

Desperate for CO2

By DUSTIN BLEIZEFFER - Star-Tribune energy reporter | Posted: Thursday, July 1, 2010

Some people in the oil industry are miffed that the Wyoming Legislature allocated some \$45 million in federal Abandon Mine Lands funds for a carbon sequestration project.

From their view, it doesn't make sense to inject carbon dioxide – a greenhouse gas – for permanent geologic storage when the oil industry is desperate for CO2 supplies to flush more oil from existing fields.

Although state officials delight at the prospect of more oil production and the revenues it would bring, they're also worried about the future of Wyoming's coal industry under climate change regulation, which will likely limit CO2 emissions from coal.

Rob Hurless, energy policy adviser to Gov. Dave Freudenthal, said the state has a major interest in proving geologic carbon sequestration – even if that means using up some CO2 that the oil industry would rather put to use.

"We think we have credible places to store carbon so coal has a commercial market down the road. Yeah, it happens to require (commercial volumes of CO2), so we got to figure that out," Hurless said.

Hurless spoke at the fourth annual Wyoming CO2 Conference in Casper on Wednesday.

For decades, CO2 has been injected into oil reservoirs to "sweep" additional volumes of oil unattainable through conventional methods such as pumpjacks.

As the price of oil increases, using CO2 for enhanced oil recovery becomes more attractive. But the supply of commercial-grade CO2 is limited. Currently, there are five CO2 enhanced oil recovery projects in Wyoming. The CO2 comes from natural gas processing facilities.

Coal-fired power plants do release a large volume of CO2 into the atmosphere, but the greenhouse gas is mixed in with a number of other gases. The oil industry needs a relatively pure stream of CO2 in order to compress the gas, ship it via pipeline and inject it into oil fields.

Hurless referred to the symbiotic relationship among all three of these pursuits: enhanced oil recovery, carbon capture and carbon sequestration.

The price of oil provides the financial driver to build CO2 pipelines to sweep "stranded" oil in Wyoming and throughout the Rockies. And the pipeline infrastructure would serve as a foundation to geologic carbon sequestration.

Once carbon capture technologies are applied to coal-based power plants, there will be an ample supply of CO2 for enhanced oil recovery.

"Why would the state go in there and compete for CO2 in the market when industry is CO2 short? Their hope is, through this process at the end of the day, end up with more CO2 resources than fewer," Hurless said.

In recent years, the Wyoming Oil and Gas Conservation Commission has pushed both Exxon Mobil and ConocoPhillips to divert CO2 emissions at their natural gas processing plants in Wyoming to pipelines for the oil industry.

ConocoPhillips will soon divert 50 million cubic feet of CO2 per day at its Lost Cabin gas plant in Fremont County from smokestack to pipeline. But that volume is already under contract with Denbury Resources, which plans to ship the CO2 to the Bell Creek oil field in southern Montana.

In September, Exxon Mobil will divert 110 million cubic feet of CO2 per day from smokestack to pipeline at its Shute Creek gas plant in southwest Wyoming, and all of that volume is under contract.

For now, the oil industry is awaiting two yet-to-be-built energy projects that may produce commercial-grade CO2.

DKRW Advanced Fuels' coal-to-gasoline plant near Medicine Bow could add another 200 million cubic feet of CO2 per day to Wyoming's enhanced oil recovery market. Linc Energy plans to launch several underground coal-gasification facilities in the Powder River Basin, which could also supply commercial-grade CO2.

As for the University of Wyoming's effort to prove geologic CO2 sequestration in southwest Wyoming, the CO2 would likely come from a carbon capture trial at PacifiCorp's Jim Bridger coal-fired power plant in Sweetwater County.

However, PacifiCorp isn't saying exactly how much CO2 it may be able to divert from smokestack to pipeline.

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