The safer, greener China

Tough new regulations have closed thousands of mines – and created opportunity

By Marlene Eisner

The numbers seem astounding: of the more than 100,000 mines in China, close to a third of them are slated to be closed within the next 10 years. The closures are evidence of the continuing struggle by the Chinese government to reform its antiquated mining industry. And, it is a trend that promises opportunity to those who establish themselves within the growing industrial powerhouse.

Marko Moudrak

Workers at Sparton Resources' Huajun coal and germanium operation in Yunnan, China. The Huajun Coal Mining Company, which is controlled by Sparton, was formed by the consolidation of three smaller mines.

"A lot of these mines are very small," explained Lee Barker, president and CEO of Sparton Resources, which has been active in China for the last nine years – the company operates a joint-venture germanium mine and is also developing a vanadium deposit. "When we think of a mine in the West, we think of 500 to 500,000 tonnes a day," said Barker. "Here, those small mines are mining five or 10 tonnes a day, that's all."

The move to shut down small mines or to consolidate them into larger scale, modern operations has mining equipment manufacturers working hard to stake their claims in this rich territory. In November, Caterpillar purchased

ERA Mining Machinery, which was a major supplier to the Chinese coal mining sector. Earlier in the year, Joy Global increased its stake in a manufacturer of longwall coal mining equipment. "The China coal market is large and diverse, and must be accessed with a multi-dimensional strategy," explained Mike Sutherlin, the company's president and CEO, when the acquisition was announced. "While the major mines generally use globally sourced equipment, a larger number of mines rely on local Chinese mining equipment manufacturers. Leadership in the China market requires strong positions specific to each segment."

David Feickert, a New Zealand-based mine safety adviser, works with coal mines in China to identify and resolve safety issues, where, he said, the situation has improved significantly in the last few years. "Since 2007 it has become clear that the government's determination to really deal with the small private mine issue meant the closure of thousands of mines, or their merger into large state-owned mines nearby," he explained. "This was a clear safety-based decision, as the largest percentage of miners was being killed in these mines." Feickert added that the number of deaths due to mining accidents is expected to be 2,400 this year, less than a third of the number reported in 2002. "China's coal industry has moved rapidly forward from 10 years ago, when disasters were usually large scale," he said.

The safety of workers is not the only target of China's sweeping policy changes. The environmental impact of mining operations is also a major focus.

Geologists Jeffery Zhou of the China University of Geosciences and Dirk van Zyl of the University of British Columbia have studied and written about the Chinese government's "Twelfth Five-Year Plan" (2011-2015) to "green" the industry and galvanize environmental protection. They have drawn attention to a 2005 government survey, which chronicled 12,379 mining geologic hazards that caused 4,251 deaths or injuries, and also to a continuous rainfall last July that resulted in a breach in the clay liner of a tailings pond at a copper mine, killing 1,890 tonnes of fish.

While these tragedies haunt the industry, growing attention to the environment has been a boon for BioteQ Environmental Technologies of Vancouver. The water treatment firm has been developing their project portfolio in China since 2006 when it formed a joint venture with the Jiangxi Copper Company. The treatment plant installed at the Dexing copper mine removes heavy metals from the water discharged from the mine, waste dumps and ore stockpiles, and allows the water to be reused at the mine. The company has since identified six potential sites for their water treatment plants and is in the process of building a second treatment circuit at the Dexing Mine.

"China has been very committed to improving its environmental regulations and, more importantly, enforcing those environmental regulations," said Tanja McQueen, vice-president of corporate development at BioteQ. China's push to move forward was the catalyst for BioteQ getting involved. "What we saw was a change in regulation that encouraged mining companies to think differently about how mining impacted water," she said.

McQueen noted that when BioteQ first arrived, the copper mine lagged not just in environmental procedure, but in safety standards as well, which turned out to be another opportunity for the company. "We introduced our safety standards there," she said, "and they were embraced and became part of the standard operating procedure at that site." CIM