



## BP: A power plant that reuses carbon dioxide?

Posted by [Yankee](#) on February 11, 2006 - 8:05pm

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The New York Times business section has an [article](#) that starts with the following paragraph:

Subsidiaries of BP and Edison International said yesterday that they were planning to build a power plant that would run on oil residues, and that 90 percent of the carbon dioxide would be captured and pumped into an oil field, where it would help push more oil to the surface.

According to the article, the gasification process that will be used in the California plant is said to be similar to what Bush talked about in the SotU when he mentioned "zero-emission coal-fired plants".

The plant would run by mixing an oil residue, petroleum coke, in a chamber with steam and a controlled amount of oxygen. In this technique, called gasification, both the fuel and the water give up hydrogen atoms to form hydrogen gas. This process also produces carbon monoxide, which is converted to carbon dioxide, giving off heat to sustain the reaction.

The hydrogen is then burned in a turbine engine, the kind that electric companies normally run on natural gas, and the dominant combustion product is water. The carbon dioxide is compressed into a liquid and injected into an oil field.

Although the fuel is an oil residue, and not coal, the technology is the same as one mentioned by President Bush in his State of the Union speech on Jan. 31, in which he said, "We will invest more in zero-emission coal-fired plants."

Dave recently had a [post about CO2 injection](#), and suggested that if were done right, it would be a step in the right direction. In the case of the BP power plant, it looks like they're looking for a partnership with Occidental Petroleum, which has oil fields in the LA area.

But there is one thing in this article that might set off a tiny red flag:

Petroleum coke from the Carson refinery is usually trucked to the harbor and shipped to China, where it is burned for fuel.

Now, I don't know much about petroleum coke. I googled it, and it seems that burning petroleum coke for fuel has become economical in the recent past, but it's not exactly environmentally friendly ([link](#)):

Increased use of heavier grades of crude, coupled with technological advances in oil refining processes, has led to increased supplies of petroleum coke. This imbalance in supply and demand has resulted in a decline in the price of petroleum coke, thus making it an attractive fuel for power generation. While it has high heat density and low ash content, which are good, it also contains large amounts of sulfur, vanadium, and other heavy metals and has a low volatile matter content, which pose some technical and environmental challenges.

Somehow, I don't find this surprising. If we're shipping it off to China instead of using it ourselves, it cannot be good stuff. Still, as I've said, I don't know much about what petroleum coke is used for, so if anyone has any more to add about petroleum coke, please do so below.



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