

Wyo models CO2 pipeline grid

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CASPER -- With the prospect of a carbon-constrained regulatory environment around the corner, Wyoming is in the enviable position of having an existing commercial demand for carbon dioxide: old oilfields.

That means, at above \$60 or \$70 per barrel, there's an economic incentive to invest in a CO2 pipeline infrastructure in Wyoming.

But without some cooperation among CO2 producers and CO2 buyers, the grid would likely evolve in a piecemeal fashion, possibly leaving out some CO2 sources and sinks.

On Tuesday, state energy officials rolled out a work-in-progress database, pointing out to CO2 stakeholders the potential for pipeline investment and collaboration.

"We think the parties should recognize their benefits, and then draw them into helping pay for it," said Brian Jeffries, executive director of the Wyoming Pipeline Authority.

The Pipeline Authority and the University of Wyoming's Enhanced Oil Recovery Institute are working together to further refine the database, which maps out where planned and speculative CO2 sources could connect through phased development of pipelines throughout the state.

The database will be available on the institute's Web site (eori.gg.uwyo.edu) later this week.

The world's top scientists believe CO2 is the main greenhouse gas responsible for global warming, and that man-caused CO2 emissions play a significant role in global warming. The CO2 pipeline infrastructure modeling is part of several state-level efforts in Wyoming to align its largely fossil fuel-based economy with emerging climate change regulation.

Wyoming's decades-long oil production decline had actually switched to an increase in 2005 due mostly to liquid condensate associated with natural gas production. But years of injecting CO2 into a handful of aging oilfields - the historic Salt Creek field among them also contributed to Wyoming's oil production up-tick, to the tune of about 13 million barrels in 2007.

So far, Wyoming's CO2 pipeline network stems from ExxonMobile's Shute Creek gas plant in southwest Wyoming to the Lost Solider oilfield near Bairoil and to the Salt Creek field 42 miles north of Casper.

Geologists and GIS technicians at the Enhanced Oil Recovery Institute are developing models that pinpoint likely areas where new CO2 pipelines could branch out from the existing network. The hope is to efficiently connect CO2 sources with oilfields that are good candidates for CO2 injection.

The general idea, according institute officials, is that the next phases of pipeline development will continue to connect CO2 from natural gas processing plants to oilfields within the state.

Eventually, new CO2 sources will emerge, such as from the proposed Medicine Bow Fuel & Power coal-to-gasoline plant in Carbon County. Developer DKRW Energy has said when the plant comes online in 2013, it will include technology to capture CO2 for commercial marketing.

Eventually, the CO2 pipeline build-out could connect to Wyoming's coal-fired power plants, trona processing facilities and areas where CO2 is simply sequestered in deep underground aquifers separate from enhanced oil recovery efforts.

Jeffries said the challenge is getting those future beneficiaries of a CO2 pipeline grid to help with the up-front costs of construction. However, the fact that some stakeholders want to get rid of CO2 while others

are willing to pay for it makes for an economically sound environment for building such an infrastructure, Jeffries said.

"We're trying to get a policy and infrastructure discussion moving forward," Jeffries said.

The Pipeline Authority and Enhanced Oil Recovery Institute is soliciting input from stakeholders about how to continue the effort and what information and modeling might help move it forward.

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