

Truth or CO₂nsequences

Major fossil fuel companies have known the truth for nearly 50 years: their oil, gas, and coal products create greenhouse gas pollution that warms the planet and changes our climate. They've known for decades that the consequences could be catastrophic and that only a narrow window of time existed to take action before the damage might not be reversible. They have nevertheless engaged in a coordinated, multi-front effort to conceal and contradict their own knowledge of these threats, discredit the growing body of publicly available scientific evidence, and persistently create doubt in the minds of customers, consumers, regulators, the media, journalists, teachers, and the general public about the reality and consequences of climate change.

This timeline highlights information, alleged in lawsuits against fossil fuel companies, that comes from key industry documents and other sources. It illustrates what the industry knew, when they knew it, and what they didn't do to prevent the impacts that are now imposing real costs on people and communities around the country. While the early warnings from the industry's own scientists and experts often acknowledged the uncertainties in their projections, those uncertainties were typically about the timing and magnitude of the climate change impacts – not about whether those impacts would occur or whether the industry's oil, gas, and coal were the primary cause. On those latter points, as these documents show, they were quite certain.

DATE	DOCUMENT	TEXT
NOV. 19, 1958	"SOURCES OF AIR POLLUTION – TRANSPORTATION," PRESENTATION AT THE NATIONAL CONFERENCE ON AIR POLLUTION BY CHARLES JONES, SHELL EXECUTIVE/MEMBER OF THE AMERICAN PETROLEUM INSTITUTE'S (API) SMOKE & FUMES COMMITTEE	<i>"The petroleum industry supplies the fuel used by the automobile, and thus has a sincere interest in the solution to the problem of pollution from automobile exhaust. The stated objective of the Smoke and Fumes Committee of the American Petroleum Institute is 'to determine the causes and methods of control of objectionable atmospheric pollution resulting from the production, manufacture, transportation, sale, and use of petroleum and its products.'"</i>
NOV. 5, 1965	"RESTORING THE QUALITY OF OUR ENVIRONMENT," REPORT OF THE ENVIRONMENTAL POLLUTION PANEL, PRESIDENT'S SCIENCE ADVISORY COMMITTEE	President Lyndon Johnson's Science Advisory Committee finds that "[P]ollutants have altered on a global scale the carbon dioxide content of the air" and "[M]an is unwittingly conducting a vast geophysical experiment" by burning fossil fuels that are injecting CO₂ into the atmosphere. The committee concludes that by the year 2000, we could see "measurable and perhaps marked changes in climate, and will almost certainly cause significant changes in the temperature and other properties of the stratosphere."
FEB. 1968	"SOURCES, ABUNDANCE, AND FATE OF GASEOUS ATMOSPHERIC POLLUTANTS," REPORT PREPARED BY STANFORD RESEARCH INSTITUTE SCIENTISTS ELMER ROBINSON AND R.C. ROBBINS FOR THE AMERICAN PETROLEUM INSTITUTE	The American Petroleum Institute commissions a report finding that: <ul style="list-style-type: none"> • "[A]lthough there are other possible sources for the additional CO₂ now being observed in the atmosphere, none seems to fit the presently observed situation as well as the fossil fuel emanation theory." • "Significant temperature changes are almost certain to occur by the year 2000, and these could bring about climatic changes." • "There seems to be no doubt that the potential damage to our environment could be severe." • "What is lacking, however, is an application of these CO₂ data to air pollution technology and work toward systems in which CO₂ emissions would be brought under control."

RECEIVED AT GET MEETING ON 12/17/19
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JUNE 6, 1978	<u>PRESENTATION SHARED WITH EXXON MANAGEMENT COMMITTEE FROM EXXON RESEARCH AND ENGINEERING SCIENCE ADVISOR, JAMES BLACK</u>	<p>Exxon Science Advisor James Black tells the company's Management Committee that "[T]here is general scientific agreement that the most likely manner in which mankind is influencing the global climate is through carbon dioxide release from the burning of fossil fuels" and that "[M]an has a time window of five to ten years before the need for hard decisions regarding changes in energy strategy might become critical."</p>
SEPT. 17, 1978	<u>CONGRESS PASSES NATIONAL CLIMATE POLICY ACT</u>	<p>Congress passes the National Climate Policy Act to help "the Nation and the world to understand and respond to natural and man-induced climate processes and their implications."</p>
DEC. 7, 1978	<u>CO2 RESEARCH PROPOSAL FROM EXXON RESEARCH AND ENGINEERING'S ENVIRONMENTAL AREA MANAGER, HENRY SHAW</u>	<p>Exxon scientist Henry Shaw proposes that the company initiate a comprehensive research program "to assess the possible impact of the greenhouse effect on Exxon business." He argues that the company needs "a credible scientific team that can critically evaluate the information generated on the subject and be able to carry bad news, if any, to the corporation."</p>
OCT. 16, 1979	<u>"CONTROLLING THE CO2 CONCENTRATION IN THE ATMOSPHERE," STUDY BY EXXON EMPLOYEE STEVE KNISELY</u>	<p>An Exxon internal study finds that:</p> <ul style="list-style-type: none"> • "The present trend of fossil fuel consumption will cause dramatic environmental effects before the year 2050." • "[R]ecognizing the uncertainty, there is a possibility that an atmospheric CO2 buildup will cause adverse environmental effects in enough areas of the world to consider limiting the future use of fossil fuels as major energy sources." • "The potential problem is great and urgent."
FEB. 29, 1980	<u>MEETING MINUTES FROM THE AMERICAN PETROLEUM INSTITUTE'S (API'S) CO2 AND CLIMATE TASK FORCE: PRESENTATION BY DR. J. LAURMAN</u>	<p>Dr. J. Laurman tells API's Climate Task Force that "there is a scientific consensus on the potential for large future climatic response to increased CO2 levels" and that "remedial actions will take a long time to become effective."</p>
AUG. 6, 1980	<u>"REVIEW OF ENVIRONMENTAL PROTECTION ACTIVITIES FOR 1978-1979," IMPERIAL OIL REPORT</u>	<p>An internal report distributed widely to Exxon/Esso Corporate Managers, finds that "[T]echnology exists to remove CO2 from stack gases but removal of only 50% of the CO2 would double the cost of power generation."</p>
AUG. 18, 1981	<u>MEMO FROM ROGER COHEN, DIRECTOR OF EXXON'S THEORETICAL AND MATHEMATICAL SCIENCE LABORATORY, TO SCIENTIST WERNER GLASS</u>	<p>Exxon Strategic Planning Manager Roger Cohen comments on an internal assessment of CO2 emissions and the greenhouse effect that is prepared at the request of Senior VP and Director Morey O'Loughlin:</p> <ul style="list-style-type: none"> • "[I]t is very likely that we will unambiguously recognize the threat by the year 2000 because of advances in climate modeling and the beginning of real experimental confirmation of the CO2 effect." • "Whereas I can agree with the statement that our best guess is that observable effects in the year 2030 will be 'well short of catastrophic', it is distinctly possible that the [Planning Division's] scenario will later produce effects that will indeed be catastrophic (at least for a substantial fraction of the earth's population)."

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<p>APRIL 1, 1982</p>	<p><u>"CO₂ 'GREENHOUSE' EFFECT," INTERNALLY DISTRIBUTED SUMMARY BY EXXON MANAGER M.B. GLASER OF A TECHNICAL REVIEW PREPARED BY THE EXXON RESEARCH AND ENGINEERING COMPANY</u></p>	<p>An internal Exxon "CO₂ 'Greenhouse Effect' Summary" finds that "[T]here is concern among some scientific groups that once the effects are measurable, they might not be reversible and little could be done to correct the situation in the short term" and that "[M]itigation of the 'greenhouse effect' could require major reductions in fossil fuel combustion."</p>
<p>SEPT. 2, 1982</p>	<p><u>MEMO FROM ROGER COHEN, DIRECTOR OF EXXON'S THEORETICAL AND MATHEMATICAL SCIENCE LABORATORY, TO EXXON MANAGEMENT INCLUDING PRESIDENT OF EXXON CORPORATION'S RESEARCH AND ENGINEERING, E. E. DAVID JR.</u></p>	<p>The Director of Exxon's Theoretical and Mathematical Sciences Laboratory, Roger Cohen, summarizes the findings of their research in climate modeling:</p> <ul style="list-style-type: none"> • "[O]ver the past several years a clear scientific consensus has emerged regarding the expected climatic effects of increased atmospheric CO₂." • "It is generally believed that the first unambiguous CO₂-induced temperature increase will not be observable until around the year 2000." • "[T]he results of our research are in accord with the scientific consensus on the effect of increased atmospheric CO₂ on climate."
<p>OCT. 1982</p>	<p><u>"INVENTING THE FUTURE: ENERGY AND THE CO₂ 'GREENHOUSE' EFFECT," E. E. DAVID JR. REMARKS AT THE FOURTH ANNUAL EWING SYMPOSIUM, TENAFLY, NJ</u></p>	<p>In a speech, E. E. David Jr., President of Exxon Research and Engineering Company, states: "It is ironic that the biggest uncertainties about the CO₂ buildup are not in predicting what the climate will do, but in predicting what people will do. . .[It] appears we still have time to generate the wealth and knowledge we will need to invent the transition to a stable energy system."</p>
<p>MAY 1988</p>	<p><u>"THE GREENHOUSE EFFECT," REPORT BY THE SHELL GREENHOUSE EFFECT WORKING GROUP</u></p>	<p>In a report prepared for Shell's Environmental Conservation Committee, the Company's Greenhouse Effect Working Group said: "Man-made carbon dioxide, released into and accumulated in the atmosphere is believed to warm the earth through the so-called greenhouse effect...If this trend continues, the concentration will be doubled by the third quarter of the next century." "If this warming occurs then it could create significant changes in sea level, ocean currents, precipitation patterns, regional temperature and weather. These changes could be larger than any that have occurred over the last 12,000 years." "Recognition of any impacts may be early enough for man to be able to anticipate and to adapt in time."</p>
<p>SUMMER 1988</p>	<p><u>PUBLIC AWARENESS OF THE GREENHOUSE EFFECT AND EFFORTS TO COMBAT IT</u> RAMP UP</p>	<p>The summer of 1988 sees a flurry of activity around climate change policy:</p> <ul style="list-style-type: none"> • Dr. James Hansen, Director of NASA's Goddard Institute for Space Studies, tells Congress that the Institute's greenhouse effect research shows "the global warming is now large enough that we can ascribe with a high degree of confidence a cause and effect relationship with the greenhouse effect." • At least four bipartisan bills are introduced in Congress, three championed by Republicans, to regulate greenhouse gas emissions.
<p>AUG. 3, 1988</p>	<p><u>"THE GREENHOUSE EFFECT," DRAFT WRITTEN BY JOSEPH M. CARLSON, AN EXXON PUBLIC AFFAIRS MANAGER</u></p>	<p>Despite declaring the Greenhouse Effect "one of the most significant environmental issues for the 1990s," Carlson writes that Exxon's position should be to "emphasize the uncertainty in scientific conclusions regarding the potential enhanced Greenhouse Effect."</p>

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AUG. 31, 1988	<u>VICE PRESIDENT GEORGE H.W. BUSH CAMPAIGN SPEECH IN MICHIGAN</u>	Vice President George H.W. Bush, in a speech while running for President, says “[T]hose who think we are powerless to do anything about the greenhouse effect forget about the ‘White House effect’; as President, I intend to do something about it.”
DEC. 6, 1988	<u>THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) IS FORMED</u>	The IPCC is formed in December 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) to provide policymakers with regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.
DEC. 20, 1989	<u>“GREENHOUSE EFFECT: SHELL ANTICIPATES A SEA CHANGE,” ARTICLE IN THE NEW YORK TIMES</u>	A New York Times article reports: <i>“In what is considered the first major project that takes account of the changes the greenhouse effect is expected to bring, [Shell] engineers are designing a huge platform that anticipates rising water in the North Sea by raising the platform from the standard 30 meters - the height now thought necessary to stay above the waves that come in a once-a-century storm - to 31 or 32 meters.”</i>
1991	<u>“CLIMATE OF CONCERN,” DOCUMENTARY PRODUCED AND DISTRIBUTED BY SHELL</u>	Shell releases a 30-minute educational video warning of climate change’s negative consequences ranging from sea level rise and wetland destruction to <i>“greenhouse refugees.”</i> It concludes: <i>“Global warming is not yet certain, but many think that the wait for final proof would be irresponsible. Action now is seen as the only safe insurance.”</i>
MAY 1991	<u>INFORMATION COUNCIL FOR THE ENVIRONMENT (ICE) PR CAMPAIGN</u>	The Information Council for the Environment (ICE), formed by the coal industry, launches a national climate change science denial campaign with data collection, full-page newspaper ads, radio commercials, a PR tour, and mailers.
DEC. 1994	<u>“THE ENHANCED GREENHOUSE EFFECT: A REVIEW OF THE SCIENTIFIC ASPECTS,” REPORT BY ROYAL DUTCH SHELL ENVIRONMENTAL ADVISOR PETER LANGCAKE”</u>	<i>“The threat of climate change remains the environmental concern with by far the greatest significance for the fossil fuel industry, having major business implications.”</i> <i>“The group position is that: Scientific uncertainty and the evolution of energy systems indicate that policies to curb greenhouse gas emissions beyond ‘no regrets’ measures could be premature, divert resources from more pressing needs and further distort markets.”</i>
DEC. 1995	<u>“PREDICTING FUTURE CLIMATE CHANGE: A PRIMER,” GLOBAL CLIMATE COALITION’S (GCC) INTERNAL PRIMER DRAFT V. THEIR PUBLICLY DISTRIBUTED BACKGROUNDER, “SCIENCE AND GLOBAL CLIMATE CHANGE: WHAT DO WE KNOW? WHAT ARE THE UNCERTAINTIES?”</u>	The Global Climate Coalition (GCC), a fossil fuel industry group, drafts an internal primer analyzing “contrarian theories” and concluding that they do not “offer convincing arguments against the conventional model of greenhouse gas emission-induced climate change.” However, a publicly distributed version excluded this section while focusing on scientific disagreement and uncertainty by citing some of those same contrarian scientists.
1996	<u>“REINVENTING ENERGY – MAKING THE RIGHT CHOICES,” BOOK BY THE AMERICAN PETROLEUM INSTITUTE (API)</u>	In a sweeping attack on climate science, the API argues against taking steps to reduce oil production or use: <ul style="list-style-type: none"> • <i>“The state of the environment does not justify the call for the radical lifestyle changes Americans would have to make to substantially reduce the use of oil and other fossil fuels.”</i> • <i>“We have no need to worry if the global climate becomes somewhat warmer over a 100-year period. If climate change was more dramatic, society would take greater steps to adapt.”</i>

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FALL 1996	<p><u>"GLOBAL WARMING: WHO'S RIGHT? FACTS ABOUT A DEBATE THAT'S TURNED UP MORE QUESTIONS THAN ANSWERS," PUBLICATION FROM EXXON CORPORATION</u></p>	<p>An eight-page Exxon publication questions the negative impact the greenhouse effect might have and plays up the uncertainty. The introductory statement by Lee Raymond, Exxon's chairman and CEO, claims that <i>"[S]cientific evidence remains inconclusive as to whether human activities affect global climate."</i></p>
NOV. 1996	<p><u>REMARKS BY EXXON CEO AND AMERICAN PETROLEUM INSTITUTE (API) CHAIRMAN LEE RAYMOND AT THE ANNUAL MEETING OF THE API IN WASHINGTON, D.C.</u></p>	<p><i>"Everyone agrees that burning fossil fuels releases carbon dioxide and that such concentrations in the atmosphere are rising. But it's a long and dangerous leap to conclude that we should, therefore, cut fossil fuel use."</i></p> <p><i>"It's an old adage, but still true, 'United we stand, divided we fall.' I submit that we simply cannot afford to 'fall' on the critical long-term issues facing our industry, such as global climate change...That begins with focusing on the common ground we share on issues with API."</i></p>
1998	<p><u>"GROUP SCENARIOS 1998-2020," INTERNAL REPORTS BY ROYAL DUTCH SHELL/SHELL GROUP</u></p>	<p>In 1998, Shell produced the results of a scenario planning process examining potential changes in energy consumption, technology, markets, and other factors. One such scenario essentially anticipated disasters that came to pass, and their repercussions, with remarkable accuracy.</p> <p><i>"In 2010, a series of violent storms causes extensive damage to the eastern coast of the U.S. Although it is not clear whether the storms are caused by climate change, people are not willing to take further chances. The insurance industry refuses to accept liability, setting off a fierce debate over who is liable: the insurance industry or the government. After all, two successive IPCC reports since 1993 have reinforced the human connection to climate change."</i></p> <p><i>"Following the storms, a coalition of environmental NGOs brings a class-action suit against the US government and fossil-fuel companies on the grounds of neglecting what scientists (including their own) have been saying for years: that something must be done. A social reaction to the use of fossil fuels grows, and individuals become 'vigilante environmentalists' in the same way, a generation earlier, they had become fiercely anti-tobacco. Direct-action campaigns against companies escalate. Young consumers, especially, demand action."</i></p>
APRIL 3, 1998	<p><u>"GLOBAL SCIENCE COMMUNICATIONS ACTION PLAN," DRAFT BY THE AMERICAN PETROLEUM INSTITUTE (API)</u></p>	<p>The API develops a multi-million-dollar communications and outreach plan to ensure that <i>"climate change becomes a non-issue."</i> It maintains that <i>"[V]ictory will be achieved when...uncertainties in climate science [become] part of the 'conventional wisdom.'"</i></p>
DEC. 11, 2000	<p><u>LETTER FROM LLOYD KEIGWIN, SENIOR SCIENTIST AT THE WOODS HOLE OCEANOGRAPHIC INSTITUTION, TO PETER ALTMAN, NATIONAL CAMPAIGN COORDINATOR FOR EXXONMOBIL</u></p>	<p>A senior scientist at Woods Hole Oceanographic Institution, Lloyd Keigwin, sends a letter to Exxon's Peter Altman, summarizing their email and phone conversations regarding Exxon's misleading use of Keigwin's study results. <i>"The sad thing is that a company with the resources of ExxonMobil is exploiting the data for political purposes when they could actually get much better press by supporting research into the role of the ocean in climate change."</i></p>

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JUNE 20, 2001	<p><u>"YOUR MEETING WITH MEMBERS OF THE GLOBAL CLIMATE COALITION," US DEPARTMENT OF STATE MEMO AND TALKING POINTS</u></p>	<p>Talking points for State Department Undersecretary Paula Dobriansky's meeting with the Global Climate Coalition at API's headquarters: <i>"POTUS rejected Kyoto, in part, based on input from you."</i></p>
SEPT. 26, 2002	<p><u>LETTER FROM MICHAEL MACCRACKEN, RETIRING SENIOR SCIENTIST FROM THE OFFICE OF THE US GLOBAL CHANGE RESEARCH PROGRAM, TO EXXON CEO LEE RAYMOND: "RE: WITH REGARD TO THE EXXONMOBIL FACSIMILE ON FEBRUARY 6, 2001 FROM DR. AG RANDOL TO MR. JOHN HOWARD OF THE COUNCIL ON ENVIRONMENTAL QUALITY"</u></p>	<p>Michael MacCracken, the former director of the National Assessment Coordination Office of the US Global Change Research Program, writes to Exxon CEO Lee Raymond in response to ExxonMobil's criticism of a US climate change assessment: <i>"In my earlier experience, arguing for study of adaptation had been a position of industry, but now when this was attempted, ExxonMobil argued this was premature. Roughly, this is equivalent to turning your back on the future and putting your head in the sand—with this position, it is no wonder ExxonMobil is the target of environmental and shareholder critics...Certainly, there are uncertainties, but decisions are made under uncertainty all the time--that is what executives are well paid to do. In this case, ExxonMobil is on the wrong side of the international scientific community, the wrong side of the findings of all the world's leading academies of science, and the wrong side of virtually all of the world's countries as expressed, without dissent, in the IPCC reports...To call ExxonMobil's position out of the mainstream is thus a gross understatement. There can be all kinds of perspectives about what one might or might not do to start to limit the extent of the change, but to be in opposition to the key scientific findings is rather appalling for such an established and scientific organization."</i></p>
OCT. 21, 2002	<p><u>MARKUPS BY PHILIP COONEY, CHIEF OF STAFF FOR THE WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY, ON A DRAFT STRATEGIC PLAN FOR THE CLIMATE CHANGE SCIENCE PROGRAM</u></p>	<p>Philip Cooney, Chief of Staff for the White House Council of Environmental Quality and a former lawyer and lobbyist for the American Petroleum Institute with no scientific credentials, edits a Draft Strategic Plan for the US Climate Change Science Program to introduce uncertainty about global warming and its impacts. In 2005, Cooney resigns after being accused of doctoring scientific reports and is hired by Exxon. A Union of Concerned Scientists report published samples of Cooney's edits (p.56).</p>
AUG. 12, 2009	<p><u>EMAIL FROM API CEO JACK GERARD TO API'S MEMBERSHIP REGARDING A SERIES OF "ENERGY CITIZEN" RALLIES IN 20 STATES DURING THE END OF THE CONGRESSIONAL RECESS</u></p>	<p>The American Petroleum Institute's CEO, Jack Gerard, emails API's membership promising <i>"up front resources"</i> and encouraging turnout for "Energy Citizen" rallies in about 20 states. Gerard says they are <i>"collaborating closely with the allied oil and natural gas associations"</i> in order to <i>"aim a loud message at those states' U.S. Senators to avoid the mistakes embodied in the House climate bill."</i></p>
NOV. 11, 2014	<p><u>"WSPA PRIORITY ISSUES," PRESENTATION BY WESTERN STATES PETROLEUM ASSOCIATION PRESIDENT CATHERINE REHEIS-BOYD</u></p>	<p>The Western States Petroleum Association, a top lobbying and trade association for the oil industry, describes in a presentation the <i>"campaigns and coalitions [it has] activated that have contributed to WSPA's advocacy goals and continue to respond to aggressive anti-oil initiatives in the West,"</i> including investment <i>"in several coalitions that are best suited to drive consumer and grassroots messages to regulators and policymakers."</i></p>