

# The Truth About Denial

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**NEWSWEEK**

From the magazine issue dated Aug 13, 2007

Sen. Barbara Boxer had been chair of the Senate's Environment Committee for less than a month when the verdict landed last February. "Warming of the climate system is unequivocal," concluded a report by 600 scientists from governments, academia, green groups and businesses in 40 countries. Worse, there was now at least a 90 percent likelihood that the release of greenhouse gases from the burning of fossil fuels is causing longer droughts, more flood-causing downpours and worse heat waves, way up from earlier studies. Those who doubt the reality of human-caused climate change have spent decades disputing that. But Boxer figured that with "the overwhelming science out there, the deniers' days were numbered." As she left a meeting with the head of the international climate panel, however, a staffer had some news for her. A conservative think tank long funded by ExxonMobil, she told Boxer, had offered scientists \$10,000 to write articles undercutting the new report and the computer-based climate models it is based on. "I realized," says Boxer, "there was a movement behind this that just wasn't giving up."

If you think those who have long challenged the mainstream scientific findings about global warming recognize that the game is over, think again. Yes, 19 million people watched the "Live Earth" concerts last month, titans of corporate America are calling for laws mandating greenhouse cuts, "green" magazines fill newsstands, and the film based on Al Gore's best-selling book, "An Inconvenient Truth," won an Oscar. But outside Hollywood, Manhattan and other habitats of the chattering classes, the denial machine is running at full throttle—and continuing to shape both government policy and public opinion.

Since the late 1980s, this well-coordinated, well-funded campaign by contrarian scientists, free-market think tanks and industry has created a paralyzing fog of doubt around climate change. Through advertisements, op-eds, lobbying and media attention, greenhouse doubters (they hate being called deniers) argued first that the world is not warming; measurements indicating otherwise are flawed, they said. Then they claimed that any warming is natural, not caused by human activities. Now they contend that the looming warming will be minuscule and harmless. "They patterned what they did after the tobacco industry," says former senator Tim Wirth, who spearheaded environmental issues as an under secretary of State in the Clinton administration. "Both figured, sow enough doubt, call the science uncertain and in dispute. That's had a huge impact on both the public and Congress."

Just last year, polls found that 64 percent of Americans thought there was "a lot" of scientific disagreement on climate change; only one third thought planetary warming was "mainly caused by things people do." In contrast, majorities in Europe and Japan recognize a broad consensus among climate experts that greenhouse gases—mostly from the burning of coal, oil and natural gas to power the world's economies—are altering climate. A new NEWSWEEK Poll finds that the influence of the denial machine remains strong. Although the figure is less than in earlier polls, 39 percent of those asked say there is "a lot of disagreement among climate scientists" on the basic question of whether the planet is warming; 42 percent say there is a lot of disagreement that human activities are a major cause of global warming. Only 46 percent say the greenhouse effect is being felt today.

As a result of the undermining of the science, all the recent talk about addressing climate change has produced little in the way of actual action. Yes, last September Gov. Arnold Schwarzenegger signed a landmark law committing California to reduce statewide emissions of carbon dioxide to 1990 levels by 2020 and 80 percent more by 2050. And this year both Minnesota and New Jersey passed laws requiring their states to reduce greenhouse emissions 80 percent below recent levels by 2050. In January, nine leading corporations—including Alcoa, Caterpillar, Duke Energy, Du Pont and General Electric—called on Congress to "enact strong national legislation" to reduce greenhouse gases. But although at least eight bills to require reductions in greenhouse gases have been introduced in Congress, their fate is decidedly murky. The Democratic leadership in the House of Representatives decided last week not even to bring to a vote a requirement that automakers improve vehicle mileage, an obvious step toward reducing greenhouse emissions. Nor has there been much public pressure to do so. Instead, every time the scientific case got stronger, "the American public yawned and bought bigger cars," Rep. Rush Holt, a New Jersey congressman and physicist, recently wrote in the journal *Science*; politicians "shrugged, said there is too much doubt among scientists, and did nothing."

It was 98 degrees in Washington on Thursday, June 23, 1988, and climate change was bursting into public consciousness. The Amazon was burning, wildfires raged in the United States, crops in the Midwest were scorched and it was shaping up to be the hottest year on record worldwide. A Senate committee, including Gore, had invited NASA climatologist James Hansen to testify about the greenhouse effect, and the members were not above a little stagecraft. The night before, staffers had opened windows in the hearing room. When Hansen began his testimony, the air conditioning was struggling, and sweat dotted his brow. It was the perfect image for the revelation to come. He was 99 percent sure, Hansen told the panel, that "the greenhouse effect has been detected, and it is changing our climate now."

The reaction from industries most responsible for greenhouse emissions was immediate. "As soon as the scientific community began to come together on the science of climate change,

the pushback began," says historian Naomi Oreskes of the University of California, San Diego. Individual companies and industry associations—representing petroleum, steel, autos and utilities, for instance—formed lobbying groups with names like the Global Climate Coalition and the Information Council on the Environment. ICE's game plan called for enlisting greenhouse doubters to "reposition global warming as theory rather than fact," and to sow doubt about climate research just as cigarette makers had about smoking research. ICE ads asked, "If the earth is getting warmer, why is Minneapolis [or Kentucky, or some other site] getting colder?" This sounded what would become a recurring theme for naysayers: that global temperature data are flat-out wrong. For one thing, they argued, the data reflect urbanization (many temperature stations are in or near cities), not true global warming.

Shaping public opinion was only one goal of the industry groups, for soon after Hansen's sweat-drenched testimony they faced a more tangible threat: international proposals to address global warming. The United Nations had scheduled an "Earth Summit" for 1992 in Rio de Janeiro, and climate change was high on an agenda that included saving endangered species and rain forests. ICE and the Global Climate Coalition lobbied hard against a global treaty to curb greenhouse gases, and were joined by a central cog in the denial machine: the George C. Marshall Institute, a conservative think tank. Barely two months before Rio, it released a study concluding that models of the greenhouse effect had "substantially exaggerated its importance." The small amount of global warming that might be occurring, it argued, actually reflected a simple fact: the Sun is putting out more energy. The idea of a "variable Sun" has remained a constant in the naysayers' arsenal to this day, even though the tiny increase in solar output over recent decades falls far short of explaining the extent or details of the observed warming.

In what would become a key tactic of the denial machine—think tanks linking up with like-minded, contrarian researchers—the report was endorsed in a letter to President George H.W. Bush by MIT meteorologist Richard Lindzen. Lindzen, whose parents had fled Hitler's Germany, is described by old friends as the kind of man who, if you're in the minority, opts to be with you. "I thought it was important to make it clear that the science was at an early and primitive stage and that there was little basis for consensus and much reason for skepticism," he told *Scientific American* magazine. "I did feel a moral obligation."

Bush was torn. The head of his Environmental Protection Agency, William Reilly, supported binding cuts in greenhouse emissions. Political advisers insisted on nothing more than voluntary cuts. Bush's chief of staff, John Sununu, had a Ph.D. in engineering from MIT and "knew computers," recalls Reilly. Sununu frequently logged on to a computer model of climate, Reilly says, and "vigorously critiqued" its assumptions and projections.

Sununu's side won. The Rio treaty called for countries to voluntarily stabilize their greenhouse emissions by returning them to 1990 levels by 2000. (As it turned out, U.S. emissions in 2000 were 14 percent higher than in 1990.) Avoiding mandatory cuts was a huge victory for industry. But Rio was also a setback for climate contrarians, says UCSD's Oreskes: "It was one thing when Al Gore said there's global warming, but quite another when George Bush signed a convention saying so." And the doubters faced a newly powerful nemesis. Just months after he signed the Rio pact, Bush lost to Bill Clinton—whose vice president, Gore, had made climate change his signature issue.

Groups that opposed greenhouse curbs ramped up. They "settled on the 'science isn't there' argument because they didn't believe they'd be able to convince the public to do nothing if climate change were real," says David Goldston, who served as Republican chief of staff for the House of Representatives science committee until 2006. Industry found a friend in Patrick Michaels, a climatologist at the University of Virginia who keeps a small farm where he raises prize-winning pumpkins and whose favorite weather, he once told a reporter, is "anything severe." Michaels had written several popular articles on climate change, including an op-ed in *The Washington Post* in 1989 warning of "apocalyptic environmentalism," which he called "the most popular new religion to come along since Marxism." The coal industry's Western Fuels Association paid Michaels to produce a newsletter called *World Climate Report*, which has regularly trashed mainstream climate science. (At a 1995 hearing in Minnesota on coal-fired power plants, Michaels admitted that he received more than \$165,000 from industry; he now declines to comment on his industry funding, asking, "What is this, a hatchet job?")

The road from Rio led to an international meeting in Kyoto, Japan, where more than 100 nations would negotiate a treaty on making Rio's voluntary—and largely ignored—greenhouse curbs mandatory. The coal and oil industries, worried that Kyoto could lead to binding greenhouse cuts that would imperil their profits, ramped up their message that there was too much scientific uncertainty to justify any such cuts. There was just one little problem. The Intergovernmental Panel on Climate Change, or IPCC—the international body that periodically assesses climate research—had just issued its second report, and the conclusion of its 2,500 scientists looked devastating for greenhouse doubters. Although both natural swings and changes in the Sun's output might be contributing to climate change, it concluded, "the balance of evidence suggests a discernible human influence on climate."

Faced with this emerging consensus, the denial machine hardly blinked. There is too much "scientific uncertainty" to justify curbs on greenhouse emissions. William O'Keefe, then a vice president of the American Petroleum Institute and leader of the Global Climate Coalition, suggested in 1996. Virginia's Michaels echoed that idea in a 1997 op-ed in *The Washington Post*, describing "a growing contingent of scientists who are increasingly unhappy with the glib forecasts of gloom and doom." To reinforce the appearance of uncertainty and disagreement, the denial machine churned out white papers and "studies" (not empirical research, but critiques of others' work). The Marshall Institute, for instance, issued reports by a Harvard University astrophysicist it supported pointing to satellite data showing "no significant warming" of the atmosphere, contrary to the surface warming. The predicted warming, she wrote, "simply isn't happening according to the satellite[s]." At the time, there was a legitimate case that satellites were more accurate than ground stations, which might be skewed by the unusual warmth of cities where many are sited.

"There was an extraordinary campaign by the denial machine to find and hire scientists to sow dissent and make it appear that the research community was deeply divided," says Dan Becker of the Sierra Club. Those recruits blitzed the media. Driven by notions of fairness and objectivity, the press "qualified every mention of human influence on climate change with

'some scientists believe,' where the reality is that the vast preponderance of scientific opinion accepts that human-caused [greenhouse] emissions are contributing to warming," says Reilly, the former EPA chief. "The pursuit of balance has not done justice" to the science. Talk radio goes further, with Rush Limbaugh telling listeners this year that "more carbon dioxide in the atmosphere is not likely to significantly contribute to the greenhouse effect. It's just all part of the hoax." In the new NEWSWEEK Poll, 42 percent said the press "exaggerates the threat of climate change."

Now naysayers tried a new tactic: lists and petitions meant to portray science as hopelessly divided. Just before Kyoto, S. Fred Singer released the "Leipzig Declaration on Global Climate Change." Singer, who fled Nazi-occupied Austria as a boy, had run the U.S. weather-satellite program in the early 1960s. In the Leipzig petition, just over 100 scientists and others, including TV weathermen, said they "cannot subscribe to the politically inspired world view that envisages climate catastrophes." Unfortunately, few of the Leipzig signers actually did climate research; they just kibitzed about other people's. Scientific truth is not decided by majority vote, of course (ask Galileo), but the number of researchers whose empirical studies find that the world is warming and that human activity is partly responsible numbered in the thousands even then. The IPCC report issued this year, for instance, was written by more than 800 climate researchers and vetted by 2,500 scientists from 130 nations.

Although Clinton did not even try to get the Senate to ratify the Kyoto treaty (he knew a hopeless cause when he saw one), industry was taking no chances. In April 1998 a dozen people from the denial machine—including the Marshall Institute, Fred Singer's group and Exxon—met at the American Petroleum Institute's Washington headquarters. They proposed a \$5 million campaign, according to a leaked eight-page memo, to convince the public that the science of global warming is riddled with controversy and uncertainty. The plan was to train up to 20 "respected climate scientists" on media—and public—outreach with the aim of "raising questions about and undercutting the 'prevailing scientific wisdom'" and, in particular, "the Kyoto treaty's scientific underpinnings" so that elected officials "will seek to prevent progress toward implementation." The plan, once exposed in the press, "was never implemented as policy," says Marshall's William O'Keefe, who was then at API.

The GOP control of Congress for six of Clinton's eight years in office meant the denial machine had a receptive audience. Although Republicans such as Sens. John McCain, Jim Jeffords and Lincoln Chafee spurned the denial camp, and Democrats such as Congressman John Dingell adamantly oppose greenhouse curbs that might hurt the auto and other industries, for the most part climate change has been a bitterly partisan issue. Republicans have also received significantly more campaign cash from the energy and other industries that dispute climate science. Every proposed climate bill "ran into a buzz saw of denialism," says Manik Roy of the Pew Center on Climate Change, a research and advocacy group, who was a Senate staffer at the time. "There was no rational debate in Congress on climate change."

The reason for the inaction was clear. "The questioning of the science made it to the Hill through senators who parroted reports funded by the American Petroleum Institute and other advocacy groups whose entire purpose was to confuse people on the science of global warming," says Sen. John Kerry. "There would be ads challenging the science right around the time we were trying to pass legislation. It was pure, raw pressure combined with false facts." Nor were states stepping where Washington feared to tread. "I did a lot of testifying before state legislatures—in Pennsylvania, Rhode Island, Alaska—that thought about taking action," says Singer. "I said that the observed warming was and would be much, much less than climate models calculated, and therefore nothing to worry about."

But the science was shifting under the denial machine. In January 2000, the National Academy of Sciences skewered its strongest argument. Contrary to the claim that satellites finding no warming are right and ground stations showing warming are wrong, it turns out that the satellites are off. (Basically, engineers failed to properly correct for changes in their orbit.) The planet is indeed warming, and at a rate since 1980 much greater than in the past.

Just months after the Academy report, Singer told a Senate panel that "the Earth's atmosphere is not warming and fears about human-induced storms, sea-level rise and other disasters are misplaced." And as studies fingering humans as a cause of climate change piled up, he had a new argument: a cabal was silencing good scientists who disagreed with the "alarmist" reports. "Global warming has become an article of faith for many, with its own theology and orthodoxy," Singer wrote in The Washington Times. "Its believers are quite fearful of any scientific dissent."

With the Inauguration of George W. Bush in 2001, the denial machine expected to have friends in the White House. But despite Bush's oil-patch roots, naysayers weren't sure they could count on him: as a candidate, he had pledged to cap carbon dioxide emissions. Just weeks into his term, the Competitive Enterprise Institute heard rumors that the draft of a speech Bush was preparing included a passage reiterating that pledge. CEI's Myron Ebell called conservative pundit Robert Novak, who had booked Bush's EPA chief, Christie Todd Whitman, on CNN's "Crossfire." He asked her about the line, and within hours the possibility of a carbon cap was the talk of the Beltway. "We alerted anyone we thought could have influence and get the line, if it was in the speech, out," says CEI president Fred Smith, who counts this as another notch in CEI's belt. The White House declines to comment.

Bush not only disavowed his campaign pledge. In March, he withdrew from the Kyoto treaty. After the about-face, MIT's Lindzen told NEWSWEEK in 2001, he was summoned to the White House. He told Bush he'd done the right thing. Even if you accept the doomsday forecasts, Lindzen said, Kyoto would hardly touch the rise in temperatures. The treaty, he said, would "do nothing, at great expense."

Bush's reversal came just weeks after the IPCC released its third assessment of the burgeoning studies of climate change. Its conclusion: the 1990s were very likely the warmest decade on record, and recent climate change is partly "attributable to human activities." The weather itself seemed to be conspiring against the skeptics. The early years of the new millennium were setting heat records. The summer of 2003 was especially brutal, with a heat wave in Europe killing tens of thousands of people. Consultant Frank Luntz, who had been instrumental in the GOP takeover of Congress in 1994, suggested a solution to the PR mess. In a memo to his GOP clients, he advised them that to deal with global warming, "you need to

continue to make the lack of scientific certainty a primary issue." They should "challenge the science," he wrote, by "recruiting experts who are sympathetic to your view." Although few of the experts did empirical research of their own (MIT's Lindzen was an exception), the public didn't notice. To most civilians, a scientist is a scientist.

Challenging the science wasn't a hard sell on Capitol Hill. "In the House, the leadership generally viewed it as impermissible to go along with anything that would even imply that climate change was genuine," says Goldston, the former Republican staffer. "There was a belief on the part of many members that the science was fraudulent, even a Democratic fantasy. A lot of the information they got was from conservative think tanks and industry." When in 2003 the Senate called for a national strategy to cut greenhouse gases, for instance, climate naysayers were "giving briefings and talking to staff," says Goldston. "There was a constant flow of information—largely misinformation." Since the House version of that bill included no climate provisions, the two had to be reconciled. "The House leadership staff basically said, 'You know we're not going to accept this,' and [Senate staffers] said, 'Yeah, we know,' and the whole thing disappeared relatively jovially without much notice," says Goldston. "It was such a foregone conclusion."

Especially when the denial machine had a new friend in a powerful place. In 2003 James Inhofe of Oklahoma took over as chairman of the environment committee. That summer he took to the Senate floor and, in a two-hour speech, disputed the claim of scientific consensus on climate change. Despite the discovery that satellite data showing no warming were wrong, he argued that "satellites, widely considered the most accurate measure of global temperatures, have confirmed" the absence of atmospheric warming. Might global warming, he asked, be "the greatest hoax ever perpetrated on the American people?" Inhofe made his mark holding hearing after hearing to suggest that the answer is yes. For one, on a study finding a dramatic increase in global temperatures unprecedented in the last 1,000 years, he invited a scientist who challenged that conclusion (in a study partly underwritten with \$53,000 from the American Petroleum Institute), one other doubter and the scientist who concluded that recent global temperatures were spiking. Just as Luntz had suggested, the witness table presented a tableau of scientific disagreement.

Every effort to pass climate legislation during the George W. Bush years was stopped in its tracks. When Senators McCain and Joe Lieberman were fishing for votes for their bipartisan effort in 2003, a staff member for Sen. Ted Stevens of Alaska explained to her counterpart in Lieberman's office that Stevens "is aware there is warming in Alaska, but he's not sure how much it's caused by human activity or natural cycles," recalls Tim Profeta, now director of an environmental-policy institute at Duke University. "I was hearing the basic argument of the skeptics—a brilliant strategy to go after the science. And it was working." Stevens voted against the bill, which failed 43-55. When the bill came up again the next year, "we were contacted by a lot of lobbyists from API and Exxon-Mobil," says Mark Helmke, the climate aide to GOP Sen. Richard Lugar. "They'd bring up how the science wasn't certain, how there were a lot of skeptics out there." It went down to defeat again.

Killing bills in Congress was only one prong of the denial machine's campaign. It also had to keep public opinion from demanding action on greenhouse emissions, and that meant careful management of what federal scientists and officials wrote and said. "If they presented the science honestly, it would have brought public pressure for action," says Rick Piltz, who joined the federal Climate Science Program in 1995. By appointing former coal and oil lobbyists to key jobs overseeing climate policy, he found, the administration made sure that didn't happen. Following the playbook laid out at the 1998 meeting at the American Petroleum Institute, officials made sure that every report and speech cast climate science as dodgy, uncertain, controversial—and therefore no basis for making policy. Ex-oil lobbyist Philip Cooney, working for the White House Council on Environmental Quality, edited a 2002 report on climate science by sprinkling it with phrases such as "lack of understanding" and "considerable uncertainty." A short section on climate in another report was cut entirely. The White House "directed us to remove all mentions of it," says Piltz, who resigned in protest. An oil lobbyist faxed Cooney, "You are doing a great job."

The response to the international climate panel's latest report, in February, showed that greenhouse doubters have a lot of fight left in them. In addition to offering \$10,000 to scientists willing to attack the report, which so angered Boxer, they are emphasizing a new theme. Even if the world is warming now, and even if that warming is due in part to the greenhouse gases emitted by burning fossil fuels, there's nothing to worry about. As Lindzen wrote in a guest editorial in NEWSWEEK International in April, "There is no compelling evidence that the warming trend we've seen will amount to anything close to catastrophe."

To some extent, greenhouse denial is now running on automatic pilot. "Some members of Congress have completely internalized this," says Pew's Roy, and therefore need no coaching from the think tanks and contrarian scientists who for 20 years kept them stoked with arguments. At a hearing last month on the Kyoto treaty, GOP Congressman Dana Rohrabacher asked whether "changes in the Earth's temperature in the past—all of these glaciers moving back and forth—and the changes that we see now" might be "a natural occurrence." (Hundreds of studies have ruled that out.) "I think it's a bit grandiose for us to believe ... that [human activities are] going to change some major climate cycle that's going on." Inhofe has told allies he will filibuster any climate bill that mandates greenhouse cuts.

Still, like a great beast that has been wounded, the denial machine is not what it once was. In the NEWSWEEK Poll, 38 percent of those surveyed identified climate change as the nation's gravest environmental threat, three times the number in 2000. After ExxonMobil was chastised by senators for giving \$19 million over the years to the Competitive Enterprise Institute and others who are "producing very questionable data" on climate change, as Sen. Jay Rockefeller said, the company has cut back its support for such groups. In June, a spokesman said ExxonMobil did not doubt the risks posed by climate change, telling reporters, "We're very much not a denier." In yet another shock, Bush announced at the weekend that he would convene a global-warming summit next month, with a 2008 goal of cutting greenhouse emissions. That astonished the remaining naysayers. "I just can't imagine the administration would look to mandatory [emissions caps] after what we had with Kyoto," said a GOP Senate staffer, who did not want to be named criticizing the president. "I mean, what a disaster!"

With its change of heart, ExxonMobil is more likely to win a place at the negotiating table as Congress debates climate legislation. That will be crucially important to industry especially in 2009, when naysayers may no longer be able to count on a friend in the White House nixing man-datory greenhouse curbs. All the Democratic presidential contenders have called global warming a real threat, and promise to push for cuts similar to those being passed by California and other states. In the GOP field, only McCain—long a leader on the issue—supports that policy. Fred Thompson belittles findings that human activities are changing the climate, and Rudy Giuliani backs the all-volunteer greenhouse curbs of (both) Presidents Bush.

Look for the next round of debate to center on what Americans are willing to pay and do to stave off the worst of global warming. So far the answer seems to be, not much. The NEWSWEEK Poll finds less than half in favor of requiring high-mileage cars or energy-efficient appliances and buildings. No amount of white papers, reports and studies is likely to change that. If anything can, it will be the climate itself. This summer, Texas was hit by exactly the kind of downpours and flooding expected in a greenhouse world, and Las Vegas and other cities broiled in record triple-digit temperatures. Just last week the most accurate study to date concluded that the length of heat waves in Europe has doubled, and their frequency nearly tripled, in the past century. The frequency of Atlantic hurricanes has already doubled in the last century. Snowpack whose water is crucial to both cities and farms is diminishing. It's enough to make you wish that climate change were a hoax, rather than the reality it is.

*With Eve Conant, Sam Stein and Eleanor Clift in Washington and Matthew Philips in New York*

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