Southern Company Knew

How a “clean coal” utility was warned about climate change risks years before it funded climate disinformation 1964-2022

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ENERGY AND POLICY INSTITUTE

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The Energy and Policy Institute is a watchdog organization working to expose attacks on renewable energy and counter misinformation by fossil fuel and utility interests. It does not receive funding from for-profit corporations or trade associations.

Cover image: A photo of Southern Company’s coal-fired James H. Miller power plant by Jet Lowe, courtesy of the National Park Service and Library of Congress digital collections.

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Executive Summary

In its latest assessment, the Intergovernmental Panel on Climate Change (IPCC) called out the "vested interests" that stand in the way of climate action.

"Despite scientific certainty of the anthropogenic influence on climate change, misinformation and politicization of climate change science has created polarization in public and policy domains in North America, limiting climate action," the IPCC said. "Vested interests have generated rhetoric and misinformation that undermines climate science and disregards risk and urgency."

While the IPCC doesn't name names, a growing body of academic research and investigative reporting has documented how major fossil fuel producers, utilities, and automakers knew more than fifty years ago that carbon dioxide emissions could cause harmful climate change in the future. Despite these early warnings, many of these powerful companies later backed disinformation campaigns against climate science and policies.

This report documents for the first time the nearly 60-year history of one of those vested interests, Southern Company, on climate change from the mid-1960s through present day.

One of the nation's largest electric and gas utilities, Southern Company's origins date back nearly a century. Part one of this report documents how as far back as 1964, Southern Company was privy to early warnings about the climate risks of burning fossil fuels. Part two details how Southern Company has played a leading role in the spread of climate disinformation since the late 1980s.

Highlights of the new findings presented in this report include:

- **1980:** A 1980 quarterly technical report by a subcontractor for the Department of Energy (DOE) included "A Review of Current Assessments of the CO_2 Greenhouse Effect" by Janet A. Firley of the International Coal Refining Company, a subcontractor that worked with Southern Company on federally-funded Solvent Refined Coal research.

  E. Huffman, the project manager for Southern Company Services' federally funded Solvent Refined Coal pilot plant in Wilsonville, Alabama, appeared on the short distribution list for the quarterly report. The distribution list also included contacts at the Department of Energy, the Electric Power Research Institute, Exxon and the Carter Oil Company.

Firley's review warned of the possible negative impacts that could result from global warming caused by a doubling of CO_2 in the earth's atmosphere, including the melting of the polar caps, rising sea levels, and "massive extinction of plant and animal species due to rapid climate change."

- **1988:** "As we approach the 21st century, climatic change looms as our most serious global environmental issue," climate scientists Richard Warrick and Philip Jones wrote in a 1988 paper published in a Tennessee Valley Authority journal that counted Southern Company's vice president of research and environmental affairs on its editorial board. The journal also published a number of other articles that warned about climate change during the 1980s.

- **1993-2004:** Southern Company paid more than $60 million to special interest groups and outside firms that were involved in climate disinformation campaigns between 1993-2004, a new analysis of annual U5S and U-13-60 reports the company was required to file with the SEC found. In 2005, Congress stripped the SEC of its oversight authority over utility holding companies, and the money trail faded as these annual reports were phased out.

  The analysis revealed previously unreported funding of climate disinformation by Southern Company. For example, in 2004 Southern Company paid $100,000 to the Frontiers of Freedom Institute, a group known for its denial of climate change. The same institute paid Wei-Hock "Willie" Soon, an astrophysicist known for promoting the debunked theory that climate change is primarily caused by solar variability rather than emissions from fossil fuels, $60,000 in 2004 for consulting. This funding trail pre-dates Southern Company's previously reported funding of Soon's work.

  The research for this report also turned up new evidence that shows how Southern Company's role in climate disinformation campaigns went beyond funding. In one example from the mid-1990s, Southern Company and a group called the Center for Energy and Economic Development targeted hundreds of teachers with workshops that promoted coal industry messages about the environment and climate change. Southern Company used its satellite communications system to beam the workshops to viewing locations in multiple states.

The report also builds off earlier research by detailing Southern Company's role in key documents and events described in the Energy and Policy Institute's 2017 report, "Utilities Knew: Documenting Electric Utilities' Early Knowledge and Ongoing Deception on Climate Change From 1968-2017," including:

- **1964:** Ernest C. Gaston, the president of Southern Services (now Southern Company Services), served as a technical reviewer for a 1964 White House report on energy research development that recommended new research to devise methods for controlling "gaseous air pollution" from carbon dioxide and further define the problem of "the increased concentration of carbon dioxide in the atmosphere."

  "The possible effects upon weather of increased carbon dioxide concentration in the atmosphere by the year 2000 have aroused some concern," the 1964 White House report said.

- **1971:** Southern Services contributed to a report by the Electric Research Council that laid out the electric utility industry's R&D goals through the year 2000, and included a budget for longterm research into the "effects of CO_2" emissions from power plants. Two Southern Company utilities, Alabama Power and Georgia Power, also contributed to the same report.

  The R&D goals report provided an early roadmap for the Electric Power Research Institute (EPRI), which launched the following year in 1972. Dr. William Harrison, who started Southern Company's internal R&D program in 1969, served on the committees of the Edison Electric Institute (EEI) and Electric Research Council that created EPRI, according to an official company history by writer Sam Heys. Harrison then served on EPRI's research advisory committee.

  EPRI funded climate research and communicated scientists' early warnings about climate change to electric utilities and policymakers during the 1970s and 1980s.

- **1985:** Victoria Douglass of Southern Company Services and David Miller of EPRI co-chaired a session on the "Effects of Increasing CO_2" at the 1985 annual meeting of the Air Pollution Control Association.

  Greg Marland and Ralph M. Rotty from the Oak Ridge Universities summarized NASA research that found "it was not carbon dioxide alone that might drive a global atmospheric warming." Marland and Rotty described other greenhouse gasses including methane, the chief component of natural gas. Their paper was sponsored by EPRI.

  "Control of emissions by the collection of gas from the stack is not a solution to the global build-up of carbon dioxide in the atmosphere," futurists Jennifer Jarrat and J.F. Coates said in an EEI-sponsored paper that described the findings of early EPRI research into the viability of carbon capture and storage for power plants.

Experts from the Brookhaven National Laboratory also presented a paper that concluded that large-scale deployment of CCS was cost-prohibitive.

Rotty and another Oakland Ridge Universities colleague, David Reister presented another EPRI-sponsored paper that concluded that an increase in energy "conservation and renewables" could delay a doubling of CO_2 in the atmosphere, while a rise in global energy use powered by fossil fuels would hasten that doubling.

"Even though much can be accomplished by shifting to alternative energy systems, it remains true that effective control on the rates of CO_2 growth a century from now must begin with planning and action in the very near future," Marland and Reister said at the 1985 conference session co-chaired by representatives of Southern Company and EPRI.

A few years later, in 1988, climate change emerged as a front-page issue as a major heat wave killed thousands, inflicted billions of dollars in damage, and demonstrated what a future of unmitigated climate change would look like. The United Nations and World Meteorological Organization also formed the IPCC to provide comprehensive assessments of the science of climate change and its impacts, and formulate global strategies for addressing the problem. Vice President George H.W. Bush promised to combat the greenhouse effect with the "White House effect" during his campaign for president that year.

At that point, Southern Company had been well aware of the impending risks of climate change for more than two decades. It could have responded by supporting the growing global calls for action and taking meaningful early steps to curb its significant greenhouse gas emissions.

Instead, after 1988, Southern Company established itself as a driving force behind climate disinformation. Misleading campaigns backed by Southern Company attacked climate science, opposed binding limits on greenhouse gas emissions, promoted "clean coal" as a false solution to the problem, and fought to slow the transition to clean and renewable energy sources like wind and solar power.

As recently as 2017, Southern Company's CEO Thomas Fanning falsely denied that carbon dioxide is a primary cause of climate change during a televised interview on CNBC. Southern Company today still generates the majority of its power from methane gas and coal and less than a third of its power from zero-emissions renewables and nuclear power.

Southern Company also continues to make misleading statements about "clean, safe, affordable, and reliable natural gas." The global warming potential of methane, the chief component of natural gas, is about 85 times higher than that of carbon dioxide over a 20-year period. The IPCC views cutting methane emissions in the next few years as a key to any hope of limiting global warming to 1.5°C during the current century.

Experts who presented at the 1985 Air Pollution Control Association conference session co-chaired by Southern Company and EPRI warned that CCS was not a viable solution for controlling CO2 emissions from power plants. Two decades later, Southern Company would propose a major CCS research and development project that was originally planned for Florida, and later moved to Kemper County, Mississippi. Billions of dollars from Mississippi ratepayers and federal taxpayers would be wasted in support of the Kemper project, which was supposed to finally demonstrate the viability of CCS for widespread use at fossil fuel power plants. Instead, the project collapsed under the weight of financial overruns and years of delays, leading to the plant's demolition in 2021.

The consequences of the project's failure are still being felt by Southern Company and its investors today. The company was forced to refund $377 million to Mississippi ratepayers and it has faced allegations of fraud, lawsuits, and federal investigations, all in connection with the Kemper CCS project. Even in the face of this failure, Southern Company continues to rake in hundreds of millions in taxpayer money to run the federally-funded National Carbon Capture Center in Wilsonville, Alabama.

Southern Company's legal woes over the Kemper CCS boondoggle could prove to be the least of its worries. A 2016 peer-reviewed study by experts from Michigan Technical University found Southern Company could face significant losses if held legally liable for climate damages linked to just two of its largest emitters, the coal-fired Scherer and James H. Miller Jr. power plants.

Southern Company was named in two earlier lawsuits that sought monetary compensation for climate change damages, including a 2008 lawsuit filed by the Native Village of Kivalina, an Inupiat community in Alaska that was imperiled by rising sea levels. Another lawsuit filed by residents of coastal Mississippi impacted by climate-related damages during Hurricane Katrina also named Southern Company. While courts dismissed those early climate lawsuits, they paved the way for future litigation.

The story of Southern Company's early knowledge and ongoing deception on climate change is in many ways similar to the stories of major oil and gas producers like ExxonMobil and Shell, which today face a wave of climate-related lawsuits. In its annual reports to investors, Southern Company recognizes litigation related to climate damages caused by carbon emissions as a financial risk, and some financial analysts predict that major utility companies will soon face climate change lawsuits similar to the lawsuits against major fossil fuel producers.

Part 1: Early Warnings 1964-1988

Early Research and Reports

In 2013, when writer Sam Heys penned the official history of R&D at Southern Company, it included no mention of climate change or carbon dioxide-related research and development conducted by the company prior to the 1990s.

The company's climate messaging would soon change, after groundbreaking investigative reporting in 2015 by InsideClimate News and the Los Angeles Times first revealed that ExxonMobil and other oil and gas companies knew by the 1970s that emissions from burning fossil fuels could cause harmful climate change. The news was followed by a wave of new investigations launched by state attorneys general and climate lawsuits filed by communities that sought to hold fossil fuel producers accountable.

Southern Company's statements to investors in more recent years indicate that the company knew by the 1960s about the risk that carbon dioxide emissions from burning fossil fuels would result in harmful climate change in the future.

"As an industry leader in the research, development and deployment of technologies that reduce carbon dioxide (CO_2) emissions, the Company has committed substantial financial and human resources to these efforts since the 1960s," Southern Company said in its annual proxy statements to shareholders for 2016 and 2017.

Documents provide further evidence that Southern Company knew about the risks of climate change as early as the 1960s.

Ernest C. Gaston, the president of Southern Services Inc., was listed among the industry experts who reviewed technical working papers for a voluminous 1964 White House report titled, "*Energy R&D and National Progress*."

Ordered by President John F. Kennedy before his death in 1963, the report identified numerous areas for future research, including the long-term effects of CO_2 emissions on the climate and need to "devise economic methods for adequate control of particulate and gaseous air pollution from sulfur and carbon dioxides, oxides of nitrogen, and incompletely burned hydrocarbons."

Scientists also warned about the potential for harmful climate change at annual conventions of the Edison Electric Institute (EEI), the industry association for the nation's investor-owned electric utilities, in the late 1960s and early 1970s, as documented in the Energy and Policy Institute's in-depth 2017 report *Utilities Knew*.

Those early warnings were communicated to member companies in the pages in the Edison Electric Institute Bulletin.

Southern Services would later change its name to Southern Company Services, which provides centralized operational services to Southern Company's utilities, and is largely funded with money collected from ratepayers of those utilities. In the decades that followed the publication of the 1964 White House report, Southern Company Services would become both a major recipient of federal energy R&D money and a significant source of funding for special interest groups and outside firms that spread disinformation about climate change.

Southern Company played a leading role in the founding of the Electric Power Research Institute, which would conduct climate change research during 1970s and 1980s.

In 1969, Southern Company hired Dr. William B. Harrison to lead the company's new research and development organization. Harrison served on committees of the Electric Research Council (ERC) and EEI that were involved in the formation of the Electric Power Research Institute (EPRI) in 1973, according to Heys' history of R&D at Southern Company.

"The U.S. government believed not enough research was being done by the electric utility industry and was preparing to tax utilities to fund a research organization," Heys wrote in 2013. "The industry responded swiftly to waylay the government's intentions, forming its own research organization to find solutions to common problems - the Electric Power Research Institute."

Harrison then served on EPRI's research advisory committee.

Alabama Power and Georgia Power, both subsidiaries of Southern Company, contributed to a 1971 ERC report that laid out the electric utility industry's R&D goals for the next three decades and provided an early roadmap for EPRI's research. The ERC report included a budget for long-term research into the climatological "effects of CO_2" emissions from power plants. Southern Services Inc., where Harrison served as vice president of research and environment, also contributed to the report.

The 1971 ERC report referenced "State-of-the-Art" research that included work on a "Climatological Model Relating CO_2 Increase to Temperature Rise" by climate scientists Syukoro Manabe and Richard Wetherald. Fifty years later, in 2021, Manabe would win the Nobel Prize for his pioneering research on climate modeling during the 1960s.

As the electric utility industry made early plans to fund future climate change research in 1971, the first coal-fired unit went online at Southern Company's Plant Bowen.

“Bowen eventually became the greatest producer of electric power of any coal-fired plant in the United States,” according to an official history of Georgia Power.

EPRI would go on to fund climate research and communicate scientists’ warnings about climate change to electric utilities and policymakers during the 1970s and 1980s.

How climate change research debunked Southern Company's 1970s-era "clean coal" ad campaign

Southern Company began to spend money on ads that promoted misinformation about "clean coal" by the early 1970s. The company's budget for advertising and sales of $20 million was "the largest promotional expenditure of any investor-owned utility in 1970," according to a 1972 study, "The Price of Power: Electric Utilities and the Environment," by the Council on Economic Priorities.

"We're into a dramatic new venture at Wilsonville, Alabama: a pilot plant specifically designed and equipped to determine the economic feasibility of solvent refining of coal for generating electricity," one 1972 ad titled "*Come Clean*" said. "Solvent refining coal is a process that rids coal of practically all its major pollutants before burning."

"Indicative of The Southern Company system's leadership role in the industry's R&D activities is our participation in a pilot project in Alabama to study the feasibility of producing 'clean coal' through solvent refining," a 1973 ad titled "*Misconceptions*" said.

The Edison Electric Institute initially co-sponsored Southern Company's $6 million Solvent Refined Coal (SRC) project at Wilsonville, which was announced in 1972, with a $4 million pledge, according to Heys. The Electric Power Research Institute took over EEI's co-sponsorship role in the project in 1973. The federal Energy Research and Development Administration awarded Southern Company Services millions of dollars in R&D contracts for SRC research at Wilsonville.

Contrary to the 1972 ad's claim that SRC "rids coal of practically all its major pollutants," the process did nothing to address the problem of carbon dioxide emissions. A 1978 EPA report, "Environmental Assessment of Coal Liquefaction," described Southern Company's SRC research and included the following warning:

> *Another development is a report by the National Academy of Sciences (NAS) which warns that continued use of fossil fuels as a primary source for more than 20 or 30 more years could result in increased atmospheric levels of carbon dioxide. The greenhouse effect and associated global temperature increase and resulting climate changes could, according to the NAS could be both 'significant and damaging.' The findings, although not conclusive, demonstrate the need for positively identifying the long-range effects of using fossil fuels to provide energy needs. The impacts on coal utilization for energy, including coal liquefaction, are obvious.*

A 1972 ad promoted Southern Company's research to produce "clean coal" from solvent coal refining

The EPA didn't expound on the "obvious" impacts, but they were already known by the utility industry at that time. One year earlier Dr. Cyril Comar, the director for EPRI's environmental assessment department, stated during testimony at a congressional hearing that if climate change "turns out to be of major concern then fossil fuel combustion will essentially be unacceptable."

Newspaper articles published in 1979 also mentioned Southern Company's SRC research and warned that new investments in synthetic fuels risked becoming stranded assets, in part based on scientific and environmental concerns about the higher CO_2 emissions produced by these experimental fuels.

In 1980, E. Huffman of Southern Company Services appeared on a short distribution list for the January-March edition of the "SRC-1 Quarterly Technical Report" published by the International Coal Refining Company under a contract with the Department of Energy. Everett Huffman was the manager of the SRC pilot project at Wilsonville.

SRC-I QTR—JANUARY-MARCH 1980

A REVIEW OF CURRENT ASSESSMENTS OF THE CO_2 GREENHOUSE EFFECT

Janet A. Firley*

The quarterly report sent to Huffman included "A Review of Current Assessments of the CO_2 Greenhouse Effect" by Janet A. Firley of the International Coal Refining Company. At the time, Southern Company Services was the administrator of a Department of Energy contract for a SRC-1 demonstration project. The International Coal Refining Company, a partnership of Air Products and Chemicals Inc. and Wheelabrator-Frye Inc., managed the project.

"The CO_2 evolution due to combustion of synthetic hydrocarbon fuels is greater than that of natural hydrocarbons because the energy required to produce them adds to the total CO_2 emission," Firley wrote. "The additional CO_2 evolution is 40% to 60% greater per unit of energy available."

Firley referenced an internal memorandum, “CO_2 Emissions - A Comparison of Fuels,” she’d prepared in 1980 for the Air Products/Wheelabrator-Frye Joint Venture. A single commercial SRC facility could produce up to 160 million pounds of CO_2 per day, according to Firley.

“The evidence for increasing atmospheric CO_2 has been well documented since 1958, when the first systematic and accurate observations began,” Firley wrote in the quarterly report. “The major man-made source of atmospheric CO_2 is fossil fuel combustion.”

“Large scale use of non-fossil energy may delay the CO_2 doubling, while large-scale use of synthetic fuels may hasten the CO_2 doubling,” Firley concluded.

Firley’s paper included a list of “projected effects” from “global warming.”

> The projected effects which have a negative environmental impact include:
> (1) Dislocation of major agricultural regions due to changing climate and rainfall
> (2) Partial melting of the polar ice caps causing 5- to 6-meter rise in sea level[2]
> (3) Massive extinction of plant and animal species due to rapid climate change

Firley also noted some uncertainties in the science. Her review listed potential “positive” impacts that included an “increase in habitable and food-producing land in the higher latitude” and longer growing seasons.

“These issues may be resolved as we gain an increased understanding of the climate, the carbon cycle, and the mechanisms and interactions of the carbon reservoir,” Firley predicted.

Others included on the short distribution list for the quarterly report that featured Firley’s review were Department of Energy officials, H. Lebowitz of EPRI, and the Exxon Coal Liquefaction Pilot Plant and Carter Oil Company. EPRI, Exxon, and the Carter Oil Company were the co-sponsors of a federally funded coal liquefaction project in Bayton, Texas.

An EPRI Journal article on Southern’s SRC research published a few months after Firley’s review included no mention of CO_2 emissions or climate change. Lebowitz was described as “EPRI’s technical manager for development of advanced liquefaction processes” and the person responsible for EPRI’s work on the SRC pilot plant at Wilsonville. He was also credited with having “traced the history of solvent refining” for the article’s author.

Years later, in 2015, InsideClimate News reported on how Exxon downplayed climate risks as it pursued synfuels during the 1980s, before the market for synfuels crashed.

Southern Company's SRC research formed the foundation for the utility company's long-term success in securing billions of dollars in federal funding for "clean coal" R&D, but by 1988 the company was "starting to shutdown SRC," according to Heys. Southern Company's SRC pilot plant in Wilsonville would shut down in 1992, after 18 years in operation.

Wilsonville is today home to the federally-funded National Carbon Capture Center that's managed by Southern Company.

“Effects of Increasing CO_2” + CCS “is not a solution”

In 1985, Victoria Douglass of Southern Company and David Miller of EPRI led a session on the “Effects of Increasing CO_2” at the 1985 annual meeting of the Air Pollution Control Association (ACPA). The session featured several research papers sponsored by EPRI or EEI, as previously detailed in the 2017 report, “Utilities Knew,” by the Energy and Policy Institute.

One EPRI-sponsored paper by Gregg Marland and Ralph M. Rotty of Oak Ridge Universities noted that in 1976, a team of atmospheric scientists at NASA found that “it was not carbon dioxide alone that might drive a global atmospheric warming.”

Other planet-warming gases included methane, Marland and Rotty noted.

Methane is the primary component of “natural gas,” which in 2022 accounted for the majority of Southern Company’s power generation mix.

Rotty also teamed up with David Reister, another colleague from Oak Ridge Associated Universities, on a second EPRI-sponsored paper, “Use of Energy Scenarios in Addressing the CO_2 Question,” that was presented at the ACPA session.

Rotty and Reister’s analysis found that “conservation and renewable” energy would help delay a doubling of atmospheric CO_2 levels, while a rise in global energy use powered by fossil fuels would lead to a faster doubling.

“Even though much can be accomplished by shifting to alternative energy systems, it remains true that effective control on the rates of CO_2 growth a century from now must begin with planning and action in the very near future,” Marland and Reister concluded.

Other papers presented during the ACPA session concluded that CCS at power plants that burn fossil fuels was not a viable solution to the problem.

For example, “A Systems Study for the Removal, Recovery and Disposal of Carbon Dioxide from Fossil Fuel Power Plants in the U.S.” was presented by Meyer Steinberg and Hsing C. Cheng of the Brookhaven National Laboratory.

“Estimates indicate that a reduction in the annual incremental atmospheric CO_2 content of up to 10% would be achieved by a CO_2 control system applied to U.S. utility plants,” Steinberg and Cheng said.

In other words, power plants in the U.S. were responsible for as much as 10 percent of the CO_2 emitted in the atmosphere globally each year, a significant portion for a single sector in a major industrial country.

Steinberg and Cheng found that if carbon dioxide control systems were applied to fossil fuel power plants in the U.S. "… on average, initial capital investment could double and the operating cost could increase by 75%."

Futurists Jennifer Jarrett and Joseph F. Coates of J.F. Coates, Inc. presented a paper, "The Greenhouse Effect: Its Implications for Industrial and Government Policy," sponsored by EEI.

"The Department of Energy, Electric Power Research Institute, and others, have commissioned studies of control technologies which would remove carbon dioxide from the stack and either store it or use it in a way which would prevent its early emission to the atmosphere," Jarrett and Coates wrote.

"Control of emissions by the collection of gas from the stack is not a solution to the global build-up of carbon dioxide in the atmosphere," they concluded.

One year earlier, in 1984, EEI had published a more detailed report by J.C. Coates titled, "Carbon Dioxide: Potential Emerging Global Hazard."

The 1984 report for EEI explained how a number of options for capturing CO_2 from power plants had been investigated, including pumping CO_2 directly into the ocean from floating power plants, burying CO_2 in old mines, pumping CO2 into oil wells to enhance oil recovery, and collecting CO_2 for other commercial uses.

The J.C. Coates team concluded that "none of these are economically attractive on a significant scale to slow atmospheric buildup."

"And except for burying gas in the deep oceans, all of the strategies only delay the emissions of carbon dioxide to the atmosphere, they do not prevent it," they also noted.

The EEI-sponsored report reached this conclusion twenty years before Southern Company's proposed to develop a major "clean coal" CSS demonstration project in Florida in 2004, which was later relocated to Kemper County, Mississippi in 2008. The experimental Kemper plant was demolished in 2021, after Southern Company spent seventeen years and billions of dollars of ratepayer and taxpayer money on the failed CCS project.

5. Control of emissions by the collection of gas from the stack is not a solution to the global build-up of carbon dioxide in the atmosphere.

The Department of Energy, EPRI and others have commissioned studies of control technologies which would remove carbon dioxide from the stack and either store or use it in a way which would prevent its early emission to the atmosphere. Ideas which have been investigated include:

- pumping carbon dioxide directly from the stack into the deep ocean. It has been speculated that one way of doing this would be to float generating plants over deep water.
- burying the gas in old mine galleries
- pumping the gas into depleted oil wells to enhance recovery of the remaining oil. This is being attempted in Texas, where a private contractor has built his processing plant beside a generating station. He buys the stack gas from the utility, processes out the carbon dioxide and pumps it to an oilfield a few miles away. (27)
- collecting the gas for commercial uses, such as dry ice, or circulating it through greenhouses clustered around a power plant.

No hard figures are available on the costs of these control efforts, although work has been done on estimating them. What is immediately apparent however, is that while one or two of the ideas present opportunities for entrepreneurs to process and resell some small portion of the carbon dioxide from fuel combustion, none of these are economically attractive on a significant scale to slow atmospheric buildup.

And except for burying the gas in the deep ocean, all of the strategies only delay the emission of carbon dioxide to the atmosphere, they do not prevent it.

Excerpt from a 1984 report, "Carbon Dioxide: Potential Emerging Global Hazard," by Jennifer Jarratt and Joseph F. Coates that was sponsored by EEI

“Our most serious environmental issue”

During the 1980s, Dr. William B. Harrison and Charles H. Goodman, who succeeded Harrison as vice president of research and environmental affairs for Southern Company Services, served on the editorial board of the Forum for Applied Research and Public Policy. The quarterly journal was published by the Tennessee Valley Authority and dedicated to discussion of policy issues in energy, the environment, and economic development.

The journal published papers that warned about climate change, and discussed policy options for addressing the problem.

A 1986 issue included a paper by James Gustave Speth, the president of the World Resource Institute and former chairman of the White House Council on Environmental Quality, which published a report on climate change in 1981 while under Speth’s leadership.

Speth wrote in 1986:

> *“Greenhouse” theory and models were once thought to be speculative, even after steady increases in atmospheric CO2 had been well documented. But recent scientific reviews have found no reason to doubt the theory, and some evidence to suggest that a warming is already underway. The most serious impacts of the greenhouse effect may be some decades away, but lead-time will still be needed to plan and execute a response - whether prevention or adaptation or both. Clearly, we should be coming to grips with this problem now, while we can do something about it.*

Harrison was listed as a member of the journal's editorial board in that issue. Other members of the editorial board included Richard E. Balhiser of EPRI, Robert Quenon of Peabody Holding Company (today known as Peabody Energy), and James A. Rock of the Montana Power Company.

In 1988, the journal published a paper, “The Greenhouse Effect: Impacts and Policies,” by Richard A. Warrick and Philip D. Jones of the Climate Research Unit of the University of East Anglia. Goodman’s name appeared as an editorial board member in that edition of the journal.

“As we approach the 21st century, climatic change looms as our most serious global environmental issue,” Warrick and Jones wrote. “The reason involves global pollution of the atmosphere.”

Warrick & Jones noted that “… if mean sea level rise is slowly rising because of the greenhouse effect, the year-to-year risks from extreme storm surges could be increasing rapidly.”

Southern Company utilities operate in regions that today are particularly exposed to the risk of damages from storm surges. A 2013 study found that climate change and sea level rise resulted in increased storm surge and flooding during Hurricane Katrina. That storm directly impacted Southern Company’s operations, especially in Mississippi, where Mississippi Power customers paid a monthly fee to cover some of the costs of those damages. Subsequent extreme storms have racked Southern Company utility service territories in the Gulf region. The IPCC today has “high confidence” that storm surge has increased and will continue to increase due to human-induced climate change.

The Forum for Applied Research and Public Policy also featured some articles that disputed the risks of climate change, including a 1989 article by climate skeptic Patrick J. Michaels. Michaels spoke at an Edison Electric Institute meeting that year, according to his curriculum vita, and would go on to become a fixture of industry-backed disinformation campaigns that aimed to sow doubt about established climate science.

Part 2: Decades of Disinformation – 1989 to present

Revealed: $62 million paid to groups and firms involved in climate disinformation campaigns between 1993 and 2004

For this report, the Energy and Policy Institute conducted a new review of annual U5S and U-13-60 reports that Southern Company was required to file with the SEC from 1993 through 2004. The annual reports included itemized lists of Southern Company's political expenditures, donations, and money paid for outside services.

The review identified over $62 million paid by Southern Company to special interest groups and outside firms involved in campaigns against climate science and policies during this eleven-year time period. Total amounts reported to the SEC are summarized by recipient in the table on the following page, and an online spreadsheet provides a more detailed breakdown of the spending.

$31.8 million went to several outside firms who have long fought clean air and climate regulations, including the law firm Hunton & Williams, public relations firm The Hawthorn Group, and lobbying firm Barbour, Griffith & Rogers.

$30.3 million went to special interest groups involved in spreading climate disinformation. For comparison, ExxonSecrets previously tracked nearly $34 million in money ExxonMobil paid to climate disinformation groups over a longer time period, 1997-2015.

Some of the groups that were involved in climate disinformation and backed by Southern Company also received money from ExxonMobil and/or the Koch brothers' foundations, including the American Council for Capital Formation, American Legislative Exchange Council, Annapolis Center for Science-Based Public Policy, Citizens for a Sound Economy, Federalist Society, Frontiers of Freedom Institute, Independent Women's Foundation, National Association of Manufacturers, U.S. Chamber of Commerce, and the Washington Legal Foundation.

Southern Company paid nearly $20 million to the Edison Electric Institute, which played a leading role in climate disinformation campaigns. $7.2 million went to the Center for Energy and Economic Development and Americans for Balanced Energy Choices, two pro-coal industry groups that would later merge to form the American Coalition for Clean Coal Electricity, known today as America's Power.

Special Interest Group or Outside Firm	Total Amount Reported Paid by Southern Company	Years When Payments Were Reported to the SEC
Edison Electric Institute	$19,868,124	1993-2004
The Hawthorn Group	$19,118,000	1996-2004
Hunton & Williams	$10,639,000	1993-1996, 1997-2004
Americans for Balanced Energy Choices	$7,000,000	2000-2004
Barbour, Griffith & Rogers	$2,103,000	1997-2004
Electric Reliability Coordinating Council	$1,120,000	2004
U.S. Chamber of Commerce*	$1,030,000	2002 and 2004
Annapolis Center for Science-based Public Policy	$345,000	2000, 2003-2004
Patton Boggs	$319,000	2004
Global Climate Information Project	$200,000	1997
Center for Energy and Economic Development	$200,000	1995-1996

National Association of Manufacturers	$171,234	1996-2003
Global Climate Coalition	$150,000	1995-1998
Frontiers of Freedom	$100,000	2004
American Legislative Exchange Council	$68,000	1993, 1995-1996, 1998, 2001-2004
American Council For Capital Formation	$20,000	1994, 2004
Citizens for a Sound Economy**	$15,000	1999, 2003
Federalist Society for Law & Public Policy Studies	$10,000	1994
Washington Legal Foundation	$10,000	1996-1997
Independent Women's Forum	$5,000	2002

**U.S. Chamber of Commerce includes $30,000 paid to the "Chamber of Commerce of the USA", and $1 million paid to U.S. Chamber Institute for Legal Reform*

***Citizens for a Sound Economy (CSE) includes money paid to CSE Foundation, Florida CSE, and Texas CSE*

Southern Company included a portion of the $62 million in federal regulatory accounts 923 and 930, which are reserved for utility operating expenses that are typically recoverable from ratepayers. Ratepayers of Southern Company's utilities may have footed the bill for payments included in these accounts, which the Energy and Policy Institute identified in an itemized online spreadsheet.

In 2005, Congress repealed much of the Public Utilities Holding Company Act of 1935, and stripped the SEC of its oversight authority over utility holding companies. The annual U5S and U-13-60 reports were phased out, and the money trail largely faded.

The SEC reports captured only a portion of Southern Company's spending to influence the climate debate. Previous reporting has documented the company's role in the Information Council for the Environment disinformation campaign of the early 1990s, and funding of climate contrarian Wei-Hock "Willie" Soon, for example. More recently, Southern Company utilities reported a total of $150 million in political influence spending in annual reports filed with the Federal Energy Regulatory Commission that covered the years from 2015 to 2019.

The sections that follow take a closer look at Southern Company's role in a number of major climate disinformation campaigns.

The Edison Electric Institute: "Grassroots instructions" manual claimed "controversy" over the reality of man-made global warming

Southern Company's annual reports to the SEC revealed nearly $20 million that was reported as paid to the Edison Electric Institute between 1993 and 2004. EEI is the industry association for investor-owned utilities that is largely funded by utility customers through hidden charges on electric bills.

The company's annual reports to the SEC provided few details about what the money that Southern Company paid to EEI was used for, aside from short and vague descriptions of money paid for branding, dues, environmental assessments, industry initiatives, legal services, and support of unspecified programs – but there is ample documentary evidence of EEI's role in climate disinformation campaigns during the 1990s and early 2000s available elsewhere.

EEI knew by the 1960s that carbon dioxide emissions from burning fossil fuels could cause harmful climate change, as previously documented in "Utilities Knew," the 2017 report by the Energy and Policy Institute. EEI later sponsored a detailed 50-page report, "Carbon Dioxide: A Potential Global Hazard," published in 1984.

Despite knowing the risks, EEI would go on to play a leading role in multiple climate change disinformation campaigns backed by Southern Company and other utility and fossil fuel interests during the 1990s and early 2000s.

In 1996, EEI's longtime president Thomas R. Kuhn led the American Energy Alliance alongside Charles D. DiBona and Jerry J. Jasinowski, the presidents of the American Petroleum Institute (API) and National Association of Manufacturers (NAM), according to internal documents first made public in 2022 by the Climate Investigations Center.

A 1996 letter from Kuhn, DiBona, and Jasinowski celebrated the American Energy Alliance's role in defeating the Clinton administration's 1993 BTU energy tax proposal. The BTU tax proposal had aimed to cut pollution by encouraging energy conservation, and provide a boost to clean and renewable energy sources of energy like solar, wind and geothermal power that would have been exempt from the tax.

"The BTU tax was a centerpiece of the new Administration's economic program and attracted broad initial support," the letter from the leaders of EEI, API, and NAM said. "But, after much hard work and commitment of resources, AEA generated widespread opposition, and the proposal died in Congress in the summer of 1993."

"Now, the nation faces an even greater threat," Kuhn, DiBona and Jasinowski warned.

The new threat was that the Clinton administration had "announced support for legally binding targets to reduce greenhouse gas emissions" at a United Nations conference on climate change.

Kuhn, DiBona and Jasinowski called on AEA members to speak out, and attacked the Clinton administration's climate policy as imposing economic costs "despite uncertainty and dispute within the scientific community about the timing, extent and consequences of climate change."

"While global warming, which makes the earth habitable, and the role of greenhouse gases in the Earth's climate are a scientific fact, controversy continues over the reality of enhanced (i.e., man-made) global warming," a set of "GRASSROOTS INSTRUCTIONS" attached to the letter to AEA members said, as pictured below.

GRASSROOTS INSTRUCTIONS

Background

While global warming, which makes the earth habitable, and the role of greenhouse gases in the Earth's climate are a scientific fact, controversy continues over the reality of enhanced (i.e., man-made) global warming.

Also attached to the AEA letter were a sample op-ed, backgrounders on global climate change and the economic impacts of potential climate policies, and proposed changes to the 1992 Rio Treaty also known as the U.N. Framework Convention on Climate Change. A Q&A on climate change was also included, along with anecdotal examples of the purported consumer impacts of a $100 per ton carbon tax.

In sum, the internal documents show AEA followed a now familiar page from the industry playbook for opposing climate action. They laid out a strategy that disputed the benefits of binding limits on greenhouse gas emissions by sowing doubt about climate science, and exaggerated the costs associated with relatively modest proposals to reduce greenhouse gas emissions to 10 percent below 1990 levels over a number of years.

It's not clear if the campaign against global climate action proposed in Kuhn, DiBona, and Jasinowski's letter was ever implemented under the banner of the American Energy Alliance. EEI, API and NAM did all back a similarly-themed 1997 campaign called the Global Climate Information Project, which was funded by Southern Company and adopted many of the messages and strategies laid out in the internal AEA documents.

In addition, EEI played an integral role in the Information Council for the Environment (ICE) and Global Climate Coalition disinformation campaigns that are described in more detail in the sections that follow.

The multi-million dollar campaign to rebrand coal, a top source of carbon pollution, as "clean"

Southern Company was a leading member of American Coalition for Clean Coal Electricity (ACCCE, now called America's Power) until 2019, when the company announced it would not be renewing its membership in the controversial 501(c)(6) industry association.

ACCCE was formed in 2006 by the merger of Americans for Balanced Energy Choices (ABEC) and the Center for Energy and Economic Development (CEED).

Southern Company Services paid $7 million to ABEC from 2000 through 2004 and $200,000 to CEED in 1995 and 1996, the Energy and Policy Institute's review of annual reports the company filed with the SEC found.

Southern Company later disclosed only the lobbying portion of its America's Power dues, which totaled more than $200,000 between 2015 and 2019, in annual reports published in response to investor calls for more transparency around the company's political activities and spending.

Southern Company's support for CEED, ABEC, and ACCCE spanned three decades, during which time the groups disputed the climate risks of burning fossil fuels. The groups also opposed limits on carbon emissions from power plants, promoted false solutions like "clean coal" and CCS, which remained unviable for widespread deployment at power plants, and produced a long-running series of reports that attacked renewable energy.

Chris Womack, then president of external affairs for Southern Company, served on ACCCE's board of directors from 2017 to 2018. In 2021, Southern named Womack as the chairman and CEO of Georgia Power, a Southern Company subsidiary.

Southern Company's current CEO Thomas Fanning served on ACCCE's board of directors from 2010 to 2016.

In 2014, ACCCE released a misleading report that claimed that the economic benefits of carbon dioxide outweigh the climate costs by 50-500 times, and described carbon emissions as beneficial plant food. The report targeted the Social Cost of Carbon, an official monetary estimate of the damages that would result from one ton of carbon pollution that was developed by a federal Interagency Working Group. The metric is used in cost-benefit analyses to establish the economic benefits of policies and regulations that would curb carbon emissions.

Southern Company's then-CEO David Ratcliffe served on the board of ACCCE in 2009, when the group became embroiled in a scandal that involved forged letters sent by a public affairs firm to members of Congress as part of a campaign to oppose major federal climate change legislation. The firm behind the forged letters, Bonner and Associates, was hired as a sub-contractor by the Hawthorn Group, a consulting firm that received $2.1 million that year from ACCCE.

"In this case Bonner and Associates are exploiting the African-American Community to achieve their misdirected goal," the NAACP said in response to the forged letters, one of which purported to be from a Virginia chapter of the NAACP, sent to a Virginia Congressman. "These tactics illustrate that discriminatory tactics normally used to deceive voters are now being used to deceive the Congress."

While Southern Company was funding ACCCE's opposition to federal climate legislation, the company was raking in millions of dollars in R&D money from the federal government. In 2009, the Department of Energy selected Southern Company to manage and operate the National Carbon Capture Center at Wilsonville, according to Samuel Heys' official history of Southern Company's R&D program. Southern Company Services billed the Department of Energy for $35 million in 2009, some of it for the company's management of the National Carbon Capture Center, according to an annual report filed with Federal Energy Regulatory Commission (FERC).

The Hawthorn Group received almost $10 million in contractual fees from ACCCE between 2008 and 2012, according to research by the Climate Investigations Center.

Southern Company Services reported over $19 million in money paid to the Hawthorn Group between 1996 and 2004 in the annual SEC reports reviewed by the Energy and Policy Institute.

Alabama Power, a Southern Company utility, paid $7.8 million to the Hawthorn Group from 1996 to 2001, according to company reports filed with FERC, as first reported by Alabama.com. The Hawthorn Group also had an office inside Alabama Power's corporate headquarters in Birmingham until around 2017, according to Alabama.com's reporting.

Josh Ashford, CEO and founder of the Hawthorn Group, wrote in 2020 about his firm's long history with Alabama Power.

"Elmer Harris, CEO of Alabama Power and who, as Hawthorn's first client put the company in business and kept it in business for many years," Ashford wrote.

Hawthorn worked on a multi-million dollar ABEC campaign to promote "clean coal" during the 2008 election.

Ashford was later asked during a 2019 interview if it was fair to say the 2008 campaign "normalized the idea that coal has a role as a solution to climate change" and delayed genuine action on climate change for the benefit of his clients and to the detriment of the rest of the planet.

"I don't know how to measure fairness, but I'd say it's accurate," Ashford responded. "I hope all our campaigns are designed to benefit our clients' interests."

ABEC's website included misleading information about climate science change.

"Emissions of greenhouse gases come from both natural and manmade sources, and there is continued debate on whether we are experiencing natural variations in the Earth's climate system, or is something else taking place?" an archived ABEC webpage from 2004 said.

"The balance of evidence suggests a discernible human influence on global climate," the IPCC had determined eight years earlier.

A leaked 2004 strategy letter sent to coal producer Peabody Energy from CEED president Stephen Miller, who would go on to lead ACCCE until 2012, exposed how CEED used CCS as part of a broader strategy for fighting limits on greenhouse emissions from coal-fired power plants:

> *In the climate change arena, CEED focuses on three areas: opposing government-mandated controls of greenhouse gases (GHG), opposing 'regulation by litigation', and supporting sequestration and technology as the proper vehicles for addressing any reasonable concerns about greenhouse gas concentrations in the atmosphere.*

Southern Company Services billed the "Center for Economic & Energy Development" for "Services concerning television networks" in 1994 and 1995, according to annual reports filed with the SEC.

Copies of Center for Energy and Economic Development newsletters found on Archive.org by the investigative research site DeSmog described how CEED used "Southern Company's new satellite video system to reach external audiences."

“Hundreds of teachers attended an energy workshop held by CEED in collaboration with the Southern Company on October 11, 1994,” according to a CEED newsletter from November 1994.

The workshop was described as a “first test” for using Southern Company’s satellite television system to communicate coal industry messages about energy, environmental, and economic issues. Another satellite program followed in 1995.

CEED’s May 1995 newsletter said that “CEED and the Southern Company are sponsoring a satellite program called *"Electricity and Global Climate Change*."

“Electricity and Global Climate Change is intended for middle and high school teachers but will be suitable for other audiences as well, i.e., speakers bureaus, employees or public audiences,” the newsletter said.

The August 1995 edition of CEEDNews reported that over 990 people participated in the program, a one-day conference sponsored by Southern Company and American Electric Power that was “carried live at 26 downlink sites in 11 Eastern and Midwest United States and Canada.”

“I didn't hear anything that would make me vote to spend any money on this problem (of global climate change)," the CEEDNews report quoted one public official who participated in the program as saying.

Southern Company paid $100,000 to CEED in 1995. Southern Company Services billed the Department of Energy for over $64 million in “Contract services concerning clean coal technology” and other R&D work that same year.

CEED claimed that CO_2 is “NOT a pollutant” in a 1998 presentation, more than thirty years after Southern Company Services president E.C. Gaston contributed to the 1964 White House report that reached the opposite conclusion and found carbon pollution needed to be controlled. Southern Company Services billed the Department of Energy for $25 million in “Contract services concerning clean coal technology, Power System Development” in 1998.

The campaign to put climate science on ICE

In 1991, a New York Times story based on leaked internal documents exposed the utility and fossil interests behind the Information Council on the Environment (ICE), a public relations campaign that aimed to "Reposition global warming as theory (not fact)." The documents revealed the ICE campaign was backed by Southern Company, EEI, the Western Fuels Association and coal producers like the Peabody Holding Company (now Peabody Energy).

Gale Klappa, then vice president of public relations for Southern Company Services, served as the president of the ICE campaign. Southern Company committed $125,000 to the campaign, according to the leaked documents.

Internal polling recommended the ICE campaign target "older, less-educated" males with radio ads. One radio ad targeted listeners of the Rush Limbaugh Show broadcast from a station based in Fargo, North Dakota, on the border with western Minnesota.

H. Allen Franklin, then president of Southern Company Services, faced questions about the ICE campaign during a 1991 Congressional hearing. Franklin testified at the hearing on behalf of EEI.

At the hearing, Rep. Jim Cooper told Franklin he was "distressed" when he read "an allegation that Southern Co., among others, was paying tens of thousands of dollars to target, as I understand it, elderly males with low incomes and young females of low income, low education, to try to persuade them that there was no scientific basis whatsoever to the global warming phenomenon."

Franklin admitted:

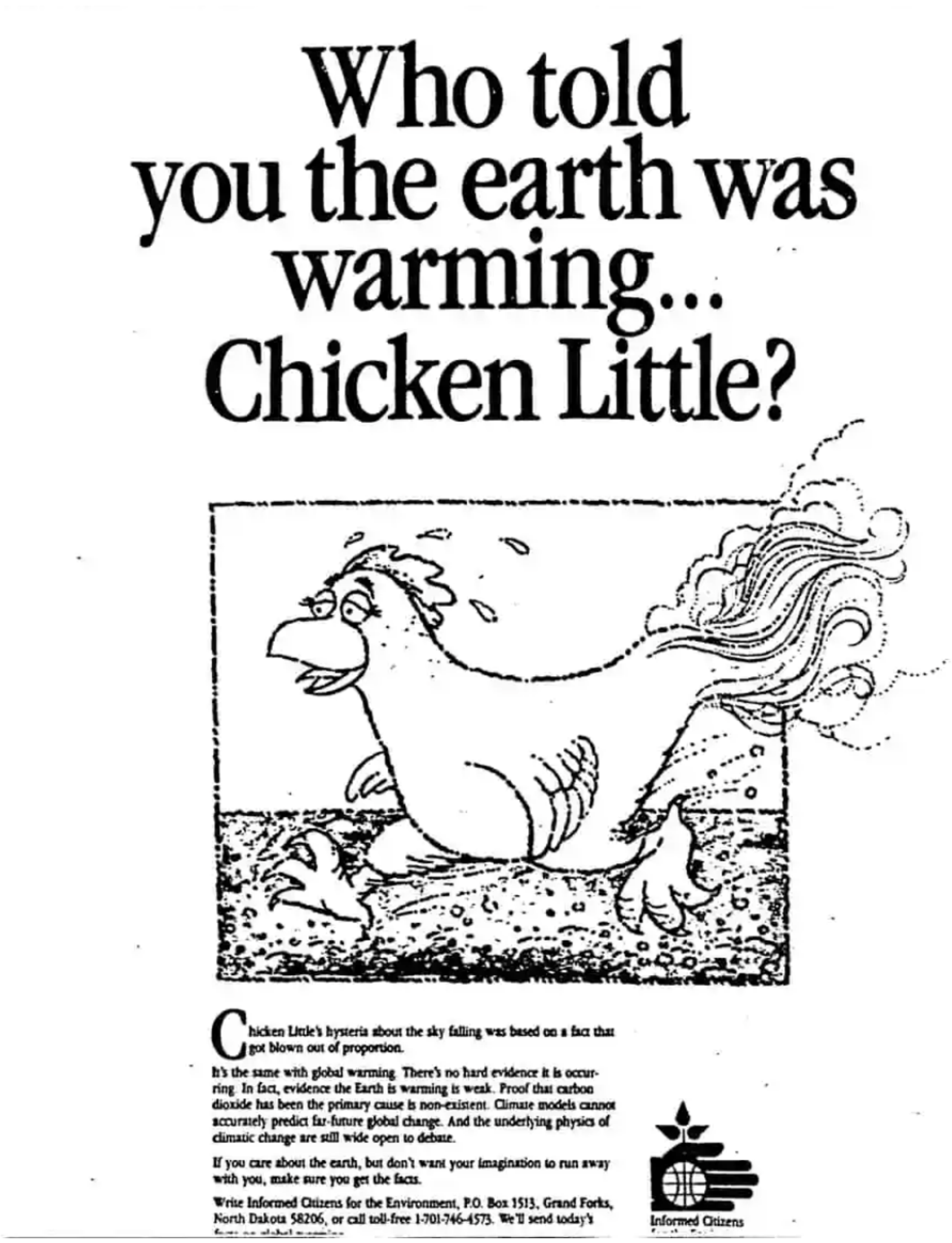
> *The Southern Company alone [sic], with a lot of other entities interested in coal have been running surveys to determine the current perception of the global warming issues and running some advertising to see how that perception is changed by advertising, but it is not targeted. It is newspaper and radio which are targeted to the entire population."*

Franklin told Cooper he was not personally involved in the issue, and after the hearing submitted additional information that included a memo by Fred Lukens of Simmons Advertising, which worked on the ICE campaign.

Lukens' memo identified three test markets where the ICE campaign's ad had appeared, including Fargo, North Dakota; Flagstaff, Arizona; and Bowling Green, Kentucky. Lukens said that in each city “15 full-page newspaper ads were placed in the local daily newspapers that reached the largest number of adults in these markets.”

ICE campaign ads aired on “all of the commercial radio stations” licensed in Bowling Green and Flagstaff, according to Lukens. The ICE campaign “purchased air time on six of the top eight rated adult stations…” in Fargo.

The ICE campaign was ultimately abandoned, but it laid the groundwork for other industry-funded climate disinformation campaigns that would follow.



The Information Council for the Environment campaign featured misleading ads that bore headlines like, "Who told you the earth was warming... Chicken Little?"

The Global Climate Coalition: Undeniable climate science denied

Southern Company was a leading member of the Global Climate Coalition (GCC) from 1989 to 2000. As the New York Times later reported, the GCC "led an aggressive lobbying and public relations campaign against the idea that emissions of heat-trapping gases could lead to global warming."

The GCC was founded in 1989 as an informal coalition based out of the offices of the National Association of Manufacturers (NAM). It was later incorporated in the District of Columbia in 1994, and granted tax-exempt status as a 501(c)(6) industry association by the IRS in 1995.

Southern Company and its service company reported a total of $150,000 paid to the GCC in 1995, 1997, and 1998, according to annual SEC reports reviewed by the Energy and Policy Institute. The amount likely represents only a portion of the money Southern Company paid to support the GCC's mission, which would have also included money paid to Southern Company employees involved in the GCC's leadership and operations. Southern Company also paid money to industry groups like NAM, EEI and EPRI that participated in the GCC.

In 1989, Southern Company Services appeared on an early list of Global Climate Coalition members. Robert J. Minter of Southern Company Services served as the Global Climate Coalition's liaison to the U.S. Senate that year.

John Richardson, the vice president of external affairs for Southern Company Services, served on the GCC's board of directors in 1994.

Robert Gehri represented Southern Company on the GCC's Science and Technology Advisory Committee (STAC). Gehri worked for Southern Company as a principal research scientist from 1974 until his retirement in 2009, and was involved in some of the company's federally-funded Solvent Refined Coal research in the 1970s.

Beyond the GCC, Gehri worked with operatives from Exxon, the American Petroleum Institute, and various special interest groups on a leaked 1998 "Global Climate Science Communications" action plan. The plan described victory as being achieved when "Average citizens 'understand' (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the 'conventional wisdom.'"

Gehri also attended United Nations climate change meetings during the 1990s and early 2000s, where he was part of delegations representing the Climate Council along with Donald Pearlman, a lobbyist for coal, utility and railroad interests. Southern

Company Services reported that it paid $319,000 to Pearlman's firm Patton Boggs for "Legal Services" in 2004, the final year before Pearlman's death, in one of the annual SEC reports reviewed by the Energy and Policy Institute.

Buddy Eller, a member of Southern Company's communications team, also attended U.N. climate meetings as part of the Global Climate Coalition's delegation, which often outnumbered delegations sent from developing countries that would be most impacted by climate change.

A copy of the Global Climate Coalition's internal "Communications Program" from July 1995 was made public in 2022 in a research article by Robert Brulle, a visiting professor at the Brown University Institute for Environment and Society. The coalition's Communications Program included a "Post COP Communications Plan" for the months that followed the first Conference of Parties to the United Nations Framework Convention on Climate Change in March 1995.

The "Post COP Communications Plan" included messages about the "continued uncertainty of the science" and identified specific donors, including the American Automobile Manufacturers Association, Southern Company, American Petroleum Institute, Association of American Railroads, and the National Mining Association. The budget for the plan, which also covered spending on a "Pre COP Communications Plan," totaled $630,000.

Brulle's research also unearthed a "Case History" on the Global Climate Coalition by E. Bruce Harrison, a consulting firm employed by the coalition, boasted about the GCC's success.

"GCC has successfully turned the tide on press coverage of global climate science, effectively countering the eco-catastrophe message and asserting a lack of scientific consensus on global warming," the Case History said.

The internal document from E. Bruce Harrison also spoke to the scope and impact of the Global Climate Coalition's campaign against climate science and policies.

"GCC has responded to every major domestic and international policy and announcement and new scientific finding regarding climate change, often generating press coverage or getting GCC's viewpoint included in news articles," it also said.

In 2009, documents from a key meeting of the GCC's STAC became the subject of a story, headlined "Industry ignored its own scientists on climate," in the New York Times. One of those scientists was Lenny Bernstein of Mobil Oil Corporation, a member of the STAC.

In December of 1995, Bernstein submitted "what I hope is the final draft of the primer on global climate change science we have been working on for the past few months" for review by GCC STAC members.

"The scientific basis for the Greenhouse Effect and the potential impact of human emissions of greenhouse gases such as CO_2 on climate is well established and cannot be denied," the draft primer said.

The draft primer was then reviewed at a January 1996 meeting of the STAC, according to minutes circulated by Southern Company. Gehri was listed among the attendees of that meeting, which took place at Southern Company Services' offices in Washington, D.C.

An updated version of the primer marked "DRAFT - APPROVED BY STAC" on climate science was also circulated with the minutes. The words "cannot be denied" were removed from the new version of the draft.

"The scientific basis for the existence of the greenhouse effect and the potential impact of human emissions of greenhouse gases such as CO_2, CH_4, N_2O etc. on climate is well established," the new STAC-approved draft primer said.

In November of 1996, the Global Climate Coalition released an overview that outlined its public position on climate change. Gone was any reference to the "well established" science on the potential climate impacts of CO_2 and other greenhouse gas emissions, science that STAC members had initially concluded "cannot be denied."

"The GCC believes that there is no convincing evidence that future increases in greenhouse gas concentrations will produce significant climatic effects," said one line in the GCC's position statement.

The draft primer Bernstein had circulated in 1995 also included a section that critiqued a number of the "contrarian theories" espoused by climate skeptics like Patrick Michaels, but that entire section was dropped at the January 1996 STAC meeting.

"The contrarian theories raise interesting questions about our total understanding of climate processes, but they do not offer convincing arguments against the conventional model of greenhouse gas emission-induced climate change," the draft circulated by Bernstein said.

"Most suggestions were to drop the 'contrarian' part," the minutes circulated by Southern Company said. "This idea was accepted and that portion of the paper will be dropped. The ideas brought out in the 'contrarian' section may be dealt with in a future paper."

For years after that meeting, the GCC would continue to misleadingly promote these debunked “contrarian theories” as on par with established climate science.

Southern Company left the GCC in 2000 and the coalition disbanded in 2002 amidst a wave of corporate defections. Before it disbanded GCC had achieved its goals of stopping the U.S. from ratifying the international Kyoto Protocol aimed at limiting greenhouse gas emissions under President Bill Clinton.

Sunlight: Secret funding of climate skeptic Willie Soon revealed by Freedom of Information Act requests

Dr. Wei-Hock "Willie" Soon, a physicist at the Harvard & Smithsonian Center for Astrophysics best known for his adherence to the disproven theory that climate change is largely caused by solar variation, received $1.2 million from fossil fuel and electric utility interests from 2001 to 2012, according to records obtained from the Smithsonian by the Climate Investigations Center and by Greenpeace.

Southern Company supplied more than $400,000 of that total between 2008 and 2015. The Smithsonian agreed not to disclose Soon's funding from Southern Company "without express written consent."

Soon published a total of 11 papers, described as "deliverables" and paid for by Southern Company, without disclosing his financial ties to the utility company.

One funding agreement also stipulated that the Smithsonian provide Southern Company "an advance written copy of proposed publications regarding the deliverables for comment and input, if any, from SCS [Southern Company Services]."

"Without exception, the papers question the extent, severity, cause or existence of man-made climate change," according to a review of the papers by InsideClimate News.

Robert Gehri served as the point person at Southern Company for Soon's work under a research agreement titled, "Understanding Solar Variability and Climate Change." More than a decade earlier, in 1996, Gehri had been present at the January 1996 meeting of the Global Climate Coalition's Science and Technology Advisory Committee where members decided to remove a section debunking "contrarian" theories from a draft primer on climate science.

The Global Climate Coalition's draft primer, which had been developed by members of the same committee, admitted that solar variation over the last 120 years and its impact on climate had been minimal, and that solar variation "does not allay concerns about future warming which could result from greenhouse gas emissions."

"Whatever contribution solar variability makes to climate change should be additive to the effect of the greenhouse effect," the draft primer said, in one example of the known facts the GCC later omitted from its public messaging.

The draft primer pointed to the work of Dr. Robert Jastrow, the director of Mt. Wilson Observatory and co-founder of the ExxonMobil-funded George Marshall Institute, as an example of the debunked solar variation theory. Soon was affiliated with the same observatory from 1992-2009.

Notes on the results of an April 11, 1996 GCC-STAC conference call mentioned that Gerhi volunteered to draft a discussion of solar variability as a source of uncertainty in the scientific assessment of climate change.

EPRI sponsored and promoted research on solar variance and climate change co-authored by Soon, according to an article published in the EPRI Journal in October of 1996. EPRI was represented on GCC STAC by Chuck Hakkarinen.

In 2004 Southern Company paid $100,000 to the Frontiers of Freedom Institute, a group known for its denial of climate change. The same institute paid Soon $60,000 in 2004 for consulting.

In 2015, after Soon's contracts with Southern Company and fossil fuel interests were made public, Southern Company informed reporters that, "Our agreement with the Smithsonian Astrophysical Observatory expires later this year and there are no plans to renew it."

In 2016, the Smithsonian disclosed that Soon received funding through a dark money portal known as Donors Trust, which does not disclose its donors.

The Global Climate (Dis)Information Project

Southern Company Services' annual report to the SEC for 1997 revealed that the company paid $200,000 to the Global Climate Information Project (GCIP), which announced that year that it would spend $13 million to defeat the Kyoto Protocol. The U.S. never ratified the treaty, which became the target of numerous special interest groups backed by fossil fuel and utility interests.

The GCIP campaign included TV and newspaper ads that preyed upon Americans' economic fears and claimed that the treaty would lead to increased energy prices.

The ads linked to a website, climatefacts.org, which featured a multi-page section on "*Science Concerns,*" which targeted climate science.

"It is fair to say that the science still is not in and there are remaining uncertainties about the causes, timing and complete effects of climate change," the website said in 1998, according to an archived version.

The Utility Air Regulatory Group v. climate science

Southern Company was a longtime member of the Utility Air Regulatory Group, a secretive group operated by the law firm Hunton & Williams (now Hunton Andrews Kurth) that for more than four decades fought Clean Air Act regulations, including regulations aimed at limiting greenhouse gas emissions from power plants.

UARG documents show that Southern Company was a member between 1978 and 2019. UARG dissolved amidst a Congressional inquiry aimed at determining if ratepayers of Southern Company and other utilities were being forced to fund the group through hidden charges on their electricity bills.

In 2009, UARG submitted comments that challenged the EPA's proposed endangerment finding for greenhouse gas emissions, and questioned the EPA's use of the scientific findings of the IPCC and the U.S. Climate Change Science Program in the proposed finding. The endangerment finding determined that certain greenhouse gasses threaten the health and welfare of current and future generations, and this finding is necessary for EPA regulation of greenhouse gas emissions for motor vehicles and other sources.

Southern Company paid over $10 million to Hunton & Williams from 1994 to 2005, according to annual reports filed with the SEC.

Leaked internal documents made public by Politico in 2019 show Southern Company paid $663,453 to fund UARG in 2017. Thomas Lee Wells of Southern Company served on UARG's Climate Change committee at the time. UARG's budgets included nearly $1.8 million per year for "Climate Change" for 2017 and 2018.

The internal documents provided details about UARG's activities and budget for discussion at a June 2017 meeting of UARG's Policy Committee. Most of the nearly $1.8 million for "Climate Change" included in UARG's 2017 budget was earmarked for legal activities, which included "H&W" participation in litigation related to EPA regulation of greenhouse gas emissions.

No limits: Haley Barbour and the Republican Attorneys General Association's campaigns against EPA limits on greenhouse gas emissions

In March of 2001, Haley Barbour, then a lobbyist for Southern Company and other electric utility interests, sent a memo to Vice President Dick Cheney and other Bush administration officials "Demurring on the issue of whether the CO_2 idea is eco-extremism" and opposing regulation of CO_2 emissions at a pollutant.

President George W. Bush would just a few days later renege on his earlier campaign pledge to regulate CO_2 in a letter to members of the US Senate. The move came just days after Bush's EPA administrator Christine Todd Whitman had signaled readiness to act on CO_2 regulations.

The memo only became public in 2002 after the National Resources Defense Council (NRDC) obtained a copy in response to a Freedom of Information Act request. NRDC had to file a lawsuit to force the Department of Energy to release the records.

Southern Company Services paid Barbour's firm a total of $363,000 in 2001 for consulting and legal services.

Barbour's other clients at the time included the Electric Reliability Coordinating Council (ERCC), a coalition of utility and fossil fuel interests that has counted Southern Company among its members. Southern Company Services paid the ERCC $1.1 million in 2003, according to an annual report filed with the SEC.

In more recent years, Southern Company contributed more than $550,000 to the Republican Attorneys General Association between 2014 and 2020, and recruited Republican state attorneys general to oppose EPA limits on CO2 emissions from power plants under the Obama administration

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