

Successful Cleantech Cooperation in China

Insights and recommendations for companies seeking to do cleantech business in China

China is now the single largest market for clean technology products and services. And the country's latest five year plan is only accelerating cleantech adoption. How can cleantech companies based elsewhere do business in China most effectively? Kachan & Co. surveyed 48 China-based experts for their tips and advice.



Jim Mahoney
March 2012

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Cover: Self-cleaning fish pond, Chengdu, China. Source: Lund Advisors Chengdu

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Executive summary & key findings

International business cooperation with China is nothing new. It has been growing rapidly for over 30 years and covers, in varying degrees, every industrial and consumer sector in China. What is more recent, though, is the growing pull of cooperation with China for cleantech entrepreneurs, investors and solution providers. Much of this pull is to tap China's well-known cost and supply chain advantages that have been driving much of the country's industrial growth and foreign-direct investment into China for many years. However, cleantech firms are also flocking to China to access opportunities not available in their home countries, including to:

- Participate in large and growing cleantech market opportunities in China—including cleaner energy demand growth, efficient commodities consumption, massive urbanization, and reducing dirty and harmful waste emissions, and
- Leverage the cooperation opportunities and incentives that can help navigate the “valley of death” and speed up getting technologies and products commercialized—including innovative research, robust industrial infrastructure, available capital and finance, government financial and business incentives—which often are not available in their home countries.

China has the need (energy and consumption, and pollution and resource constraints), the intent (clear national policy direction), and the tools (capital, incentives, industrial and manufacturing infrastructure) to continue driving cleantech opportunities. China is clearly focused on developments in cleantech not only for domestic purposes, but also for leadership and competitive advantage globally across the cleantech spectrum—be it cleaner and renewable supplies of energy, conservation and efficient use of water and natural resources, or smarter and cleaner transpiration, or smarter agriculture and food safety.

Key findings of this report include:

- Government policy and spending is creating cleantech opportunities across many cleantech sectors. More and more Western cleantech firms are investigating R&D, capital, finance, and industrial cost and speed advantages in China to fill the gaps in these areas that they are unable to close in their home countries
- While certain cleantech sectors scored higher or lower on various criteria (e.g. homegrown innovation versus need for Western innovation), excellent opportunities are seen across the cleantech spectrum
- Western cleantech companies face four main challenges in China: Building business relationships, intellectual property (IP) protection and legal issues, local competition and local talent management
- Western cleantech companies can be successful but need to bring something to the table (e.g. talent, IP, Western market access) and need to localize properly (incl. lower costs, be flexible in fast changing markets)
- Strategies for strong business relationships and effective IP management are highly related. Both require careful planning, ongoing assessment, and for long-term success rely on aligned goals and incentives of the Western and Chinese parties

The cleantech landscape today

China is hungry for resources

Global energy demand is expected to rise 40% by 2030, with half of that rise from China's growth¹. China produces the most CO₂ emissions, and leads global demand (or demand growth) in many power, water, food, and natural resource commodities—all feeding the country's vital export industries, huge infrastructure projects, and massive urbanization. There are three hundred million new citizens expected to move into cities by 2030², with the consumption and transportation requirements of a total of one billion Chinese urbanites climbing up the standard of living ladder.

Drivers for China's spending to develop and make use of cleantech solutions are clear. China adds about 100GW of energy generation (approximately equal to California's total energy)...each year³ and many urban areas still experience power shortages during peak seasons. Over 80% of China's electricity production comes from coal. Water pollution and shortages are well documented, as are health and food safety issues⁴.

Money continues to flow to cleantech...

Even in difficult economic times globally, cleantech is getting a bigger slice of the pie. In 2011, venture capital from both funds and corporate VC arms rose 13% year on year to \$9 billion, and global cleantech M&A more than doubled from a year earlier to \$41 billion with 2/3 of that spent on solar, wind and energy efficiency purchases⁵. Looking at clean energy alone, global venture capital, private equity, asset financing and IPOs reached \$260 billion, a 5% increase over 2010⁶.

As regional economies continue to struggle for growth amid uncertainty over government policy and financial support for cleantech sectors at home, consolidation on a global basis will likely increase, and Western cleantech players will need to increasingly look East for partners, policies and finance that can speed getting their technology commercialized, or into Chinese or global markets.

... but the action is heading East

While cleantech was largely pioneered in the West, the last three years of sputtering economies have caused policy and support from government and funders to retreat. Asian countries, with China in the lead, with less developed infrastructure, large and growing populations and low cost supply opportunities, are expected to drive the largest growth rates in cleantech areas over the next several years. Trade disputes between American and European companies with China in solar panels and wind turbines, for example, are early symptoms of China's increasing competitiveness as the country stakes its claim as a leading cleantech manufacturer, often at the expense of Western manufacturers struggling to compete.

¹ Energy Outlook 2030, BP, January 2012

² Preparing for China's Billions, McKinsey Global Institute, February 2009, by Jonathan Woetzel, Lenny Mendonca, Janamitra Devan, Stefano Negri, Yangmel Hu, Luke Jordan, Xiujun Li, Alexander Maasry, Geoff Tsen, Flora Yu, et al.

³ <http://www.foreignaffairs.com/articles/136761/s-julio-friedmann/how-chinese-innovation-is-changing-green-technology>

⁴ <http://www.circleofblue.org/waternews/2011/world/chinas-other-looming-choke-point-food-production/>

⁵ <http://blog.cleantech.com/cleantech-investments/cleantech-investment-totals-strong-in-2011/>

⁶ <http://bnf.com/PressReleases/view/180>

A new cleantech Global Innovation Index 2012 ranks China No. 13 overall. The index places China No.5 in “cleantech-specific innovation drivers” (such as the most money raised for cleantech focused funds) and No. 3 in “evidence of commercial cleantech” (e.g. cleantech manufacturing leadership and the highest number of cleantech IPOs), while noting China trails several other countries in cleantech start-ups⁷.

In China during 2011, cleantech was the second biggest recipient of venture capital⁸, 4th in China for all IPOs⁹ (yet a staggering 28 of 51 global cleantech IPOs¹⁰), but just 7th in China M&A (less than 5% of the total)¹¹. China produces and exports more solar PV panels and makes and uses the most wind turbines¹². Although many of China’s publicly listed cleantech manufacturing giants are now struggling¹³ (as are their global peers), China recently raised (again) its targets for installed capacity and equipment production increases along the wind and solar supply chains.

But perhaps the most important numbers coming out of China are the government’s increasing emphasis and clear targets for cleaner and more efficient industries. Objectives in achieving energy security, reducing pollution, securing resource supplies, and sustaining massive urban development are all drivers in China’s current five year plan’s emphasis on spending and policy direction to spur cleaner and greener industries. The government has set spending targets totaling trillions of Yuan (well in excess of U.S.\$ 1 trillion) through 2015 to achieve help these goals¹⁴.

With such a massive, focused base, no wonder more Western cleantech companies than ever before are participating in these markets (see Figure 1). A few well publicized moves mentioned in interviews by Kachan & Co. for this report help illustrate:

- LanzaTech (New Zealand) collaborates on demonstration projects with leading State-owned companies that need to reduce their emissions. Boston-Power (U.S.) sought Chinese capital, finance and local incentives not available back home. GreatPoint Energy (U.S.) is benefitting from China’s heavy investment into technologies for cleaner energy for both Chinese and global markets. Silevo (Israel) showed that even in a current difficult solar market, innovation can benefit from China’s capital and cost and speed of scale advantages¹⁵.
- Western firms in clean transportation, waste management and recycling and cleaner food and energy efficiency are signing up with Chinese funders and partners on a regular basis. Why? The markets are big, or at least growing, and present interesting offerings of various blends of cash, debt, tax breaks, land and resource incentives are often not available back home.
- Movement in the opposite direction is also progressing. Chinese firms are increasingly looking west and carefully picking and choosing distressed cleantech assets, investing in commodity supply, and taking stakes in higher

“The access to Western markets and the help to commercialize technologies overseas can be an important aspect for a Chinese company to partner with a Western firm.”

-Matthias Herlan, Commercial Director, Clean Energy Commercialization Center

⁷ Cleantech Group and WWF’s February 2012 Cleantech Global Innovation Index 2012

⁸ <http://www.pedaily.cn/Item.aspx?id=218401>

⁹ <http://www.pedaily.cn/Item.aspx?id=218370>

¹⁰ <http://blog.cleantech.com/cleantech-investments/cleantech-investment-totals-strong-in-2011/>

¹¹ <http://www.pedaily.cn/Item.aspx?id=218330>

¹² <http://english.caixin.com/2012-02-07/100354090.html>

¹³ <http://www.cleanbiz.asia/story/china-cleantech-index-dropped-48-percent-2011>

¹⁴ http://www.apcoworldwide.com/content/pdfs/chinas_12th_five-year_plan.pdf

¹⁵ Kachan & Co. interviews

margin clean energy projects. China also wants to cooperate to access higher margin markets for Chinese products in Europe.¹⁶

Cleantech start-up companies making significant moves in China

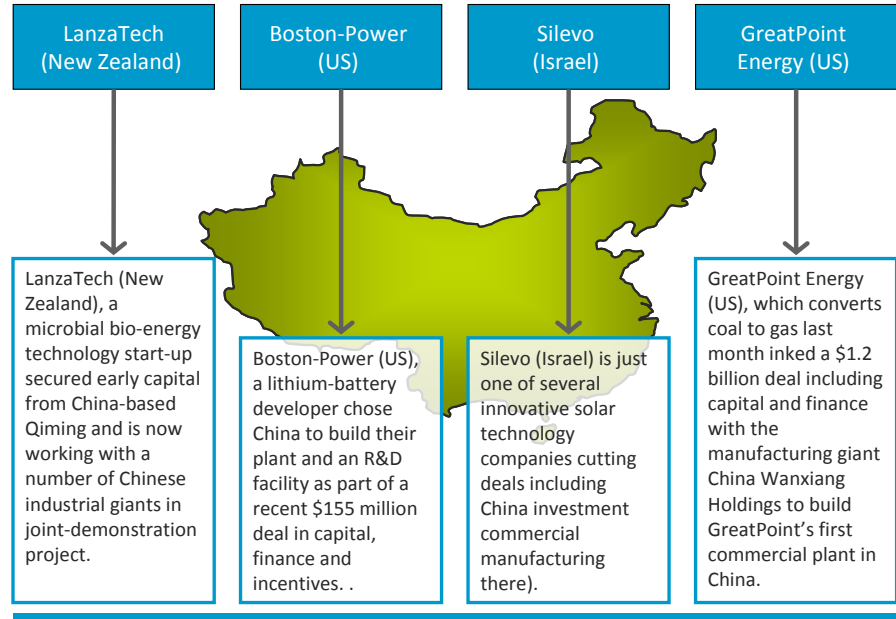


Figure 1: Western cleantech firms are leveraging China's abundant capital and incentives.
Source: Kachan & Co. interviews, analysis

“Chinese want to see the product proven in China so companies should be prepared to invest their own funds to demonstrate that and not expect Chinese companies to purchase right away. Furthermore, Chinese highly value co-investment, so Western companies may need to share risk in the market and not just provide product.”
-Kachan & Co. survey response

Although not covered in this report, international trade issues are also relevant. The debate, from both sides of the Pacific, over the U.S.-based Coalition of American Solar Manufacturers (CASM) current push to place anti-dumping duties onto solar imports from China also is just one of a number of trade and State-level issues that one should stay up to date on¹⁷.

Importantly, many multinationals are beginning to ask how best to leverage their relationships and foundation in China to compete elsewhere in the world. While most arrangements seem to involve cooperative agreements with Chinese partners on the use of specific products in other markets, there are signs that this could be taken a step further to include joint ventures in third countries¹⁸.

Cleantech in China: What's hot... and not

Kachan administered an online survey in January, 2012 of senior China-based professionals extensively involved in cleantech, plus interviews with six senior cleantech executives in China. Respondents are described in the Methodology & Bibliography section at the end of this report.

¹⁶ Enter the Dragon - How China will impact Europe's renewable energy landscape, Taylor Wessing 2011

¹⁷ <http://cleantechnica.com/2012/01/20/us-china-solartrade-dispute-the-case-for-casm-and-us-manufacturing/>

¹⁸ Multinational companies and China: What future? The Economist Intelligence Unit, 2011

Respondents were initially asked to identify specific cleantech sectors in which there was significant homegrown Chinese technology innovation. Renewable energy scored highest with 33%, followed by energy efficiency at 20%. Waste treatment and recycling, natural resources efficiency and cleaner transportation also registered (See Figure 2).

In scores for technology innovation sought by China covering these same five sectors, energy efficiency ranked highest, with 25%, with waste treatment and recycling and renewable energy scoring 21% each. Natural resources efficiency and cleaner transportation reached 17% and 14% respectively.

China's energy efficiency and carbon reduction targets are certainly driving innovative energy efficiency solutions in large industrial processes, e.g. boilers, smelters, cement and construction material manufacturing. All are huge energy consumers, where even slight efficiency gains can mean substantial savings in energy consumption and margins. China's push to get more and cleaner power sources into the grid and distribute power more effectively is expected to also mean opportunities for smart sensors and grid management software.

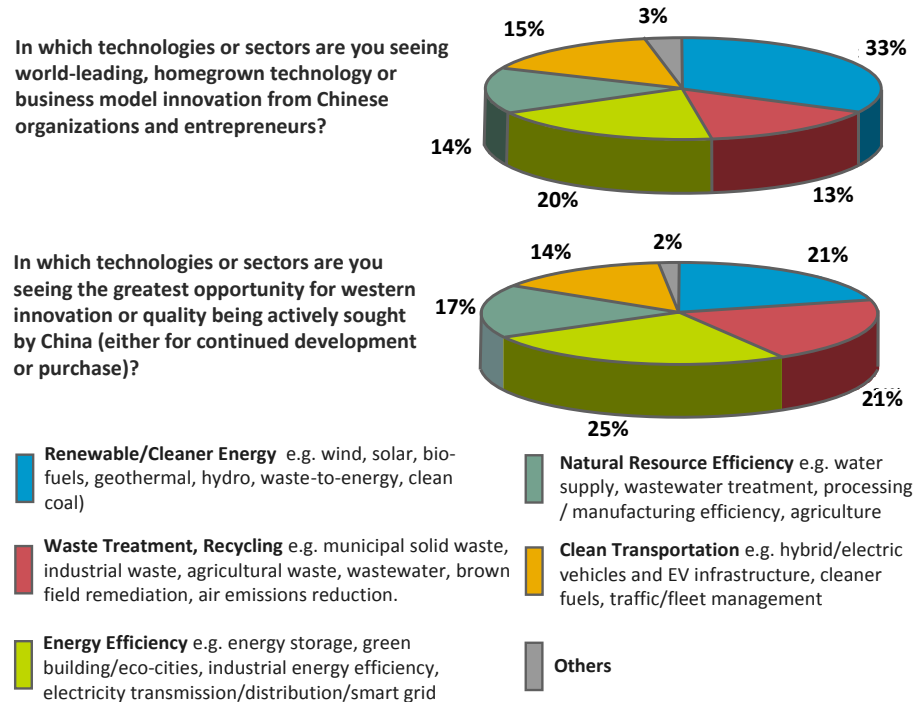


Figure 2: How China based cleantech executives perceive opportunities in different cleantech sectors.
 Source: Kachan & Co. survey

All of these five sectors received relatively strong scores, underscoring the wide-ranging opportunities that China's growth means for cleantech providers. David Gong, an independent cleantech advisor, nicely sums up many of the hot sectors. He suggests providing products and services for healthier, happier and more efficient living as China urbanizes means opportunities including: Cleaner and more efficient sources of energy (renewable and distributed energy and waste-to-energy), more efficient use of energy (sensors and energy management software, LED lights, efficient appliances, greener building materials), cleaner living-related products and services (waste and water management and recycling), more efficient agriculture (less water, more natural fertilizers), and technologies and services providing healthier and safer food.

How to get an environmentally-friendly toilet noticed in China? A conversation with Walter Ge, Director, New Ventures China, a non-profit organization in Beijing supported by U.S.-based World Resources Institute, China's Institute for Environment and Development and corporate sponsors.

A familiar lament heard from Chinese entrepreneurs across all sectors in China's economy is a difficulty in accessing policy incentives, financing, and market access when compared to their State-owned competitors. So how can cleantech start-ups in China get noticed by essential financial and market stakeholders? Keep working 24/7 to match the market, keep improving performance while cutting costs, and maybe get in touch with Walter Ge.

As the head of New Ventures China (NVC), a non-profit organization, Mr. Ge's mandate is to accelerate the path to market for young, innovative Chinese cleantech entrepreneurs. Ge helps start-ups become "investor ready". His team assists local start-ups with operational structuring, business plans, and understanding investment tools and market channels so that they are able to effectively present their case to professional investors, banks, customers and suppliers. There is a small ticket price: criteria for companies to join NVC's program include initial market validation through at least RMB1.2million (USD \$200,000) in sales and the ability to make significant contributions to environmental and social improvements.

A whiff of innovation can carry a long way

Take Beijing Landwasher for example, a provider of portable lavatory systems that use minimal water by treating urine and re-using it to "flush the toilet". Henry Wu started the company after graduating from Beijing University. He and his colleagues spent four years developing his idea, and another four years of slow sales and company development (including support from NVC), before seeing sales begin to takeoff in 2009. Having now sold thousands of systems, again with NVC's guidance, the company has recently delved into other emerging markets where inadequate infrastructure presents immediate customers.

"The time and energy required explaining and understanding each other's benefits, roles and goals is exhausting... but incredibly rewarding."

Over seven years, NVC has helped 20 companies raise an equivalent of USD150 million. The program focuses on three inter-linked services: investment facilitation (through pitch events, one-to-one match-making), education (financial management, business management seminars), and access-to-markets (domestic and cross-border trade events, market reports).

"Chinese green SMEs are often overlooked for receiving policy benefits, and by investors and banks," Ge says. To help get them on the radar, NVC works with an extensive network of stakeholders in China. The Ministry of information and Industry and Information technology (MIIT), for example, is a valuable government partner that worked with NVC to launch the Green SME Impact Model Initiative. An initial report from the initiative, due for publication in April of this

year, tracks cleantech market trends and showcases both financial accomplishments and environmental and social contributions of the cleantech SMEs NVC works with. As Ge relates, "the more exposure the better since many of these homegrown firms we support have the innovative solutions that can benefit from cooperation with Chinese and foreigners alike."

Another innovative start-up NVC has been essential in mentoring is Sinen Entech. The company treats boiler steam for reuse at high temperatures, thus removing costly steps for cooling steam before treatment and then reheating for re-use. Large industrial customers benefit from significant energy and water savings, delivering payback in a little as 7 months. Partners such as Tulane University in the U.S. have recognized Sinen's solution as world-class, which helps immensely with market opportunities abroad.

Good relationships take time

Regarding relationship challenges in China for Western cleantech entrepreneurs, Ge uses his own organization's experience to illustrate. The biggest step for NVC is building trusting relationships, and this takes time and patience. "Here I am offering entrepreneurs help on investment, training and market information and access, and not asking them for any compensation."



Landwasher toilets on duty in Beijing's historic Forbidden City

"You can imagine how many 'huh?'s I hear during the months, and sometimes years before an entrepreneur understands our value and trusts our credibility." Ge sees the same patience and relationship building as equally essential for Western entrepreneurs when building up needed networks of government and private partners in China. "The time and energy required explaining and understanding each other's benefits, roles and goals is exhausting... but incredibly rewarding."

China's 'green blueprint'

China's 5-year plans are the State's main economic policy documents. The current 12th version, covering 2011 through 2015, emphasizes several cleantech focused initiatives. Survey results asking for feedback on nine points of the plan highlighted 'energy reduction and efficiency targets in industry' and 'spending on seven Strategic Emerging Industries (SEI),'—four of which are cleantech focused with the three others partly cleantech related—as the biggest drivers moving cleantech businesses forward (see Figure 3).

Which goal in the 12th 5-Yr Plan do you expect will be the greatest driving force moving cleantech businesses forward in China?

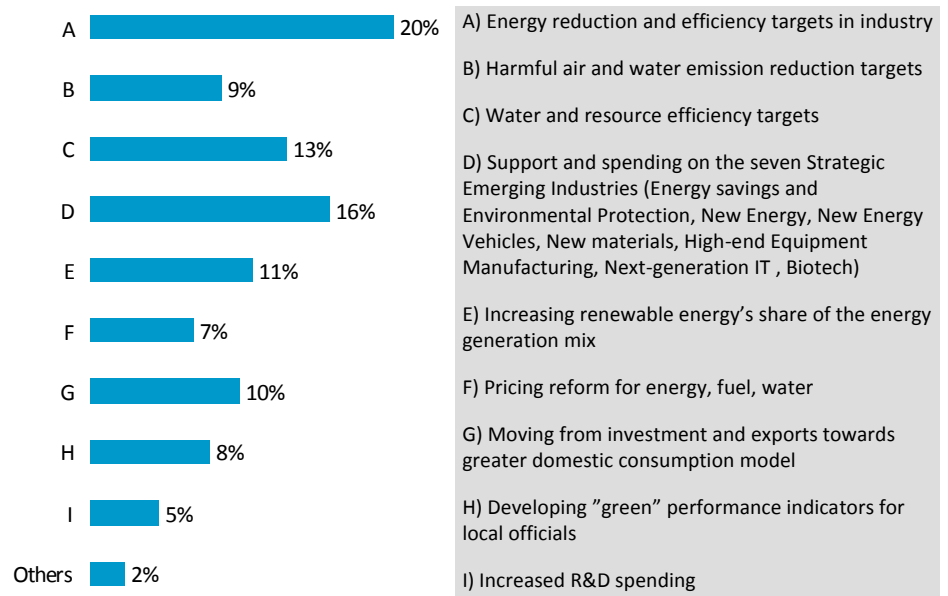


Figure 3: Cleantech decision makers believe energy reduction and efficiency will be the leading five-year plan goal that will drive cleantech markets. Source: Kachan & Co. survey

Interestingly, all of the 5-Yr Plan goals we listed received responses. China is working all sides at once, focusing on everything. The need to feed the economy drives goals for improving energy efficiency, expanding cleaner energy sources, reducing water and air pollution, and increasing standards of living.

Speaking with Chinese companies and government officials on a regular basis, it is clear that no matter what sector they are involved in, they feel that their work is supported and vital for the country. This is good news. Western companies have current and emerging technologies right across the board and China has the plan to support and spend on developing and employing cleaner solutions as effectively and quickly as possible.

Greenkey International – Cleaning dirty lubricating oils for their continuous use

Kachan & Co. sat down with Stephen Scoones, Director of International Marketing at Greenkey International – a solution provider laundering dirty mineral lube oils for re-use.

Switching from the high-flying world of international trade and finance to a small, self-built R&D center in Southern China isn't a common career path these days, let alone 20 years ago. Tajwar Shadikhan, the founder of Greenkey International, made such a shift shortly after seeing a British Rail R&D project by chance while on business travel. Fast forward through two decades of chemistry and technical development challenges to a unique, innovative technology that allows the re-use of 95% of a dirty industrial waste stream.

From its Hong-Kong headquarters and operations facility in neighboring Shenzhen, Greenkey International has recently launched a unique process that cleans, or as the company explains, "launders," used mineral lubricating oils for re-use.

Environmental challenge meets entrepreneurial drive

Most current treatments in the market recycle lube oil, providing industrial fuel oils which are burned. Other treatments produce base oils which are used as primary building block of synthesized lubricating oils. Other treatments filter used oils to remove some of the contaminants but only allow limited life extension of the oil. Greenkey says it improves on all of these.

While chance helped identify the idea for the solution, plain hard work and endless trial and error was the long, and often frustrating, path to commercialization. As Stephen Scoones, Greenkey's Director of Marketing explains, "Tajwar's earlier career provided deep insight into oil and emissions issues, but his entrepreneurial streak stoked his drive to experiment and solve problems."

In any country, managing one's own R&D and launching a new concept technology is not an easy task. Adding in a tight budget, and a founder coming from outside the industry and learning on the way made GreenKey's journey even longer. Scoones points out that "protecting your IP also limits the engagement of outside third parties, no matter the personal excellence of those interested in participating in the project. "Outside investment may have made the road easier to travel, however we were not able to find a suitable long-term industrial investor to partner during this journey."

Using China as the platform for a global market

As Scoones, a British national who has lived in China for 13 years, relates, "our innovation is a unique capability to remove all contaminants and impurities in dirty mineral lube oils without removing unspent additives or changing the oil's chemical or physical state. This allows 95% of these soiled oils to be re-used as fresh oils, saving substantial end-user costs for waste oil handling and new oil purchases. No one else does this. Another differentiator, compared to other current treatments, is our low temperature process requiring far less energy consumption."

"This certainly isn't on the glamorous side like smart grid software or bio jet fuel, but we do have a breakthrough process that serves a large niche market need very well."

Although they would have preferred an investor early to help with development, Greenkey at launch controls all of its own intellectual property, supplies its oil cleaning liquids to exclusive agents and users and maintains quality control oversight through compulsory training, support and inspections. Its main customers are large industrial users of high volumes of lubrication oil that benefit from an easy to operate, scalable process located right on-site.

Completing development work last year, Greenkey just launched its solution globally in January 2012. "It's taken us a while to get here, but all the pieces are in place, and working and performing as they need to at launch. China proved an exceptional location—high-quality supply of tailor-made components, low cost trials and demonstration and first customer validations."

Main challenges

Four challenges for Western cleantech companies were deemed equally difficult by survey respondents: Building business relationships, intellectual property (IP) protection and legal issues, current and potential Chinese competition, and managing local talent. While these four do not differ much from challenges across any sector and in any country, our survey and interview input raised advice and examples with a uniquely Chinese flavor (see Table 1).

Which of the following do you consider the most difficult challenges for Western cleantech companies to focus on when considering China entry or cooperation?		
Four Difficult Challenges	Main Takeaway	Illustrative Survey Response
Building business relationships	Time and effort is needed to know and understand partners and stakeholders, and to continuously manage these relationships.	“Management often lack the skills required by the challenging China market. The primary weakness is a failure to understand interest, needs and fears of Chinese partners, clients and government.”
IP protection and legal issues	Expect problems will arise, but consider long-term goals and benefits for both sides when negotiating. Hire experienced legal expertise.	“Understanding that commercial terms in China evolve as a function of what is pragmatic. The 'letter of the law' or contract does not stand if it is untenable based to the bottom line of the customer or partner, and any recourse is costly and very limited...”
Current and potential Chinese Competition	Be aware of aggressive competition already in China and the speed at which competitors develop and adapt.	“Western entrepreneurs have to be very cautious when dealing with their Chinese counterparts, as competition in China is intense” and “it is difficult for a Western company to realize that competitors can be created overnight in China.”
Managing local talent	Provide more autonomy for decision making with corresponding responsibilities and accountability.	“Should give more freedom to local team for decision making, small budget and reporting procedure” and “Local Talent—Local way...”

“(Westerners) fail to understand the real level of competition in the market, the real cost levels in China and the lower levels of profitability that are normal/accepted domestically in China”
 -Kachan & Co. survey response

Table 1: The four leading challenges for Western cleantech companies in China. Source: Kachan & Co. survey

Focusing on such unique conditions in China, our surveys and interviews generated useful advice and suggestions on how to effectively face China’s challenges. Effective localization practices, business relationships development, and IP protection strategies were the three main themes covered by the guidance and suggestions offered by our survey and interview feedback.

The balance of this paper explores all three of these suggestions for most effectively doing cleantech business in China.

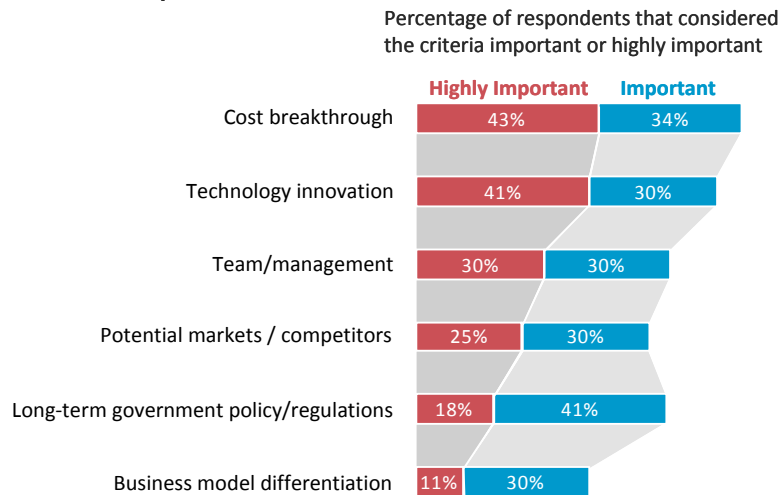
Localize...the Chinese way

If you're coming to the party, make an impression

When assessing Western cleantech companies coming to China, decision makers based in China know their priorities. Cost benefits, technology innovation potential, and team and management capabilities are identified as the three most important criteria.

Cost breakthrough and technology innovation are central to China business models and crucial to Chinese companies seeking how to get ahead of intense competition. For China-based firms, team capabilities of potential Western partners can be just as much about access to Western markets as about effective management execution.

China-based decision makers were asked: How do you rate the importance of the following criteria when you assess potential western cleantech companies?



"I wouldn't necessarily advocate doing it 'the Chinese way.' Different people will have different definitions and experiences of what 'the Chinese way' is. Concern yourself with doing it the 'right way'."
-David Gong, Independent Cleantech Advisor

Figure 4: China based decision makers provided feedback on the importance of different criteria during the assessment of Western cleantech companies. Source: Kachan & Co. survey

With ever more Western cleantech companies looking to China for capital and incentives, well capitalized and well-connected Chinese companies can afford to be picky. In Kachan & Co.'s China cross-border work (such as our recent [Northern Cleantech Showcase](#)) we increasingly find Chinese companies avidly investigating cutting-edge technology and know-how that is at or close to market readiness. Chinese investors are generally more technology risk averse, and near-term cost breakthrough via technology innovation plus management team domain knowledge certainly trump longer-term 'technology in development' opportunities. And Chinese companies and investors are increasingly up-to-date on latest technologies. When these executives see game changing potential, they investigate cooperative scenarios for co-development.

We were surprised to find 'potential markets and competitors' judged much less important, especially considering that in a separate survey question 'local competition' was voted as one of top challenges facing Western companies in China.

Also interesting was 'business model innovation' scoring the lowest. Perhaps the longer timeframe required for planning and explaining a disruptive business model is an

unaffordable luxury for business competing at “China speed.” Cost, tech and team—the three top criteria—are clear, immediately understandable and, when considered together, can make up the main components of a company’s model.

Westerners want to access China locally... but are making mistakes

According to survey results, Westerners seek to tap local Chinese advantages—such as growing local markets, manufacturing speed and cost advantages, along with local government incentives (financial support, tax breaks, and other subsidies). At the same time, respondents said what Westerners most often failed to address when coming to China were all local as well—failure to assess local market pricing pressures, understand local market dynamics and appreciating the intensity of local competitors.

Additionally, survey feedback on what aspects of business models and alliances Westerners should be more flexible on highlighted Westerners’ localization strategies: local market knowledge (including policy, pricing dynamics, and sales and service channels), and the local competitive landscape. Responses also advised considering more product customization options, longer-term horizons for return, tempered expectations on profitability margins and timing on returns, and keeping an open mind about local partnership requiring trust, longer-term planning and upfront investment.

“1) Local market knowledge and local business management team and sales and service channel in China.
2). Competition and pricing strategy.
3). Long term commitment and willingness to invest before harvest”
-Kachan & Co. survey response on what Westerners fail to address in China

What are the most common benefits cleantech companies seek through Chinese partnerships?

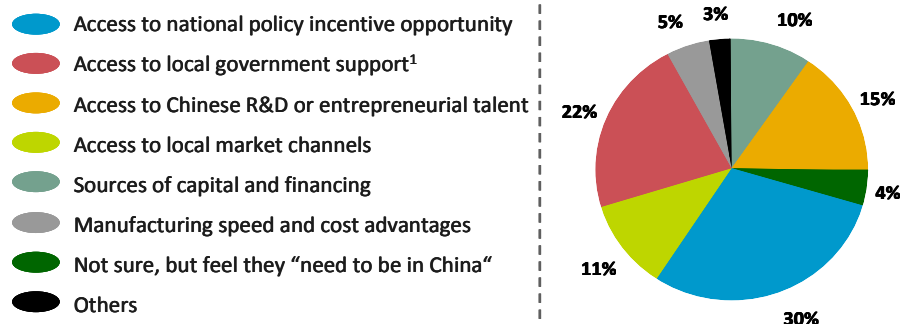


Figure 5: How Western cleantech companies perceive the advantages of partnering with Chinese entities. Note government support includes financial, tax, approval and subsidy incentives, etc.

On the surface, these suggestions don’t sound so different than similar advice for any country or industry. The China flavor bubbles to the surface more strongly, though, when we slot in two other comprehensive themes resonating throughout the survey—the frenetic speed of change and the resulting pace of flexibility and agility needed to ‘stay in the game, and advice to partner effectively to compete more successfully.

Competition at the speed of change

Numerous open-ended survey responses labeled the speed of change in local markets and the agility of local competitors as important issues. A number of responses advised Westerners to bring innovative, proprietary technology and a strategy to meet China’s low cost structures. And often cited between Chinese and Western decision makers, and backed up by survey responses, was how Chinese commercialize with lower cost, simpler offerings to get into market as fast as possible, and then improve subsequently¹⁹.

“There is sometimes a different concept of speed. Chinese might look for a fast, ‘good enough’ solution, and improve later in order to keep projects moving. Westerners often work on a more perfect solution, but that delay takes up valuable time”
-Kachan & Co. interview

¹⁹ McKinsey Quarterly, February 2012 A CEO’s guide to innovation in China, Gordon Orr and Erik Roth

Expanding Chinese homegrown innovation through global talent A conversation with Dr. Bo Lu, Executive Vice President, Lattice Power. Nanchang, China-based Lattice Power was the first company to commercialize Gallium Nitride on silicon LED products. The company was recognized by MIT's Technology Review magazine as a global top 50 innovative company in 2011, and in each of the past two years has been included in Cleantech Group's annual Cleantech 100 listing of top global cleantech companies

How do you penetrate a multi-billion dollar market?

Forecasters expect the global LED market to reach EUR65 billion by 2020 and China's LED market to almost double from \$5.8 billion in 2011 to \$11.1 billion by 2015²⁰. In 2011, 100 billion LED chips were produced. A lot of them were made by the 60 or so LED chip manufacturers in China that feed an estimated 4,000 companies in China involved in LED lighting²¹.

One pioneering Chinese start-up, Lattice Power, stepped into the market by setting the global benchmark for what is widely considered a game changing LED chip technology—Gallium Nitride on Silicon (GaN-on-silicon). The two incumbent substrates for LED chips are sapphire (with about 90% of the market) and silicon carbide (which also uses GaN). The promise of GaN-on-silicon is the much lower price of silicon and larger scalability for wafer size and fab production, which can all potentially reduce the costs for LED chips greatly.

Bo Lu, Lattice's Executive Vice President, credits a well-executed international collaboration strategy as the company's main competitive advantage. "We worked hard at combining our homegrown technology innovation with top research and development talent from North America and Europe and production chain experts from Taiwan". Lattice Power CTO, Dr. Hanmin Zhao and Lu himself are two good examples. They grew up in China, gained their PhDs in the U.S. and spent over 15 years in Silicon Valley in optoelectronics before returning to China with Lattice.

Homegrown breakthrough

"Proudly from China" is part of Lattice Power's slogan, and Lu was happy to explain. The technology was developed by Prof. Jiang Feng Yi and his team at China's Nanchang University. Like many researchers in the 1990s, this team worked for many years on GaN-on-silicon. While many peers withdrew from this research area due to lack of breakthrough progress and a growing sapphire based LED industry, Jiang stayed at it. Two main obstacles in developing this technology were physics problems of lattice and mismatch between the two different materials (GaN and Silicon). Lattice references the constant distance between atom cells in a crystal, while thermal expansion mismatch occurred because the different compounds cool in different ways. As Lu explains, "Plugging away for years in the lab, Jiang and his team were able to contain and minimize these two issues, being the first to make GaN-on-silicon viable—a genuine China technology breakthrough story to be proud of."

Lu also emphasizes the invaluable vision and support of Sonny Wu, Lattice's chairman, and a founder of Silicon Valley-based GSR Ventures. "While studying business at MIT, Sonny was introduced to the world of LEDs and spent time investigating potential opportunities. After delving into Professor Jiang's innovative work, the two decided to go for it and started the company." Mr. Wu also helps bring top scientists, engineers and management to Lattice Power, who greatly contributed to the company advancing and leapfrogging in technology and products. Lattice also benefitted from GSR's healthy portfolio of Western-Chinese collaborative companies, including companies up and down the LED value chain, which also helped draw in essential domain knowledge, talent and capital.

Innovation breeds competition

While utilizing silicon is expected to deliver huge cost reductions, the light brightness from GaN-on-silicon still lags behind sapphire. Two years ago, Lattice was the first to reach the milestone of 100 lumens (a measure of brightness) for GaN-on-silicon product. Since then they have been steadily closing the brightness gap and advancing their IP with their pioneering know-how and portfolio of over 200 patents. And they will certainly need to keep improving. GaN-on-silicon's potential has lured a number of other LED companies, plus industrial giants such as Samsung and Taiwan Semiconductor (TSMC) into the race in recent years.

While these giants of have deep pockets and vast resources to compete with, Lattice's Lu welcomes their participation. "GaN-on-silicon is still early; the more people working on this can only strengthen the whole industrial chain which will speed up market adoption across the board." Lu however does emphasize that competitive pressure is heating up and Lattice is driving ahead at full speed to maintain its leadership. "We are continuing to combine Western know-how, talent and channel partners with China's strengths in core technology and scale production capabilities."

Going forward, Lu sees the greatest production and cost advantages by tapping into the already mature and hugely efficient industrial silicon supply chain. The industry expects cost reductions gains will really kick as manufacturers migrate to 6-inch and then 8-inch wafers while scaling up manufacturing capacity. Lattice Power plans to continue leading the charge—proudly from China.

²⁰ McKinsey & Company, Lighting the Way: Perspectives on LEDs and the Global Lighting Market, 2011 & <http://www.isuppli.com>

²¹ http://www.ledinside.com/china_led_lighting_201112

A recent survey of 50 top Chinese cleantech companies by Deloitte and Tsing Capital²² found that 79% of respondents labeled their highest corporate goals as ‘reducing cost to compete’. 71% expected to increase production, and 61% expected to increase R&D. With such strong and balanced development plans, Westerners indeed better have something special to offer the market and be prepared for speedy, intense competition.

A third theme touching on competition and speed covered the all-important ability to scale up quickly. When something catches in one of your markets in China, there can be a feeding frenzy. If you can’t supply that demand surge in a hurry, someone else will find a way with a similar offering. Teaming up with local supply chain, manufacturing and distribution partners is essential. Sound simple? Read on.

Long-term business relationships

Patience, flexibility, and understanding

China requires more relationship building than in the West—both the time involved and the scope or number of parties involved in the business relationship. China also often involves many more market segments to be considered and can have varying implementation of policy across different regions and localities. All require flexibility in negotiation and relationships. Interviewee David Gong emphasizes the importance of staying on the same page. “If your idea of ‘doing it the Chinese way’ is seeking a genuine understanding of the strengths both parties bring and the goals both parties seek, leaving enough on the table in negotiation and relationships so that both sides benefit, then you should be able to align incentives for mid and long-term success.”

Shanghai-based Matthias Herlan points out that understanding the decision making process in very large Chinese organizations and government bodies is an important piece of the puzzle. Herlan explains that while there is always a central head office, often the local operations/subsidiaries are able to operate with a healthy dose of independence. It is important to distinguish between strategic collaboration agreements at the head office level, while implementation occurs at the local level, requiring careful, consistent relationship development there as well. Herlan advises that employing senior Chinese managers to help develop relationships locally because they know how to get things done more effectively, whereas a Western manager often struggles to do so.

Herlan, Gong and a number of survey responses advise Westerners to open up their mindset, and do the homework to truly find stakeholders that are on board with long-term success goals. If all you are after is a cheap supply source or a low-cost assembly line, that’s fine, and that’s what you’ll get, said respondents. Obviously, many Westerners begin their China foray by testing the waters in just such a way, which is fine. Just keep in mind that short-term, low margin cooperation is a zero-sum game mentality and that’s how the relationship might progress, said respondents. If, on the other hand, you want to do more in China, or you have an innovative offering that the market can use or that China can help to commercialize quickly, then you’ll need to up your game with relationships, trust, and partnerships, said interviewees.

Choosing the correct shortcuts

Chinese are always thinking mid and long-term, stresses Gong. Relationship and reputation is a key component for them, and they want to know that the Western side will also be thinking that way. Going forward in China, innovation is expected to be a

“Chinese want to see the product proven in China, so companies should be prepared to invest their own funds to demonstrate that and not expect Chinese companies to purchase right away. Furthermore, Chinese value high co-investment, so Western companies may need to share risk in the market and not just provide product.”
-Kachan & Co. survey response

²² http://www.deloitte.com/view/en_CN/cn/Pressroom/pr/fd70d9e0c9264310VgnVCM2000001b56f00aRCRD.htm

core driver for government and State-Owned Enterprises (SOEs). Leading, plugged-in SOEs will collaborate with Western innovators that show dedication to long-term cooperative benefits. The challenge interviewees flagged was the potentially long and winding road Westerners might need to travel to reach the relevant SOE decision makers. Most of the service providers surveyed recommend the value of working with experienced, reputable advisors to help shorten the time to reach decision makers. Likewise, successful SOE partnerships require careful planning and preparation, effective execution and monitoring and an ability to be flexible (if required by markets and policy adjustments), and clear and consistent two-way communication of business objectives and principles.

Several survey responses acknowledge that if one is looking for easy shortcuts or expecting some skimping on basic clauses in a contract as tactics for getting into a market in China, then that is what you will likely get. However, they caution that real success, other than a quick sale or short-term manufacturing agreement, is likely just a dream if taking such shortcuts.

And lastly, while ongoing, dedicated and aligned relationships are vital, survey and interview responses were almost unanimous in counseling that Westerners cannot skimp on what they require. While it can pay to be flexible, most respondents reminded Western executives to be smart in contract terms and not be timid in dealing with infringement of agreements.

But what about China's drive for re-designing Western technologies as part of its well-publicized indigenous innovation policy? Or China's requirements to transfer technology through joint-ventures as the 'price of admission' in certain sectors? And the long list of IP infringement cases year after year?

Just as our survey and interviews suggested there were three general IP strategies, we received specific feedback on IP infringement, covering both ends of the spectrum.

What? A win-win model for China-Western solar manufacturing? A conversation with Guy Rong, CEO of Suntrix. Shanghai-based Suntrix provides concentrated photovoltaic products and systems for large scale solar energy projects. In December 2011, the company was awarded The Most Growth Potential New Energy Enterprise during the China Cleantech Industry 2011 conference in Beijing. In April, 2011 Suntrix was the first company to receive China's Golden Sun certification for concentrated Photo-voltaic (CPV).

Mentioning the words 'China' and 'solar' in close proximity these days is likely to trigger accusations and examples of what's wrong with the solar sector, with cleantech in general, or with globalized trade as a whole. Anti-dumping disputes, import tariff retaliation, unfair government subsidies, protectionism, careless over-capacity and resulting price declines are just some of the topics keeping solar manufacturers, installers and end-users—both inside and outside of China—busy, angry, and ready for battle.

Guy Rong, CEO of Suntrix, a provider of Gallium Arsenide (GaAs) concentrated solar PV (CPV) systems, suggests that being successful in this climate can best be done through quality collaboration—combining the best from the west with China's advantages. Rong reckons that Westerners too often still consider China as a low cost and low quality base. While acknowledging that there are firms there that offer and compete on that model, he advises Westerners coming to China seek out the increasing number of innovative Chinese companies that are climbing the value chain, and that understand the value of IP and are keen to engage in healthy win-win cooperation.

Leveraging Western technology with China's design and manufacturing advantages

Suntrix can be illustrative. CPV, which greatly magnifies the amount of sunlight onto a very small PV module, is still a small niche in the solar energy generation sector. To be successful, Suntrix needs to go head-to-head not only with the other leading CPV competitors—currently no major Chinese, but several foreign competitors—but also compete effectively against ever lower-priced flat panel PV, which accounts for the majority of solar power projects. "CPV business is an excellent mix of Western product quality, our design process, and China's low R&D costs, excellent production chain infrastructure and huge market potential." Suntrix currently splits sales between the China and European markets, and next year intends to mostly focus on China.

Suntrix's competitive advantages include quality innovation. Its silicon on glass (SOG) technology uses specialty silicon from abroad, and its internal total-cost design process (TCD). In TCD, the complete senior team—technical, supply chain, production, and

market-facing—deep-dive together to spec out a design plan to customers' needs and the performance targets to meet those needs. Then they leverage China's strengths in lowest cost scaled production to make the new product. Delivery of power at a lower levelized cost of energy (LCOE) than competitors is the goal. "In CPV, you really need to look at the cost/Kwh more so than cost of capacity. Without the best components and materials from the West, our own total-cost design advantages would not make us as competitive."

A different concept of speed

A frustrating difference Rong finds between Western and Chinese companies is the concept of speed. For example, Suntrix makes sure engineers are available 24/7 no matter what country when the customer needs them, whereas sees Western partners and competitors are less willing to do this, either abroad or in China. "For us, speed and scale is of paramount importance to move product, commission projects, and please customers. For example, we want to solve problems that come up overnight and keep on schedule—the fix may not be 100% perfect, but it keeps projects, installations and deliveries moving. In the West, I think the practice is to plan and work out a solution that can deliver 100%, but that means delays and money not used well."

Rong's three main business relationships involve customers, suppliers and certification organizations. The extra time taken on relationships in China is just as important for Chinese companies as Western ones. "It needs to be done here, and Westerners need to take that time to do it well. Actually, we generally find business in the West easier because everything in agreements and negotiations is very clear upfront with direct discussion. In China, there is far more time spent on developing trust across several relationships." Rong stresses that this is not necessarily a bad thing, rather just a cost of doing business well with quality, trustworthy partners.

Managing intellectual property

Intellectual property (IP) rights and protection is top of mind with any company looking to be involved with China somehow. Our survey results list IP issues as one of the four biggest challenges facing Western cleantech companies in China, and our question asking for advice on IP strategy garnered the most responses in the survey. We identified three general IP strategies that percolated to the surface, each representing about 1/3 of the responses: 1) keep your essential IP in-house, 2) compartmentalize separate elements of your IP, and 3) carefully share with strong partners.

Survey Question: Western cleantech providers often cite intellectual property (IP) protection as their top concern when considering participation in China's markets. What advice would you offer these firms regarding their IP strategy for successful China market participation?		
Three Main IP strategies	Main Takeaway	Illustrative Survey response
Keep your most important IP "locked-up" and in-house	Maintain complete control of your essential IP by keeping latest IP out of negotiations or at least locked-up in a "black box". Continuously innovate in-house to stay one step ahead of others.	"Acknowledge that there will probably be leaks and plan to deal with it. Protect as much as possible anything that can be protected legally, in line with China law. Do not transfer what cannot be protected and is life critical. Do not be naive and ruthlessly protect at all levels."
Compartmentalize your IP elements physical barriers	Carefully manage information flow with partners, suppliers and employees so no one constituency gains a complete enough picture to replicate or even improve.	"...always be two or three steps ahead in your product development cycle or do not share your most advanced technology. ...(Westerners) must be prepared to roll out the next generation of their technology"
Share and co-develop IP with strong partners for mutual benefit.	Develop quality Chinese relationships and cooperation structures that allow you to share your IP with trustworthy partners who benefit more by protecting the IP with you.	"Select the appropriate partner, and define the benefit for both parties clearly...(by) structuring the motivation and performance of the Chinese partner or distribution channels to deflect from IP issues"

Table 2: Three strategies for managing cleantech intellectual property (IP) in China.
 Source: Kachan & Co. survey and interviews

Three degrees of sharing

A common theme within each of these strategies was the expectation of IP infringement attempts and subsequent disputes, and to be prepared to deal with them with the help of experienced legal counsel. Depending on your market and sector dynamics, and on the

make-up of your IP, a successful strategy might involve any of the above three or some combination of them.

Several survey and interview responses advocating sharing of IP with partners highlighted a common message: Don't let IP concerns keep you away from genuine, compelling opportunities key to your business. With strong, well-managed and ongoing relationships, and with China's improving IP protection environment and vast market opportunities, it would be a mistake not to pursue avenues to make IP sharing, licensing or transfer work, respondents said²³ (see Q&A case box on page 22).

A number of legal professionals in the survey expressed that China's IP administrative infrastructure is developing better than most people realize, and that China has similar levels of IP litigation as occurring in U.S. Good news, as greater IP awareness should foster greater win-win collaboration to develop and protect joint IP²⁴.

American Semiconductor's (AMSC) on-going high-profile case with Sinovel, China's largest wind turbine maker is keeping Western-China IP issues on center stage. Four separate litigation cases by AMSC accuse Sinovel of copyright infringement, reportedly for damages of about \$200,000, and trade secret theft for damages of \$405 million. The cases are being followed closely by Chinese and Western companies alike²⁵.

It will be instructive to see how China's IP infringement regime handles these and other cases. Additionally, details of both successful IP-related Western-China cleantech partnerships, as well as legal dispute cases, might carry valuable lessons on what strengthens, or damages, the long-term relationships, alignment of goals, and contract negotiations that define IP strategies.

Management by incentives

A number of survey and interview participants supported IP strategies that center on, and extend from, the health of your business relationships. When considering cooperation with Chinese partners, David Gong thinks Westerners can make great progress by clearly translating their IP goals and strategies into useful incentives for the potential Chinese partner that demonstrates how the Chinese side can benefit from the cooperation to reach their own goals. That isn't an easy or quick thing to do. We received many responses stressing the prerequisites of doing your homework to understand what value and benefit the Chinese side can bring, and just as importantly, understand what their crucial interests and goals are, and what direction they want to see the cooperative relationships head in.

To help make your efforts worthwhile, interviewees advocate investigating closely the opportunities and advantages of working with reputable SOEs, leading companies that have the clout to really move projects forward. Gong and a number of other respondents are confident that after establishing what the SOE's crucial interests are and framing the benefits of cooperation to them along a common path, then you have taken a big step towards to a win-win collaborative partnership.

²³ Kachan & Co. survey and interviews

²⁴ Kachan & Co. interviews

²⁵ <http://www.windpowermonthly.com/news/login/1115598/>

Strategic advice for managing western cleantech IP in China

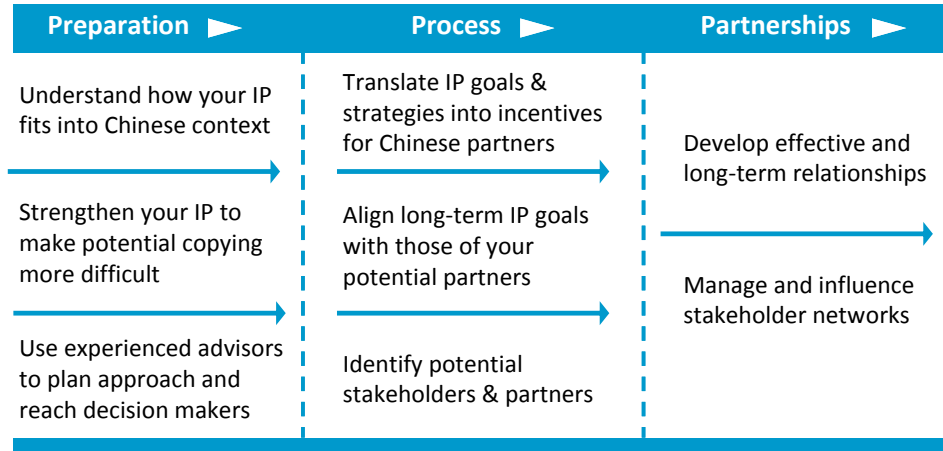


Figure 6: Advice on protecting Western cleantech IP in China. Source: Kachan & Co. interviews.

To accomplish this, says Gong, “Don’t try to re-invent the wheel and do all the leg work on your own. Do your homework upfront and utilize experienced advisors and service providers to help you understand the landscape and which Chinese people and companies to target. Then leverage these advisors and other reputable companies that already have strong business and personal connections with your target enterprises as a catapult to quickly plug into that trust—that is certainly doing it ‘the Chinese way’ and can save valuable time and energy.”

In sum, if you want to lock-up your IP, you can, but you might be turning your back on genuinely lucrative opportunities for your business. However, if you’re bold enough to utilize China’s markets and advantages to advance your IP for well-founded business reasons, there are ample partnership and markets benefits to leverage, said survey respondents and interviewees, but you should heed some of the above advice on IP management strategies.

The Perils of Viewing China Through the Rear-view Mirror Australian lawyer Peter Corne has been practicing law in Shanghai since 1996. For the past six years he has been active in China cleantech work. Mr. Corne spoke with Kachan & Co. at his office in Shanghai's Pudong District.

Q: A major theme of the responses to our survey was the importance of intellectual property (IP) strategy and protection when dealing with China. What do you see on the ground here?

I think a lot of Westerners often go about IP the wrong way in China. There is a lot of self-imposed paranoia out there about China, but you shouldn't let concerns over IP stop you from entering the market in a reasonable way and investigating and pursuing opportunities here. China is no longer the low-cost widget manufacturer that the West has come to view the country as. There is a concerted effort in China to move up the value chain and stand tall in the development and innovation of cleantech solutions.

Of course it depends on who are you dealing with and what sort of IP you have. However, China already has a relatively strong legal framework in place, so properly structuring agreements and contracts enables you to take advantage of all of the tools available. Something that isn't well known is that China has about as much IP litigation as the U.S. does, and the vast majority of it is Chinese-Chinese cases. Innovation in China will only continue to increase as the Chinese see the benefits of protecting their own IP here.

Westerners have a tendency to view China through the rear view mirror. This needs to change. The country is moving quickly—policy direction is very clear, there are more and more qualified managers and technicians, and the government leadership is applying money in very focused areas. Cleantech will benefit from this top-down direction, and I'm very optimistic that China will make great progress in all clean and green areas.

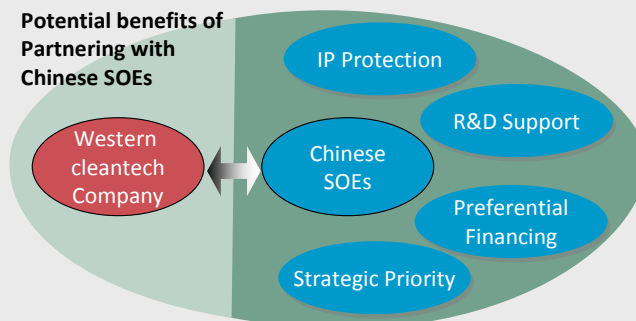
Over the past five years, there has been a noticeable shift as the economy has become increasingly dominated and controlled by State-owned enterprises (SOEs). Industries of strategic importance will be largely run by SOEs, which retain close links with government. In certain ways, this makes it easier for Westerners to handle IP issues. If I had an exciting emerging technology, I would look closely at collaborating and co-developing with SOEs and leading government institutions. If I was then faced with IP infringement in the market, my partnership with the SOEs would let me take advantage of the social sanctions that would be applied within this discreet and special community.

Q: Are you advocating more cooperation and less competition?

Not across the board, but if it makes a strong business case, you might gain more by cooperating. China is focused on developing its own R&D capability and competing using world-class technology and solutions. This is engrained in the current 5-year plan, which provides huge guidance and support for cleantech sectors.

If Western companies do not consider the current opening to collaborate with the elite SOE community to develop new technology—whether through partnerships for China markets or in support of their global strategies—the window of opportunity to collaborate may close on them. But the West needs to bring

something interesting to the table. As China is developing it is catching up, and if you don't have anything special to offer, why should China collaborate with you?



How Western cleantech companies can leverage cooperation with Chinese SOEs

In domestic industries of strategic importance or sensitivity, the State dominates. These partnerships I mention are needed if Western business is to have a future here. They can also develop quickly as a basis for successful global competition. Interestingly, smaller Western players sometimes have a better chance of successful development here. For these smaller companies, their IP is often all they've got. China, in many cases, especially in today's global economy, provides a more attractive location than in their home countries—it offers access to readily available capital and finance, attractive incentives and fast-moving research, development and manufacturing partners, which are all key for getting flagship projects up and running.

In comparison, many large global players often have a whole kitchen cupboard full of mature IP that they want to protect. Historically, I think they have viewed China as suitable for the "D" (merely tailoring existing technology to Chinese conditions) more than for the "R" (genuine collaborative innovation). This was often smart for years, but I think it is definitely reaching the end of the line given the amount of money China is applying to R&D and the speed at which quality, logistics, and higher value supply chains are improving.

Q: Could you share an example of China's homegrown leadership?

China's coal chemistry and liquefaction players come to mind. You might have seen recently that Sasol withdrew from China. Sasol is a global leader in chemical areas. The Fischer-Tropsch process is well known and China has developed it further, on its own, to a point where the performance and cost of indirect coal liquefaction leads the world. China Synfuels' offering is now world-renowned and is winning business from other traditional international players.

“There is a lot of self-imposed paranoia out there about China, but you shouldn’t let concerns over IP stop you from pursuing opportunities here.”

I’ve been privileged over recent years to meet the heads of a number of Chinese Academy of Science (CAS) institutes and to witness first-hand the cutting-edge work they are engaged in. Many have reached a high degree of recognition globally, and after each visit I have walked away very impressed. Generally these scientists have studied and worked abroad, and are now back taking advantage of China’s funding, resources and a supportive mandate—a package that wasn’t available to them in the west.

Q: Our survey also solicited many comments on the importance and difficulties developing business relationships with Chinese parties. What advice would you offer?

It is not just about the formal business deal relationship that is more the norm in the west. Here, you need to put in a lot of effort understanding one another’s goals. Making sure they are indeed aligned is a difficult but necessary and often lengthy process. In terms of results, though, the extra effort required can be extremely rewarding.

Initially, Westerners need to spend some effort questioning every one of the assumptions that they are bringing from home. With many clients, updating or adjusting these initial assumptions, many of which are contrary to what is happening here, is invaluable. This extra homework helps clarify and distinguish the points that are essential from the ones less important for relationship building and agreement negotiation.

Lawyers need to be careful with this, too. It is essential that both sides understand where the cooperation is going. It is up to lawyers and other service providers to help both sides understand not only the language of the agreements, but also the spirit and expectations that both sides want in their agreement.

Q: A number of survey responses recommended far more flexibility in contract negotiation and language. Would you agree?

Westerners can get hung-up on the form of the contract. A document that achieves the commercial objectives is what’s important. Often, beginning with a short, succinct, bilingual document covering just the crucial objectives for both sides, which is a format the Chinese are much more familiar with, can be useful. The simplified format helps keep both sides focused on the essential deal terms and can result in faster, qualitative negotiation. Working on the lengthier boiler-plate clauses later, after the sides are clear on the real numbers, contributions, and responsibilities, often moves along decisions and agreements for these latter clauses more effectively as well.

One caveat here: while I support flexibility by the Western side in negotiations and relations, the agreed terms cannot be applied to the exclusion of controls and law. By this I mean that if, after signature, your Chinese side is not delivering as promised or understood, the Western party shouldn’t let this slide for fear of damaging the relationship that they have invested so much energy in.

So Westerners shouldn’t be scared about enforcing their rights during contract implementation phases. If you discover bad faith infringement, don’t hesitate to enforce your rights under the law. This does not mean immediately filing an action in court. It means setting in chain a series of steps—that begins with first raising it with the other side and after a process of cutting out possibility for differing interpretations, making it clear that such behavior is not tolerable. Don’t tread softly or worry about offending the other side by easing back from provisions in the contract that are not being met. This again speaks to my “looking through the rear view mirror” comment earlier. In a basic commercial sense, China today should not be considered different. Don’t compromise on what’s been agreed to.

Conclusion

China's size and growth present opportunities for global cleantech companies in every cleantech-related sector. Global-leading demand in energy, resources, industrial production and consumer products mean vast prospects for cleaner, greener and more efficient development of all sectors. The State government's focus and spending on cleaner, greener and more efficient economic development is attracting Western cleantech companies from around the globe.

These firms are entering China all along the life-cycle chain, whether for R&D collaboration, speeding up the commercialization phase, tapping growing markets, or using China as a base for global strategies and endeavors. Top challenges these companies face in China include building collaborative business relationships, managing intellectual property, and competing in hyper-fast changing local markets. Leading cleantech professionals in China advise three ways to overcome these challenges.

Westerners need to localize more effectively. To be successful, they need to have a technology or solution that is innovative, need to create a real cost reduction, or provide needed management and know-how capabilities. Westerners would also be wise to step up the time and effort they place on developing business partnerships in China with capable, reputable counterparts. A first step is being more open-minded and flexible than they are likely used to in their home countries. Different structuring of the partnership, the specific contributions and responsibilities of all sides, and the expectations and timelines for returns might all be best reconsidered to be more successful and longer lasting.

Strategies for strong business relationships and effective IP management are highly related. Both require careful planning, ongoing assessment, and for long-term success rely on aligned goals and incentives of the western and Chinese parties.

Intellectual property management and protection in China is often the top concern of Western cleantech companies. And rightly so—for smaller companies, IP is the main chip they bring to the table, while larger companies' IP often encases years of development costs and know-how. Our report suggests both sides of the relationship need to clearly understand each other's motivations and goals to build the cooperative arrangement that will benefit both parties. Companies also need to work hard to maintain this understanding and common direction throughout the relationship.

Working with State-owned enterprises (SOEs) might be a useful strategy for Western companies due to their size and support from governments. At the same time, though, there is no room for reducing or waiving solid business sense and solid business parameters for upholding the responsibilities and accountability of both sides. Westerners are advised to stand up for agreed-to terms if there is infringement, or lack of agreed-to performance on their partner's side.

Methodology & bibliography

Kachan administered an online survey in January 2012 with senior China-based professionals extensively involved in cleantech, and interviewed six senior cleantech executives in China.

Respondents covered four functional areas—investment and finance, entrepreneurs, professional services, and non-government organizations, and included leading Chinese, Western or joint-venture organizations such as Suez Environmental, Deloitte, Tsing Capital, Climate Group, National Resource Development Council, China Energy Conservation Center, Guodian United Power, Camco International, Holcim Investments, U.S.-China Clean Air Task Force, China Materialia, Siemens Energy Center, Covanta and Applied Materials.

Of 150 email invitations to participate in the survey, 74 viewed the survey online of which 48 completed it.

Interviews conducted by Kachan & Co.

Six face-to-face interviews took place during February 2012 with the following:

Bo Lu, Executive Vice President, Lattice Power (a leading LED technology developer); Stephen Scoones, Director of Marketing, Greenkey (an lubrication oil cleaning and re-use solution); Guy Rong, CEO, Suntrix (a leading Chinese concentrated solar photovoltaic (CPV) provider); Peter Corne, Managing Partner—Shanghai, Dorsey & Whitney (an international law firm); Walter Ge, Director, New Ventures China (a non-government organization helping Chinese cleantech companies accelerate market adoption) and David Gong, a long-time cleantech investor, entrepreneur and advisor.

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KACHAN & Co.

Kachan & Co. is a cleantech research and advisory firm with offices in San Francisco, Toronto, Vancouver and Beijing. The company publishes research on clean technology companies and future trends, offers consulting services to large corporations, governments and cleantech vendors, and connects cleantech companies with investors through its Hello Cleantech™ programs. The company also offers services for Western companies entering China. Kachan staff have been covering, publishing about and helping propel clean technology since 2006.

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