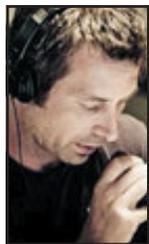


# From coal to carbon, the Bakken's potential is beginning to gas up

It is hard to imagine that the Bakken's energy play is still in infant stages — at least from a macro level. On a micro level, the start up phase is over and production is here, while the Bakken passed the



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boom phase and into an industry sometime over the past 9-12 months. Brad Crabtree, vice president of fossil energy at the Great Plains Institute, has seen it all first hand and believes the future of resources like carbon and coal are just starting to gain traction in the Bakken.

Crabtree's experience in the state's energy world goes back quite a few years. From his days running for public office as a candidate for public service commissioner or working overseas in Europe and Asia presenting on energy policy and touring facilities to see cutting edge technologies, Crabtree has always attempted to lead with North Dakota's interests. Crabtree currently office in Bismarck with The Great Plains Institute, a non-profit that works with the industry, government and other interests on energy and climate change.

"We promote good energy and good energy policy," Crabtree said. "I run our fossil energy program, but we also work on renewables, wind, biomass, transmission infrastructure, energy efficiency, really the whole gamut."

Crabtree added he also works on power plants — coal and natural gas fired generation that produce electricity — and carbon capture technologies in the Bakken.

"We are using more CO<sub>2</sub> to produce more oil while storing the CO<sub>2</sub> carbon dioxide in the ground at the same time," Crabtree said. "So you solve an environmental problem while creating an economic activity."

When asked about the relationship and coexistence of coal and natural gas, Crabtree is in the camp that the two are in competition. At least for now.

"They are very much competing with each other," Crabtree said. "They are two invaluable energy commodities, and in the case of power generation, I would say the challenge with coal is two-fold."

The first fold is the growing and changing regulations within the coal industry, according to Crabtree. The second is the abundant lower priced supply of natural gas in the shale plays.

"Thanks to horizontal drilling and hydraulic fracturing, which has produced a gas resources we would have imagined a generation ago," Crabtree said. "If you have a conventional gas fired plant and a conventional style coal fired plant, the environmental and carbon footprint of the natural gas fired plant and some of the other emission are certainly lower."

In regards to coal, Crabtree added that it is important to point out that advancements have been made, but industry, government and investors need to become even more progressive and advanced.

"I've actually worked on coal for many years as an energy resource and think it can and should play an important part in our country's energy future," Crabtree said. "In order for that to happen we need to have a much more ag-

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— Great Plains Institute VP Brad Crabtree

gressive effort to advance new coal technologies. Technologies that will manage the carbon dioxide emissions from coal and continue to make the progress we've seen and the dramatic progress in reducing mercury emissions and sulfur dioxide and some of the other traditional pollutants. Until we see that technology investment in coal, I think the future for coal is going to become more and more difficult."

Crabtree added uncertainty in the marketplace is creating issues and causing problems with the resources' relationship with natural gas.

"With all this uncertainty you have natural gas that is affordable and available and coal which has all kinds of environmental risks," Crabtree said. "So what's happening is industry is investing



PAUL FLESSLAND/For the Tribune

Brad Crabtree, left, answers a question from Jason Spiess at the Williston Basin Petroleum Conference held in Bismarck.

in natural gas. So the future in the coal industry and all the jobs that go with the mining, and managing and operating power plants depend on new technologies."

Crabtree said one of the policies he and the GPI back is tax credits that create incentives to "allow companies to invest in new coal technologies." Currently the economics and life cycle of this still in limbo.

"What we have seen for decades in the energy industry is technologies are developed and they are tested out and shown to work," Crabtree said. "Being shown to work is one thing, but being commercially viable in the marketplace today that's another level of challenge."

Crabtree said tax credits can ease the shift from research and development into the marketplace and offer companies the opportunity for making a profit. In addition to seeing the process work in the fields, he sees the cultivation of tomorrow's solutions to coal, natural gas and oil at industry events consistently.

"We learn by doing and we are seeing that in the Bakken right now," Crabtree said. "Every year we go to conferences and see the dramatic improvements in hydraulic fracturing and horizontal drilling technologies almost month by month. That's because they are drilling a lot of wells. So they are getting more and more experience drilling the wells, improving the technologies, improving the processes. We need to have that with some of the technologies to manage natural gas and if we do that we'll bring the cost down."

Even with a good process and plan, the industry still faces a major unknown in regulation, according to Crabtree.

"There's a regulatory piece to this

too, and I think we've made a mistake in North Dakota," Crabtree said.

That mistake is allowing an environment in the state that allows oil companies to drill without have a proper plan in place for natural gas, due to the economics of natural gas.

"As a state we permit oil companies to drill a well, which we should," Crabtree said. "But managing the natural gas responsibly needs to be built into the cost of doing business and producing the oil."

Crabtree said if the state every went that direction, he believes there is enough profit on oil's side to adjust the numbers and still come out in the black.

"One of the things you will hear is it actually costs more to capture that natural gas and say use it on site for electricity or some other purpose or connect it to pipes that the gas itself is worth," Crabtree said. "Well that may be true. But we are choosing to produce the oil."

As Crabtree and I concluded chewing the energy policy fat, he pointed out the current regulators in North Dakota are moving in the right direction.

"I think our regulators are moving in that direction," Crabtree said. "It wish it would be sooner, but overall it is all in a positive direction."

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Jason Spiess is a multi-media journalist and host of Building the Bakken Radio. Building the Bakken Radio can be heard in Bismarck on SuperTalk KLXX 1270AM on Sundays at 10am CT. To see if your listening area carries the radio program or see the entire Building the Bakken Media Network, visit [www.buildingthebakken.com](http://www.buildingthebakken.com). Spiess can be contacted at [jason@buildingthebakken.com](mailto:jason@buildingthebakken.com).