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Plant won't keep CO2 out of the atmosphere

Carbon sequestration is still rare and experimental

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A proposed coal-to-methane refinery in Jamesville is likely to release large amounts of carbon dioxide into the atmosphere, prompting criticisms that it will contribute to global warming.

Although the Empire Synfuel project would capture at least 90 percent of the carbon dioxide created during the manufacture of methane, the developers say their initial operating plan is simply to vent the gas because there is no economical alternative.

Adam Victor, who heads Empire Synfuel, estimated the plant's daily output of carbon dioxide at roughly 300 million cubic feet. At normal pressure, that's the equivalent of more than 5 million metric tons per year, on par with emissions from the largest coal-fired power plants in the Northeast.

As the state Department of Environmental Conservation prepares to evaluate Empire Synfuel's plans, environmental activists are already urging them to block the project unless carbon dioxide will be sequestered - that is, kept out of the atmosphere.

"The release of massive amounts of carbon dioxide is not a plan that should be approved," said attorney Joseph Heath, who represents the Onondaga Nation.

Heath wrote DEC officials and Gov. Eliot Spitzer to express concern about the project.

But Victor said state officials should not lose sight of the potential upside of his project. If an infrastructure for carbon sequestration develops in the Northeast, Empire Synfuel could easily keep its carbon dioxide out of the atmosphere, he said.

Empire Synfuel's proposed facility would heat 10,000 tons of coal per day, but not burn it, and combine it with water to produce methane, or natural gas. To increase the quality of the methane sufficiently to sell it as natural gas, plant operators would strip out nearly all of the carbon dioxide, Victor said.

That ability to capture carbon dioxide is different from coal-burning power plants, which have to take more extraordinary measures, Victor said. The problem, he said, is what to do once you capture it.

Carbon sequestration is still rare and experimental. No underground sites have been established

in New York, and there is no transportation network or legal framework to support the effort, Victor said.

Empire Synfuel has had offers from Texas oil companies to buy its carbon dioxide, which they could use to enhance recovery in mature oil fields, but their prices would cover only about half the cost of compressing the gas and shipping it by rail, Victor said.

The picture might change in 2009, when New York and other states are expected to implement the Regional Greenhouse Gas Initiative, which will force power plants to pay for their carbon dioxide emissions. If a CO2 market evolves and Empire Synfuel can sell credits based on the CO2 it captures, that might help pay for sequestration, Victor said.

A combination of new regulations, legislation and spending will likely be necessary to make sequestration viable in New York, Victor said, a prospect he estimates is at least 10 years away.

"We're ready," he said. "When you have the pipelines, when you have the laws, we're ready."

The problem of carbon dioxide emissions is gaining attention as evidence mounts that it contributes to climate change. Although it is not specifically regulated as an emission, DEC officials say they will consider carbon dioxide when they review the project.

"All I can say right now is that the fate of CO2 in this process is one of many issues that we'll be looking at as part of the environmental review," said Ken Lynch, the DEC's regional director in Syracuse.

Great Plains Synfuels, a 23-year-old coal-to-methane plant in North Dakota, is one of only a few facilities in the world to have found a way to sequester carbon dioxide. The facility is owned by a subsidiary of Basin Electric Power Cooperative.

In 2000, Basin Electric finished building a 200-mile pipeline to ship its carbon dioxide north into Canadian oil fields, where two oil companies pump it underground to enhance oil recovery. Floyd Robb, a vice president at Basin Electric, declined to say how much the oil companies pay, but he said it's enough to cover the cost of the pipeline and to make a profit.

Canadian and U.S. energy officials are studying the oil operations to assess whether the carbon dioxide stays put after being pumped underground, Robb said. Thus far, the results are promising, he said.

Robb said he knows of only two other facilities that sequester carbon dioxide on a large scale: one in the North Sea, the other in the Sahara desert.

Earlier this month, a team of researchers at Massachusetts Institute of Technology issued a report on "The Future of Coal," urging the U.S. government to support research into carbon sequestration.

They said sequestration is the "critical enabling technology" to meet the world's energy needs without destroying the climate.

Without the sequestration of carbon dioxide, coal gasification technology like that proposed by Empire Synfuel does not represent progress, said Robert Moore, executive director of Environmental Advocates of New York.

"There is no benefit to coal gasification if you're not going to do sequestration," Moore said.

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