

# THE DIRTY TRUTH BEHIND ~~CLEAN~~ COAL

RAINFOREST  
ACTION NETWORK



July 2007

America's biggest source of electricity comes with a price. In addition to pumping out half of our electricity, coal-fired power plants emit more climate-changing greenhouse gases than any other source. Proponents of our continued reliance on fossil fuels often argue that a new generation of "clean coal" technology is emerging and that it will allow us to not just continue using coal – but to use even greater amounts of it!

Currently, the term "clean coal" covers everything from scrubbers on conventional coal plants to marginally more efficient burning processes to futuristic "near-zero emission" technologies that may never be technologically, economically or socially viable. But even if so-called "clean coal" technologies were available, would they be the best solution?

What the coal industry conveniently omits from its sales pitch is the fact that the entire life cycle of coal is dirty. Before it is burned, coal must be mined, transported and refined. Coal extraction leads to entire mountain ranges destroyed by strip mining; rising rates of asthma and lung disease; water pollution; and the creation of massive amounts of toxic wastes. Coal enthusiasts never mention what it takes to get coal out of the ground in the first place.

## IS IGCC OR "COAL GASIFICATION" VIABLE?

IGCC (Integrative Gasification Combined Cycle) is the most commonly cited technology masquerading as clean coal. The basic idea is to convert coal from a solid into a synthetic gas. The gas powers a turbine, and the resulting heat propels a steam turbine to generate electricity. While IGCC plants can be slightly more efficient and less polluting than traditional coal plants, the technology is unproven and unreliable.

Only three IGCC plants have been built in the U.S., all largely funded by the government as commercial test projects. One failed and was abandoned, and the other two have suffered from operating problems and reliability rates that would never be acceptable for a commercial plant.

The heavily marketed story of IGCC is that the technology will make it easier to capture CO<sub>2</sub> emissions at some undetermined point in the future. However, of the 151 new coal power plants currently under development across the country, only 34 are planning to use IGCC technology, and none of these are being designed to capture their emissions! Proponents say that IGCC plants are "capture-ready," which is a bit like saying your driveway is "Porsche-ready."

## CAN CARBON CAPTURE AND SEQUESTRATION WORK?

The other buzz words associated with clean coal are "carbon capture and sequestration," or CCS. The concept of CCS is that we can curb climate change by capturing the emissions from coal plants and storing them underground, safely away from our atmosphere for eternity.

The most glaring flaw in this concept is that CCS technology is not likely to be a commercially viable option for at least another decade, and new coal-fired plants are slated to begin construction now. There are also no working models of CCS at a commercial-scale power plant anywhere in the world. Why not? Read on.

## QUICK & DIRTY FACTS:

- So-called "clean coal" doesn't address the massive social and environmental costs of mining, transporting and refining coal.
- Zero emissions clean coal is highly speculative and decades away from wide scale deployment.
- Factoring in the true costs of coal, our environment, health, climate and economy will fare far better if we switch to clean, renewable energy sources immediately.
- U.S. power plants produce 1.9 billion tons of CO<sub>2</sub> every year. Even if capturing and storing this waste is theoretically possible – why create it in the first place?

<sup>1</sup> Massachusetts Institute of Technology, The Future of Coal: Options for a Carbon-Constrained World, 2007, p96

<sup>2</sup> NETL (National Energy Technology Laboratory), Department of Energy, Tracking New Coal-Fired Power Plants: Coal's Resurgence in Electric Power Generation, May 1st, 2007, p25

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### ***Not under my basement!***

Proposals for carbon storage locations include underground depleted oil and gas fields, unmineable coal seams, and even in our oceans. Underground storage of the 1.9 billion tons of CO<sub>2</sub> waste produced annually by U.S. coal plants is hugely problematic and likely impossible. Carbon dioxide is a colorless, odorless gas that can be fatal to humans exposed to high concentrations. In 1986, a CO<sub>2</sub> leak killed nearly 1,800 people instantly in Lake Nyos, Cameroon. The leak was but a tiny fraction of the amount of CO<sub>2</sub> we would need to store annually from coal plants.

### ***Inefficient and polluting***

According to estimates, using CCS on a typical plant would require a 40 percent energy increase. So, even if carbon emissions could be captured and stored, other air pollutants would actually increase due to the additional fuel being burned.

### ***Don't bank on it***

In 2006, the Environmental Protection Agency estimated that capturing 90 percent of CO<sub>2</sub> emissions from IGCC plants would increase the total cost of electricity by 38 percent. The EPA's definition of "capture" does not include transportation of gas, storage, or the monitoring needed at storage sites for decades to come. Some estimates that include both capture and storage predict a doubling of the cost of electricity, which would make CCS prohibitively expensive.

### ***Who will be liable?***

Who pays if sequestered carbon leaks and causes fatalities or other damages? Even proponents of CCS have said the technology won't go ahead unless the federal government assumes full liability. If that happens, our tax dollars would be spent protecting utility companies from bearing both the risk and the cost of coal.

**Currently, CCS remains a "smoke and mirrors" show – keeping attention away from real solutions. With global warming accelerating, we need to make smart energy choices now. Keeping fossil fuels in the ground is key to stopping climate change.**

## **REAL SOLUTIONS FOR REDUCING CARBON EMISSIONS:**

- **We can dramatically reduce our energy needs through energy efficiency and conservation, ending the need for new coal plants altogether.**
- **It will cost less and provide far greater returns to our environment to replace dirty fossil fuels with clean, renewable sources of energy such as solar and wind.**
- **Rather than investing billions to maintain our dependence on an unsustainable and inherently dirty energy source, we should build a clean energy future immediately.**

Why waste billions of dollars to research an uncertain technology when safer, cleaner energy solutions already exist? Even if we could capture coal's dangerous emissions, why create such massive waste streams in the first place? All fossil fuels, including coal, are running out. The longer we keep relying on them, the worse off our environment, climate and society will be.

The fact is, coal will never be sustainable or clean – so don't let the coal industry con you with slick slogans and marketing. Every dollar spent on coal is a dollar better spent on smart energy solutions. Major Wall Street banks like Citi and Bank of America are determining our collective fate by continuing to fund dirty energy. It's time to hold Wall Street accountable for financing climate change, and it's up to us to take the power back. Together, we can build a clean energy future.

**COAL IS OVER.  
FUND THE FUTURE.**

**[www.DirtyMoney.org](http://www.DirtyMoney.org)**

<sup>3</sup> EPA Report, "Emissions of Greenhouse Gases in the United States 2005," November 2006. Report #: DOE/EIA-0573(2005)

<sup>4</sup> EPA Final Report, "Environmental Footprints and Costs of Coal-Based Integrated Gasification Combined Cycle and Pulverized Coal Technologies," July 2006, EPA-430/R-06/006, p. ES-6.

<sup>5</sup> Cost figures have been gleaned from the following sources, among others: Parsons, "Coal-Based Power Generation for California with CO<sub>2</sub> Removed for Use in Enhanced Oil Recovery," 2002; Rich Ferguson, "Risky Diet 2005: Global Energy Resource Adequacy," Center for Energy Efficiency and Renewable Technologies, June 2005, p. 54; Socolow, op. cit. note 5, 52; Jim Lacy, "Update on IGCC" in PacificCorp, IRP Public Input Meeting, November 10, 2004, p. 10.

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