

INSIGHT.

The Journal of the American Chamber of Commerce in Shanghai - Insight May/June 2017

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GETTING CHINA GREEN

BUSINESS AND THE ENVIRONMENT

Can China navigate its environmental challenges while maintaining strong economic growth? We take a closer look at government policies and business strategies promoting sustainable development and green growth in China.



FEATURES P.08

PwC looks at developments
in green finance

POLICY P.20

Barbara Finamore of the NRDC
on China's climate change efforts

MEMBER FOCUS P.38

Q&A with Jing Nealis of Shunfeng
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SNAP PRINTING, INC.

INSIGHT
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FEATURES

- 08 **The Rise of Green Bonds in China**
PwC looks at developments in green finance
- 10 **Selling Solutions to Pollution**
How companies are responding to China's pollution problem
- 13 **How Interface Localizes its Sustainability Agenda**
One company's quest to instill a culture of sustainability in its staff
- 16 **Motivating Chinese Factories for Environmental Performance**
How to incentivize green production
- 18 **How do We Stay Productive in an Information-overloaded WeChat World?**
David Allen and Cyrille Jegu, productivity consultants, provide advice

POLICY PERSPECTIVES

- 20 **Is China the Next Climate Leader?**
Barbara Finamore & NRDC colleagues consider China's climate change efforts
- 22 **Bumps on the Road**
Government efforts to speed the creation of a dynamic EV market in China
- 25 **Dealing with China's Debt**
What China can do to avoid the risks associated with growing debt
- 27 **Why China's New Renewable Energy Targets Lack Ambition**
Putting China's energy goals under the microscope
- 29 **Blindsided by China's March to Clear Waters**
Can China manage its resources to ensure water security?
- 31 **Understanding China's Cyber Security Law**
Objectives, compliance and business recommendations

MEMBER NEWS

- 34 **Month in Pictures**
Selected photos from the past two months' AmCham events
- 36 **Event Report**
Recap of selected events from last two months
- 38 **Member Focus**
Q&A with Jing Nealis of Shunfeng International Clean Energy Limited
- 41 **Committee Chair's Corner**
Essay by Michael Rosenthal, chair of AmCham Shanghai's Environmental Committee
- 43 **Overview of AmCham Shanghai's Ethics Committee**
Introduction to the Ethics Committee and its members
- 44 **President's Note**
After Mar-a-Lago, now what?
- 45 **Board of Governors Briefing**
Notes from the last two months' meetings
- 46 **Esoterica**
Mobike mobilizes the masses



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CHAIRMAN'S LETTER



Ker Gibbs

KER GIBBS
Chair of the Board of Governors

China is big. The People's Republic boasts the world's biggest population and will soon have the largest economy. China also consumes the most coal, produces the most carbon gasses and pumps more chemicals into the ground and water supply than any other nation.

China's cities are highly polluted across a number of metrics related to soil, water, and air. *The New York Times* has reported on cities in China that have reached a level of 1,000 micrograms of PM2.5 per cubic meter; the World Health Organization recommends exposure of no more than 25 micrograms. China's citizens, normally reluctant to criticize their country, are angry and frustrated. Public protests and sharply worded blog posts show how bold people have become.

China's government, not known for tolerating outspoken criticism, may have gotten the message and has taken aggressive steps to put new environmental laws in place. In 2015, China joined more than 190 nations in signing the Paris Agreement on Climate Change. Moreover, they committed to one of the most aggressive numbers of all major countries to reduce the percentage of carbon emissions by 2030.

These words have been backed up by deeds. According to the International Energy Agency China's coal consumption has been flat or slightly down the last two years. China is adopting new standards and now evaluates officials based on environmental goals, not just economic growth measures. Some experts say China's commitment to reduce carbon emissions is not only achievable but may even come in ahead of their goal.

Are we, as residents in China, satisfied with the results so far and content with the efforts being made? Of course not, nor should we be. The quality of our air, water, and soil is still horrible. The Chinese people will continue to push their government and hold their officials accountable for cleaning up and protecting the environment. There are also issues with the integrity of data reporting, transparency, and the degree to which regulations are implemented consistently across the country. Despite these problems, movement is in the right direction.

China's current environmental policies represent a significant shift in thinking. Previously, China aligned itself with developing countries that saw environmental protec-

tion as a luxury they couldn't afford. They prioritized industry and job creation and were reluctant to impose regulations that might impede growth.

Today China's views are changing, and for good reason: Pollution creates costly health care burdens and hampers business activity in any number of ways. China also wants environmental technologies to be a major driver of economic activity and job growth. China is positioning itself to be a leader in the fight against climate change and environmental degradation.

China's plan looks far into the future. It is building capacity in clean and sustainable energy and new energy vehicles. Already it is a world leader in solar and wind energy and has mandated that 30% of government vehicles should use clean energy. The Chinese National Energy Administration announced that the country would spend \$360 billion on renewable energy, creating more than 13 million jobs.

These plans are not perfect. We can debate the safety of nuclear power plants, the efficacy of wind, and the economics of solar. Electric vehicles may be clean, but in China people still depend on power that is produced primarily by coal. The challenges we face to save our planet are many. The direction that China is taking, however, is the right one.

China will face challenges in this new role as a leader against the effects of climate change. Global powers are always examined and criticized, as they should be. That's how power is held in check and the best solutions are found. Notoriously thin-skinned, China will need to be careful when throwing economic weight around. If China continues to finance coal-burning power plants abroad while moving away from coal domestically, hackles will rise. Infrastructure projects under One Belt One Road should be scrutinized for adherence to high environmental standards and principles.

The impact of human activity on our environment and the sustainability of our planet could be the most important issue of our time. Future generations will rightly hold us to account. This issue also binds us together. Some countries will lead while others fail to act, making our common task that much more difficult. China has chosen to lead. As long as the goal is to preserve the environment on the only planet we have, let's hope others make the right choice to follow. **1**

Movers and Shakers highlights senior-level personnel changes within the Chinese government and at multinational companies in China

PRIVATE SECTOR



YUM

Yum China Holdings, Inc. named **Joey Wat** president and chief operating officer of Yum China. In addition to overseeing the KFC

brand, Wat will expand her responsibility to oversee the company's Pizza Hut Casual Dining and Pizza Hut Home Service brands. Wat joined Yum! Restaurants China in September 2014 as president of KFC China, and was promoted to chief executive officer of KFC China in August 2015. Prior to that, she took various leadership positions at A S Watson group since 2004, most recently as the managing director of Watsons UK. Wat received her MBA from Northwestern University in 2000.



MARRIOTT

Marriott International appointed **Alethea Lam** vice president, communications for Asia Pacific. In her new role, Lam will be

managing and orchestrating the company's internal and external communications, including corporate reputation and crisis management. In addition, she will also oversee the holistic brand communications strategy for Marriott International's 20+ distinct Asia-Pacific brands and provide strategic counsel to Marriott's over 550 operating hotels in the Asia Pacific region. Prior to this appointment, Lam was director of corporate communications for Starwood Hotels & Resorts Asia Pacific. Before joining the travel industry, Lam worked across industries including fashion and entertainment.

Lam holds a Bachelor's degree in Chinese Literature and Psychology from the University of British Columbia.



AVNET

Avnet, a global technology distributor, named **Frederick Fu** president of Avnet, Asia Pacific. In his new role, Fu will be responsible

for the strategic direction and business growth in the region. He joined Avnet in October 2006 and was named regional president, China, overseeing the company's electronic component business growth in China. Most recently, he served as acting president for Avnet Asia and Japan. Prior to Avnet, Fu was the chief marketing officer at Surface Mount Technology Ltd, responsible for worldwide marketing and building a global network for the company. Before that he spent 14 years with STMicroelectronics Taiwan and STMicroelectronics Singapore. Fu holds a Master's degree in Industrial Engineering from the University of Hong Kong.



ASIAN TIGERS

Asian Tigers, a leading international relocation company, announced the appointment of **Jason Will** as the country manager of Asian Tigers China.

Will joins Asian Tigers China with over 24 years' industry experience. He previously worked for Crown Relocation Australia in Brisbane and Melbourne in 1991-1998 and for Crown Relocations Indonesia in 1999-2001. He then joined Santa Fe Relocations in Shanghai in 2001 as division manager of household goods and in 2003 he relocated to work for Santa Fe Relocation in Singapore as general manager – sales & marketing. In 2004 he moved to Jakarta, Indonesia to take the role of managing director for Santa Fe Relocations Indonesia and remained in that role until December 2016. Will also holds Global Mobility Specialist (GMS) certification from the Worldwide ERC organization.



Yin Hong was promoted to deputy party secretary of Shanghai. Most recently Yin was a member of the municipal standing committee. Before that,

he was the vice secretary-general of Shanghai municipal government. From 1996 to 2008, Yin took leadership positions in various districts of Shanghai, including Songjiang, Changning and Zhabei.



Xu Liyi was named mayor of Hangzhou, the capital city of Zhejiang province. Prior to this, he was the party secretary of Wenzhou, another

major city of Zhejiang province. Xu spent his whole career in Zhejiang, first in Yuyao and Ningbo before moving to Hangzhou in 2006. He became the vice mayor of Hangzhou in March of 2014.



Zhou Jiangyong was appointed party secretary of Wenzhou, a major city of Zhejiang province. Zhou started his career as a middle

school teacher in 1985. He then joined different county and city governments in Zhejiang, most recently working as the mayor and party secretary of Zhou Shan.

We apologize for misidentifying Yang Xiaodu in the March-April edition.

If your company has executive personnel changes, please contact Deborah Tang at deborah.tang@amcham-shanghai.org.

AmCham Shanghai Ball Raises RMB 650,000

During a fun-filled evening, AmCham Shanghai members raised RMB650,000 for local charity organizations at the annual AmCham Shanghai Ball on April 15 at the Pudong Shangri-La Hotel. At the sold-out ball, over 350 guests danced, played casino games, dined on fine foods and bid on exclusive items at the live and silent auctions.

This year's theme was "Boulevard of Dreams" and the evening featured live music from Studio 188, the Tom Pang Newgrass Band, a gu zheng performance by Liu Ting Ting and singing by Sevi Ettinger who debuted her newly released single and video. Club Med's Guilin G.O. team also performed and danced with guests.



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As in years past, the highlight of the evening was the live auction as guests outbid each other for items such as business class airplane tickets, hotel stays and gourmet meals. This year's ball also included a bazaar and a silent auction.

Proceeds from the event will be donated to Shanghai Sunrise, Stepping Stones, and AmCham Shanghai's Centennial Scholarship. All three groups help disadvantaged students. Shanghai Sunrise provides scholarships and support, while Stepping Stones provides training to rural English teachers. AmCham Shanghai's Centennial Scholarship provides scholarships for talented and disadvantaged college students in Shanghai.

"We appreciate the generosity of our members. Since 2004, the AmCham Shanghai ball has raised over 10.5 million RMB for local organizations, a clear sign of our members' commitment to the communities where they live and work," said AmCham Shanghai President Kenneth Jarrett.

AmCham Shanghai would like to thank all of our sponsors for their generous support to this event. **I**



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The Rise of Green Bonds in China

By Jennifer Ye



Jennifer Ye
Partner,
Sustainability
and Climate
Change, Risk
Assurance,
PwC China

In China, PwC provided pre-issuance assurance to the first green corporate bond issued on the Shanghai Stock Exchange in 2016

Many global companies acknowledge the reality of climate change and the fact that it will impact their business. As climate change starts to affect access to raw materials, the reliability and security of global supply chains, and even the type of products and services that consumers demand, companies are realizing that a more active and diverse approach is needed to address climate change, and that doing so can also bring new opportunities. Green finance incentives, green jobs and green stimulus packages are becoming more common. Policymakers, looking to encourage environmentally and socially responsible investments, developed green bonds as a tool to mobilize the global investment community and spur green growth and development.

In 2007, the first green bond was issued by the European Investment Bank (EIB). While this initial issuance was relatively small, the market quickly gained momentum; the Climate Bonds Initiative (CBI) estimates that the annual issuance of green bonds rose from RMB 21 billion (USD 3 billion) in 2012 to RMB 559 billion (USD 81 billion) in 2016. Much of this growth came from China, which accounted for 39% of global issuance in 2016. Green bonds are quickly becoming an attractive investment prospect in China, with demand continuing to grow.

■ What are green bonds?

Green bonds, like any other type of bond, are fixed-income financial investments that companies or state-owned entities can use to raise funds. The key difference between a “green” bond and a regular bond is that the issuer publicly states it is raising capital to fund green projects, assets or business activities. Green project categories, as outlined by the Chinese government, typically include energy efficiency, renewable energy, sustainable water management, pollution prevention and control, sustainable management of living natural resources, biodiversity conservation, sustainable water management, climate change adaptation, eco-efficient products, and production technologies and processes.

Green bonds can be issued by financial institutions, listed companies, or private companies with eligible green projects. Green bonds offer multiple potential benefits to issuers, including but not limited to:

1. Expanding financing channels, especially for foreign investment, to aid companies in need of capital during periods of rapid development
2. Reducing financing costs, as green bonds have lower interest rates than ordinary bonds, resulting in a lower total issuance cost compared to ordinary bonds
3. Improving market perception, as issuing green bonds demonstrates resolve to contribute to environmental protection and sustainable development

■ What are the standards or guidelines that apply to green bonds?

To regulate the development of green bonds, domestic and international financial institutions and regulators have issued green bond standards and guidelines. Internationally, the most widely used standards are the Green Bond Principles (GBP) from the International Capital Market Association (ICMA) and the Climate Bonds Standards (CBS) from the Climate Bonds Initiative (CBI). In China, several guidelines pertaining to green bonds have been promulgated in the past two years (see *figure 1*).

While international and domestic guidelines pertaining to green bonds vary slightly, the spirit is similar with the focus on four main areas: use of proceeds, process for project evaluation and selection, management of proceeds, and reporting.

1. Use of proceeds: the issuer must declare eligible green projects and asset categories. There are several categories and sets of criteria defining eligible green projects and/or assets already in existence in the market.
2. Process for project evaluation and selection: the issuer must establish, document, and maintain a decision-making process that it uses to determine the eligibility of the nominated projects and/or assets.
3. Management of proceeds: the

Date	Regulator	Guideline	Description
22 December 2015	The People's Bank of China (PBoC)	Guidance on the issuance of green bonds (The Announcement [No. 39], 2015)	Provides guidance for financial institutions issuing green bonds
13 January 2016	The National Development and Reform Commission (NDRC)	Guidance on the issuance of green bonds	Lists projects that are considered eligible as green projects, and outlines the requirements for bond issuance approval
March and April 2016	Shanghai Stock Exchange & Shenzhen Stock Exchange	Notice on implementing the green bond pilot program	States that green bonds can be listed on stock exchanges in addition to the interbank bond market
31 August 2016	Jointly released by the PBoC, Ministry of Finance, NDRC, Ministry of Environmental Protection, China Banking Regulatory Commission (CBRC), China Securities Regulatory Commission (CSRC), and China Insurance Regulatory Commission (CIRC)	Guidelines for Establishing the Green Financial System	Proposes 35 measures to push the development of the green financial system

▲ Figure 1



Green bonds are quickly becoming an attractive investment prospect in China, with demand continuing to grow

issuer must open a special account for receiving, saving, transferring, and payback of green bond proceeds.

4. Reporting: In addition to periodic reporting on the use of proceeds and undistributed proceeds, the issuer should disclose on an annual basis the development status of green projects and their environmental benefits.

■ How are green bonds issued?

The process of issuing a green bond is similar to that of a regular bond. The difference is that the bond prospectus must meet specific green bond criteria, including adhering to green project category requirements and project selection criteria, demonstrating potential environmental benefits, and explanation as to the use and management of green bond proceeds. In addition, the issuer must also disclose regularly updated information regarding the use of proceeds, green project development status, and environmental benefits in periodic reports. An independent verification report issued by a profes-

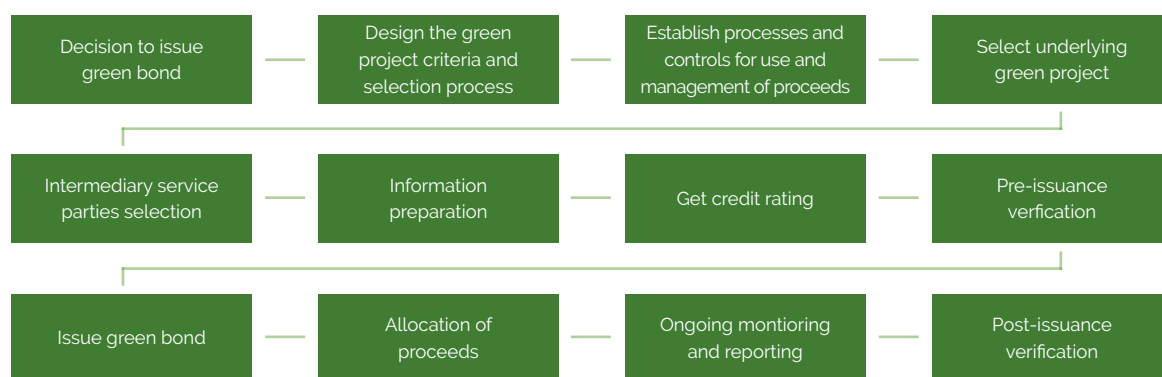
sional certification authority assessing compliance to green bond standards is strongly recommended.

■ How are green bonds verified?

Both policymakers and investors want assurance that green investments are genuinely green. As such, many issuers of green bonds engage a third party to provide independent verification to enhance the reliability of conclusions, and increase investor confidence and comfort. External verification service providers evaluate green bond funded projects and issue reports, the nature and scope of which vary depending on the needs of the issuer, and the applicability of domestic or international regulations. Typically, pre-issuance verification is focused on compliance with related green bond standards, namely adherence to green project qualifying criteria, project selection processes, procedures pertaining to the management of proceeds, information disclosure, and reporting. Post-issuance verification is focused

on the use and management of proceeds, green project development status, and disclosure of environmental benefits arising from green bond funded projects.

Despite the recent increase in the volume and value of green bonds issued in China, challenges remain. As green bonds are still quite new in China, many issuers lack experience in properly defining green bond criteria as the basis for investment decisions in green projects, and may struggle to set up the appropriate policies and procedures to effectively manage these projects. In addition, as issuers must also periodically disclose the progress of green projects funded by the green bonds, issuers should have robust procedures and an ongoing monitoring mechanism in place to effectively track, manage, and report green bond proceeds. In line with international practice, it is also strongly suggested that issuers in China engage a third-party assurance provider to assess compliance both before and after the issuance of the green bond. **1**



► The process to issue a green bond

Selling Solutions to Pollution

A look at companies measuring and responding to China's pollution problem

By David Hicks

When Premier Li Keqiang declared "war on pollution" at the 2014 National People's Congress, it was clear many companies were prepared to fight on the frontlines. The directives and regulations issued by the government since then have been embraced and brought commercial benefit to companies in the business of monitoring and reducing pollution.

Lofty pollution reduction goals have been set, and impressive progress has been made. The average concentration of PM2.5, particulate matter of less than 2.5 micrometers that pollute the air and can cause serious health and environmental problems, fell by about 12% in 74 of China's cities between 2013 and 2016, according to Greenpeace. And in 2015 the State Council issued a 'Water Ten Plan', requiring local governments and water suppliers to monitor the quality of their water and ensure 93% of water sources reach national standards by 2020.

To underscore the seriousness of this battle, a spokesman for the National Development and Reform Commission (NDRC) announced at the dawn of 2017 that, for the first time in Chinese government history, environmental protection would carry more weight than economic growth when evaluating government officials' performance. The stakes are high and the numbers matter to everyone – the government, private companies, and individuals alike.

■ Who's buying

Accordingly, demand for pollution monitoring and abatement equipment comes from a variety of sources. Gianluca Pettiti, president of Thermo Fisher Scientific China, an American company which focuses on serving science companies with products monitoring air, water and soil pollution in China, told Insight that consumers of their pollution monitoring equipment include government-affiliated environmental monitoring stations, research institutions, third-party testing organizations, and enterprises like soil remediation companies and contaminative factories. Meanwhile, companies like Honeywell, a multinational conglomerate, have had success in marketing consumer-grade air and water purification products as part of their "smart home" strategy in China, according to Dino Asvaintra, vice president and general manager of HBT Greater China/HGR Home business, which oversees Honeywell's portfolio of residential products.

Between the 2014 declaration of war on pollution and Xi Jinping's recent championing of the international environmental protection cause, it might be hard to remember that, until recently, the details of China's pollution problem were not officially discussed. Citywide pollution data was not publicly shared in China until 2008, when the US Embassy in Beijing installed an air quality monitor and began making the data public

to the Chinese government's chagrin. However, in 2012, the Chinese Ministry of Environmental Protection followed suit and included PM2.5 in their "national ambient air quality standards," requiring cities to publish their PM2.5 levels.



▲ Gianluca Pettiti

To get the data, the Chinese Ministry of Environmental Protection aimed to construct 1,436 PM2.5 real-time monitoring stations in 338 cities by 2015, a project that was estimated to exceed USD\$326 million, according to Chinese media reports. Since then, much of the initiative to measure pollution output has come from local governments themselves. For instance, in December 2016 Shanghai Municipal Environmental Protection Bureau deputy director Su Guodong announced that the Shanghai government had installed over 1,000 on-

line monitoring systems to make sure local construction sites complied with dust emission regulations.

The Chinese government has been an important client for pollution monitoring equipment sellers, at both a local and national level. But Thermo Fisher's Pettiti has also begun to notice greater demand from the private sector. "I see much more urgency in the private sector to align with the new [pollution] regulations that are being designed and implemented," said Pettiti. "The private sector's pollution monitoring capabilities are maturing as a result of new regulation."

For a better solution, in February this year, Thermo Fisher launched the innovative Thermo Scientific™ Model 5028i, which combines PM2.5 and PM10 monitors together, helping customers to combat air pollution in a more cost-effective way.

As public awareness of pollution has increased, so has interest in monitoring and abating pollution in private homes. According to Asvaintra, Honeywell's "most rapid growth in the past couple of years has come from our air purification and water purification products. Over the last two years, we've experienced over 80% year-on-year growth in the residential air purifier category." Such impressive growth is not unusual to Honeywell: according to Daxue Consulting, a Beijing-based market research company, total domestic sales for China's air purifier market had over 70% year-on-year growth as of 2015.

■ The equipment

When the city of Hangzhou hosted the G20 2016 Summit, Thermo Fisher provided air monitoring equipment to help manage pollution levels. The URG 9000 Series Ambient Ion Monitor is Thermo Fisher's primary piece of air pollution monitoring equipment, and can measure the specific composition of PM2.5. According to Pettiti, a significant portion of Thermo Fisher's pollution monitoring equipment sales come from products in this category, which use ambient technology to measure air pollution. The URG 9000 Series Ambient Ion Monitor (AIM) is an advanced air sampling instrument



▲ Water purifier style

that simultaneously measures both fine particle composition (PM2.5) and precursor gases.

A research paper in the academic journal *Sensors* describes stationary monitoring systems – like Thermo Fisher's URG 9000 Series Ambient Ion Monitor – as "highly reliable, accurate and able to measure a wide range of pollutants." A high level of accuracy and reliability is useful in many cases, but the large size, weight and expense of these stationary systems makes them more suitable to industrial and research-based use rather than for residential consumers. Honeywell has sought to meet this need by developing a suite of 'smart home' products, with air and water purification products at the core.

Asvaintra argues that the technology needed to effectively measure air pollution is already very well developed. Until recent years, it was common for consumer pollution measurement products to use infrared technology. The measurement device would emit an infrared beam, which would register when particles interfered with the beam and provide a rough estimate of the air quality, usually in the form of a color rating (red, bad; green, good). But the sensitivity and variance of these sensors was too great: the simple act of walking past a sensor would cause it to turn red, falsely reporting that the air quality had turned poor.

Over the last few years, infrared technology has been replaced by laser-based technology. Lasers are more sensitive to the size, quantity

and concentration of air pollutants, and have become "the minimum benchmark technology needed to compete in China's [residential market]," according to Asvaintra. He notes that all of Honeywell's air purification products include laser-based sensors that measure PM2.5 and volatile organic compounds (TVOCs). The company is preparing to release the next generation of machines with detachable sensors so consumers can measure the air quality in very specific locations.

That technology has been put to use by many of the companies who have enthusiastically entered the China market. In 2016, Daxue Consulting reported that the number of air purification brands being sold in China increased from 151 in 2013 to 1,614 in 2015.

The vast majority of these brands are equipped with low cost, small size, and fast response time laser-based sensors, similar to that found in Honeywell's consumer-grade products. Other examples include the Beijing-based Origins Laser Egg and Air-Visual Node. But to date it seems that there is no way for these convenient and ubiquitous sensors to meet the very specific needs of research institutions and government bodies. The *Sensors* report found that "no low-cost portable ambient sensor can achieve the same data accuracy and quality as conventional monitoring instruments."

■ Becoming the Chinese competitor

The dizzying pace at which the market for air purification products has



A spokesman for the NDRC announced at the dawn of 2017 that, for the first time in the Chinese government's history, environmental protection would carry more weight than economic growth when evaluating government officials' performance



We are seeing a trend where the focus is less on where the pollution is, and more on where the pollution is generated

expanded might dissuade some companies, but Asvaintra remains optimistic. "China is a very competitive market and there are a lot of local players. But the market penetration is still very low," he said. "We have a long way to go."

At the same time, he notes that competition from local businesses has brought some challenges: "The speed and efficiency of local Chinese competitors is really phenomenal. It remains a perennial challenge for us, and we need to deal with it."

Honeywell's response to competition from Chinese companies has been marketed within the company as "Becoming the Chinese Competitor." While many engineering companies in the United States strive for perfection before they release new products, Asvaintra notes that this approach is not as effective in China. In an effort to keep pace with their Chinese competitors, Honeywell "tries to get stuff to market in about six months. It's not always perfect, but we improve and iterate on top of that," he said. "The competition has forced us to be competitive in that way. It's pushed us to develop a new kind



▲ Dino Asvaintra

of mindset."

The air purification technology that has flooded the China market is generally more advanced than what is found in more developed markets, notes Asvaintra. "In the United States, an air purifier isn't designed to combat the levels of PM2.5 you find in China. It's designed more for a market of people who have allergies, hay fever, asthmatics, groups like that."

China is Honeywell's most impor-

tant market after the United States, said Asvaintra, surpassing Germany a few years ago. He estimates that air purification equipment has a market size of about USD\$2 billion in China alone. Accordingly, Honeywell has made great efforts to invest in their China operations. They call their China strategy 'East for East', which in practice has involved investing over USD\$1 billion to develop their manufacturing, design and R&D capabilities within the country over the last decade. "China is very quickly emerging as the center of gravity for the global air purification industry," he said, and Honeywell accordingly develops and designs their purification products within China and specifically for the China market.

Similarly, Thermo Fisher has invested major resources into developing their China operations. The company first came to China in the 1970s to sell pollution monitoring equipment and have since moved their manufacturing and R&D for these systems to China. In recent years they have experienced double-digit year-on-year revenue growth. Pettiti says that Thermo Fisher strives to develop as many of their products as possible within China. Although the core technology of their pollution monitoring equipment is still managed in the U.S., the water-pollution monitoring Orion 3106 COD was "100% designed, developed and manufactured in China."

■ Looking forward

In the coming years, industry insiders expect pollution monitoring and abatement equipment sales to be driven by private sector companies seeking to identify the source of their pollution, rather than public sector clients trying to measure and respond to pollution output. Johnny Browaeys, partner and director of international business at Greenment, an environmental consulting firm, notes: "Good monitoring equipment does not just show when there is exceedance of a limit. It actually helps them understand how that exceedance comes about." With the proper monitoring equipment, polluting technologies can be identified and the root problem can be more eas-



▲ The science behind air quality monitoring

ily addressed.

The importance of understanding the root of the problem was underscored by the 13th Five Year Plan, which put forward clear pollution reduction targets and encouraged companies to invest in pollution monitoring and abatement equipment in order to comply with these new regulations. "We are seeing a trend where the focus is less on where the pollution is, and more on where the pollution is generated," said Pettiti.

Browaeys agrees: "Right now, most monitoring happens near the end of the pipe. I suspect that there will soon be more interest in monitoring earlier in the production process, to preemptively address this stuff." This trend has been developing since 2014, when the central government required thousands of factories to begin publicly reporting real-time details of their air and water emissions.

The end of China's pollution problem is not yet in sight, so it is hard to imagine dim prospects in the near future for companies like Thermo Fisher and Honeywell. As Asvaintra puts it: "Regardless of all the news you see about soft or hard economic landings, we still see a tremendous amount of runway in China." ¹

David Hicks is a contributing writer for AmCham Shanghai

How Interface Localizes its Sustainability Agenda

By Shannon Ellis



Shannon Ellis previously worked for the Canadian and British embassies in Beijing doing civil society development work, was a brand manager at Nike during the Beijing Olympics and founded a clothing company. She writes regularly about China's biotech industry for BioWorld.

For many American firms, their sophisticated global sustainability policies hit a cold hard reality when they leave home: they fail to resonate with employees and by extension with customers. How to get local teams to be passionate about a sustainability agenda when it was designed for developed markets by folks far away in headquarters?

■ The Interface way

Interface, the leading carpet tile manufacturer, started on its sustainability journey in the 1990s. Ray Anderson, the company's founder, saw early on that while his company was successful, it was not doing good for the world in terms of its contributions to landfill waste and excessive use of energy and toxic materials. He set an ambitious sustainability agenda for Interface and coined the term "Mission Zero" - a company promise to eliminate any negative impact on the environment by 2020.

When Interface came to China that pledge could not be ignored, nor could it locally be easily understood or implemented. That is, until the firm's Chinese employees found a way into the sustainability issue on their own terms.

"Here in China, we have struggled to get the sustainability conversation going, not only with our customers but to fully engage our staff," said Patrick Riley, former senior vice-president Greater China for Interface (now, vice-president global). "The conventional thinking has been you can talk to a Western company about sustainability but not a Chinese one. But that changed for us about two years ago."

He credits two events for the shift in mindset. The first was the release of the controversial viral documentary "Under the Dome" which linked the impacts of China's air pollution directly to people's health. It was China's Al Gore moment. A decade after his 'Inconvenient Truth' presentation first aired, for the first time concern about the impacts of climate change became urgent and personal in China.

Purely by coincidence a month later, Interface moved into a beautiful office designed to meet RESET standards for wellbeing and health, with vertical gardens and sensors to transparently track levels of air pollution such as volatile organic compounds (VOCs) and particulate matter (PM) levels. The staff saw how their employer's commitment to the

environment also benefited them.

"We had stumbled into the place where the Chinese public is interested," said Riley. "Whereas in the West it is all about the impact on the environment followed by the impact on your health; the trigger point with Chinese people is personal well-being."

Since then, staff engagement has snowballed, helped along by opportunities to make the company's sustainability efforts tangible and locally relevant - often by encouraging experiences in which employees can participate.

When contacted for this article, Riley was on his way to Inner Mongolia with a dozen employees to visit a wind farm. Travelling by train to limit their carbon footprint, the trip was organized as a part of a company-wide competition. The coveted prize, a trip to the wind farm, created excitement across the firm for the company's renewable energy policies in a way that no policy directive ever could.

But Inner Mongolia is a long way from the company's Taicang manufacturing site. Located near Shanghai, Taicang lacks direct access to a renewable energy grid. To circumvent this, the company buys energy

credits to offset their carbon footprint and support the wind farm in Inner Mongolia. Interface has had success with this approach in other countries and was pleasantly surprised to find it could be adopted in China as well. The trip was a way to see for themselves the renewable energy source they were supporting.

■ Sustainability equals sales

Interface believes that through environmental engagement, they benefit from better staff retention and productivity. But perhaps more importantly, the sales team have also had an easier time convincing clients of the sustainability proposition that Interface offers.

"After that trip, it became a natural thing for sales staff to say with pride that they saw the wind farm and tell a compelling story that explains our renewable energy policy," explained Gloria Niu, sustainability manager at Interface.

Another priority at Interface is to reduce the use of virgin materials, especially petroleum-based nylon. Among their recycling programs is Net Effect, which reclaims old nets from Philippine fishing villages to be used to make carpet tiles. Interface carpet tiles are recyclable and the company operates a closed loop system, taking back their used carpets for recycling.

But when a salesperson was pitching carpet tiles made from recycled fishing nets to an interior designer client in Hong Kong, it failed to be convincing. "Is ocean plastic a severe problem?" asked the designer and skeptical consumer. "I want to know what this means."

The salesperson replied: "Let's go find out."

It wasn't long after a 'sea classroom' was organized with the help of local NGO, Plastic Free Seas and employees from Hong Kong and mainland China went on a day trip to take water samples from the open ocean. They discovered high concentrations of plastic in the seawater, especially polystyrene, and when they returned to shore, they found the beach lit-

tered with disposable plastics. They spent time picking up water bottles and plastic packaging before they could be broken into small particles in the ocean and consumed by fish, and later by extension by humans.

Such trip suggestions come up frequently says Niu, a young Cambridge University environmental studies graduate born in Shanghai who is doing a fellowship with Collective Responsibility in Shanghai. But she says there is no one person in the company in charge of organizing them. "It always starts when a colleague says, 'Hey, why don't we do this?'"

While sustainability conversations in the company have taken off - helped along with an internal Facebook-like social platform that connects employees globally - there is a recognition that the value the company places on sustainability is not shared by everyone.

"It is not always the case we can squeeze in a discussion of sustainability with customers. Sales must cover the technical specifications, the design, the warranty, our quality and everything the client is looking for, so sustainability often comes last. And the value of sustainability means different things to different people," Niu says.

■ The China way

But in China, health and wellbeing remain top priorities. Carpets can contribute to this by being mould resistant and not off-gassing harmful chemicals. "In China, the first thing most of our customers think about when they talk about sustainability or environmentalism, is the impact on human health. Overseas, air quality is taken for granted but that is no longer the case in China. That is why carpets with zero VOCs are very appealing here," added Lucy Lei, China managing director at Interface and vice-president, Asia.

This central insight led to Interface developing a line of products specifically for the China-market, called Nature History, inspired by the same brush technique as a Chinese ink painting. While the aesthetic gives a

subtle nod to Chinese heritage, it is also the product of modern technology, made with a high percentage of recycled fibers with no VOCs, completely manufactured in China.

Now they are entering the next stage in the sustainability conversation - listening more deeply to customers. "We need to understand what the customer thinks sustainability is and determine what we can bring to it," says Niu. "We cannot just sell them on everything we are doing on sustainability and be convincing. It is more about listening to them."

Their timing couldn't be better. Chinese companies are increasingly aware of their impact on the planet and willing to do something about it. Where once many of Interface's China clients were multinational corporations looking to implement their global sustainability targets in China, now Chinese companies such as real estate firm Vanke, technology company Lenovo and China's e-commerce giants are pursuing corporate responsibility programs and defining these on their own terms. And when speaking with these customers, having a locally relevant sustainability story is more important than ever.

Some methods Interface uses to achieve Mission Zero:

- Zero waste from factories
- Energy used in manufacturing comes from renewable sources
- Closed-loop manufacturing: recycles used carpet tiles to minimize landfill waste
- "Less is more" approach: carpets use minimal materials for maximum performance
- Carbon offsetting for company travel
- Recycled packaging materials
- Donate used office computers to charity **1**



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Motivating Chinese Factories for Environmental Performance



Tristan Edmondson is the general manager of Carnstone's Shanghai office. Carnstone is an independent management consultancy, specializing in corporate responsibility and sustainability. Tristan has created and managed sustainability projects in China and Europe for pharmaceutical companies, fashion retailers, construction firms, supermarkets and publishing houses.

How do international firms sourcing in China motivate their Chinese suppliers to be *huanbao*: in Chinese both the act of being environmentally friendly, and also the state of environmental protection?

I recently conducted a short environment training session for Chinese suppliers to a UK department store chain. I gave them a case study based on a real factory with a RMB7m a-year energy spend, few energy efficiency measures yet implemented and various potential environmental and safety issues. One option in the case study was to hire a permanent Environment, Health and Safety (EHS) manager to create an energy management system. How many of those on the course chose this option?

At the end of the exercise, it turned out only two out of 40 factory managers decided to employ an

EHS professional at the case-study factory. Tellingly, those two managers were also the only ones that already employed EHS managers at their own facilities.

Let's unpack why Chinese firms often don't employ environmental professionals, in-house or as consultants, and seldom invest enough in environmental management processes or equipment that are *huanbao*.

The history and culture of Chinese business over the past 30 years has been of almost continuous growth at all costs, in an unpredictable legal climate, with a young and inexperienced managerial class. Developing management processes for incremental and long-term cost control and risk management has been an afterthought.

Yet China's environmental landscape is also changing faster than factories can adapt:

- The Communist Party rightly

views environmental degradation as an existential threat, and a wave of upgrades to regulations and improving enforcement is catching many companies off guard.

- Few factories recognise community action over environmental issues as a risk. The single largest cause of protests in China is environmental pollution, and factories have had expansion plans blocked, experienced shutdowns and even permanent closures because of local pressure.

- Factory owners and managers also often don't see the world from their customer's perspective, and are surprised when international brands turn up at the factory gates demanding to know why the effluent treatment plant is not maintained properly. Few factories have heard of NGOs like Greenpeace who shame big companies into action, or local NGOs like the Beijing-based

Institute for Public and Environmental Affairs (IPE) which produces The Corporate Information Transparency Index (CITI), a project to assess and rank brands' environmental management of their supply chains in China.

But these risks relating to regulations, communities and customers will not alone persuade factories to materially change their approach to environmental performance.

■ The mindset challenge

Yes, international brands can insist that high visibility, high-risk problems with low-cost solutions should be fixed, such as switching to safer chemicals where substitutes exist, ensuring that basic energy efficiency measures are implemented, or training staff in basic water efficiency. This should be the first step. But treating environmental performance as a management challenge for capturing the gains from reduced costs and reduced risk requires a mindset change.

There are two parts to this mindset change, and the first is to take advantage of the fact that factory managers tend to only view *huanbao* in relation to personal health. Show managers the human impact of pollution on people not dissimilar to themselves, and you will have primed them for change.

A great place to start in terms of understanding this mindset change is the Chinese documentary called *Under the Dome* by Chai Jing, a former China Central Television journalist. Chai Jing made the film when her unborn daughter developed a tumour in the womb, for which Chai blamed Beijing's air pollution.

A way to follow up is to point suppliers towards IPE's pollution map, which contains levels of pollutants in the air and water, by city, province and river basin, as well as emissions data from factories, by city, province and river basin. Suppliers can see how much pollution is in the air and water around them, and which of their factory neighbours is the source of that pollution. They might start

thinking about their children, and their neighbours.

The second part of the mindset change is rooted in hard numbers. Companies sourcing in China who want to help their factory partners change their approach for the long-term should understand their own role on the short-term attitudes of their suppliers towards the environment. Creating constructive relationships with factories, and providing them with the management support to tackle the cost and risk reduction challenges that could put them out of business, is the only way to foster long-term improvements. And this does not just apply to environmental issues, but also to product quality, as well as to productivity and labour management practices.

In practice this means fostering a more open and honest relationship, through giving real and useful information to factories, such as accurate purchasing forecasts, business strategy details, as well as detailed expectations of the kinds of management processes and investment



▲ Green growth

plans factories should have in place to ensure good environmental performance. It isn't easy, but the benefits of helping China's factories to succeed in the next stage of their development are lower costs and a lower risk supply chain.

If companies that source in China show factories the connection between factory pollution and human health, invest in constructive business relationships and require effective environmental manage-

ment from their suppliers, factory managers will start taking *huanbao* seriously.

■ A strong law, patchy enforcement

Enforcement of China's Environmental Protection Law, implemented on January 1, 2015 has been patchy. Some regions have experienced a flurry of factory shutdowns, fines and administrative detentions, while other areas have been relatively inactive. Below are a few examples of how the law has been enforced:

- July 2016: the Suizhou Environmental Protection Bureau in Hubei closed the Suizhou Qingyuan quarry and imposed a 15-day administrative detention on company management because no environmental impact assessment had been carried out.

- March 2016: a court in Zhejiang upheld a lower court's decision to impose fines of 78 million yuan on three chemical companies that dumped 26,000 tons of hazardous waste into rivers. Ten suspects, including the heads of the three companies, were sentenced to jail terms ranging from 20 months to nine years, and fined a total of RMB8.5 million.

- February 2016: the Wuhan Environmental Protection Bureau fined Hanchuang Jihua Fabric Mill RMB100,000 and imposed a 10-day administrative detention on company management because of illegal chemical discharge.

- January 2015: the Shenzhen Environmental Protection Bureau closed the Hengjin Metal Product factory because of pollution discharge, fined the company RMB200,000, and imposed a 15-day administrative detention on company management. **1**

The benefits of helping China's factories to succeed in the next stage of their development are lower costs and a lower risk supply chain



How do We Stay Productive in an Information-overloaded WeChat World?

David Allen and Cyrille Jegu, productivity consultants, provide the following advice

By David Allen, Cyrille Jegu



David Allen is an author, consultant, international lecturer, founder and chairman of the David Allen Company, a productivity training and consulting company that provides services designed to increase performance, capacity and aligned execution.



Cyrille Jegu is a certified GTD Master Trainer and exclusive licensee of the David Allen Company in Greater China. His purpose is to equip and empower individuals and organisations to do more of the right things, in less time, with less stress, more confidence and clarity.

WeChat and many mobile-device apps are perceived as distracting or unsocial or both. Walking zombies stare at their devices on busy streets; friends dine together yet are more present with their phones than their companions. Even among those of us who criticize these behaviors, there's guilt about disappearing down digital rabbit holes of our own. What impact do these new rules of engagement have on our productivity?

Simply stated, productivity is the act of producing or creating something. In the broadest sense, we are all productive, all the time. We are producing whatever in the moment we are experiencing. That could be a physical result, like a cooked soup; or it may be the emotions or thoughts we create, like feeling happy or sad.

"Being productive" can also mean "achieving a desired result." Most people think of productivity as having something to do with business, or busy-ness. However, if you go on a vacation to relax, but you don't relax, that's an unproductive vacation. If you go to a party to have fun, but don't have fun, that's an unproductive experience.

Usually when people talk about productivity, they mean being *more* productive. There are two ways to do that:

1. Be more Efficient – i.e. produce with less effort or resources, so you have the resources to do more and better things otherwise

2. Be more Effective – i.e. selectively productive: optimizing for results.

In the first instance, you've decided to go out for errands, and you want to take the best routes to complete them all, in the briefest time. In the second, you're deciding whether going out for errands is the most appropriate thing to do right now, given your other obligations. Either one is an improvement in your productivity.

In both cases, what you need to operate optimally is clarity – a clear head, a clear set of options, and a clear action path. A methodology I developed in the last 30 years provides both.

How? By using the following five-step process:

1. **Capture** everything that has your attention. Write it all down: get a new light bulb, research a new mobile app, hire an assistant, update the resume, launch a new website, decide on the acquisition, etc.

2. **Clarify** what specifically you're going to do about each of them, if anything

3. **Organize** reminders of the actions you need to take in a trusted system

4. **Reflect** and review your calendar, actions and projects regularly, keeping them current and providing a clear overview of your commitments

5. **Engage** your focus and attention positively, based on steps 1 through 4.

Information overload is something we must contend with. Having a systematic ap-

proach in how we manage this tsunami of information can help at work and at home.

Information is coming from everywhere: WeChat and other apps, emails, phone calls, casual conversations, business meetings, even your thoughts are a mine for potential information, ideas and distractions. The five steps outlined above can help you make sense of it all and remain in control of any situation, reducing the sense of being overwhelmed that is prevalent in our world today.

Whether WeChat is a good or a bad thing depends on your motivations behind using it. Using social media for fun is healthier than many other things people do for fun. Using it for networking to build your brand and professional connections can be highly useful. Accessing information about your hobbies and interests can add value to your leisure time. Connecting with friends and loved ones in a more real-time way can be a great expression of your core values.

The medium is not bad or good, the challenge is being conscious about how you're using it. The clearer your head is, the less likely WeChat or other apps will become a distracting addiction. **1**



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Is China the Next Climate Leader?

By Barbara Finamore, Alvin Lin, Noah Lerner

Barbara Finamore is a senior attorney and Asia director at the Natural Resources Defense Council (NRDC). Finamore has had over 35 years of experience in environmental law and energy policy, and founded NRDC's China Program in 1996. She holds a J.D. degree with honors from Harvard Law School.

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Noah Lerner is a Princeton-in-Asia fellow at the Natural Resources Defense Council's Beijing Office, helping to support China-focused climate and clean-energy policy research and advocacy. Noah received a B.A. in Biology and East Asian Studies from Amherst College. Noah is also the co-founder and host of Environment China, a podcast that shares the stories of China's environmental innovators.



The U.S. is ceding its role as a global climate leader, with potentially devastating impacts worldwide

As the world's largest emitters of the dangerous carbon pollution that's driving climate change worldwide, U.S. and Chinese actions are critical to the solution. In the lead up to the Paris Agreement, the two countries played a crucial role in showing how cooperation on addressing climate change could accelerate the transition to a clean energy future.

Together, they have made real progress. The U.S. has cut its carbon footprint 14% since 2005, to the lowest level since 1992, even as its economy has grown 17%, in real terms. American innovation and enterprise have been moving ahead with cleaner, smarter ways to power our future without imperiling the planet. One result: a powerful employment engine that has already created three million good-paying jobs, with the potential for many millions more.

Sound national policy has helped. But President Trump has sounded the retreat from these gains, an approach meant to dig us into a deeper reliance on coal,

oil and gas. As a result, the U.S. is ceding its role as a global climate leader, with potentially devastating impacts worldwide. The U.S. also stands to lose out on the biggest market opportunity of the century: the transition to clean energy.

Bloomberg New Energy Finance (BNEF) estimates that some US\$7.8 trillion will be invested globally in renewables between 2016 and 2040, two-thirds of the investment in all power generating capacity. They forecast that a total \$13.1 trillion is needed in clean energy through 2040 to hold warming below the Paris Agreement's 2 degree Celsius target. Smart companies and countries are investing in new technologies for cleaner, more energy efficient homes, buildings, vehicles, materials, and manufacturing processes.

China recognizes that transitioning to clean energy will ensure its long-term economic development by creating jobs in new industries like renewables, electric vehicles and efficiency, and protecting it from the destructive im-

pacts of climate change on its food security, human health, cities, and infrastructure. Another reason to take strong action: new research shows that climate change may be intensifying China's relentless air pollution.

So is China emerging as the next climate leader? There's no doubt that China continues to be the largest investor in wind, solar, and other renewable energy sources. In 2016, China invested \$88.2 billion in renewables, compared to \$58.8 billion in the U.S. And China is planning to invest an additional \$361 billion in renewables projects through 2020 that will help to generate over 13 million clean energy jobs.

In 2016, China added more than three times as much wind energy capacity as the U.S., cementing its status as the world leader in both wind capacity and wind power generation. China's solar energy growth has been even more spectacular. In 2016, for the second year in a row, China smashed the world record for installing the most new solar photovoltaic power, nearly doubling its

solar energy generation capacity. Like wind, China's solar capacity and total solar energy production are the largest in the world. One analysis has forecast that in the next five years, nearly 40% of global new solar and wind growth will be financed and developed by Chinese companies.

But building the world's leading clean-energy economy will take more than just investing in wind and solar. It will also require the simultaneous phasing out of dirty fuels. Though China still consumes more coal than any other country, it has been decarbonizing at a furious rate. Chinese coal consumption began to level off about three years ago and has since been steadily declining.

Last year China cut 290 million tons of excess coal mining capacity, and will increase that number to 800 million tons over the next several years. China's 13th Five Year Energy Development Plan has also set, for the first time, a mandatory target to reduce the share of coal in energy consumption to 58% or less by 2020, down from 62% in 2016. China has every reason to clamp down on coal; in its power sector alone, it could face \$500 billion to \$1 trillion in economic losses from "stranded coal assets" if it does not cut back on coal power plant overcapacity.

China is also working to reduce carbon emissions from the transport sector. China will invest more than \$500 billion to build 30,000 kilometers of new railroad tracks by 2020, with 11,000 kilometers of the new tracks for high-speed rail. Chinese travelers and commuters take four million high-speed rail trips every day, at a small fraction of the carbon footprint of equivalent air travel. In addition, after leading the world with over 500,000 electric vehicle sales in 2016, China is aiming to put an additional 800,000 electric vehicles on the streets this year. And despite manufacturing scandals and planned reductions in government subsidies, China aims to have five million total electric ve-

hicles on the road by 2020.

Finally, in an effort to reduce carbon emissions and speed the transition to clean energy, China will unveil a much-awaited national carbon market this year. This national market will be an expansion of

tributed energy generation, developing large-scale renewables closer to demand centers, and initiating power sector reforms designed to overcome the built-in preferences for coal generation.

In order to become a global cli-



▲ A wind and solar power station in Dafeng Port, Jiangsu province

China's existing seven carbon trading pilots, which by June 2016 had already traded a cumulative 94 million tons of carbon, worth roughly \$350 million. China's carbon market will be the world's largest, and will cover eight carbon-intensive industries. With an initial carbon price of around RMB30 (roughly \$4.5 per ton), the national market will be a significant step toward pricing and capping carbon emissions.

China's transition to a low carbon economy is neither easy nor painless. The government's crack-down on excess steel and mining capacity is expected to lay off some 1.8 million workers, up to 15% of the workforce of these industries. China has pledged to set aside \$15.8 billion for job retraining and other support for workers.

Another enormous challenge for greening the power sector is the high rates of curtailment for wind and solar energy. In 2016, 17% of China's wind power was curtailed, enough to power the annual residential electricity use of almost 90 million Chinese residents. China has set goals to bring renewable energy curtailment down to five percent by 2020 by increasing dis-

tribute leader, China also needs to make good on its 2015 pledge to "strictly control public investment flowing into projects with high pollution and carbon emission both domestically and internationally." Last year, China increased its investments in renewable energy overseas by 60% to a record \$32 billion, including 11 new overseas investment deals worth more than \$1 billion each. Yet as their domestic opportunities shrink, Chinese coal companies are also pursuing opportunities to export their technologies abroad.

China still has a long way to go to reach its ambitious climate targets. But the dramatic measures it has taken over the past several years to cut emissions, reduce its reliance on coal, and invest in renewables have been remarkable. There can now be no question that China – while still leading the world in both coal consumption and carbon emissions – is also leading the way to the clean-energy future. **1**



One analysis has forecasted that in the next five years, nearly 40 percent of global new solar and wind growth will be financed and developed by Chinese companies

IMAGINE CHINA



Bumps on the Road

Government efforts to speed the creation of a dynamic EV market in China



David Frey is a partner for Markets Strategy at KPMG in China, and leads KPMG's U.S.-China Corridor. He has spent nearly 20 years in industry and consulting roles for clients in China, across Asia Pacific and in the USA.

One of the most striking aspects of commerce in China today is the commitment of the government to transition in determined fashion toward environmentally sustainable market choices. One area where this is particularly evident is in government actions supporting electric vehicles (EVs).

The number of EVs on the road in China in 2016 grew at a healthy clip, rising by some 50% to 330,000 cars. While this volume represents only two percent market share in China, it equates to more cars than the combined global total of EV sales outside China in 2016. This growth came on the back of 2015 data that showed a 300% rise in EVs on the road in China.

So it appeared that green shoots were taking root from the government's efforts to seed the market through a combination of local production investment incentives, consumer subsidies, and free, quota-busting license plate registration schemes. The levers that were designed to assist in reaching the government's lofty goal of five million EVs on the road by 2020 appeared to be having an effect.

As 2016 came to a close, the market began to experience some significant bumps on the road. Early 2017 saw a sudden and precipitous drop in EV purchases. Market watchers attributed much of this to a pattern of abuse of subsidies, where some local manufacturers were called out for booking sales to related parties, who kept the purchase subsidy and then returned the car to the manufacturer. Beijing got wise to this and clamped down hard, which sent a shiver through sales. The government's Mid- and Long-Term Development Plan for the Auto Industry, issued April 25, 2017, re-emphasizes the commitment to new energy vehicle development, while appearing to moderate the volume growth targets in the segment in recognition of some early-stage growing pains.

■ **PRC government acting as a sustainable "market maker"**

Despite these twists and turns on the early path to development of a

vibrant EV market in China, the government remains uniquely committed to taking "market maker" steps to accelerate market growth. These steps include mobilizing capital, structuring regulations, incentivizing state-owned fleet buyers, and – importantly – shaping the direction of foreign investment.

As a result, the dynamic interaction of Chinese manufacturers, foreign OEMs, domestic JV partners, and national and local governments will produce a combination of experimentation, scale and innovation that has a high chance to realize a robust EV market. The government's commitment to development of a vibrant EV market in China is the single-most important factor in overcoming the bumps that inevitably line the road.



To help stimulate growth of this nascent market, China put in motion its unique "market making" powers, and enacted a number of both demand-side and supply-side measures

■ Factors driving China's commitment to the EV market

Policy makers in China had previously recognized the confluence of factors that favored a shift toward the manufacture and sale of a significant volume of EVs in China. These factors include the country's strong drive to move into advanced areas of manufacturing, the opportunity to reduce carbon emissions from automobile tailpipes through EV adoption (assuming renewable energy – not coal-fired – powering of charging stations), and the opportunity for China to dominate the core component of the EV value chain – the batteries.

To help stimulate growth of this market, China applied its unique "market making" powers, and enacted a number of demand-side and supply-side measures. On the demand side, the government moved to stimulate EV purchases of early-stage, local EV prototypes by incentivizing fleet owners of municipal taxi companies, state-owned logistics and transport companies, and government vehicle fleet operators to purchase the vehicles.

Further, China's consumers were also targeted with incentives and subsidies. In Shanghai for example, potential buyers of new energy vehi-

cles were given an option. Purchase a traditional, internal combustion engine automobile and endure the lengthy and expensive lottery process in the hopes of one day legally operating the car on the road. Or, become the beneficiary of the fast-track, nominal fee, licensing procedures accorded to purchasers of EVs. This represented a dramatic choice that would certainly weigh heavily in favor of EVs.

■ Quality improvements and innovative growth strategies – the role for foreign manufacturers

Additionally, concerned by the consumer perception impact of the relatively low base quality of much of the domestic manufacturing to date, Beijing began to act again in its "market maker" role, this time targeting the foreign OEMs. Initially, regulators

“ While neither the policy path nor consumer market behavior has been smooth or predictable to date, each company recognizes the unwavering commitment of the China government to developing new energy advanced automobile manufacturing ”

made some bold but vague statements about the technology transfer requirements that would be required for foreign auto manufacturers operating under the required JV structures in China.

Later, Beijing began to accelerate its push on foreign manufacturers to increase their share of new energy vehicle production in China, requiring these manufacturers to produce a minimum of eight per-

cent of their total production volume as hybrid-electric or electric cars beginning in 2018. Discussions with auto company leaders in China indicate this content share is expected to rise progressively in the coming years to 25-30% of production, and perhaps significantly more.

This led to a series of rapid fire announcements from manufacturers including VW, GM, Ford, Toyota and Honda, all making significant product launch announcements in the area of new energy vehicles for the China market. While neither the policy path nor consumer market behavior has been smooth or predictable to date, each company recognizes the unwavering commitment of the China government to developing new energy advanced automobile manufacturing, and doing so as a core component of a national carbon footprint reduction strategy. That said, many companies have also expressed a need for ongoing collaboration with regard to government policy, such that products can be introduced in line with improvements in battery technology and car range.

■ The risk of being sidelined in China market development

The case of Toyota in China bears special mention, as the company has been well known for backing hydrogen fuel-cell power over electric power in its new energy vehicle strategy. Ultimately the "market maker" power of China appears to have convinced company executives of the need to create an electrification strategy for the market. In short, the opportunities that will arise in the China EV market require entry and experimentation now, as the risks of being left on the sidelines in China – and perhaps globally as a result – are simply too high.

So what bends in the road might we expect in the near future? First, as the events of the last few months have shown, even where policy experimentation may create market flaws and distortions on both the production and the consumer side, particularly in early stages, we can expect the China gov-

ernment to remain focused on arriving at the end destination of a robust EV market in China. Billions of dollars of foreign and local investment are now lined up in this direction, with the hand of the central government pushing in the background.

Secondly, we can expect that city-based experimentation with the infrastructure and business models required to support expansion of EV will be robust, and vary greatly across cities and regions. Integrating EV charging stations into multi-modal transport that seamlessly transitions from airports, high-speed rail, metros, and even bike-sharing transport models will have local – not national – answers.

Lastly, EV in China sits squarely within the revolutionary environment of autonomous driving and mobility as a service that is sweeping the industry globally. China's "market maker" influence will certainly need to take account of these trends. But answers to future state busi-

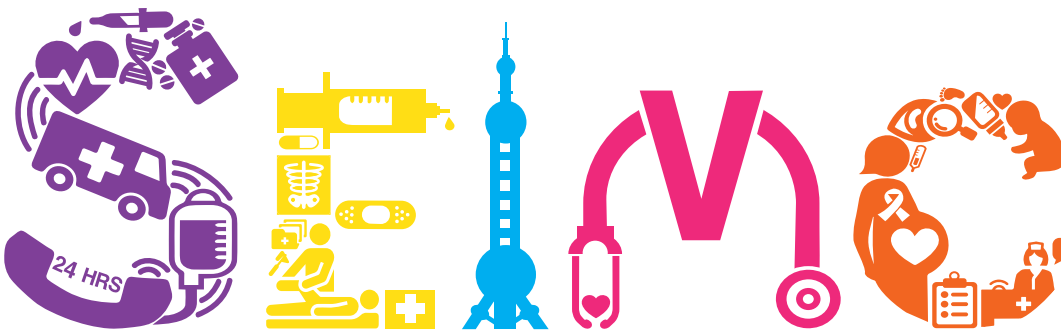


▲ The green stamp of approval

ness model questions will not come from plans hatched in government bureaucrat offices. They will come bottom-up, through consumer- and city-oriented market experimentation, driven by the most innovative manufacturers working with visionary high-tech companies that are being integrated more deeply into the

automobile as a platform for services and convenience.

Balancing broad policy frameworks with capital commitments that foster – not limit – innovation is the crucial art of "market making" for the government in China. We should fasten our seatbelts to watch the story unfold. **I**



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Dealing with China's Debt

By Paul Armstrong-Taylor



PAUL ARMSTRONG-TAYLOR is Professor of Economics at the Hopkins-Nanjing Center where he teaches classes on finance, strategy and the Chinese economy. He has a PhD in Economics from Harvard, and has previously worked at Monitor Group and Morgan Stanley. Paul is the author of *Debt and Distortion: Risks and Reforms in the Chinese Financial System*.

High and rising Chinese debt levels are increasingly seen as a danger not only to Chinese stability but also to the global economy. Addressing this threat requires understanding both the causes of rising debt and its interaction with economic growth, topics about which there is much confusion. This article illuminates these topics and discusses the policy options open to the Chinese government.

■ Cause of rising debt

After being stable at around 120% of GDP prior to 2008, Chinese corporate and household debt has since increased sharply to over 200% of GDP (see the solid green line in figure 1). This sharp increase has raised concerns that borrowing is excessive and may lead to a financial crisis. However, borrowing relative to GDP has, aside from the brief post-crisis stimulus, not increased (see the red dashed line in figure 1). In fact, the increase in debt-to-GDP has not been driven by increased borrowing but rather by declining investment returns.

As long as investment returns exceed interest rates, high levels of borrowing for investment can reduce debt ratios because the investment increases income more than sufficiently to cover the increased debt. Such borrowing is sustainable, and it can form the basis for growth for both firms and

economies. However, if investment returns are lower than the interest rate, debt-financed investment will cause debt to grow faster than income, leading to rising debt ratios. This is not sustainable. At a company, such a policy will eventually lead to bankruptcy; in an economy, it will eventually lead to a financial crisis.

China's rapid growth prior to 2009 was driven by high levels of debt-funded investment, but because this investment earned high returns, income levels increased as fast as debt levels so the debt-to-GDP ratio did not increase. Since 2009, however, the returns on Chinese investment have declined due to decreasing returns to investment (e.g. building high-speed rail lines in increasingly remote places), excess capacity in several key industries (e.g. steel) and increasing use of debt for speculative investment on stocks and, particularly, real estate. Despite these lower returns, borrowing and investment has remained high, which has led to a sharply rising debt to GDP ratio.

■ Tradeoff between growth and financial stability

As investment returns decline, more investment is required to maintain growth. If this investment is funded by debt, the ratio of debt-to-GDP will increase. If, instead, the goal is to stabilize

the debt-to-GDP ratio, then borrowing and investment must decrease, which leads to slower growth. In short, declining investment returns create a tradeoff: either growth must slow or debt-to-GDP ratios must increase.

We can see this tradeoff in the policy changes of the Chinese government. Although it realizes the risk of rising debt, the government seems unwilling to accept the slowdown in growth that is needed to address it. Rough calculations suggest that growth must slow to around 3-4% to stabilize the debt-to-GDP ratio, but the government is unwilling to let growth slow below 6-7%. Concern about debt leads to constraints on lending, but when growth slows these constraints are relaxed and debt starts to grow again.

Easing this tradeoff requires an increased return on investment. One solution is to shift investment from the state sector, where it tends to earn low returns, to the private sector, where returns are higher. However, privatization is ideologically problematic, so this is unlikely to happen on a significant scale. Financial and economic liberalization could also help by empowering the financial sector to channel investment to projects with the highest returns. Unfortunately, progress in this area has been slow. Assuming the return on investment remains low, the tradeoff between growth and debt must eventually be addressed.

Options for dealing with bad debt

Given the scale of the debt and slowing growth, it is inevitable that some debts will not be repaid. This is already happening in industries such as steel, but will become a bigger problem in the future. Bad debt involves losses. The policy options revolve around who pays for those losses and when. Five main options can be used in some way to deal with the bad debt problem.

1. Kick the can down the road

Losses can be delayed by lending to firms even when they cannot repay their old loans. This is politically attractive because it minimizes current pain and, under certain circumstances, it can ease the problem.

China used this policy successfully to deal with the bad debts accumulated by its banks during the 1990s. Those losses were absorbed by asset management companies and funded by bond issues – a form of kicking the can down the road. Nobody has yet taken the losses, but because the interest rate on the bonds has been lower than the growth in the economy, they are now relatively small. In a fast growing economy with low interest rates, kicking the can down the road can work because the bad debt to GDP ratio will shrink over time.

However, if the interest rate on the debt is higher than the growth rate of income, then kicking the can down the road is not sustainable – the debt-to-GDP ratio will spiral out of control. This is the case in China now, with its slower growth and liberalized interest rates. While policy makers may be tempted to try the same trick they used successfully in the past, it's unlikely to work today.

2. Stealth bailout

The other strategy that the Chinese government has historically used to deal with bad debt is the stealth bailout. This involves distorting prices to transfer funds from healthy sectors (mainly households) to those with bad debt. For example, during the early 2000s, interest rates were kept artificially low – often below inflation – which transferred money from savers (mostly households) to borrowers (mostly firms and government).

Distorting prices undermines the government's attempts to liberalize the economy and promote household consumption, and promotes inefficiency that could further lower investment returns. It may also be politically harder to take money from households when their income growth is also slowing.

3. Bailout funded by taxes

The most direct way to address bad debt would be for the government to directly bail out the indebted firms by raising taxes or cutting government spending. Many Western countries bailed out banks or firms after the subprime lending crisis of 2007-2008. This approach has the advantage of addressing the issue in a quick and direct way that allows the financial system and economy to recover without the shadow of bad debt. However, shielding firms from the consequences of bad decisions may promote inefficiency. Moreover, households would likely pay for this bailout as the only sector that can afford to. This would hinder the rebalancing of the economy toward consumption.

4. Bailout funded by asset sales

Perhaps the most attractive option from an economic perspective would

be a bailout funded by sales of government assets. Privatizing state-owned enterprises alone could raise sufficient funds to cover bad debt losses. Not only would this solve the bad debt problem, but it would also improve efficiency by shifting more activity into the private sector. However, vested interests and ideological opposition would make this politically difficult.

5. Allowing bankruptcies

The final option would be for the government to allow overly indebted firms to go bankrupt and investors in those firms to take losses. This would force investors and firms to accept the losses, not only the profits, of investment, which should lead to investment that is more efficient. However, in excess, it can lead to extreme financial and economic disruption. The Great Depression is not something anyone wants to repeat. A severe economic shock could also lead to political instability which the government would want to avoid.

In practice, the government is likely to pursue a combination of different approaches and the results will depend on the mix. A combination of bailouts funded by asset sales (4) and some bankruptcies (5) would probably be best for the economy in the long run. However, these would be ideologically problematic, unpopular with vested interests and would involve considerable short-term pain. Past precedent and the path of least political resistance tilt probabilities toward the other three options. Such options would avoid short-term pain, but do little to improve incentives or promote a transition to a more sustainable growth model. Continuing to kick the can down the road would likely lead to a financial crisis.

The government certainly recognizes the problem, but seems unwilling to accept the slower growth necessary to bring debt under control. As a result, policies to reduce credit growth are introduced, but then relaxed when they start to slow growth. This has resulted in a 'stop-go' economy over the last few years. It is unlikely that growth will be allowed to slow significantly before the leadership transition in the fall, but hopefully decisive action to address the debt problem will be taken soon after. **1**



High and rising Chinese debt levels are increasingly seen as a danger not only to Chinese stability but also to the global economy

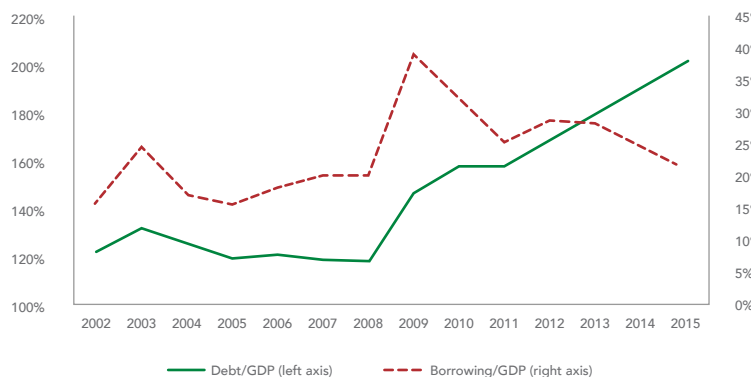


Figure 1:

Why China's New Renewable Energy Targets Lack Ambition

By Huw Slater - China Carbon Forum



Huw Slater is an energy and environmental policy professional based in Beijing, and is currently the research manager at China Carbon Forum. He has published a range of papers and reports on issues including stranded assets in China's coal power sector and the development of carbon pricing. Huw previously worked with Chinese NGO Institute for Environment and Development on climate change adaptation policy, and with an Australian National University research team reporting on Climate Change and Fiscal Policy.



Given the rapid rollout of installed capacity in recent years, the NEA could have afforded to be more ambitious if it chose to

In November 2016, China released its 13th Five Year Plan (FYP) for the power sector (2016–2020). The plan was announced by the National Energy Administration (NEA) and included forecasts for the development of the power sector to 2020. The targets set for renewable energy and coal power capacity had been widely anticipated. But those set out for renewables were lower than expected, while the plan allows for creating an additional 200 Gigawatts (GW) of coal power capacity by 2020.

Given that China usually over-achieves with its renewables targets, it may be more useful to think of the plan as a baseline from which further progress can be made. Indeed, it is useful to compare how the NEA's predictions equate with those of other government agencies. Such a comparison also reveals that the NEA is balancing a range of powerful competing interests.

The plan expects a range of 3.6–4.8% average annual growth in electricity demand between 2016 and 2020. This is higher than predicted by the China Electricity Council (CEC), a sectoral association that released its 2020 power sector forecast in 2016. The CEC suggested a more modest range for growth in power consump-

tion of 3.3–4%.

Recent years have seen a significant slowdown in the growth of electricity demand. Down from a high of 14% average growth per year during the 11th FYP period (2006–2010), in 2015 electricity demand grew by only 0.5–1%. In 2016, demand was up five percent, but according to Greenpeace this was largely due to increased industrial output to supply a government stimulus to the property sector. As the government aims to cool the property market over coming months, this effect is likely to disappear.

This assumed demand explains why the NEA targets for additional coal and gas capacity are much higher than the CEC estimates. By contrast, the NEA targets for thermal power are about the same as the State Grid Corporation's estimates for 2020. State Grid has a vested interest in promoting higher levels of electricity consumption, and its predictions tend to be high for both fossil fuels and renewables.

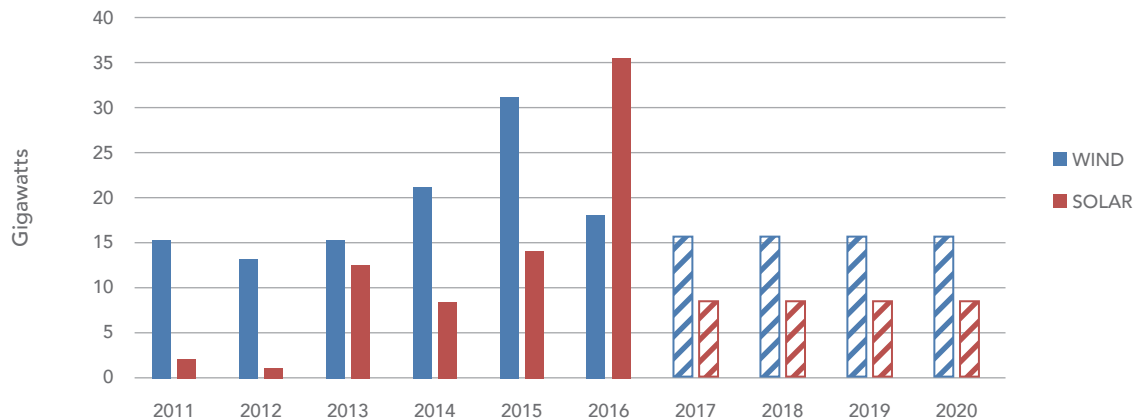
The 200 GW of additional net coal power capacity allowed for in the FYP is on top of significant existing overcapacity in the power sector, particularly in coal power. The thermal power utilisation rate dropped to

47.5% in 2016, down from 66% a decade earlier. While coal prices were low, coal power companies were still able to generate profits and had a spate of new projects approved in 2016.

But with a recent spike in the price of coal, many smaller companies are going to be hit hard by lower demand and increased competition. Taking the FYP's forecast for power demand and additional installed capacity, if so-called 'new energy' sources (China groups nuclear and renewables together) maintain their current level of utilisation, thermal power use will drop even further to 43–47%.

The NEA has acknowledged the need to cut back on the 350 GW of coal power capacity in the pipeline, and made a start with the cancellation of 120 GW of planned or under-construction capacity in January 2017. At the annual session of the National People's Congress in March, Premier Li Keqiang announced plans to close 50 GW of capacity during 2017. It wasn't clear whether the January measures covered this amount, or whether it represented additional efforts. Even so, most analysts consider the plan's target to still be too high. Bloomberg New Energy Finance has suggested that only 150 GW capacity

REQUIRED NEW INSTALLATION TO MEET 13TH FYP TARGETS



There is already significant pushback over the economic implications of coal power plant closures, both from local governments in coal regions and coal companies who are concerned about their profitability

will be added. The NEA's recent actions demonstrate a determination to rein in coal power, but over-capacity is likely to persist for some time yet.

While the FYP targets are high in relation to thermal power, they are low with regard to expectations for renewable energy. The plan sets targets of 210 GW for grid-connected wind capacity and 110 GW for solar by 2020, up from 130 GW and 48 GW in 2015 respectively. This compares with State Grid's prediction of 240 GW for wind and 150 GW for solar, and even more optimistic predictions for wind by other government agencies. Given that 87 GW of wind was already under construction at the end of 2015, this also means that no further construction would need to be started in order to meet the target.

The FYP's renewable targets would require annual capacity additions of about 15 GW for wind and only 8 GW for solar. For wind, this would represent a slower build-out than during each of the last three years, while for solar it would represent less than a quarter of what was achieved during 2016. Such a slowdown seems highly unlikely.

Why is the plan so cautious? Firstly, it was calculated that these targets were sufficient for the power sector to play its part in meeting the goal for renewables to provide 15% of primary energy supply by 2020, as stated in the overall national Five-

Year Plan. At the same time, given the rapid rollout of installed capacity in recent years, the NEA could have afforded to be more ambitious if it chose to. Second, reductions to the feed-in tariffs for wind and solar PV power were announced in 2016, contributing to a reduced rate of installation. Third, while announcing the targets, the NEA stated that it is concerned about "blind expansion" of the solar PV industry. NEA Deputy Director of New Energy Liang Zhipeng said that "for solar PV development, it is not simply a case of the larger the better; the scale and technological progress of solar PV should go together".

Just as important, however, is the fact that there is already significant pushback over the economic implications of coal power plant closures, both from local governments in coal regions and coal companies who are concerned about their profitability. Even greater competition from renewables may be the straw that breaks the camel's back for some plants.

As in many other countries, there is also a conservative mindset in the energy sector, especially within state-owned enterprises (SOEs), which consider coal to be irreplaceable for the foreseeable future. But this attitude underplays the tremendous advances that China is making in driving down the cost of

established renewable energy technologies such as wind and solar, developing promising early-stage technology such as solar thermal, as well as major advances in grid technology which could help to make distant renewable resources accessible to the major demand centers. Grid integration of renewables is still a formidable challenge, but former State Grid chairman Liu Zhenya made waves with a book published in 2015 which outlined a grand plan for a globally-connected electricity grid, bringing renewables online and seamlessly coordinating supply and demand.

The Chinese government is currently pushing forward long-awaited regulatory and pricing reforms in the power sector, and if these are dealt with effectively, renewable energy development should continue to progress rapidly. Communities in some areas will be affected by coal power plant closures. However, this is not a reason for China to scale back its ambition, but rather to more actively support regions which are undergoing transition. **1**

Blindsided by China's March to Clear Waters

By Debra Tan - Director, China Water Risk



China Water Risk (CWR) is dedicated to addressing business & environmental risks arising from China's limited water resources. CWR aims to foster efficient and responsible use of China's water resources by engaging the global business and investment communities. At a micro-level CWR works toward embedding water risks into the financial valuation of companies thereby influencing capital flow to responsible users, and on a macro-level by wedding provincial/national water resource management to economic planning.

Few would drink water out of a tap in China without first filtering or boiling it. And mistrust of tap water has led to a booming market in water filtration systems and a rise in bottled water consumption. Yet most health conscious urbanites still fret about the water they are buying. Statistics about fake bottled and/or carboy water in China are worrying: in 2015, a food safety inspection by China's National Food & Drug Administration revealed that 400 of the 407 beverage samples that failed to meet standards were bottled or carboy water.

The state of China's water resources is grim. The last State of Environment report showed that except for a few pockets, China's overall environment quality worsened in 2015. The share of 'excellent' and 'good' groundwater has deteriorated, shrinking 6.2% over the past five years. As for China's key rivers, there was mixed news. The flagship Water Pollution Prevention & Control Action Plan (also known as the 'Water Ten' plan) set a 2020 target for 70% of the water in seven key river basins to meet Grade I-III water quality. Five of the key rivers in the North are still far from this: Yellow (61.2%), Songhua (65.1%), Huai (54.3%), Hai (42.2%) and Liao (40%). In fact, the overall water quality of the Songhua, Huai, Hai & Liao Rivers deteriorated in 2015. The only bright spot is the improvement in Grade I-III water for

China's key lakes and reservoirs.

The march toward Premier Li Keqiang's vision of "a Beautiful China where the sky is blue, the land is green and the water runs clear" is overdue. But it's not just pollution woes that are worrying; there are concerns over water availability and management. A third of China's arable land lies in water-scarce regions, as do over half of China's coal reserves. But agriculture and coal mining use sizeable amounts of the nation's water: agriculture accounts for 63%, and coal and power generation account for over half the nation's industrial water use. Can China manage its resources to ensure water, food and energy security?

Naturally, the government is concerned and has issued a host of policies on the management of water resources, from national and provincial water quotas, water allocation and efficiency targets for different sectors, pollution prevention and control, and water use and wastewater discharge permits. A tougher Environmental Protection Law has also been introduced, favoring harsher penalties and punitive fines. These policies have boosted investment opportunities ranging from water recycling, rainwater harvesting, irrigation and sponge cities to wastewater and sludge treatment. However, these policies may also have the effect of blindsiding businesses and investors in China and beyond.

At China Water Risk, we look at how water risks impact different industries. To quantify water risk, we obtained feedback from institutional investors and asset owners on various valuation methodologies applied to a variety of listed energy stocks in China. Our survey of over 70 investors last year showed that 43% were taking the survey because they were worried about water risks, yet less than five percent were using tools available to assess water risk.

Some of these tools show that the five listed major power producers in China would face a negative impact on EBITDA margins of -3 to -24% if water was priced properly (See figure 1). More worrying is that almost 100% of the share of coal output from China's five coal majors were extracted from either arid or high and extremely high water stress regions (see figure 2).

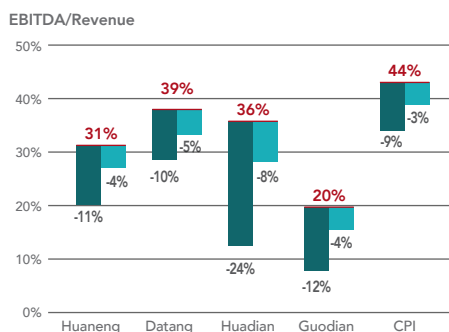
Eighty-five percent of investors surveyed said they were concerned about water risk and almost half reported that they would use existing tools to assess exposure. With government action, investors are starting to recognize regulatory risks as more immediate as well as material. We believe Chinese banks are leading the global charge: ICBC has started stress testing their lending portfolio for changes in environmental pollution regulations for various sectors.



Current EBITDA/Revenue

Tool#2WRM
Tool#1CBWCRT

Potential loss of profitability due to water risks

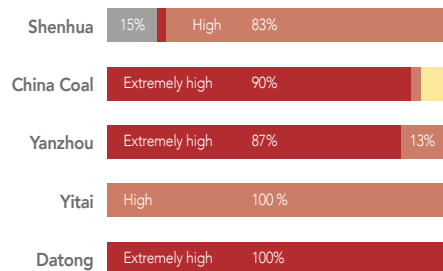


Source: China Water Risk based on companies' annual reports, own water use estimations
Valuation tools are the Water Risk Monetizer (WRM) and the Corporate Bond Water Risk Tool (CBWCRT)



Baseline Water Stress

Low (<10%)
Low to medium (10-20%)
Medium to high (20-40%)
High (40-80%)
Extremely high (>80%)
Arid & low water use



Source: China Water Risk based on companies' annual reports and WRI China Baseline Water Stress map

Earlier this year, the China Green Finance Committee invited us along with ICBC to present on water risk valuation at the People's Bank of China in a half-day workshop aimed at quantifying environmental risk, raising the possibility that water risk may be embedded sooner rather than later in financial valuations and lending rates.

Sometimes the risks are not so obvious. For example, the textiles and clothing industry is among the top three largest industrial users and polluters of water in China. Many people are unaware that textile manufacturing discharges more waste water than China's entire coal industry. Not surprisingly, it is the most targeted industry in the Water Ten plan. We estimate that almost 90% of factories could face shutdown if they fail to meet the more stringent standards.

Here again, it is not just pollution. Global brands which believe they have side-stepped this problem by moving their sewing and/or dyeing and finishing outside of China may have to think again. The fashion industry sources large quantities of raw materials from China, including cotton, hides, chemical fibers, wool and silk. New research has surfaced indicating that the cotton trade has caused the over-extraction of groundwater in Pakistan, India and the United States. In China, a quarter of cotton is grown in the parched North China Plain, and another 63% in arid Xinjiang. As China responds to this by removing cotton subsidies from the over-abstracted North China Plain, it is not clear if global brands have formulated a true mitigation strategy for water risks in upstream fashion raw materials sourcing. Common sense would dictate that if regulations fostering the growth of fast fashion changed, the business model would also change. Since it is also unreasonable to think that other governments will not act to pre-

serve their aquifers, are C-suite executives of brands doing enough to protect shareholder interest?

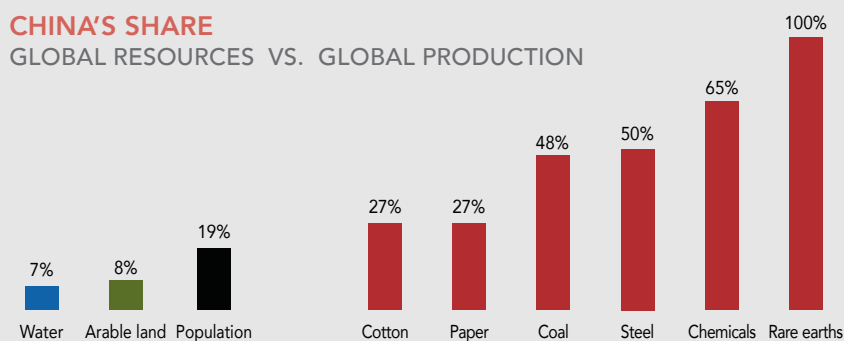
Another hidden risk comes from rare earths. Not long ago, there was global concern over the supply of rare earths, which are overwhelmingly sourced from China, when it cut its export quotas, citing environmental concerns. Complaints were brought to the WTO, which ruled against China, and today these fears have subsided. But China still supplies 85% of global rare earths crucial to most electronics, smart tech and defense industries. Even more concerning is that some heavy rare earth elements are still 100% sourced from China.

Today, the environmental cost of mining rare earths remains hefty with water pollution and soil remediation. Moreover, clean-up efforts are hampered by the existence of illegal mining and a global black market. The electronics industry has yet to form a responsible sourcing platform for these elements. Reputational risk aside, the question of whether the pursuit of a Beautiful China will impact future rare earth supplies should be addressed. What about China's rising domestic demand?

In our rare earth report published last year, we estimated that China may not have enough to supply itself as early as 2020, as it develops its advanced manufacturing, renewables, energy savings and electric vehicle industries.

We live in a resource-constrained world. In Asia, the limiting resource is water. In China, we expect the government to continue to drive action in 2017 with holistic resource management and economic policy making at the river basin level. We call this "water-nomics," and strategies for the Yangtze River Economic Belt, which carry 42% of China's GDP, are laid out in a brief we co-authored with the Foreign Economic Cooperation Office of the Ministry of Environmental Protection. Limited water will dictate industrial and crop mix – the new mantra is more GDP-per-drop, more crop-per-drop, more jobs-per-drop. Upstream actions affect those downstream; which industries are located where matters. The bottom line is: decisions today matter for water tomorrow. But decisions that are good for China may be black swans for others. It's best in this changing landscape to know your water risk. **1**

CHINA'S SHARE GLOBAL RESOURCES VS. GLOBAL PRODUCTION



Source: China Water Risk based on FAO, SYNTAC, NBSC, BP ©China Water Risk, 2017

Understanding China's Cyber Security Law:

Objectives, compliance and business recommendations



Tom Groom is an AmCham member and managing director of D4 Shanghai who provides leading edge information search technology running on servers located in China. D4 supports law firms and corporations as they deal with China's cybersecurity regulations, regulatory and internal investigations, and cross-border litigation. D4 has been an industry leader in the U.S. for the past 20 years.



China's view of cyber security is all encompassing because to China, cyber security equals national security

In June 2013, Edward Snowden revealed to the world that governments were actively collecting information on their citizens. That revelation spawned global cyber awareness, prompting the EU, Japan and the U.S. to establish Cyber Security Acts. Now it is China's turn, which is going one step further by establishing China's cyber sovereignty – exercising total control over data within its borders. China's Cyber Security Law is set to go into effect on June 1, 2017.

■ China's Cyber Security Law

China's view of cyber security is all encompassing because to China, cyber security equals national security. While most countries view cyber security as primarily focused on protecting critical servers, China protects the servers as well as the data that is stored, transmitted by, or created on the servers. China's primary challenge is that political boundaries in cyberspace are hard to define and control. Another challenge is that the nature

of data is hard to predict and contain. China's cyber security law attempts to address these issues, and outlines how the government will manage the process. The law was created as more of a framework and China will spend the next several months publishing implementation policies and rules outlining how foreign and domestic companies will need to modify their operations to comply.

■ Key components of China's Cyber Security Law

The primary components of China's cyber security law include:

1. Define and establish requirements for organizations that are deemed as Critical Information Infrastructure (CII)
2. Define and implement Cyber Security Review methodologies and protocols

(The original name National Security Review was changed to "Cyber" Security Review to underscore the importance of securing

China's cyberspace.)

3. Provide technical support to China's security agencies and regulators
4. Encourage data localization

■ Defining critical information infrastructure organizations

The most contentious item of the framework concerns how to define which organizations are considered to be *Critical Information Infrastructure* (CII). The first draft provided examples of CII organizations as:

Companies that provide network infrastructures within China for:

1. Public telecommunications and media broadcasting;
2. Key industries, such as energy, transportation, water resources and finance;
3. Public services, such as the supply of electricity, water, gas, healthcare and social security services;
4. Military and government agen-



This strategy is part of President Xi's vision for the world to accept and respect China's internet governance and cyber sovereignty

cies above the municipal level; and 5. Network services used by a "very large" number of users.

However, the law's final draft replaced concrete CII examples with a more general definition that broadened the scope. The final draft defines CIIs as:

Public communication and information services, power, traffic, water, finance, public service, electronic governance and other critical information infrastructure that if destroyed, degraded or vulnerable to leaks might endanger national security and the country's economy, as well as people's livelihood and the public interest.

Missing from the final draft are the specific definitions of "national security, country's economy, people's livelihood, or the public interest," as well as under what circumstances they could be "endangered." The final draft also delegates responsibility for further definition to the State Council, China's highest governmental body. Until the State Council provides clarity to define CII, multinational companies face uncertainty regarding whether or not they need to comply.

Organizations that might qualify as a CII should note that China's cyber security approach will look for data localization first, and CII organizations that do not localize their data are unlikely to pass a Cyber Security Review. Consequences could include the loss of their business license in mainland China, jail time for local executives or, at the very least, the government could impede the ability of the organization to successfully conduct business in China.

■ Will non-Chinese companies ever be considered CII?

The government is starting to identify which companies are CII priorities. For example, unless a non-Chinese company has over one million users or customers, they initially aren't likely to be considered as CII. Still, China "encourages" all companies to keep China data in-country, especially if the data contains per-

sonal information, sensitive data or state secrets. Regarding how cloud-based solutions will be treated, one of the presenters said that the language of the law does allow for the CII scope to include applications like Salesforce and LinkedIn. Though China regulators have stated they would not expand the CII scope this far, that principle isn't stated in the law. WeChat has a greater likelihood to fall under CII because it has a large user-base and impacts the public interest.

■ China's cyber security review

On February 4, 2017, The Cyber-space Administration of China (CAC) provided their guidelines of what a Cyber Security Review will require. The CAC proposed a two-tier approach to prioritize which organizations need to comply with the cyber security regulations. The first tier includes government agencies, Communist Party organizations, and key sector organizations that are not permitted to acquire network products and/or services from CII operators who have not passed the Cybersecurity Review. In other words, organizations doing business with the Chinese government need to comply. The second tier includes finance, telecommunications, and energy organizations.

One of the key components in the Cyber Security Review will be to inspect how "secure and controllable" an organization protects their products and services. The intent is to determine what the organization has in place to mitigate the following:

- Personnel risks involving *research and development, delivery, and technical support*
- Products or services risks associated with *unlawfully controlled, interfered with, or interrupted by another organization*
- User reliance risks as a means to *engage in unfair competitive practices or otherwise harm consumers*
- The means for an organization to *illegally collect, store, process, or utilize users' data*

China's "secure and controllable" component goes beyond guard-

ing the servers and infrastructure against intrusion, hacking, or interference, and encompasses protecting consumers and their data, regardless of where it resides in the world.

■ Cyber security recommendations for businesses in China

Determine who is in charge of cyber security at your company. This needs to be someone in the C-suite. It isn't just about intrusion detection anymore.

1. Develop a corporate culture around cyber security involving all employees, not just IT.
2. Self monitor, evaluate and prepare for when your organization is audited as part of a China Cyber Security Review.
3. Secure local support. China will fight to protect data that is currently on or created on CII and it would be wise to consider local support should that data be involved in a regulatory or internal investigation, as well as any cross border litigation dispute.

■ Implement holistic information governance policies

Cyber security isn't just about China; it's about implementing a global plan for Information Governance. China is only one of the countries you must consider. If your plan is holistic, you'll be prepared for when your organization is subject to a cyber security review in China or elsewhere.

China is moving quickly to establish its cyber security protocols, partly to provide a model for other countries to use as they develop their respective cyber borders. This strategy is part of President Xi's vision for the world to accept and respect China's internet governance and cyber sovereignty. **1**



2017
AmCham Shanghai
Future of Food
Conference



2017 AmCham Shanghai Future of Food Conference

AmCham Shanghai's 2017 Food Industry Conference will focus on what the impact of new food production and product innovation, traceability and technology, food safety and fraud concerns, consumer marketing and new business models will mean for the future of China's food, agricultural, and beverage industry, as well as the average Chinese consumer.

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08:00 - 17:00**

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For event information, please email steven.bielinski@amcham-shanghai.org

Members question the outlook and challenges ahead for the Chinese economy



AmCham Shanghai



Secretary William Cohen discusses key factors driving Trump's Asia policy



Preprandial persiflage



AmCham Shanghai hosts 2nd annual HeforSHe conference in support of the UN's campaign to end gender inequality



The annual Barnett-Oksenberg lecture this year highlighted U.S.-North Korea relations



A briefing on Taiwanese identity and its role in U.S.-China relations



Harry Harding and Shirley Lin discuss the precarious side of cross-strait dilemmas

Month in Pictures



A panel discussion on the critical role the sports industry plays in China's development



AmCham Shanghai takes a closer look at accelerators in China



Articulating the Chinese view on the recent Xi-Trump meeting

Event Report

FORMER U.S. DEFENSE SECRETARY WILLIAM J. PERRY DELIVERS ANNUAL BARNETT-OKSENBERG LECTURE

On March 21st, William J. Perry, former U.S. Secretary of Defense and now Professor Emeritus at Stanford University, gave the annual Barnett-Oksenberg lecture on Sino-American relations. Mr. Perry's talk, broadly titled Possible Flashpoints in the Asia Pacific Region, focused on the seemingly intractable problem of North Korea and its growing nuclear capability.

Speaking to an audience of over 300 people, Mr. Perry said that American (and Chinese) efforts to bring North Korea to the bargaining table should continue, but he stressed that this required a change in negotiating strategy.

"We must deal with North Korea as it is, and not as we should wish it to be," urged Mr. Perry. He also said that the United States should not base its diplomacy on the idea that North Korea will give up its nuclear weapons.

A veteran of earlier talks with North Korea, Mr. Perry said that a failure to understand North Korea's goals had led to fruitless negotiations. He also emphasized that the parade of incentives and disincentives that U.S. negotiators tried to use 16 years ago were no longer valid.

Mr. Perry defined North Korea's current goals as: (1) sustaining the Kim dynasty, (2) gaining international respect, and (3) improving its economy. Perry argued that the country's nuclear program allowed it to achieve the first two but offered no hope of the third.



▲ Former U.S. Defense Secretary William Perry

Mr. Perry disabused the audience of the commonly held belief that North Korea is a suicidal and reckless state, instead positing that there is logic behind Pyongyang's policies. However, he said that the danger of North Korea overplaying its hand and blundering into a war with South Korea and/or the United States would be devastating for all parties, and possibly also Japan.

Major General Yao Yunzhu of the People's Liberation Army offered some counterpoints to Mr. Perry's speech, saying that

the U.S. had mistakenly pursued not just a denuclearized North Korea but also regime change. She labeled the Obama administration's patience with North Korea as a "kind of strategic inaction."

The major general agreed with Dr. Perry's proposal for using a blend of incentives and disincentives in negotiating with North Korea, with her proposed mix including a U.S. offer of security assurance to the North Koreans.



▲ Four wise men

APRIL MONTHLY MEMBER BRIEFING ON THE U.S.-CHINA BILATERAL RELATIONSHIP

AmCham Shanghai held its monthly member briefing on Tuesday, April 11th, at the Four Seasons Hotel. The event featured guest speakers Hanscom Smith, Consul General at the U.S. Consulate in Shanghai, Kent Kedl, Senior Partner at Control Risks Greater China and North Asia, and Zhixin Zhang, research fellow at the Center for Asia-Pacific Studies and Assistant Director of the Institute of Taiwan, Hong Kong and Macao Studies, Shanghai Institutes for International Studies (SIIS).

The event opened with Consul General Smith providing remarks on the U.S.-China bilateral relationship. The other guests then joined him on stage for a panel discussion moderated by AmCham Shanghai President Ken Jarrett. The main theme was the recent meeting between President Trump and President Xi, and covered topics ranging from trade relations, North Korea and recent U.S. actions in Syria to how the two countries' media covered the meeting and the significance – if any – of the meeting being held in Florida rather than at the White House. The session closed with a spirited Q&A that dug deeper into these issues and their implications for the business community in China. 1

Record Setting Attendance at AmCham Shanghai's 2nd HeForShe Conference

MORE THAN 230 LEADERS COME TOGETHER TO DISCUSS SOLUTIONS FOR ADVANCING GENDER DIVERSITY

AmCham Shanghai, supported by their Women's Executive Network Committee (WEN), proudly hosted the 2nd annual HeForShe Conference on March 28th, 2017, at the Portman Ritz-Carlton Hotel in support of the UN's campaign to end gender inequality. With the theme of "Paving the Way to the Top - Solutions for Advancing Gender Diversity", this year's conference was focused on corporate responses making a real difference and welcomed 230 leaders to learn what companies including Gap, P&G, GE, Baidu, Johnson & Johnson, EF, Grant Thornton, EY, General Motors, DLA Piper, Bayer and Wells Fargo Bank are doing to create change.



▲ Sharing insights on advancing women

Attendees heard from leaders on a variety of topics, including how to increase the number of women leaders in China, how to make greater gender equality goals part of company culture, and how to jumpstart programs and policies that promote women in the professional services sector, as well as in traditionally male-dominated STEM (science, technology, engineering, and math) industries.

Panelists agreed that diversity is about more than gender alone, and that when men and women feel comfortable bringing their authentic selves to work, companies and brands are able to excel and better understand their customers and clients. Using metrics for measuring and achieving success, components of equality can be tracked. These include equal pay for equal work, and having an equitable distribution of senior leaders from both genders making strategic business decisions.

To reach greater gender parity at the executive level it is also important to identify the right female raw talent early on, including giving more women the opportunity to serve on boards and in other senior advisory roles. Companies often lose talent because women feel pressured to stay at home, or feel they cannot have both a successful career and home life.

Potential solutions include giving mothers the ability to work where they choose, whether home or elsewhere, including even part-time just a few days a week; as well as focusing on results and not merely office based work hours.



▲ A packed house

Childcare is also one of the biggest challenges for working women and mothers, as well as the pressure to get married at an early age in China. Giving men and women the freedom and flexibility to take care of their family, bringing their full and authentic self to the office, and setting up talent councils and affinity groups to cultivate female leaders and ensure a female leadership pipeline is also important.

While in the U.S. the challenge lies more in increasing number of girls studying STEM at university level, for China, the challenge is more in advancing the large number of women in STEM to more senior levels.

Speakers agreed that when women have role models and mentors for success at the senior level, believe in themselves, and are willing to harness their passion into taking more career risks, they are set to truly succeed in business. ¹



▲ Norbert Ehlert talks about the P&G way

Member Focus

Q&A with Jing Nealis

Jing Nealis is the managing director and CFO of the International Division at Shunfeng International Clean Energy Limited (SFCE) listed in Hong Kong. She is a member of the Board of Directors for all major subsidiaries and investments SFCE holds outside of China. Prior to joining SFCE, Nealis served multinational corporations at the Deloitte offices in Chicago, Shanghai and Hong Kong.



You lived in the U.S. for some time before returning to China, what prompted the switch?

I came back to China in 2009. I was with Deloitte, in the States, and China outbound investment had started to take off. There were many green field investments in the U.S. by Chinese state-owned enterprises and the Chinese private sector. I was sent back to help Deloitte capture those business opportunities, and help Chinese companies to go overseas.

I am from China but lived and was educated in the States for many years. I thought I could serve as a bridge between the U.S. and China, and helping Chinese companies go global would help me grow personally and professionally. It turned out to be the right decision. The market has been growing fast, companies have been going global. There have been many mergers and acquisitions in the last seven years and I have been involved in a lot of those. One of my big projects at Deloitte was with Tianjin Pipe, building their seamless pipe manufacturing plant in Texas. It was billions of dollars in green field investment, and they decided to manufacture locally. We helped them with everything, from financial planning to taxes.

You previously worked in an established industry (accounting) but are now a CFO in what is still a relatively young sector (environmental technology). What are the most striking differences between the two?

Working as a corporate CFO involves being an advisor to a CEO and the board. In consulting, you are always taking on different projects and are not necessarily focused on the day to day management of a company. You have much more decision making power as a CFO, but you have much more flexibility as a consultant.

What are the greatest challenges to managing in an environmentally focused industry in a place like China?

It is hard to say, because for clean energy we are in the right place at the right time. The Chinese government is super supportive. They are coming up with different incentives. It really didn't have these incentives until 2013; before that, we exported 90% of our products to the U.S., Europe, Japan, etc. There was not much domestic consumption of solar power, because solar is an industry that requires government subsidies, as it is still more expensive than coal.

The U.S., Germany, Spain, and France; they are obviously pioneers of moving toward low carbon, but China just started that in 2013. We are in the right place at the right time, but there are challenges such as managing expectations and the process of doing things, especially because the downstream business for solar in China is new.

In the past three years, China has become the largest country for new solar installations in the world. The growth is rapid, and you face lots of challenges when managing that growth; from process, financing, to making sure things are done properly. But when you grow fast, some of the back or front office management cannot go as fast as the market. From a management perspective, that can be a challenge.

Shunfeng International Clean Energy Ltd. has recently acquired a number of overseas assets. What are the forces propelling those acquisitions?

Since 2014, we've been transitioning from a manufacturer of solar products to a clean energy service provider. We are making acquisitions overseas to buy companies with the expertise or technology to provide services or solutions, particularly in the solar industry. For example, we acquired meteocontrol in

Germany. They are the largest independent solar monitoring company in the world. Founded in the 1970s, they grew with the German solar market.

This is something China will need in the future, because with more and more solar farms being installed, and with the solar assets management monitoring of this solar power, the internet of solution management-related things is becoming very important. For a company like ours - a private company listed on the Hong Kong exchange - we are transitioning into a service provider because the state-owned enterprises probably have an advantage over us when owning assets that require a lot of capital. The cost of financing is different for SOEs than it is for us. So our strategy is to grow from a manufacturer into a service provider. Our acquisitions all revolve around acquiring companies with the engineering capabilities, the solutions, and the knowhow to match our strategy.

Shunfeng has recently expanded its footprint to include a presence in Europe and the United States. How do you handle the demands of leading in a company with such an international reach?

Our strategy is: when we have bought a company overseas, such as in Germany, Australia or Japan, we engage local management teams. We don't send general managers to manage the Germans, for example. From a finance perspective, my role is to set up a reliable process and best practices within different subsidiaries, so that they are under control from a budgeting and financial analysis perspective. But we allow the local general managers and managing directors to run their business within the scope of the agreed strategies and plan. For me, it's about managing from a liquidity, treasury, and reporting compliance and control perspective.

Has the Trump Administration's apparent rejection of global leadership concerning environmental protection changed Shunfeng's strategy at all?

When Trump became President, this was not good news for clean energy. But now that people have calmed down and thought things through, and now that he has published his energy plan, it is clear that he is about traditional energy. I think from the solar industry perspective, there might not be a gigantic impact. Solar is an established industry, with the whole supply chain/value chain, and solar is becoming cheaper and we are reaching the point where we will be at grid parity with coal very soon. I don't know whether he will cut the ITC (Solar Investment Tax Credit), that's something no one knows right now.

The U.S. market for installation probably will drop, compared to last year. Last year was a great year; it was the highest installation rate since inception. The U.S. market had 16 gigawatts of installation, the second highest in the world.

This year, it will most likely come down. On a high level, it doesn't impact us that much because we are not very U.S.-centric. Having said this, the U.S. has quite an established solar industry which employs lots of people and creates value.

Xi Jinping's Davos speech seemed to call for greater action regarding climate change, how does this affect Shunfeng's operations?

Since 2013, the government has been putting out different incentives to promote installation of solar. It is paying a subsidy on top of the standard electricity price. For investors, then, it makes more sense to invest in solar, because the electricity payment would be more, since the government is actually paying a subsidy. That's how Germany and other places pick up on solar installation.

The government's goal for annual installation is around 20 gigawatts per year, and Xi Jinping recently said that in the next five years the goal is to add 100 gigawatts, which is huge. The U.S. market last year for installation was 16 gigawatts, and it is coming down. In contrast, in China, last year, I think by June there were already more than 20 gigawatts installed. So first, the government is setting a goal for solar installation, and pairing it with subsidies, so as to give investors incentives to invest their money into solar projects as a long term investment.



▲ Shunfeng solar-powered San Francisco airport

Rooftop solar is getting popular as well, which we call distributed power. It is not a big power plant on the ground, but rather, on somebody's roof. This is well developed in the U.S. and in Europe, but China, starting from last year, began giving very good rooftop-distributed generation subsidies as well. Now it makes more sense for people who are manufacturers or whoever owns their roof to have a rooftop solar unit generating electricity from the sunshine rather than taking electricity that is generated from coal. It is a supplemental energy provider to traditional coal energy.



▲ Google solar roof

through a leasing structure. So there are many ways to finance green projects.

China recently announced a new standard for promotion of officials that emphasizes commitment to environmentalism over economic growth. Do you foresee this changing the power infrastructure mix?

Now that government officials' KPIs (Key Performance Indicators) are linked to environmental issues, it certainly gives them much more incentive to do so. However there are issues that persist. For instance, it is very hard to shut off a coal plant, because once you do, it becomes very expensive to turn it back on. So they are kept on in order to have a guaranteed supply. **I**

How does the government's push for green financing affect businesses such as yours?

The government is hoping more private capital will go into green projects; also, financing institutions, whether bank or nonbank, are very actively involved. I think almost every bank has departments responsible for green financing. Further, different provinces have set up green energy funds. For instance, at today's event (at AmCham Shanghai), representatives of a company from Anhui province were able to set up a financial leasing company through which they can finance green projects

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Join Today

Committee Chair's Corner

An Essay by Michael J. Rosenthal

Founder, U.S. Green Solutions

Chairman, Amcham Shanghai Environmental Committee



I vividly remember celebrating the first Earth Day as a student on April 22, 1970, and the sense of excitement about a bright and clean future. But within a few years there was great turmoil when the major industrial countries of the world faced petroleum shortages, resulting in stagnant growth and elevated fuel prices, with the worst years in 1973 and 1979. During this period known as the "Energy Crisis" it was common to watch television news reports showing cars waiting in lines at fuel stations for hours, or even days, to get motor fuel.

On July 15, 1979, U.S. President Jimmy Carter gave his address to the nation on energy and national goals in which he stated how the country would create clear goals to reduce its dependence on foreign oil. In part he said: "To give us energy security, I am asking for the most massive peacetime commitment of funds and resources in our nation's history to develop America's own alternative sources of fuel - from coal, from oil shale, from plant products for gasohol, from unconventional gas, from the sun," and that he was "proposing a bold conservation program to involve every state, county, and city and every average American in our energy battle. This effort will permit you to build conservation into your homes and your lives at a cost you can afford."

It seemed that the U.S., along with other countries throughout the world, would do whatever was required to solve our problems with conservation of resources and renewable energies. However, the price of fuel eventually fell, new environmental technologies did not mature as fast as hoped, and the result was a loss of willpower to take action. The promise of overhauling the energy regime in the U.S. slowly faded into the background. In the meantime, mankind continued to globalize and consumer demand for products and services increased. It has become all too evident how manmade pollutants due to industrialization, and poor maintenance of our planet, have negatively affected the air, soil and water, creating serious consequences for the environment. All one need do is look to the sky to see the effects, and the air quality can be monitored real time on our mobile phones to see whether the air is unhealthy for our bodies. Most scientists agree that the increased volumes of carbon dioxide and other greenhouse gases released by the burning of fossil fuels, land clearing, agriculture, and other human activities, have resulted in serious variations to

the earth's weather, and are a significant and imminent threat to the health of the planet and its inhabitants. Scientists have been aware of the potentially serious effects on our planet for quite some time. In November 1965 climate scientists summarized the risks associated with rising carbon pollution in a report for then U.S. President Lyndon Johnson.

This issue of AmCham's *Insight* magazine has a variety of articles about business and the environment, and in particular the U.S. and China, together the world's largest emitters of carbon pollution. As noted by Barbara Finamore and Alvin Lin of the NRDC, both countries have been making progress toward solving our environmental problems, although it now appears the U.S. is ceding its role as the global climate leader to China. "The Communist Party rightly views environmental degradation as an existential threat, and a wave of upgrades to regulations and improving enforcement are catching many companies off guard," says Tristan Edmondson, general manager of Carnstone's Shanghai office.



▲ 1971 Earth Day – activism before the internet

As one would expect, Chinese environmental leadership not only protects the environment but provides opportunities that are advantageous for the China economy. "The Chinese government is currently pushing forward long-awaited regulatory and pricing reforms in the power sector, and if these are dealt with effectively, renewable energy development should continue to progress rapidly," says Huw Slater of the China Carbon Forum, while at the same time "tremendous advances that

China is making in driving down the cost of established renewable energy technologies such as wind and solar, developing promising early-stage technology such as solar thermal, as well as major advances in grid technology which could help to make distant renewable resources accessible to the major demand centers."



▲ Rosenthal at the recent AmCham Shanghai Earth Day event

Jennifer Ye of PwC of writes that "Policymakers, looking to encourage environmentally and socially responsible investment, developed green bonds as a tool to mobilize the global investment community and spur green growth and development."

Elsewhere, lofty pollution reduction goals have been set, and impressive progress has been made, says David Hicks. The first step in the process is monitoring, and Thermo Fisher Scientific China, has been successfully providing products for monitoring air, water and soil. According to Hicks: "As public awareness of pollution has increased, so too has interest in monitoring and abating pollution in private homes." He notes that "companies like Honeywell, a multinational conglomerate, are successfully marketing consumer-grade air and water purification products for their smart home strategy." Other businesses are focusing on taking traditional products and making them more environmental. Interface claims to have the lowest carbon footprint product in the carpet tile industry through its intelligent product design, choice of raw materials, manufacturing process, shipping, and end-of-life recycling.

Additionally, technology is now allowing us to utilize the shared economy as never before, as proven by the rise of Uber and Didi DaChe. Mobike, as well as roughly 30 other bike sharing startups, already operate within China. These could have a significant impact on carbon emissions, which could drop by 11% if 14% of travel in the world's cities were to be by bike in 2050. Especially in China, which is already the world's largest automobile market. And while there are still challenges ahead, China is becoming a leader in the electric vehicle (EV) market thanks to government "market making" policies, which are pushing both domestic and foreign manufacturers to seriously retool their thinking toward an electric-based future, writes KPMG's David Frey. It won't just be government directives that drive these changes. Consumers and China's increasingly in-

novative technology companies will play a major role in this transition.

Of course it is not just about China and the U.S. Countries throughout the world are making progress toward a cleaner future. Cities like Reykjavik, Vancouver and Copenhagen have a significant percentage of their energy needs met by renewable power. In the U.S., notwithstanding national politics, cities are moving ahead with energy-saving steps, such as bike-sharing, tougher building codes, electric vehicle charging stations and cool roofs. Burlington, Vermont, was the first U.S. city to run on 100% renewable electricity, and others soon followed. There is hope that one day we will all live in eco cities with green design, rooftop or community gardens, recycling, waste to energy, sustainable building practices, solar, wind and other alternative energies, public transportation, car-free, walkability, work-live-play environment, and a close proximity to nature.

Now, close to half a century since the energy crisis, we are witnessing an incredible renaissance of accessible and affordable environmental solutions. Companies are forging ahead with new innovations and technologies with or without government support. Many environmental solutions are cost saving and simply make business sense. For example, why would any company even think of installing traditional light bulbs, when they could use LED lights which last longer and use just a small fraction of the power. In recent years, prices for solar systems have plummeted due to mass production and increased competition amid growing demand, which combined with government incentives make solar an extremely viable solution.

Since its founding in 1915, AmCham Shanghai, now known as the "Voice of American Business" in China, strives to be the leading international business association in China. Its mission is to support the success of its members by promoting a healthy business environment in China, strengthening U.S.-China commercial ties and providing high-quality business information and resources. AmCham Shanghai's 18 industry-specific committees are intrinsic to the Chamber's mission of promoting a healthy business environment for American companies operating in China. The Environmental Committee has held a wide variety of events from green finance to eco-tourism, and holds an Earth Day Fair every year. However, the Earth Day that we celebrate these days at AmCham Shanghai is far different from that which I first experienced in 1970. Instead of considering businesses to be part of the problem, it is now evident that businesses are the way forward. Our Earth Day Fair celebrates those companies, and organizations, that are leading us toward a cleaner future. In the end, it will be businesses that solve the problems which have been caused by businesses, and economics will drive that change. While our planet is truly feeling the strain of humanity's activities, it is also an exciting time of innovation and change that can give us all hope about the future for our world. **I**

Ethics Committee

Like many institutions and businesses, AmCham Shanghai has an Ethics Committee to ensure that members have a channel via which they can communicate any concerns they have about the behavior or integrity of either Chamber members or staff. Holding our members and staff to a high ethical standard not only protects the Chamber's reputation but also enhances the membership experience for all.

Not all members are aware of the Committee's existence, so we have dedicated this page to giving you a brief explanation of its purpose, its members, and the procedure by which you can bring concerns to the Committee's attention.

Underpinning the Ethics Committee is a belief that American businesses should succeed commercially but only while imbuing both their working practices and employees with sound moral principles.

"Doing the right thing the right way is a hallmark of American businesses around the world. It is at the core of American values and ethics. It inspires our talent and creates pride and fulfillment; it builds our business reputation and fuels success and an acceptance of differentiation," said Pierre Cohade, chairman of the Ethics Committee.

Purpose: The Committee shall provide an independent, confidential channel for any member of AmCham or its staff to report a situation involving AmCham and potentially compromised ethics or core values. Requests for confidentiality shall be honored, so as to protect the positions and reputations of individuals involved.

Procedure: An individual who wishes to raise a matter with the Committee may approach any one of its members. Upon receipt of information that alleges conduct contrary to ethical behavior or the Chamber's core values, the Committee shall take such action, protecting the anonymity of both the source

and other individuals concerned, to determine whether the complaint should be presented to the Officers or Board, as appropriate, of the Chamber. On determining that the allegation is worthy of further investigation or action, the Committee shall notify the Officers or Board of the existence of the allegation and any established facts. The Committee shall thereafter render such assistance as may be requested by the Chamber's management.

Areas of Principal Concern: The Committee shall identify risks to the Chamber from unethical behavior of members and employees as well as investigate allegations relating to unethical behavior or breaches of the Chamber's core values, including but not limited to fraud, theft, corruption, sexual harassment and abuse of authority. In addition, the Committee will entertain complaints related to actions by the Officers, Board of Governors, Committee Chairs/Vice Chairs, AmCham staff or members at large that are alleged to violate the Chamber's Articles of Association, but such complaints after investigation shall be reported to the Officers or Board, as appropriate, for final action.

Members of the Ethics Committee are appointed by the AmCham Shanghai Board of Governors to serve a two-year term, with staggered turnover. Members shall not concurrently participate on either the Nominations and Election Committee (NEC) or the Board of Governors to minimize and reduce potential conflict of interest concerns by the membership. **I**

Members of the Ethics Committee



Pierre Cohade
Chairman (2016-2017)



Arthur Dicker
(2016-2017)



Cecilia Ho
(2017-2018)



Norm Page
(2016-2017)



Tom Ward
(2016-2017)



Christine Yan
(2017-2018)

You may file a report to the Ethics Committee by emailing ethics@amcham-shanghai.org or by mailing a written statement addressed to the Ethics Committee at the AmCham Shanghai office. Verbal reports are not considered valid until they are formally made via email or written statement.

PRESIDENT'S NOTE

After Mar-a-Lago,
Now What?



A handwritten signature in black ink, appearing to read 'Kenneth Jarrett'.

KENNETH JARRETT
President of The American Chamber of
Commerce in Shanghai

President Donald Trump and President Xi Jinping had an early opportunity to size each other up when they met in Florida April 6-7, at what many pundits call the "citrus summit." Given the frequency with which China featured in Trump's campaign rhetoric, and usually not in flattering terms, the Florida meeting was anxiously awaited around the world. Our members were no exception. What do the meeting outcomes tell us about President Trump's China strategy and the future direction of U.S.-China relations?

Both governments worked hard to downplay expectations from the summit, and for good reason. The summit occurred at an early point in the Trump administration, even before it has articulated a China policy. For this reason, some American foreign policy experts argued that the meeting was premature as the United States seemed unprepared. In my view, that risk was outweighed by the value in having the two leaders meet face-to-face. In fact, both governments defined the principal goal of the summit as establishing personal rapport. A second goal was to set the future work agenda – North Korea and the U.S.-China commercial relationship were prominent on that list.

Did the summit achieve its objectives? On the first point, outside observers cannot really judge if any special chemistry now exists between the two presidents. They have such different personalities, and come from such different political traditions, that it is difficult to believe that one visit alone could forge a special bond. But President Trump was a gracious host and the protocol aspects of the trip, a consideration of high importance to China, were well handled. That certainly helps. The timing of the U.S. missile attack on Syria may have been awkward for Xi Jinping, but that did not diminish his ability to say the trip was a success and proof of his skill at managing U.S.-China relations and President Trump in particular. With the 19th Party Congress around the corner, that's what mattered most for Xi.

As for more substantive outcomes, these were limited, but that also was consistent with what senior officials said in advance. The two governments launched a 100-day study of how to reduce bilateral trade tensions. Neither side has said much publicly about the purpose of this study, but it should buy us another three

months of relative calm. The chief risk with this study is a potential disconnect in what each government hopes to achieve. The U.S. government likely seeks systemic change, such as meaningful market access improvements, while China probably thinks that a few specific and modest concessions will placate the United States. Surprisingly, little was said publicly about North Korea, but this remains a topic of ongoing discussion. The two leaders have already had two phone calls about North Korea since the citrus summit.

Lastly, the two governments reconfigured the structure of high-level dialogue, converting the existing Strategic & Economic Dialogue into four separate tracks: diplomatic/security; economic/trade; law enforcement/cybersecurity; and social/cultural. This tinkering is no different from what President Bush and President Obama did in the past. If there is any significance to the new structure it is the elevation of cybersecurity as a theme and the fact that Treasury and Commerce will co-lead the economic/trade track when previously Treasury alone had the lead.

With this first high-level meeting now behind us, what can we conclude about the Trump administration's China policy? To date, most of the President's tough talk about China has failed to materialize – 45% tariffs, declaring China a currency manipulator or abandoning the one-China policy. For American business in China, that is good news. But we are not out of the woods yet. In addition to the 100-day bilateral study, the Administration is engaged in some studies of its own: a 90-day study on bilateral trade deficits, a look at how currency manipulation should be defined, and a 270-day review of whether steel imports harm U.S. national security. In other words, points of contention still abound. Thus, while a trade war is unlikely, trade skirmishes remain a distinct possibility. That also means your Chamber has plenty of work to do as we seek to advance the interests of U.S. business in China. **I**

Board of Governors Briefing

Highlights from the March 16, 2017, meeting

COOPERATION WITH OTHER CHAMBERS

AmCham Chair Ker Gibbs introduced AmCham China governor Eric Schmidt. He joined the meeting as part of an open invitation from each Board to the other to join meetings in order to increase cooperation and coordination between the two chambers.

NEW WEBSITE

Communications director Ian Driscoll reported on the launch of the new website. The project has come in under budget and has received positive feedback. The President reported that emails to members will soon decrease from three to two a day. Members can define what emails they receive by adjusting their profiles.

MEMBERSHIP SATISFACTION SURVEY

The President provided highlights from the membership satisfaction survey. Membership satisfaction improved to 82%, an increase of 4% from last year. The staff will provide the full results of the survey at the April board meeting.

ETHICS COMMITTEE

The President announced that Cecilia Ho and Christine Yan will join the Ethics Committee.

Highlights from the April 18, 2017, meeting

AMCHAM BALL

Board Chair Ker Gibbs expressed his pleasure about the amount of money – RMB 650,000 – raised at the ball and congratulated Chamber staff, particularly Patsy Li, for their hard work. Board member participation helped increase attendance.

MEMBER SATISFACTION SURVEY

The President noted the increase in overall satisfaction. There was an increase in satisfaction with AmCham services but less interest in communications issues including the magazine. The President said survey results will be shared with members.

AMCHAM CHINA DOORKNOCK

Chamber President Kenneth Jarrett reported that he will join the AmCham China Doorknock in early May. This will provide a sense of the atmosphere in Washington and the Trump administration's approach to trade and U.S.-China relations.

ANNUAL BUSINESS CLIMATE SURVEY

The Chamber sent out the China Business Survey in mid-April. The President encouraged governors to fill out the survey, the results from which are used to help advocate with both the U.S. and Chinese governments.

MEETING ATTENDANCE

Governors: Ker Gibbs, Robert Abbanat, David Basmajian, Helen Hu, Tim Huang, Sarah Köchling, Nancy Leou, Glen Walter (by phone), Cameron Werker, Helen Yang, Vincent Yang (by phone), Eric Zheng

Regrets: Mike Crotty

Attendees: Eric Schmidt (AmCham China), Ken Jarrett, Helen Ren, Titi Baccam, Ian Driscoll, Patsy Li, Ian Driscoll

MEETING ATTENDANCE

Governors: Ker Gibbs, Robert Abbanat, David Basmajian, Mike Crotty, Helen Hu, Tim Huang, Sarah Köchling, Nancy Leou, Glen Walter, Cameron Werker, Helen Yang, Vincent Yang, Eric Zheng

Attendees: Gentry Sayad, Ken Jarrett, Helen Ren, Titi Baccam, Patsy Li, Jessica Wu

The AmCham Shanghai 2017 Board of Governors



Ker Gibbs
ChinaBio

Chairman of the Board of Governors



Helen Hu
Treasurer
International Paper



Robert Abbanat
ILE



David A. Basmajian
Baxter International



Michael Crotty
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Board Vice Chair
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Timothy Huang
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Sarah Köchling
Shanghai Blossom
Consulting Co.



Helen Ching-Hsien Yang
DuPont



Vincent Yang
ILE

Esoterica

Mobike Mobilizes the Masses

By Jillian Smith

Housed in the bottom of an out-of-use sports stadium, millennial workers type furiously away at laptops. Sporting bright sneakers and tinkering with patented technologies, they are armed with a vision of a greener future. But this is no Silicon Valley software company. It's Mobike, the world's largest bike-share operator, and a nascent player in the effort to lower China's carbon footprint.

Recently, AmCham Shanghai toured the company's founding location with its general manager, Lynn Xing. Less than a year old, Mobike has been fast at work. Its Shanghai office workforce is already over 300, and on the day of our visit the company announced that it had opened its first international office, in Singapore.

Mobike, Xing explains, solves the problem of the "last mile." The issue with most bike-sharing services is that one must return a bike to a 'station' after a ride is complete. Often, however, such stations are not conveniently located, and riders must alter their course, adding unnecessary time to their trip in order to return a bicycle.

Mobike is different. Users of their service are able to ride their bike to any public location and then leave their bike legitimately where they end up, eliminating the need for stations, locks, or racks.

Riders install the Mobike app on their phone, which they use to scan the unique QR code on the back of the bike, unlocking its wheels. The smart technology, in addition to components such as its internal push-powered generator, airless wheels, and unique five-spoke radial system, means the bicycles are costly. Xing estimates that each bike costs about US\$400. Yet amazingly, a 30-minute ride on a Mobike only costs 0.5-1.0 yuan.

When asked why the rides are so inexpensive, Xing suggests there is an altruistic element to the company's pricing model.

"We are a green company," he says. Riding bikes reduces car usage, which cuts down on air pollution and carbon waste. Mobike, which was intentionally founded on Earth Day last year, says it will continue to keep costs low for bike ridership in an effort to incentivize riders to adopt and maintain a lower carbon lifestyle.

Mobike's ease-of-use business model and low prices has indeed driven a new demand for bike riding; within six months, the company had expanded from one city to 39, which attracted the government's attention. Late last year, company representatives met with Premier Li Keqiang. Given Beijing's most recent Five Year Plan, which calls for unprecedented carbon output cuts, officials are interested in companies that do so via a simple user experience.

Perhaps of greater interest to the government, however, is the little square chip that each Mobike holds. These SIM cards, powered by the bike's self-powered generator, hold hundreds of data points that record rider behavior. This information can help city governments plan more energy-efficient transport networks, thereby further reducing carbon emissions and other forms of waste.

This data has enabled Mobike to maintain its unique business model. In January, the company secured a total of US\$300 million in Series 4 funding. Investors, such as technology company Tencent, are similarly interested in the data that can be mined for valuable rider habit information. Xing admits that the company is not yet profitable, but he estimates that once Mobike's data is more widely utilized, the best of both worlds can be achieved: a sustainable business model for a sustainable planet.

Mobike is not alone in this endeavor. Roughly 30 other bike sharing startups already operate within China, with Ofo serving as Mobike's main competitor. The two have



▲ It burns calories too

been engaged in a funding battle that some compare to the one last year between sharing economy heavyweights Uber and Didi. In fact, Didi has become an investor in Ofo, and Tim Cook, Apple's CEO visited the Beijing-based company on March 21, though apparently no investment or collaboration was discussed. Foxconn, the company which assembles Apple's iPhones, and ironically, is a longtime Didi backer, has picked Mobike as the favorite in the cash burning race. While this hypercompetitive bleeding of billions has become relatively standard in China's internet economy, the drama unfolding between Mobike, founded by 34-year-old former journalist Hu Weiwei, and Ofo, founded by Dai Wei, a 25 year-old PhD dropout, may be the most high profile, and most interesting.

Regardless of who manages to capture the most market share, the trend seems to be a promising one for a nation that is literally choking on the smog created, in part, from automobiles. China is already the world's largest automobile market, with 28 million cars sold in the country in the past year. Emissions from cars have become so problematic that in some cities new regulations allow cars to drive only on certain days, based on license plate number. According to a 2015 study from the Institute for Transportation and Development Policy, if 14 percent of travel in the world's cities were to be by bike in 2050, carbon emissions from urban transportation would be reduced by 11 percent. ¹

Jillian Smith is an intern in AmCham Shanghai's publications and communications department

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