



Cheap green tech demanded by Chinese dyeing industry

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China's Made in China 2025 strategy, initiated by president Xi Jinping in October, was largely welcomed by the Chinese industry. However, its stress on raising environmental standards is making dyers and finishers nervous.

Announced during the fifth plenary session of the 18th central committee of the Communist Party of China, the Made in China 2015 goal is to ultimately better orientate the country's manufacturing industry towards innovation, sustainability and high quality. But this will mean change – throwing challenges in the face of nearly every manufacturing sector – and dyeing and printing, a significant source of water pollution yet essential to the textile sector, is under fire.

Speaking at last month's Integral Conversation conference – held by Hong Kong textile company Esquel at Guilin, Guangxi province – Chen Zhihua, president of the China Dyeing & Printing Association (CDPA), a government linked body, said, "In the next five years, we will continue to shut down the dyeing mills that fail to comply with our discharge regulations." Chen added that China has closed a large number of low level dyeing mills in the past decade, but more than 2,000 dyeing mills remain in the country. "The industry will continue to consolidate," he said.

A total of 2,219 clothing and textile manufacturers in Zhejiang province in high polluting sectors such as dyeing and printing, leather, as well as plating, were shut down from January to July this year, according to the local government. In Shanghai, high polluting and energy intensive industries including textiles and leather are not allowed in some key areas of the city, such as the new Disneyland park, which is currently under construction. In Beijing, the local government is moving the entire textile industry out of the city.

Moreover, in April, the Chinese government issued a new water protection law, according to which small sized manufacturers with no approved environmental protection facilities in 10 high polluting industries – including dyeing – will have to be closed by the end of 2016. The dyeing industry started taking measures to address pollution in 2006, since the CDPA began promoting ecofriendly technologies and environmental protection education among the nation's numerous dyeing and printing mills, with the CDPA putting particular focus on improving processing technologies, chemicals management and water treatment technologies, as well as upgrading printing equipment.

Such efforts have yielded impressive results over the past decade, including water consumption, which has been cut to 1.8kg per 100metre from 4kg, and water recycling rate, which has risen to 30% from 7%, according to Chen. He also added that azo dye detection is down to less than 3% on average – a global average level – as Chinese manufacturers must comply with foreign and Chinese domestic regulations, such as the EU's REACH and China's GB18401 standards.

“But challenges remain, as there are gaps between companies and regions,” said Chen, who used Esquel as an example. “Esquel is one of the few large textile companies that are willing to invest generously in green manufacturing.” And it is true, the Hong Kong company's investment in green technologies, especially waste water treatment and water consumption, is significant for a textile company. “Each year, around five per cent of our revenue goes towards improving green manufacturing at our global sites,” said Queenie Huang, Esquel managing director of woven business, at the event. “We foresaw in early years that eventually the Chinese government wouldn't allow the economic development at the expense of sacrificing natural resources.”

It does not seem to be harming the company's bottom line, however, with Esquel having earned US\$1.39bn in 2014 from its five major manufacturing sites in China, Sri Lanka, Malaysia, Mauritius and Vietnam – up 6.1% year on year. In China, Esquel runs its dyeing facilities in Gaoming, Guangdong province, using reactive dyes to reduce chemical discharge, as well as energy and water consumption, according to the company. Gaoming also is home to Esquel's research and development centre for chemical dyeing research.

In Kunming, Yunnan province, Esquel is working with the Kunming Institute of Botany, a division of the Chinese Academy of Sciences, to develop natural dyes for cotton yarns. “A bunch of natural dye colours are under testing at our research centre,” said Huang. But for many other Chinese companies, cost is still a major concern when it comes to environmental compliance. Said Chen, “Cost effective dyeing and water treatment solutions are in urgent demand.” Chinese scientists and companies are already working on projects to meet the demand. For example, Tianjin Polytechnic University is undertaking a research project that uses Rankine cycle-to-recycle dyeing

wastewater; Wuhan Textile University is studying fix methods by liquid ammonia; and Weifang, Shandong province chemical fibre supplier CHTC Helon is developing stained and easily dyed viscose staple fibres. All projects have been assigned by the China National Textile & Apparel Council.

The move in the dyeing industry certainly benefits dyeing technology companies such as Singapore's DyStar, which develops products for a variety of sectors, including textile, denim and digital printing. "Our business in China has seen growth in recent years, thanks to dyeing mills serving high profile brands and retailers," said Vera Huang, general manager of DyStar. "Among products demanded by Chinese clients are reactive dyes such as the Remazol series, which provide a balanced performance of fastness and environmental protection at a relatively lower price, as well as disperse dyes including Dianix products, which are known for their high light fastness (resistance to fading in light) and weather fastness (resistance to fading through weather exposure) properties.

"Chinese clients are more concerned about fastness, colour consistency and environmental compliance," said Huang. However, many of them are still price conscious.

"In general, only those serving big brands and retailers focus more on quality than price, as they have to meet the demand from their clients," she said. DyStar is building a new global innovation centre in Nanjing, Jiangsu province, to develop dyeing products to help clients in China achieve shorter and more economical dyeing procedures. Although the investment amount has not yet been disclosed, the facility is expected to include a process technology department and well equipped labs.

With such investment, DyStar is well positioned to fulfill the Made in China 2025 goal in three ways. "Our innovative technologies such as digital printing inks, our unique ability to serve brands throughout their entire supply chain, as well as our commitment to green technologies and sustainability enable us to grow with the evolving dyeing sector in China," said Huang.

Full story :

<http://www.wtin.com/article/2015/november/301115/cheap-green-tech-demanded-by-chinese-dyeing-industry/>