GRAND VALLEY

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Ruby Canyon Engineering and A New Energy Economy

Michael Coté (left) and Lu Tao (center with black glasses) meet with government officials and the administrators for the Furong Coal Mine Association in Gong Xian, China.

BY JOSH MCDANIEL
PHOTOS BY MICHAEL COTÉ

RUBY CANYON ENGINEERING is a Grand Junction-based company specializing in international greenhouse gas emission reduction projects. Much of the company's work is in China. "What we see all over China is a huge need for clean energy," says Michael Coté, Vice President of Ruby Canyon.

Since 2005, the company has worked with Chinese coal mines on methane capture and use projects. China now has between 10,000 and 15,000 coal mines, and as a result of its coal production, the country is the world's largest emitter of coal mine methane. Methane is an important component of global greenhouse gas emissions, representing 16 percent of the total. But, more importantly, methane is 21 times more potent than the most common greenhouse gas, carbon dioxide, in its ability to absorb heat.

Methane recovery projects capture gases that would otherwise be released to the atmosphere and convert them into energy that can be used

Buses in the town of Gong Xian, China, equipped to run on captured methane from the Baijiao mine.

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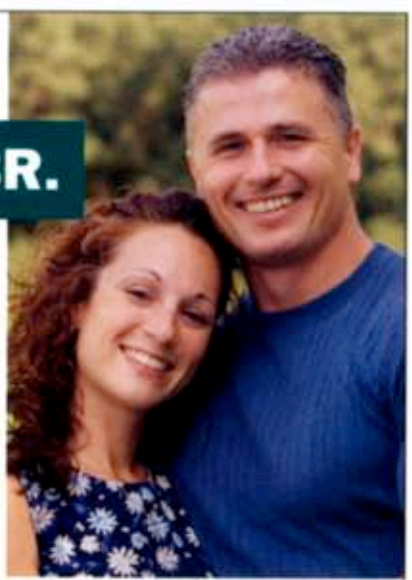

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to provide electricity and heat for the mine and surrounding towns or to power vehicles. In return, the mining company receives carbon credits under the Kyoto Protocol, which it can market to other carbon-emitting companies in Europe, Japan, and elsewhere to offset their emissions.

Ruby Canyon Engineering works with the mines to validate their emission-reduction projects and ensure eligibility for carbon credits. They also do third-party verification, confirming that the mines are following proper metering and monitoring procedures. The company is one of only 11 firms worldwide with American National Standards Institute (ANSI) accreditation under ISO 14065 for third-party greenhouse gas validation and verification.

The Baijiao mine in Gong Xian, China, produces about 200,000 metric tons of usable methane per year (equivalent to the emissions of 745,000 cars per year). The gas was previously released directly into the atmosphere, but Ruby Canyon is working on a project to capture the methane and put it to use, generating electricity for the

Methane power generating units at the Pingdingshan mine in Henan Province, China. The mine captures and uses 100,000 metric tons of methane per year.

mine, heating and lighting homes in Gong Xian, and powering local buses fitted with rooftop bladders for use of compressed gas. The project allows the mining company to increase operational efficiency, provide low-cost clean energy for their employees and the surrounding area, and create income through the sale of carbon credits. Ruby Canyon Engineering has worked on 20 such projects in China.

"These are not grandiose projects. They use simple technology," Michael says. "But anytime you can find a local source of energy to offset coal in China, it is a big deal."

Ruby Canyon Engineering was formed in 2005 by Michael Coté and company president, Ron Collings, both of whom were working for mining companies doing voluntary emission-reduction projects in the U.S. With the implementation of the Kyoto Protocol in 2005, they recognized that there would be a tremendous need for technical services related to qualifying, registering, metering, and monitoring greenhouse gas emission-reduction projects globally. They made some contacts in China, India, Russia, and Ukraine and soon found themselves on the frontlines of the emerging carbon economy.

Ruby Canyon works on emission-reduction projects in the U.S. as well. They conduct greenhouse gas inventories, measuring the carbon footprint for companies and identifying areas for potential increased energy-efficiency. However, Michael says that so far U.S. companies haven't shown much interest in the carbon-offset market, but he believes that could change very quickly with a significant change in U.S. energy policy.

Currently, the U.S. has a voluntary market for carbon emission reductions, but under a compliance market — meaning that some industries are capped in their total allowed emissions (as has been proposed under a cap-and-trade policy) — the market for carbon offset credits would become very important. For example, a coal-fired power plant that emits above their cap would have to purchase offsets from companies that have received credits for emissions reductions, such as methane recovery projects at U.S. (or Chinese) coal mines. Michael thinks that when that policy shift occurs, there will be much more interest in generating carbon offset credits by U.S. companies, leading to a huge increase in green technologies and jobs.

"If the U.S. goes to a compliance market, carbon will become a real commodity with a strong price signal. The U.S. carbon market will explode. It will go from hundreds of millions of dollars to billions of dollars per year. The U.S. carbon market could be larger than the entire existing carbon market under the Kyoto Protocol."

Michael says that even though Ruby Canyon Engineering has no clients in Grand Junction, Western Colorado makes sense for the company. He graduated from Mesa State, and he and his wife decided that they wanted to raise their family in the Grand Valley. "I am not going to live in a big city just to be close to an international airport," he says.

He also believes that Colorado is positioned to play an important role in the changing energy economy of the U.S. "Colorado will definitely benefit from a change in the mix of clean energy sources — natural gas, solar, wind, biomass, and methane-to-energy from landfills, coal mines, and farms. A lot of that is going to occur in Colorado." ❖

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