

Green and Glorious

While China's multi-faceted environmental challenge may be gaining attention both at home and abroad, the greening of this economic juggernaut is a long-term quest.

By Gary Bowerman

ON A SUNNY AFTERNOON last October, South African businessman Grant Horsfield and his architect wife Delphine stood in a Zhejiang mountain valley and planted a tree. Despite the location, this was no idyllic gardening session but the groundbreaking of an eco-themed resort witnessed by local government officials, business owners and the media.

After the ceremony, the flat-cap wearing Horsfield stood over a scale model placed at the foot of a hill covered in tea trees. "This is why we are here," he said. "Naked Stables will adhere to the world's highest environmental standards, and prove that 'Made in China' can provide luxury and sustainability while supporting the local economy."

The Naked Stables resort near Moganshan, slated to open this Autumn, aims to be the first LEED Platinum leisure resort outside the United States, and only the second in the world, targeting 35-40 per cent energy reduction from national US standards and 40 per cent water reduction. Tag-lined as "Sustainable Luxury in Nature," it will feature 30 stilted bungalows overlooking tea plantations, 40 lakeside chalets, a spa, organic farm, three restaurants, a bamboo museum, cycling, tennis, a spa and an equestrian centre.

Horsfield says the key to its reduced environmental impact is low-density development, with building accounting for just six per cent of the 154,000 sqm forested site – plus the implementation of a range of cutting-edge energy and water saving technologies across the resort. "The business model is designed to be sustainable, but it must also be profitable," says Horsfield. "We cannot adhere to sustainable principles unless we make money, because the resort is very costly to develop and operate."

Currently in China, there are 48 LEED-certified projects and 215 LEED-registered projects that are seeking certification, according to the US Green Building Council.

With Shanghai focused on the 'Better City, Better Life' themed 2010 World Expo, businesses like Naked Stables can be viewed as benchmarks for a healthier approach to economic growth.

Beyond the clean-and-green showcases at many of its pavilions, the 2010 World Expo site is promoting itself as "the largest solar plant in China". The solar-power infrastructure at the Expo's China Pavilion and Theme Pavilion is supplied by Wuxi-based Suntech Power Holdings, the world's leading producer of crystalline silicon photovoltaic modules. Suntech, which has pioneered the cutting-edge Pluto technology that delivers 10-15 per cent greater efficiency than standard PV technologies, is undergoing rapid growth. In 2009, it shipped 704MW of solar products, up 42 per cent from 2008, and is now eyeing a larger slice of the global market.

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Among Suntech's marquee projects are solar installations at Sydney Town Hall, San Francisco International Airport, Taiwan's largest solar power plant and Lebanon's largest solar initiative, and it is preparing to open its first US manufacturing plant in September. The new facility at Goodyear, Arizona, is slated to "accelerate innovation and deploy new products designed to meet the burgeoning US solar market," according



With 50,000 skyscrapers to be built in China over the next 20 years, energy efficiency has never been so fundamental

to Suntech.

Headline green-tech companies like Suntech are leading the export charge, but back in China, the need is for an integrated, long-term approach to sustainable economic development. "If the negative impacts of climate change and environmental degradation are not adequately addressed in China, there is a danger that three decades of social and economic achievements may be reversed," warned the United Nations Development Programme's latest China report, released in April.

China's Conundrum

"China is at a critical juncture where the business-as-usual growth model is not sufficient to the country's emerging challenges and pressures," Khalid Malik, UN Resident Coordinator and UNDP Resident Representative in China, stated in the report. "The shift to a low carbon development pathway is imperative as China balances further economic development with environmental sustainability," he added.

However, integrating sustainable commerce is a tricky proposition in a geographically diverse country that over the next 15 years will count 221 cities with a population of over one million people. "The disparities in carbon emissions among provinces, corresponding to

different economic development, structure of the economy, level of technology and regional economic strategies require diverse policy objectives and priorities throughout the country," says the UNDP.

Utilising clean technologies is central to any grand plan, and China is making strides, says the World Business Council for Sustainable Development (WBCSD). "China is already a world leader in critical low-carbon technologies such as solar power, heat and wind turbines. However, it should do more in some key areas, including energy systems, transport, water and food supply," Bjorn Stigson, President of the WBCSD, says on the Council's website.

Low participation of Chinese companies in coordinated global efforts is a concern. Stigson notes that only three Chinese multinationals – Sinopec, Baosteel and COSCO – have joined the WBCSD, compared to 68 from the European Union, 42 from North America and 24 from Japan.

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For all business sectors, water usage is a top concern, and one that is already impacting China's economic efficiency, according to the Charting Our Water Future report published by the 2030 Water Resources Group, a multi-organisation group including The International Finance Corp, McKinsey & Co, Coca-Cola, Nestle, Syngenta and Standard Chartered Bank.

The report says China faces a water supply deficit of 200 billion cubic metres in the next two decades. It adds that "mounting pressure on water supply" is already costing the Chinese economy up to 2.3 per cent of GDP each year. "In China, unlike in most other large economies, industrial demand for water dominates overall demand growth," the report notes. Chinese industrial demand for water is predicted to grow by 300 per cent from 2005 to 2030, while China's total water demand is slated to rise 532 per cent, compared to 468 percent in India, 326 percent in North America and 184 percent in Europe.

The pressure is now on companies to strategise both energy and water efficiency. The 2009/10 Amcham Shanghai China Manufacturing Competitiveness Report has reported that three-quarters of their respondents said they were adopting green technology in their China operations, where 60% anticipate savings from their green investment. "The number one priority was to increase energy efficiency (86%), followed by conserving or recycling water (83%). A majority of multinationals (58%) are selling services into the Chinese market that benefit the environment or that are produced and distributed in ways that are environmentally sound," according to the report. >>>



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The Zero Energy Media Wall – harvests solar energy by day and uses it to illuminate the screen after dark is an example of sustainability solutions in Chinese cities

“China can no longer be viewed solely as a hub for low-cost exports. The growing domestic market in China offers rich opportunities to foreign invested manufacturers,” said Brenda Foster, President of AmCham Shanghai. “While challenges certainly exist, China remains a strong manufacturing partner and top investment destination.”

AmCham also noted that 58 per cent of manufacturing respondents are selling products and services in China “that benefit the environment or are produced and distributed in ways that are environmentally sound.” Pricing these solutions remains challenging. Only 30 per cent of respondents selling green products and services in China are achieving higher prices, compared to 46 per cent in other markets. “It is difficult to price green products competitively in China,” notes Brenda Lei Foster, President of AmCham Shanghai and co-author of the report.

Boosting Energy Efficiency

Energy pricing is just the front end of China’s sustainability conundrum. “The massive challenge will be to change the way China uses and supplies its energy,” says Steve Hammer, Executive Director of the Joint US-China Collaboration on Clean Energy (JUCCCE) Energy Smart Cities Initiative.

A Sino-US initiative, JUCCCE is coordinating an energy-efficiency training programme for mayors and vice mayors of Chinese cities at the Mayoral Training Centre in Beijing. JUCCCE’s “10-year mandate to visibly accelerate the greening of China” targets the development of “energy smart cities” by focusing on the key drivers of energy use: the electrical grid, industry, urbanisation and

consumer behaviour.

“Shanghai, for example, had 112 buildings of eight levels or more in 1980, and by the end of 2008 it had 13,100,” Hammer says. “That means there is a lot of retrofitting to be done.” Hammer adds that the technology is well established for making existing and new buildings more energy efficient, but the need is for “behavioural solutions.”

“Cities in China are thinking very seriously about how to integrate sustainable solutions into their master planning, but we are still in the early days,” Hammer says. Although the production and sales of renewable energy products is rising fast, achieving economies of scale is difficult in urban environments,” Hammer says.

the thirst for energy and water in China’s largest cities is not going to abate

These challenges are being tackled. “Every new building we design incorporates energy and/or water efficiency solutions,” says Andrew Kwok, General Manager of Asian Operations, SSOE Group, an architecture, engineering and construction management firm. “However, clients who focus more on driving down long-term operating costs of the facility, as opposed to initial design and construction, can justify even higher efficiency – and higher initial cost – technologies, and therefore have a higher demand”, he adds.

SSOE has set “an aggressive goal” for all technical staff, including the CEO, to become LEED accredited. “In Shanghai, we have approximately 15 per cent of our staff LEED accredited or in the process of accreditation,” Kwok says. “When talking with US-based clients looking to build in China, they want the assurance that we have the experience and can ‘localise that experience’ to successfully achieve certification.”

The importance of LEED in setting a new constructive agenda in China is widely

agreed. “It’s without question that LEED has gained in popularity in China amongst foreign-invested projects over the last few years,” says David Lehmann, Managing Director, Bovis Lend Lease China, which has 16 LEED-accredited technicians in China and constructed Nokia’s China headquarters in Beijing – China’s first Gold LEED rated commercial building.

The future may be different, however. “I actually see this dropping off in coming years, as the China Green Building Council gains traction and Chinese Authorities legislate the compulsory usage of a China green rating tool for buildings and developments,” Lehmann adds.

While green technologies are not in short supply, many need significant financial support. International banks headquartered in Shanghai are required to demonstrate their sustainable business credentials in an annual report submitted to banking regulators. Most are now diversifying their approach to sustainable commerce.

HSBC, for example, has developed a ‘climate champions’ programme in association with the Earthwatch Institute, the Climate Group, the WWF and the Smithsonian Tropical Research Institute, whereby selected staff members undertake environmental field research at the Gutianshan Nature Reserve in Zhejiang province. Citi China is participating in China’s first energy-intensity cap-and-trade scheme in Tianjin, where heat suppliers of more than two million square meters of residential buildings, whose emissions intensity is below the cap level, are allocated Carbon Emissions Allowances that can be sold to participating entities exceeding the cap, or to third-party traders.

Investing in greentech suppliers is another focus for international banks in China. Standard Chartered made a USD40 million equity investment in Environmental Facilities Management Corp, a wholly-owned subsidiary of Kolon Group. It also invested USD23.3 million in Sangle Solar Energy, a Chinese solar water heater company, and USD70 million in China’s wastewater treatment sector.

China’s multi-faceted environmental challenge may be gathering more traction at home, and engendering greater interest worldwide, but the greening of this economic juggernaut is a long-term quest – and one that will test business and political leaders to the limit for decades to come. **SBR**