)

The 2017 European Chamber Badminton Tournament was successfully held on 17th June at the International School of Tianjin (IST). The tournament attracted eight teams and over 100 participants. Special thanks to our generous sponsors: International School of Tianjin (IST), iKang Guobin Medical Screening (Tianjin), Bavaria Beer Keller and Best Cake.

3

Joint Chamber Briefing – A dialogue with the Tianjin Administration of Foreign Expert Affairs: Demystifying China's new work permit policies (3)

The European Chamber Tianjin chapter, held a dinner briefing on Thursday, 22nd June. Government officials from the Foreigners Working in China Division at the Tianjin Administration of Foreign Expert Affairs were invited to explain China's new work permit policy to a group of foreign members.

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