

U.S. Changes Plan for Capturing Emissions From Coal

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WASHINGTON — The Energy Department abruptly shifted course on Thursday on a flagship federal effort to capture and sequester carbon dioxide from coal-fired power plants, saying it would not finance construction of a new plant in Mattoon, Ill.

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Instead of underwriting that project, which would have turned coal into a hydrocarbon gas, filtered out the carbon and burned the hydrogen, the government said it would contribute \$737 million to remake an obsolete oil-burning plant in Meredosia, Ill.

In the new design, the plant would be fed pure oxygen and burn coal, and the exhaust gas would consist of almost pure carbon dioxide. That carbon dioxide would then be piped 170 miles east to Mattoon and injected underground, possibly along with contributions from an ethanol plant in Decatur, Ill., and other industrial plants along the way.

It is the latest twist for [FutureGen, a federally supported venture](#) to demonstrate the most advanced ways to convert coal to a gas, capturing pollutants and burning the gas for power.

Despite warnings that pollution from power plants contribute to [global warming](#) and that the United States should promptly build several prototypes using different technologies, [FutureGen has been repeatedly delayed by drawn-out federal procedures for choosing a site](#) and then by sticker shock in Washington.

The Bush administration cut off money, saying the costs were too high. But [President Obama](#) included \$1 billion in last year's stimulus bill. Now that there is money in hand, his administration opted to support a more advanced technology that some officials described on Thursday as FutureGen 2.

Although the planned retrofit involves an old oil-burning plant, the new approach could be a way of converting dozens of big old coal plants around the country, said Matt Rogers, a senior adviser to the energy secretary, [Steven Chu](#). If successful, Mr. Rogers said, this would allow the coal industry "to remain competitive on a global basis."

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With new [Environmental Protection Agency](#) rules scheduled to take effect limiting power plants' emissions of conventional pollutants like nitrogen oxides, mercury and particulates, he said, many older coal plants are candidates for re-powering.

Senator [Richard J. Durbin](#) of Illinois, who has been a strong supporter of the Mattoon project, said in a conference call that the gasification strategy no longer made sense because it was no longer the best or newest option. "That happens when you wait six years," he said.

The largest plant for burning oxygen is 10 megawatts; the plant in Meredosia would be 200 megawatts and the first of a commercial scale, officials involved in the project said.

Under the new structure, the original FutureGen coalition would still manage the sequestration portion of the project and would arrange experiments with different types of coals to gain experience that could be useful around the world.

The oil-fired plant belongs to [Ameren](#), which is based in St. Louis. It has not run much in recent years and has not generated any power since 2009, said a spokeswoman, Susan Gallagher. The plant operates in the competitive Illinois market, and any profit or loss would fall to Ameren shareholders and not its customers, she said.

Some of the oxygen will be supplied by the French energy company Air Liquide, which relies on a conventional technology, chilling the air until the oxygen turns to a liquid at 297 degrees below zero Fahrenheit. The energy required to accomplish that has always been considered a drawback to the technology.

Mr. Rogers said the project would also test a membrane that could sort oxygen from nitrogen without consuming much energy. And a plant burning oxygen would not need to use much energy to clean up other pollutants, like nitrogen oxides, which cause smog, and mercury, he said.

Babcock & Wilcox will do the engineering. The project is expected to capture 90 percent of the carbon dioxide, or 1.3 million tons a year.

Two other efforts to capture carbon dioxide from coal burning are under way. [Duke Energy is building](#) a coal-fired plant in Edwardsport, Ind., that will cook coal into a gas that is a mixture of hydrogen and carbon monoxide. Tentative plans call for it to be outfitted with equipment that sorts out the carbon dioxide and burns the hydrogen, although there is no firm commitment yet to do that.

And [American Electric Power](#) is testing a system at its [Mountaineer plant](#), on the Ohio River in New Haven, W.Va., that uses ammonia to scrub the carbon dioxide out of gas in the smokestack.

The government recently gave a \$417 million tax credit to another coal project in Illinois, the Taylorville Energy Center, in exchange for a promise to capture 65 percent of its carbon. That plant would turn coal to [natural gas](#) and then burn the natural gas.

Global warming experts say that coal is certain to be burned around the world for decades, and that limiting carbon dioxide concentrations in the atmosphere will depend in part on finding inexpensive ways to capture the emissions from coal-fired plants.

Yet the United States has been off to a slow start in the field. An alternative is switching to natural gas, which has about half as much carbon as coal per unit of energy. But that would be inadequate to reach the goal espoused by President Obama, a reduction of 80 percent in emissions by 2050.



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