



## **Power Lines Blog**

### **Golden opportunities for gasification in China?**

By Carla Bass

December 6, 2010

<http://www.platts.com/BlogDetails/powerlines>

The gold business card -- that's gold, not gold-colored paper -- said it all about where the money is coming from for a new kind of gasification industry. The small but growing area is a fairly low-emission process that turns carbon feedstocks, mainly coal, into synthetic gas for multiple uses -- including turning power turbines -- without burning them. It is especially expected to take off in China, with that country's abundance of cash, coal and carbon dioxide emissions.

The card came out of the wallet of gasification entrepreneur Robert Walker, who said it came from a Chinese business contact.

"Solid gold. Worth about \$300," he said of the card during a recent chat in Houston.

Walker took his own money out from under the mattress -- make that out from under the well-known Sleep Number adjustable mattress he invented and became wealthy from -- to set up Bixby Energy Systems in 2001. He decided to research a variety of clean energy technologies as his "post-retirement" project.

In September, the company shipped its first Bixby Process unit to China -- the first such unit set to begin producing commercially, in January. Chinese firms have ordered four other units, Walker said.

The process, he said, uses a different way of heating coal to produce lower emissions and a higher-quality synthetic natural gas than other gasification systems.

Typical gasification processes use air or steam to break down coal into mainly carbon monoxide and hydrogen that can be reformed into other hydrocarbon compounds -- synthetic natural gas, for example. Certain gases and carbon in the coal, which can have market value, are usually consumed in the process. And the flyash left behind must be dealt with.

The Bixby Process injects very finely pulverized coal into a chamber filled with methane, and heats it. The coal "evaporates" to produce mainly more methane (a high-quality syngas) and other long-chain hydrocarbons. It also leaves behind a semi-activated carbon that has market value. The company is also working on "liquefaction" technology to produce light sweet crude oil from coal, with plans for a testing unit to be ready by mid-2011.

Jim Childress of the Gasification Technologies Council, which represents some of the bigger gasification leaders such as Shell and GE, said that the "fundamentals are about the same" in most gasification technologies, even though there are a variety of processes.

"There are a lot of smaller start-ups" like Bixby, he added, as companies are jockeying for position in the adolescent industry.

What they do all have in common is their focus on Asia, and China in particular, Childress said. "China is exploding," as he put it.

China is expected to lead the world in gasification growth through 2015, with 81% of all growth to take place in Asia, the council estimates.

The US hasn't brought a large-scale gasification project online since 2002, because high construction costs and policy uncertainty are holding things up. Worldwide, the overall industry is expected to grow by up to 72%, to 51,288 MW worth of syngas output, by 2016, the US Department of Energy says.

Whether Walker's Bixby Process will hold a big place in that boom is yet to be seen. But then again, whoever thought the world needed a mattress with numbers?