

Capturing CO₂ must be part of any plan for coal

By Todd Wilkinson

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In a hotel conference room in Taiyuan, China—a city as populous as any in the U.S. outside of New York but one that you've never heard of or could easily find on a map—Susan Capalbo is talking about a flapjack strata of geology deep beneath China and the U.S.

Her hosts, representing the People's Provincial Government of Shanxi, coal producers, and the country's eminent ministers of science, are paying close attention.

The US-China Clean Coal Forum, co-sponsored by the Jackson Hole Center for Global Affairs which flew Capalbo over to Taiyuan from Bozeman, is not a junket or academic fancy.

It's one piece in a puzzle that creates a tangible picture for the future.

Capalbo, an economist but also a mother, researcher, believer in free markets, and the role of government in protecting the environment, is involved in an obscure federal-led program.

As director of the Big Sky Regional Carbon Sequestration Partnership, one of seven centers established by the US Department of Energy, her office is charged with sizing up the prospects of containing carbon dioxide and methane emissions that industrialized human societies are releasing into the atmosphere.

It's a hurry-up-and-assess-the-potential endeavor that has long-term implications for the health of a warming planet.

There is no single silver bullet technological fix that may rescue the Earth as growing CO₂ emissions coming from the largest global energy consumer—the US—and the nation gaining on its heels—China, followed closely behind by India, she says.

If those three nations, stepping forward in concert with the rest of the world, don't address one of THE major sources of CO₂ emissions—gas released from coal-fired power plants—any attempt to arrest the worst effects of climate change will be fruitless.

Capalbo knows it. China knows it. John Turner, one of the real green pragmatists formerly with the Bush Administration, knows it. So does Wyoming's Senate President Grant Larson; and Rob Wallace, a higher up in mighty General Electric; and a rapidly expanding braintrust of government officials, business people, environmentalists, and scientists.

So dire is the outlook without intervention that even the Bush Administration, which recognizes its seriousness but has been too timid to mandate action from the White House, has been supporting talk about sequestration behind the scenes, knowing that action is inevitable.

Capalbo, based out of Montana State University, notes that the West, besides having huge amounts of coal, also has geology suitable to possible carbon sequestration, which is to say rock formations that might serve as vaults for injected carbon.

For example, storing CO₂ in basalt strata located in the Columbia River Basin alone could theoretically contain all emissions from US coal-fired power plants for the next 20-30 years.

Although that prospect is considered viable yet untested, a crucial first step is having the means of trapping CO₂ that is a byproduct of energy generation.

The best possibility is IGCC technology, i.e. the gasification of coal, that the Jackson Hole Center hopes will take hold in China and the U.S. West.

What's great about IGCC, says Capalbo and GE's Wallace, is that besides being cleaner, more efficient, and able to separate out noxious mercury, sulfur and lead, is that such plants can be built to contain carbon dioxide.

Sequestration isn't a panacea. It is one tool that holds promise within a broader arsenal that includes using alternative energy and curbing emissions from cars.

Sen. Craig Thomas backs IGCC so does Big Business and King Coal. Turner, who sits on the board of Peabody Coal, says it's an innovation that represents a vast improvement and can actually help the US if antiquated coal-fired plans are converted to IGCC.

Just this week, Montana Gov. Brian Schweitzer, who's been influenced by Capalbo who, in turn, has been inspired by the Jackson Hole Center, got behind a new \$1.3 billion IGCC plant in Montana's Bull Mountains north of Wyoming's Powder River Basin.

The plant will produce 300 megawatts of electricity, create 1,764 full time jobs and become a beacon as "one of the cleanest coal plants on the planet." The rest of the world can do it, too. Wyoming could even set the standard.

NEXT WEEK: Where does your energy come from?