Climate Facts

Why Liquid Coal Is Not a Viable Option to Move America Beyond Oil

The coal industry is touting a plan to transform millions of tons of coal into diesel and other liquid fuels—an expensive, inefficient process that releases large quantities of heat-trapping carbon dioxide into our air. Fortunately, better, cleaner options exist to reduce America's dependence on oil: *efficiency, smart growth,* and *renewable fuels*.

www.nrdc.org/globalwarming/solutions

February 2007

The High Costs of Liquid Coal

The considerable economic, social, and environmental drawbacks of coal-derived liquid fuel preclude it from being a sound option to move America beyond oil. Relying on liquid coal as an alternative fuel could:

- nearly double global warming pollution per gallon of transportation fuels, and
- increase the devastating effects of coal mining felt by communities and ecosystems stretching from Appalachia to the Rocky Mountains.

To move America beyond oil, we should start with the measures that will produce the quickest, cleanest, and least expensive reductions in oil use—measures that will also put us on track to achieve the reductions in global warming emissions we need to protect our climate.

Efficiency and Renewable Fuels—The Right Way to Move America Beyond Oil

America can have a robust, effective program to reduce oil dependence without liquid coal technologies. By investing in a combination of efficiency, renewable fuels, and alternatives to driving such as public transportation, we can reduce our oil consumption more quickly, more cleanly, and in larger amounts than we could with coal-derived liquids. In fact, *Securing America*, a report published by the Institute for the Analysis of Global Security and NRDC, found that a combination of more efficient cars, trucks, and planes; biofuels; and smart growth transportation options can cut oil dependence by more than 3 million barrels a day in 10 years and achieve cuts of more than 11 million barrels a day by 2025. With thoughtful action, America can pursue an energy path that enhances our security, our economy, and our environment.

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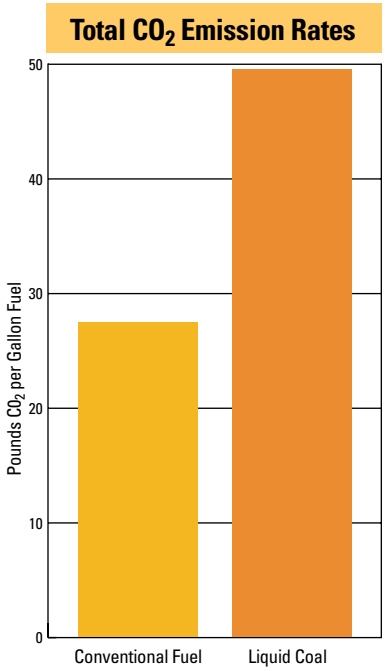

Hazards of Coal Mining Would Increase With Liquid Coal

Large-scale deployment of liquid coal plants would cause a significant increase in the amount of coal mining and its harmful effects. Coal mining creates hazardous and acidic waste, which can contaminate groundwater. Strip mining, a technique in which land and vegetation are stripped away by giant machines, not only damages surfaces and permanently reshapes landscapes, but it also can destroy habitats and affect water tables. The destructive practice of mountaintop removal to extract coal involves clearcutting native hardwood forests, using dynamite to blast away 800 to 1,000 feet of mountaintop, and then dumping the debris into nearby valleys. And post-mining reclamation is problematic at best. The increase in coal production anticipated for liquid coal plants using today's practices would increase harm to the environment and adversely affect many of the people who live and work near coal mines.

Global Warming CO_2 Emissions Could Nearly Double With Liquid Coal

Experts say we need to cut global warming emissions by 60 to 80 percent by mid-century to minimize irreversible and harmful effects of global warming. The United States and other nations should use energy resources that produce less carbon dioxide pollution than that produced by oil, gas, and coal. And the technologies we invest in now to meet our future energy needs must have the potential to perform at much reduced emission levels. So how do liquid coal processes perform?

To assess the global warming implications of a large liquid coal program, we need to examine the total life cycle, or "well-to-wheel", emissions of these new fuels. Coal is a carbon-intensive fuel, containing almost double the amount of carbon per unit of energy compared to natural gas and about 20 percent more than petroleum.

Proponents of coal-derived liquids claim they are "clean" because the fuel is sulfur-free, but when coal is converted to transportation fuel, two streams of carbon dioxide (CO_2) are produced: one at liquid coal production plants and one from exhaust pipes of the vehicles that burn the fuel. Emissions from liquid coal production plants are much higher than those from producing and refining crude oil to produce gasoline, diesel, and other transportation fuels; emissions from vehicles are about the same.

The total well-to-wheels emission rate for conventional petroleum-derived fuel is about 27 pounds of CO_2 per gallon of fuel. If the CO_2 from the liquid coal plant is released into the atmosphere, based on available information about liquid coal plants being proposed, the total well-to-wheels CO_2 emissions from coal-derived fuel would be about 50 pounds of CO_2 per gallon—nearly twice as high. Introducing a new fuel system that doubles the current CO_2 emissions of our crude oil system is clearly at odds with our need to reduce global warming emissions.

Even If the CO_2 Is Captured, Liquid Coal Still Pollutes More Than Current System

If the CO_2 from liquid coal plants is captured instead of being released into the atmosphere, then well-to-wheels CO_2 emissions would be reduced some but would still be higher than emissions from today's crude oil system. Even capturing 90 percent of the emissions from liquid coal plants leaves emissions at levels somewhat higher than those from petroleum production and refining; emissions from the vehicle using the coal-derived liquid fuels are equivalent to those from a gasoline vehicle. As a result, with CO_2 capture well-to-wheels emissions from coal-derived liquids fuels would be 8 percent higher than for petroleum.

Since policies to cut CO_2 emissions are inevitable, proceeding with liquid coal plants now would leave investments stranded or impose unnecessarily high abatement costs on the economy.

In summary, using coal to produce a significant amount of transportation fuel would harm communities and the environment in coal-producing regions and is incompatible with solving global warming.

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