



# The Clean Coal Smoke Screen

## Coal, Utilities Talk Clean Coal but Spend Few Dollars on It

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A series of feel-good ads this year showcased a variety of people straight from central casting: the feisty grandma, the hip-looking teacher, the salt-of-the earth farmer. They all communicated the same message: “I believe in...” the future, technology, American ingenuity. Only at the end do we learn what they all believe in: “Clean Coal. America’s Power.”

These ads were sponsored by the American Coalition for Clean Coal Electricity, an industry group comprised of 48 coal and utility companies. ACCCE spent at least \$45 million on advertising this year to convince Americans that “clean coal” is the solution to global warming. The ACCCE companies claim that they “are committed to making coal a clean energy source.” Yet the coal mining and electric utility industries spent over \$125 million combined in the first nine months of 2008 to lobby Congress to delay global warming pollution reductions until clean coal technology is ready.

Despite the ads’ claims, an analysis by the Center of American Progress determined that ACCCE’s companies spend relatively few dollars conducting research on carbon capture and storage, the most promising clean coal technology to reduce global warming pollution from coal-fired power plants. This technology would allow power plants to capture 85 percent or more of their carbon dioxide emissions and permanently store them underground in geological formations.

Recently, ACCCE spokesman Joe Lucas admitted that the commercialization and widespread use of CCS is still 10 to 15 years away. And ACCCE opposes binding pollution reductions until CCS is ready. Instead it supports essentially voluntary measures to reduce greenhouse gases from coal-fired power plants and other sources.

Despite its slogan that ACCCE companies made “a commitment to clean,” a review of its member companies’ research programs found that they are making relatively insignificant investments in CCS compared with their profits. CAP’s analysis found that the 48 ACCCE companies made a combined profit of \$57 billion in 2007 (see chart 2) while investing over several years only \$3.5 billion in CCS research (see chart 1). That means

**Chart 1: ACCCE Members CCS Projects**

Name of Project	ACCCE members	Location	Est. Total Project Cost (millions)	Private Funding (millions)	DOE Funding (millions)	Notes
Plains CO <sub>2</sub> Reduction Project	ACCCE, Ameren Corporation, Basin Electric Power Cooperative	North Dakota (Amerada Hess oil field in western North Dakota), South Dakota, Alberta Canada	\$161.6	\$78.7	\$82.9	
Big Sky Regional Carbon Sequestration Partnership	CONSOL Energy Inc.	Liberty, Pennsylvania	\$13.3	\$4.3	\$9.0	
Dakota Gasification Project	Basin Electric Power Coop	North Dakota & Weyburn Saskatchewan	\$3.2	\$2.2	\$1.0	
Antelope Valley Station	Basin Electric Power Coop	North Dakota & Weyburn Saskatchewan	\$300.0			Cost is for FY2011; as of November 2008, federal loan application is still pending.
Plant Daniel- Coal Seam	Southern Company	Escatawpa, Mississippi	\$5.0	\$0.3	\$4.8	Listed funding shares are based on average reported levels.
Phase III Early and Anthropogenic CO <sub>2</sub> Injection Field Tests	Southern Company	Tuscalusa, Alabama	\$93.7	\$28.7	\$64.9	Projected to begin in FY '09.
Edmonds Port Integrated Gasification Combined Cycle	Duke Energy Corporation	Edwardsport, Indiana	\$2,350.0	\$1,890.0	\$460.0	DOE funding is through local, state and federal tax incentives
Cincinnati Arch Geologic Test	Duke Energy Corporation	Rabbit Hash, Kentucky	\$23.7	\$6.3	\$17.5	
Mountaineer Plant	American Electric Power	New Haven, West Virginia	\$275.0	\$225.0	\$50.0	Total project cost is based on average reported levels; \$225 to \$300 million will be spent for additional equipment for the test.
RE Berger Plant	First Energy	Shadyside, Ohio	\$18.1	\$3.7	\$14.3	
Mississippi Power IGCC plant	Mississippi Power (Southern Company subsidiary)	Kemper, Mississippi	\$2,200	\$1,100	\$1,100	Other private funding from Kellogg, Brown and Root. Applications for over half government funding still pending; money spent beginning 2009
Central Appalachian Coal Seam	CONSOL Energy	Fayette, McDowell, Raleigh and Wyoming Counties in West Virginia	\$2.7	\$0.5	\$2.2	Non-DOE spending is provided by total of 18 industrial partners.
Gulf Coast Stacked Storage Project	Southern Company	Cranfield Oil Field, Natchez, Mississippi	\$7.8	\$3.2	\$4.6	Non-DOE spending is provided by 15 industrial partners and the University of Texas.
Black Warrior Basin Coal Seam Project	Southern Company	Tuscaloosa, Alabama	\$2.4	\$0.5	\$1.9	Non-DOE spending is provided by total of 5 industrial partners.
Consortium for Clean Coal Utilization	Arch Coal, Ameren, Peabody Energy	Washington University, Missouri	\$12.0	\$12.0		Announced on December 2nd. Money paid over 5 years, proposals accepted starting January 2009.
Michigan Basin Geologic Test	DTE Energy	Otsego County, Michigan	23.7	\$6.3	\$17.5	
MRCSP Phase III Large Scale Geologic Injection Test	Duke Energy	Edwardsport, Indiana	93.0	\$32.0	\$61.0	
Williston Basin demonstration	Basin Electric Power Coop	Williston Basin, North Dakota	101.2	\$64.3	\$36.9	
<b>TOTAL</b>			<b>\$5,686.6</b>	<b>\$3,458.1</b>	<b>\$1,928.4</b>	

the companies combined made \$17 in 2007 profits for every \$1 invested in CCS research over several years. This is a very generous estimate, because the analysis includes several projects that haven't yet begun. Nonetheless, the research funding over a number of years is dwarfed by the profits for a single year. With such relatively small investments in CCS research, it's no wonder that it may take many years to develop and commercialize the technology. The lack of investment reinforces the notion that the real purpose of the clean coal campaign is to postpone requirements to reduce emissions.

The rate of investment must increase dramatically for CCS to play a role in greenhouse gas emission reductions from coal-fired power plants. A recent study by the [International Energy Agency](#) found that "current CCS spending and activity levels are nowhere near enough" to reduce emissions by 20 percent by 2020. Instead, the IEA advised that "up to USD 20 billion is needed for near-term demonstrations." [Credit Suisse](#) says that CCS research "needs a further \$15 billion of investment and 10 more years of research and development to be ready for commercial use." These levels are significantly more than the than the combined research effort of the ACCCE companies and Department of Energy.

Coal-fired power plants generate nearly 50 percent of the electricity in the United States, and are also responsible for 27.2 percent of U.S. greenhouse gas pollution. CCS is the most promising technology to reduce carbon dioxide emissions from these plants. Although there is no fully operational full-scale CCS plant today, many countries are researching the technology. This past September, Germany launched a 30-megawatt power plant that will capture and store its CO2 emissions. This plant is much smaller than most commercial power plants. Much more work remains to research, develop, deploy, and commercialize this technology on a large scale.

The 18 CCS projects by ACCCE companies have a lifetime cost of \$5.7 billion, or one-tenth of the ACCCE companies' profits in 2007 alone. Of this total cost, the ACCCE companies would eventually spend \$3.5 billion on these projects, based on our analysis of publicly available data. The Department of Energy would provide an additional \$1.9 billion. (We were unable to identify full funding details for one project.)

Scientists have repeatedly warned about the urgency to act to reduce carbon dioxide and other greenhouse gases to slow global warming. Rajendra Pachauri, the scientist who heads the Nobel Prize winning

**Chart 2: Profits of ACCCE Member Companies (2007)**

Company	2007 profit (millions)
Alabama Power	see Southern Company
ALCOA	\$2,564
Allegheny Energy, Inc.	\$412
Alliance Coal, LLC	\$170
AMEREN Corporation	\$618
American Electric Power	\$1,089
Arch Coal, Inc.	\$175
Arkansas Electric Cooperative Corporation	\$463
Associated Electric Cooperative, Inc.	\$21
Basin Electric Power Cooperative	\$71
Berwind Natural Resources Corporation	
BHP Billiton	\$13,700
BNSF Railway	\$1,829
Buckeye Industrial Mining Co.	-\$205
Buckeye Power, Inc.	
Bucyrus International, Inc.	\$94
Caterpillar Incorporated	\$3,541
CONSOL Energy Inc.	\$268
Consumers Energy	\$215
CSX Corp.	\$1,336
Drummond Company, Incorporated	
DTE Energy (Detroit Edison)	\$971
Duke Energy Corporation	\$1,500
E.ON U.S.	\$7,724
Express Marine, Incorporated	
First Energy Corporation	\$1,309
Foundation Coal Corp.	\$33
Freightcar America, Inc.	\$27
General Electric Capital Corporation	\$9,815
Jennmar Corporation	
Joy Global Mining	\$280
Luminant	
Midwest Generation	\$1,098
Mirant Corporation	\$1,995
Murray Energy Corporation	
Natural Resource Partners L.P.	\$103
Norfolk Southern Co.	\$1,464
OG&E Energy Corp.	\$244
Oglethorpe Power Corporation	\$19
Ohio Coal Association	
Peabody Energy Corp.	\$264
Progress Energy, Incorporated	\$504
Seminole Electric Cooperative	\$11
SEP Corporation (Sunflower Electric)	\$16
Southern Company	\$1,734
Tri-state Generation & Transmission Assn. Inc.	\$103
Union Pacific Railroad	\$1,855
Western Farmers Electric Cooperative	\$20
Western Fuels Association	-\$1
<b>Total</b>	<b>\$57,448</b>

Intergovernmental Panel on Climate Change, cautioned: “If there’s no action before 2012, that’s too late. What we do in the next two to three years will determine our future. This is the defining moment.”

Despite these warnings, ACCCE continues to oppose mandatory reductions in greenhouse gases until CCS is commercialized. The organization maintains that, “prior to the commercial availability of carbon capture and storage technologies, policies should encourage near-term investments in conservation, enhanced energy efficiency, and terrestrial carbon sequestration.” Yet ACCCE companies have created their own “chicken and egg” policy loop: no action on greenhouse gas reductions until CCS is commercialized, and no real action to commercialize CCS.

The advertising by ACCCE, and coal and utility companies, is an effort to convince the public that “clean coal” is the solution to global warming. In response, five environmental organizations led by the Alliance for Climate Protection created the “Reality Coalition” to educate the public, media, and public officials “that in reality, there is no such thing as ‘clean coal.’” The first salvo in this effort is a humorous television ad campaign that demonstrates that no clean coal technology exists to reduce global warming pollution.

ACCCE’s lead spokesperson Joe Lucas has responded defensively to attacks on the organization’s efforts to promote clean coal as a solution to global warming:

“For those Monday morning quarterbacks who suggest that the coal industry should put more money behind the research and development of advanced carbon capture and storage technologies (instead of advertising), I say this—what have they done lately? Most of these groups have a long-standing record of opposing funding for cost-shared projects to bring new advanced technologies to the marketplace.”

He is likely to react similarly to this analysis. It is important to note that CAP has urged federal investment in CCS, including in the 2009 economic stimulus and recovery package. CAP also supported a major demonstration project blocked by the Bush administration. Unlike ACCCE, however, we do not believe that the adoption of binding domestic greenhouse gas reductions requirements should wait until the development and commercialization of CCS. A cap and trade program to reduce greenhouse gases would actually speed the development of CCS by creating a market for the technology.

The coal and utility industries have spent millions of dollars to oppose mandatory reductions in global warming pollution until CCS is commercialized. Yet their paltry CCS research investment demonstrates that the ads and other public clean coal activities are merely designed to delay global warming solutions without suffering a public relations black eye. Meanwhile, atmospheric greenhouse gas levels grow, ice sheets melt, hurricanes become more ferocious, and the day of reckoning for the Earth looms closer.

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## Methodology

CAP surveyed all 48 ACCCE members, inquiring about their investments in CCS technology. We sent two [information requests](#) to company officials in corporate communications, research and development, and media services. We received responses from nine companies. We conducted phone interviews with officials from Southern Company and Duke Energy.

CAP also reviewed company websites and annual reports for information regarding recent investments. In addition, CAP reviewed the Department of Energy list of current CCS projects included in their [Regional Carbon Sequestration Partnerships](#). Many of the projects involved Integrated Gasification Combined Cycle-related technologies. IGCC reduces sulfur dioxide, particulates, and mercury. Many experts believe that IGCC is an important component for capturing carbon dioxide for CCS, but research into IGCC does not ensure that it will be used for CCS. So although IGCC is a “clean coal” technology, we did not include such projects unless it was part of an effort to make a plant CCS ready or test some element of CCS. We also reviewed the “clean coal” project [list](#) on the ACCCE website.

Profit figures were obtained from the 2007 10-K SEC filings provided on individual company’s websites. Eight of the 48 companies did not have profit (net earnings) data immediately available.