

November 5, 2015

# Bill McKibben on NY Attorney General's Exxon Investigation

New York, NY — In response to the news that New York Attorney General Eric T. Schneiderman is launching a sweeping investigation of Exxon Mobil over their past knowledge of climate change and attempts to mislead the public, **350.org co-founder Bill McKibben issued the following statement:**

“Exxon Knew’ just joined the category of truly serious scandals. Just as New York’s Teddy Roosevelt took on the Standard Oil Trust a century ago, New York’s attorney general has shown great courage in holding to account arguably the richest and most powerful company on Earth. We hope that other state attorney generals and the federal Department of Justice, and the Securities Exchange Commission will show similar fortitude.

I went to jail a few weeks ago because I was worried this great reporting from *Inside Climate News* and the *LA Times* might disappear. I’m not worried about that anymore.”

McKibben committed an act of civil disobedience and was arrested at an Exxon station in Burlington, Vermont on October 15th. Over the last month he has written extensively about the need to investigate Exxon Mobil after revelations that it had known about climate change for decades but spent millions to mislead the public and block action to address the crisis.

On October 30, 350.org and a coalition of nearly fifty environmental and civil rights groups issued a joint letter calling on the Department of Justice to investigate Exxon Mobil. Tens of thousands have signed onto petitions with the same demand.

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November 19, 2015

# 360,000+ Signatures Delivered to Department of Justice Calling for Exxon Investigation

*As calls for an investigation continue to grow, members of Congress hint that inquiries could extend to other fossil fuel companies*

Washington, DC — This afternoon, representatives from a wide ranging coalition of groups delivered the Department of Justice over 360,000 signatures on petitions calling for an investigation into ExxonMobil's climate deception. Accompanying the signatures was a letter from over 50 leading environmental, social justice, and indigenous organizations calling on the Department to take action.

The petition signatures were collected by CREDO, Climate Hawks Vote, Environmental Action, Avaaz, Campaign for America's Future, Climate Parents, ClimateTruth.org, Corporate Accountability International, DailyKos, Food & Water Watch, Moms Clean Air Force, MoveOn, The Nation, Sierra Club, the Working Families Party, and 350.org.

Over the last month, calls for DOJ investigation have grown, as members of Congress, Presidential candidates, and others have joined the effort. The New York Attorney General's office launched its own Exxon investigation on November 5, issuing a subpoena to learn more about how the oil giant may have misled the public and its shareholders about the threat of global warming.

On a press call earlier today, Representative Ted Lieu (D-CA) outlined Congressional efforts to build support for an investigation. Lieu and Representative Peter Welch (D-VT) are circulating a

letter amongst colleagues that they plan on sending to other fossil fuel companies to request information on how they too may have misled and deceived the public.

“The matter of an urgent response to climate change is so important and the allegations made against ExxonMobil are so startling, that a full investigation by the Department of Justice is most certainly warranted. The American public deserves to know whether or not ExxonMobil willfully undermined climate science for decades,” said **Rep. Lieu**.

The investigation into ExxonMobil and other fossil fuel companies has clear parallels to previous inquiries into how Big Tobacco misled the public for years about the links between cigarettes and cancer.

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## Quotes

Climate Hawks Vote

“All fifty states are now suffering damages from Exxon Mobil’s greenhouse pollution, from sea level rise to wildfires, floods, and drought,” said **RL Miller, President of Climate Hawks Vote**. “The Department of Justice must investigate Exxon knew and what Exxon did, and then prosecute Exxon’s deliberate climate denial. If Attorney General Loretta Lynch fails to act, then our state attorneys general must step up to protect the American people.”

CREDO

“Exxon’s clear understanding that fossil fuels cause climate change means the company’s turn to a denial campaign was a truly destructive act of greed,” said **Elijah Zarin, CREDO’s Director of Climate Campaigns**. Zarin continued, “Exxon executives chose to buy the political process for a few decades more of deadly profits, instead of acting when it could have made the biggest difference for humanity,” adding “the years Exxon squandered from their fraudulent denial campaign have cost us dearly, and Exxon should be held accountable.”

Environmental Action

“It’s an outrage that Exxon conspired to hoodwink the public on the reality of climate change, and their decision to do so has placed American lives in peril,” stated **Anthony Rogers-Wright, Policy Director of Environmental Action**. “Lives have been altered and lives have been lost here and around the world. And instead of owning up to their depravity, Exxon is now doubling down on denial – denying what they did while also denying their scheme to fund climate denial think tanks like the Heartland Institute. DOJ should follow the leadership of New York Attorney General Eric Schneiderman and prosecute Exxon for their campaign of lies and misinformation, which has clearly hurt people and the planet.”

Food & Water Watch

“The reckless quest to squeeze every last bit of oil and gas from the planet, consequences be damned, is a stark symbol of our broken democracy,” said **Wenonah Hauter, executive director of Food & Water Watch**. “Like the tobacco companies before them, Exxon and the rest of the oil and gas industry must be brought to justice. They played the general public and policymakers for fools on an issue that is imperative to our survival.”

Greenpeace USA

“Greenpeace USA has been exposing ExxonMobil’s climate denialism for over a decade. It’s outrageous, but we have the power to turn outrage into action. Governments and citizens need to hold ExxonMobil and other fossil fuel companies legally accountable for the damage their activities have caused to people and the planet,” said **Annie Leonard, Executive Director of Greenpeace USA**.

Moms Clean Air Force

“For decades, ExxonMobil has contributed to national confusion, setting up fake debates on science and causing national paralysis in the face of a serious crisis,” said **Dominique Browning, Senior Director of Moms Clean Air Force**. “The result? Misinformed citizens, misinformed politicians, misinformed editors and reporters—unable to properly steer our democracy. We are in the race of our lives, and we should all be very angry, and very concerned. We need to get to the bottom of this.”

Climate Parents

“Exxon must be investigated by the DOJ for knowingly deceiving the public about the role of its products in fueling the climate change that is putting our kids and communities, across the entire world, in harm’s way,” said **Lisa Hoyos, Director and Co-Founder of Climate Parents**. “Exxon actively stonewalled the full-scale clean energy expansion that should have started years ago; and has taken corporate negligence, along the lines of Union Carbide and Philip Morris, to an all-time low where no person or place is unaffected.”

ClimateTruth.org

“Exxon and its executives will go down in history for committing one of the most vile acts of greed ever perpetrated,” said **Emily Southard, Deputy Director of ClimateTruth.org**. “For 34 years, Exxon understood the connection between carbon emissions and climate change, yet chose to buy our political process and misinform the public to prevent any action that might damage their bottom line.”

Corporate Accountability International

“Exxon’s campaign of climate denial has had huge and far-reaching implications,” said **Katherine Sawyer, Senior International Climate Organizer at Corporate Accountability International**. “By denying knowledge of climate change and actively deceiving the public,

Exxon has helped fabricate the climate ‘debate’ — and delayed necessary progress on climate change in the name of protecting its own profits. Now is the time to hold Exxon accountable for its deception — just as we’ve done with Big Tobacco — and to protect climate policymaking from Exxon and other big polluters.”

Working Families Party

“For decades, scientists have known about the reality of climate change and the existential threat it poses. It is difficult to believe one of the richest multinational corporations was not aware of this too. If Exxon and other fossil fuel companies were aware of the perils of climate change at the same time as they reaped hundreds of billions by making the problem worse and lied to their investors and the public, they committed a crime against the planet and every family that lives on it. We commend New York Attorney General Schneiderman for launching an investigation, and we urge the Department of Justice to do so as well.” — **Bill Lipton, New York State Director, Working Families Party**

350.org

“Given the stakes, this may be the greatest corporate scandal of all time, and now, in the hottest year ever recorded on our planet, is the time to find out all the details . Everyone is clear that Exxon behaved reprehensibly; the DOJ needs to find out if they broke the law as well.” — **Bill McKibben, 350.org co-founder**

December 2, 2015

# Momentum: Campaigners Announce at Paris Climate Summit that Divestment Commitments Have Passed 500+ Institutions Representing \$3.4 trillion in Assets

Paris — The fossil fuel divestment campaign broke a new record today at the COP21 Climate Summit in Paris: more than 500 institutions representing over \$3.4 trillion in assets have made some form of divestment commitment, according to the international climate campaign 350.org

“The logic of the divestment movement is quite simple: if it’s wrong to cause climate change, it’s wrong to profit from climate change,” said **350.org Executive Director May Boeve** at a press conference this afternoon. “The diversity of actors involved, such as faith groups, cities, universities show that the movement is wide and has injected itself into the life of different institutions which do not want to be associated with this industry.”

“The divestment movement has permanently changed the energy finance landscape. No responsible institution wants to be financially or morally implicated in yesterday’s fuels,” added **350.org founder Bill McKibben**.

New announcements on Wednesday included the news that 20 French cities, including Paris, Bordeaux, Lyon, and Dijon have all passed a motion to divest, and that the French National Assembly has passed a similar resolution.

In just the last month, the German insurance giant Allianz made a commitment to dump its coal stocks ahead of COP21, major cities like Oslo, Munster, and Melbourne have endorsed divestment, and 9 UK universities have joined the campaign.

“This movement is rapidly growing, and it’s because of two things,” said **Stephen Heintz, the President of the Rockefeller Brothers Fund**, one of the original oil fortunes which divested from fossil fuels last year. “There is a moral imperative to save the planet, and to do so we need to end the fossil-fuel era now. In addition to this making moral sense, it makes economic sense, because the fossil-fuel assets owned by those companies are risky assets, and they are assets that are losing value.”

“Now everybody is speaking about divestment in the foundation world. We can’t play our part and have money invested in fossil fuels,” said the **French philanthropist Jacqueline Delia Bremond**. Bremond announced that she would be divesting her foundation, the Ensemble Foundation, and her family’s fortune from fossil fuels.

The university commitments include the prestigious London School of Economics, which this November 26th dumped all of its direct holdings in fossil fuel stocks, and all of its direct and indirect holdings in coal and tar sands. Students are celebrating the victory, while still campaigning to push the school to go 100% fossil free.

“Students have been at the heart of divestment. They are aware that for a better future, we need to move away from fossil fuels,” said **Noeli Audi-Dor, President of London School of Economics (LSE) Divest**.

Wednesday’s announcement is another sign in the early days of the Paris Climate Summit that investors are reading the writing on the wall and dramatically shifting capital away from fossil fuels and towards clean, renewable energy. On Monday, Bill Gates and a group of investors announced the launch of a multi-billion dollar private sector coalition to accelerate clean energy innovation. Other voices, including many of the world’s most vulnerable countries, are demanding that the Paris agreement send a clear signal that the age of fossil fuels has come to an end and the dawn of renewables is irreversible.

“The fossil fuel industry is in panic mode. After COP21 I hope they will be even more scared,” said **Pascal Canfin, the former Development Minister of France and Senior Advisor for International Climate Affairs at the World Resources Institute**. “Every time you buy a share in the fossil fuels industry, you’re buying a share in a 7°C world.”

The institutions that have joined the fossil fuel divestment campaign hope that their actions can push governments to follow suit by shifting public finance from fossil fuels to climate solutions in order to keep global warming below 1.5°C or 2°C. Many are calling on governments to specifically make good on their promises to end fossil fuel subsidies and fulfill their climate finance commitments.

Subnational actors, like the State of California, are already taking action. **Kevin De León, the President of the California State Senate**, spoke at the COP21 divestment events on Wednesday. De León successfully passed a resolution to urge two of the world's largest pension funds, CalPERS and CalSTRS, which together represent nearly \$500 billion in assets, to divest from thermal coal. The four largest coal companies in the United States have lost 95% of their value in the last four years.

"We have successfully delinked and decoupled G.D.P. from carbon," Mr. de León said. "Our economy has simultaneously grown while we have reduced our carbon emissions."

At a panel discussion in the afternoon, activists also spoke to the need for better protections against corporate influence at the UN Climate Talks, and the drive to get cultural institutions to cut their ties with fossil fuel companies.

"One of the most dynamic and creative wings of the divestment movement is the push to end oil sponsorship of museums, galleries and theatres," said **Jess Worth with 'BP or Not BP?'** an activist group pushing the Tate Modern to cut ties with the oil company. "Expect to see an upsurge in stage invasions, creative occupations and disruptive performance art as this movement goes global after coming together at COP21."

Worth and other activists will be organizing a demonstration at the Louvre on December 9th to urge the famous French museum to cut its ties with fossil fuel sponsors.

The Wednesday announcements are another sign that the divestment movement is picking up steam as the public turns against the fossil fuel industry and investors become increasingly concerned about climate risk. In September 2014, 181 institutions representing \$50 billion in assets had made a divestment commitment. On September 21, during Climate Week in New York City, 350.org and Divest-Invest announced the number had jumped to 400 institutions representing \$2.6 trillion under management, and launched a "Divest for Paris" initiative to garner new commitments ahead of COP21. In the intervening 10 weeks between then and today, more than 100 institutions made new divestment commitments.

The commitments vary in their exact language and some are only partial divestment commitments, or just apply to a particular fossil fuel, such as coal or tar sands. At many institutions on the list, activists are still pushing for more action. The top line number refers to the number of assets under management by the institutions that have made a commitment, not the amount of money directly removed from fossil fuels. The goal is to demonstrate that a growing number of significant institutions are either reducing their carbon risk, taking a moral stance on fossil fuels, increasing investments in climate solutions, or all of the above.

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Some of the most notable new announcements since September 21, 2015 include:



- **19 French Cities have endorsed divestment ahead of COP21: 350.org will announce for the first time that they have secured commitments from 19 French cities, including Lille, Bordeaux, Dijon, Saint-Denis, Rennes, Ile-de-France, and others.**
- **The French parliament has endorsed divestment:** On November 25th, the French National Assembly adopted a resolution encouraging public investors, companies (especially those in which the states owns shares) and local authorities not to invest in fossil fuels anymore. The resolution is the first step to formalizing the policy as law.
- **Uppsala** became the largest city in Sweden to endorse fossil fuel divestment.
- **Münster** became the first city in Germany to divest completely from fossil fuels.
- **Melbourne**, Australia's second largest city, committed to go fossil free ahead of COP21. In fact, Australia has seen a seven-fold growth in the divestment movement, from two councils divesting in 2014, to 14 divesting as of now. Together, these funds represent AUD \$5.5 billion in assets under management.
- **Oslo**, the capital of Norway, announced that it will divest its \$9 billion pension fund (€8 billion) from coal, oil and gas companies, becoming the first capital city in the world to ban investments in fossil fuels.
- **Dutch pension fund PFZW** announced it will divest from coal companies and reduce its investments in other fossil fuel companies. The fund has €161 billion of assets under management.
- **London School of Economics**, one of the preeminent economics schools in the world, dropped all its direct and indirect holdings of coal and tar sands, and all direct holdings of fossil fuel companies.
- **Allianz**, Europe's largest insurance company, divested €630 million of their own capital investment portfolio from coal, and are reinvesting over €4 billion into wind energy over the next 6 months. This is one of the largest funds to make a commitment to divest from fossil fuels. Allianz tied their announcement to COP21, making the moral and economic case for investing in cleaner technologies
- **APRA AMCOS**, the biggest music industry organisation in the southern hemisphere announced that it is beginning the process of divesting from all fossil fuels. APRA AMCOS distributed over \$250 million in royalties to its 87,000 songwriter and composer members last year, making it a large cultural force for divestment.
- **London Science Museum** announced plans to dump Shell Oil as a sponsor, amidst controversy and public pressure.
- **In addition to the London School of Economics 5 Universities from the UK** took action: Oxford Brookes University, University of the Arts London, University of Surrey and University of Sheffield divested from all fossil fuel companies; Wolfson College (Oxford university) divested from coal and tar sands. Fund manager CCLA, which manages investments for Birmingham City University, Cranfield University, Heriot-Watt University, University of Hertfordshire, University of Portsmouth, University of Westminster excluded coal and tar sands from its investments.

- **The first church in Germany**, the Protestant Church in Hesse and Nassau, managing €1.8 billion, committed to drop investments in coal, oil and gas too.
- Two weeks ago, renowned economists **Thomas Piketty and Tim Jackson** **wrote a letter** in The Guardian, calling on investors to divest from fossil fuel ahead for the COP21.

January 20, 2016

## **350.org reacts to reports of 2015 as the 'hottest year on record'**

Following the publication of NOAA/NASA's Annual Climate Update highlighting the record-breaking temperatures of 2015, Aaron Packard, head of 350.org's Climate Impacts Program, stated:

"The result of 2015 being the hottest year on record meant that for millions of people worldwide, the consequences were painful, costly and frightening. We witnessed terrible consequences that resulted from a warmer atmosphere, including: devastating floods in parts of India, the US, UK and China; deadly heat waves across India, Pakistan and the Middle East, severe drought from Africa to California, and an exacerbated [El Niño](#) event. "

"Yet hope is found in the fact that humanity has the ability to stop this escalating warming of our atmosphere — if we can succeed at keeping 80% or more of fossil fuel reserves in the ground. In short, we need to make 2016 the year that the world breaks free from fossil fuels. The sheer pace with which global warming is moving is truly alarming, yet more people worldwide are choosing to be on the right side of history and stand up for climate action."

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January 20, 2016

## 350.org's Bill McKibben on CA Attorney General's Exxon Investigation

Sacramento, CA — In response to the reports that California Attorney General Kamala D. Harris is launching an investigation of Exxon Mobil over their knowledge of climate change and attempts to mislead the public, **350.org co-founder Bill McKibben issued the following statement:**

“California’s action means that the world’s eighth largest economy is now probing the world’s richest fossil fuel company for lying about the greatest problem the planet ever faced. I’d say this means this scandal isn’t going away. With Attorney General Eric Schneiderman’s ongoing case in New York, there’s now a coast-to-coast investigation into all Exxon knew about climate change. With the climate changing at the pace it is, we can’t afford for the Department of Justice and Loretta Lynch to dawdle.”

Last October, McKibben committed an act of civil disobedience and was arrested at an Exxon station in Burlington, Vermont. He has written extensively about the need to investigate Exxon Mobil after revelations that it had known about climate change for decades but spent millions to mislead the public and block action to address the crisis. Recent reports revealed that these climate lies were not exclusive to Exxon, but also shared by their industry peers with the American Petroleum Institute.

On October 30, 350.org and a coalition of nearly fifty environmental and civil rights groups issued a joint letter calling on the Department of Justice to investigate Exxon Mobil. Tens of thousands have signed onto petitions with the same demand.

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March 3, 2016

# 350.org Responds to FBI's Criminal Division Launching Exxon Probe

Contact: Lindsay Meiman, (347) 460-9082

Washington, DC — [350.org](#) Communications Director **Jamie Henn** issued the following to the news that the Department of Justice is referring an investigation into ExxonMobil to the FBI criminal division:

“This is turning into a nightmare for Exxon. No company wants to hear their name and ‘criminal’ in the same sentence. This FBI investigation must quickly lead back to a full Department of Justice inquiry and, ultimately, legal action. There’s too much public pressure and action by state Attorney General’s for this case to disappear into a bureaucratic blackhole. Exxon knew about climate change, they misled the public, and it’s time for them to held to be criminal account.”

[350.org](#) is part of the #ExxonKnew campaign calling for investigations into how Exxon knew about climate change as early as the 1970s and proceeded to mislead the public, government, and their investors about the severity of the crisis. The campaign has delivered tens of thousands of signatures to the Department of Justice and state Attorney General’s calling for an investigation.

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1. “[Justice Department Refers Exxon Investigation Request to FBI](#),” InsideClimate News, March 2, 2016

April 13, 2016

## 350.org on Peabody declaring bankruptcy: “A harbinger of the end of the fossil fuel era”

*Peabody 50th coal company to declare bankruptcy since 2012, stressing necessity of a just transition away from fossil fuels that prioritizes communities and workers*

**Brooklyn, NY** — Peabody Energy Corporation, the world’s largest private-sector coal company, **filed** for Chapter 11 bankruptcy today, spelling the end of coal and a bleak outlook for the entire fossil fuel industry.

Coal has been in a structural decline since 2013 and today’s announcement highlights the need to create a comprehensive plan for a just transition away from fossil fuels.

“Peabody Energy’s bankruptcy is a harbinger of the end of the fossil fuel era,” said **Jenny Marienau, U.S. Divestment Campaign Manager with 350.org**. “Peabody is crashing because the company was unwilling to change with the times — they doubled down on the dirtiest of all fossil fuels, and investors backed their bet, as the world shifted toward renewable energy. They have consistently put profit over people, and now their profits have plummeted. Our world has no place for companies like Peabody.”

As oil prices plummet and renewable energy **attracts** record levels of investment, Peabody is the latest major United States-based coal corporation to file for bankruptcy. Peabody is the **50th**

coal company to declare bankruptcy since 2012, following announcements from Alpha Natural Resources and Arch Coal in the last few months.

In their 2014 SEC filings, Peabody **cited that** the fossil fuel divestment movement “could significantly affect demand for our products or our securities.” During the Paris climate talks in December, 350.org and Divest-Invest announced that more than 500 institutions representing over \$3.4 trillion had **committed** to some level of fossil fuel divestment.

“Peabody Energy has lost 95 cents on the dollar over the course of the last year. It’s more clear than ever that divestment is the morally and financially smart thing to do,” said **350.org’s Senior Global Analyst, Brett Fleishman**. “The country’s largest pension systems urgently need to take a deep look at the fossil fuel companies on their books. This bankruptcy, in a series of others, will ripple through communities, leaving a wake of economic and environmental destruction. There is literally no reason every institutional investor shouldn’t divest from coal.”

In 2015, Peabody was **found** to have broken the law by providing false and misleading statements about the financial risks of climate change.

A coalition called on Peabody Energy’s President and CEO to take meaningful steps to protect the American public, the climate, public lands, and workers, calling on the company to withdraw pending coal lease applications, relinquish coal leases, and reclaim its mining operations.

“Institutions around the world are divesting from coal companies like Peabody because they see the writing on the wall: the fossil fuel age is coming to an end,” said **May Boeve, 350.org Executive Director**. “As we repower our economy with 100% renewable energy we must repower our communities, as well. That includes a just transition for Peabody’s employees and prioritizing workers in the fossil fuel industry. Peabody shouldn’t take these communities down with them.”

The groups also called on Peabody to ensure the needs of workers and retirees are fully met, and that communities—including the St. Louis community—are aided as they transition from coal.

“This is a company that willfully and deliberately sought to delay, dismantle or destruct climate action. Perhaps if they had spent more time and money diversifying their business rather than on lobbying against climate action and sowing the seeds of doubt about the science, they might not have joined the long (and ever growing) list of bankrupt global coal companies,” said **Bill McKibben, co-founder of 350.org**.

This May, groups are coming together under an unprecedented mobilization to **Break Free** from fossil fuels, targeting major fossil fuel projects around the world. Through this platform, the global fossil fuel resistance movement will join actions taking place across 6 continents which aim to stop dirty fossil fuels and speed up the just transition to 100% renewable energy.

“We are on the brink of a historic, global shift in our energy system,” said Marienau. “It’s high time that our governments invest in a just transition for the security of communities and workers rather than bail out destructive corporations like Peabody whose inherent business model depends on planetary destruction.”

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April 20, 2016

## 350.org Statement on the Signing of the Paris Agreement in New York

New York — **350.org Executive Director May Boeve** issued the following statement ahead of the formal signing ceremony of the Paris Agreement taking place at the UN this Friday. This signing is purely ceremonial, most countries still need to ratify the agreement at a national level. The treaty will only enter into force when at least 55 countries representing at least 55% of global emissions have ratified.

“The formal signing of the Paris Agreement could be the next nail in the coffin of the fossil fuel industry if governments actually follow through on their commitments. The growing and vibrant climate movement is forcing governments to bow to the pressure to break free from fossil fuels. However there is still a dangerous gap between what the governments are signing up to, what they are doing and the real ambition we need to avert the worst impacts of climate change. The only way to achieve this is by keeping coal, oil and gas in the ground. As a movement we will continue to hold governments accountable, ensure they ratify the treaty, go well beyond their current targets and accelerate the transition to 100% renewable energy.

We also need to maximise the current political momentum to push for more. **Break Free**, a wave of global mobilisation planned for this May, is at the forefront of this and marks an unprecedented moment of local and international groups undertaking bold mobilisations to stop fossil fuel projects on six continents; demonstrating their resolve to transition off fossil fuels and build the new kind of economy that we know is possible –centred on a just transition to 100% renewable energy systems.

The fossil fuel industry is pushing our climate to the brink faster than anyone expected, as record temperatures are proving, along with extreme weather related events. We are all at risk from a warming planet, so we are left with no choice but to scale up nonviolent direct action. As the transition from dirty energy to clean and efficient energy systems grows stronger and faster, communities and private citizens around the world will continue to hold decision makers accountable to their promises, and to science.”

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April 29, 2016

## 350.org's Bill McKibben Responds to Right Wing Group's Plans to Target Climate Activists with Trackers and Video Cameras

**New York, NY** — Today, anti-environmentalist front group America Rising Squared announced plans to target climate activists with trackers and video cameras. In response, **350.org co-founder Bill McKibben** issued the following statement:

"I'm of course flattered that our work has exposed the fossil fuel industry enough that they feel the need for this kind of personal attack — but as usual, the real news is the lengths they will go to avoid talking about the greatest issue of our time, their ongoing wreckage of the planet's climate, and in the process so many of its people."

According to [The Hill](#), America Rising is pouring an "unprecedented" amount of resources into a campaign usually reserved for only the most high-profile Democratic targets. America Rising and associated groups are using their immense research and tracking infrastructure intended to take down Hillary Clinton to now target Bill McKibben, Tom Steyer, and others in the climate movement.

This is not the first time right-wing operatives allied with the fossil fuel industry have directly targeted McKibben, 350.org, and other climate justice activists. Just ahead of Global Divestment Day in 2015, an anti-environmentalist front group backed by Richard Berman <sup>1</sup> [released](#) an animated video romanticizing the relationship between humans and fossil fuels, featuring McKibben as the apparent villain.

"It's no coincidence that this attack is coming less than one week ahead of the kick-off of the global mobilization to [Break Free](#) from fossil fuels," said **May Boeve, 350.org Executive Director**. "With major protests targeting fossil fuel projects across six continents, six actions taking place here in the US, and one action in our nation's capital, the fossil fuel industry and their allies are continuing to pour resources into sowing doubt and targeting those fighting for climate justice."

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May 15, 2016

# Tens of Thousands Worldwide Take Part in Largest Global Civil Disobedience in the History of the Climate Movement

*A global wave of peaceful direct actions lasting for 12 days took place across six continents targeting the world's most dangerous fossil fuel projects*

## PHOTO AND VIDEO:

Photos from all actions available here: [breakfree2016.org/pressphoto](http://breakfree2016.org/pressphoto)

Video footage from all actions available here: [breakfree2016.org/pressvideo](http://breakfree2016.org/pressvideo)

**GLOBAL** — Twelve days of unprecedented world-wide action against fossil fuels have just concluded, showing that the climate movement will not rest until all coal, oil and gas is kept in the ground. The combined global efforts of activists on six continents now pose a serious threat to the future of the fossil fuel industry, already weakened by financial and political uncertainty.

Tens of thousands of activists took to the streets, occupied mines, blocked rail lines, linked arms, paddled in kayaks and held community meetings in 13 countries, pushing the boundaries of conventional protest to find new ways to demand coal, oil and gas stay in the ground. Participants risked arrest — many for the first time — to say that it's time to **Break Free** from the current energy paradigm that is locking the planet into a future of catastrophic climate change.

Driving this unprecedented wave of demonstrations is the sudden and dramatic acceleration in the warming of the planet, with every single month of 2016 shattering heat records – combined with the growing gap between world governments' stated climate ambitions, and their demonstrated actions in approving new fossil fuel projects. On the last day of mobilisation, a key monitoring site on Tasmania recorded atmospheric carbon-dioxide **exceeding 400 parts per million** for the first time ever.

These actions took place under the banner of **Break Free**, which refers to the need to shift away from our current dependency on fossil fuels to a global energy system powered by 100% renewable energy. **In 2015, 90% of new energy capacity came from renewables**, signaling that a rapid transition to 100% renewable energy is more feasible than ever.

As the impacts of a warming planet become more visible in the form of rising sea levels, drought and stronger storms, the citizens who joined **Break Free** will continue to be a part of the next phase of the movement as it becomes more vocal, disruptive and powerful.

## HIGHLIGHTS INCLUDE:

- **Thousands worldwide risked arrest during the actions, many for the first time**
- **\$20 million worth of coal shipments** were halted by activists shutting down the largest coal port in the world in Newcastle, Australia.
- The **UK's largest opencast coal mine was shut down** for a day.
- Hundreds **stood up to South Africa's most powerful family** with a march that delivered coal to their front door, despite their attempts to silence civil society by pressuring police to revoke permits for a march
- Dozens of people **occupied train tracks overnight** on both coasts of the United States to stop oil-filled 'bomb trains' from rolling through communities — including less than 100 feet from low-income public housing in Albany, New York.
- **3,500 people shut down one of Europe's biggest carbon polluters** in Germany, occupying a lignite mine and nearby power station for over 48 hours, reducing the plant's capacity by 80 percent.
- **10,000 marched against a proposed coal plant** in Batangas, the Philippines
- **3,000 sent an ear-splitting message to Indonesia's president** with a whistle demonstration against coal in Jakarta, and a few days later 12 activists climbed the cranes supplying coal for the Cirebon Coal Power Plant, and dropping banners to Quit Coal and for Clean Energy, Clean Air.
- Community members **blocked traffic outside the gates of Brazil's largest thermal coal plant**, in Ceará
- On land and water, **indigenous communities and local activists blockaded** the Kinder Morgan tar sands facility in Metro-Vancouver, unceded Coast Salish Territories.
- 150+ local activists marched and occupied the entrance of two fossil fuel refineries, which are the **largest unaddressed source of carbon pollution in the Northwest** of the United States
- In Aliaga, Turkey **2000 people marched to the gates of the Izmir region's largest coal dump**, and surrounded it with a giant red line, as a call to end plans for the massive expansion of coal in the country.

## DETAILED OVERVIEW OF THE ACTIONS:

### May 3: Wales – UK

Three hundred people halted operations at the UK's largest opencast coal mine at Ffos-y-fran in South Wales, making it the biggest ever mass action in a UK coal mine with the majority of participants joining a climate action for the first time. The occupation and blockade ended after 12 hours with no arrests.

### May 4, 14 : Philippines

Some 10,000 people marched in the streets of Batangas City opposing a proposed 600MW coal-fired power plant and to demand the cancellation of another 27 proposed plants in the country. The march, led by Archbishop Ramon Arguelles, Archbishop of the Roman Catholic Archdiocese of Lipa, also included activists from many organisations as well as thousands of people from coal-impacted communities. Days later, hundreds of community members in Calaca demonstrated against a proposed coal plant expansion project there.

### **May 5-15: United States**

In Sacramento, Central Valley community members sat-in outside of Governor Brown's office. In Philadelphia, hundreds of people marched to the largest refinery on the east coast. In Colorado, hundreds of people disrupted an auction selling public lands for fossil fuel extraction, as seven people held a sit-in blockading the room where the auction was being held. Over 2,000 people protested refinery pollution in the Pacific Northwest and blockaded oil trains for three full days culminating in at least 52 arrests. In Albany, 2,000 people marched and blockaded bomb trains, resulting in five arrests. Hundreds occupied a proposed fracking site outside Denver, and in California dozens blocked the road to the Porter Ranch gas facility, which was the site of the largest methane leak in the history of the US. Led by frontline community members, 1,300 people marched in Washington, DC to call on President Obama to end offshore drilling; and outside of Chicago, 1,500 people protested proposed the expansion of BP's Whiting refinery.

### **May 6-13: New Zealand**

Day after day dozens of people shut down ANZ bank branches in ChristChurch, Wellington, Auckland, and Dunedin calling for ANZ to divest from fossil fuels.

### **May 8: Australia**

An armada of kayakers blocked the Newcastle harbour entrance while 70 people blocked a critical rail crossing preventing any coal from getting to the port for over six hours. In total 2,000 people took part in the action shutting down the world's largest coal port for a day, preventing the shipment of almost 2 megatonnes of coal during the protest. In Western Australia, over 150 occupied the headquarters of BP & Chevron, blockading a busy intersection in front, with two arrests.

### **May 9-14: Brazil**

A series of anti-fracking events led up to over 300 people marching through the streets of Uruamama, in the state of Paraná, towards the City Hall where a Bill to ban fracking in this city was being voted. In the presence of the marchers, the city councilors unanimously agreed to declare Umarama fracking free. Then on the 14th, over 500 people marched on the highway used to deliver coal to a power plant in Ceará. The march included people from 20 municipalities, four Indigenous ethnic groups (Anacé, Pitaguary, Tapeba and Tremembé), fishermen and residents of the coastal zone, farmers and residents of the inner cities severely affected by drought.

### **May 10-14: Nigeria**

A coalition of climate justice organisations gathered with representatives of oil communities at Oloibiri, the site of the first oil well in Nigeria, as well as at Ogoni and Ibeno to emphasize fossil fuel's role in climate change, call an end to the Nigerian economic dependence on oil and to reduce adverse effects of climate change. The activists also demanded an end to the extreme pollution caused by endless oil spills and toxic dumps in the Niger Delta. At the concluding action at Ibeno, fisherfolks called for an halt to oil extraction, insisting that fish is far more valuable than crude oil.

### **May 11-15: Indonesia**

More than 3,500 participants marched in Jakarta carrying banners with slogans such as ‘Stop Dirty Energy Investments’ and ‘Stop Pollution, Stop Using Coal’, as they called for President Joko Widodo to move Indonesia, one of the world’s biggest coal producers, away from coal and embrace renewable energy. On 15 May, 12 Greenpeace activists stopped operations at the Cirebon Coal Power Plant for 12 hours, the activists unfurled banners saying ‘Quit Coal’ and ‘Clean Energy, Clean Air’ from both cranes supplying the coal terminal.

### **May 12-14: South Africa**

Affected communities represented by 200 people including farmers and private citizens gathered to speak about the daily realities of living in a town with the most polluted air in the world at *Emalahleni*, which directly translated means “place of coal.” A picket of 45 people was organized outside Medupi and Exxaro coal mine in Lephalale, which will be one of the world’s biggest coal-power stations. Also 400 participants joined the National Bread March to protest the increasing cost of food as a consequence of the severe drought the country is suffering. Finally, despite efforts by the Guptas to shut down a mass action at their residence – hundreds of people rallied at the nearby Zoo Lake to speak out about corrupt mining deals, and 15 people delivered a coffin of coal to the doorsteps of the Gupta residence.

### **May 13-15: Germany**

More than 3500 activists from all over Europe shut down the opencast coal mine *Welzow-Süd* in the Lusatia coal fields. While hundreds entered the mine, others blocked coal trains and conveyor belts transporting coal to the power plants. Around 300 people continued the blockade overnight. On 14 May another 2000 activists cut off coal power plant *Schwarze Pumpe* from all coal supplies. Around 120 were arrested and released the next day. Five occupations continued over another night. After the power plant had been blocked for more than 48 hours, the activists stopped the blockade on Sunday, May 15th.

### **May 14: Canada**

Over 800 people took action to surround the Kinder Morgan facility on the Salish Coast. On the land, activists locked messages onto the gates of the facility, staged a sit-in and painted a giant mural. On the water a massive kayak flotilla swarmed the pipeline’s tanker terminal.

### **May 14: Ecuador**

The group Yasunidos took over close to 500 hectares destined to built an oil refinery called Refinería del Pacífico, where Ecuador plans to process the oil extracted at the Yasuní National Park. Yasunidos planted 1 tree in the area, and managed to stay in the premise for about three hours after peacefully passing through the security control. Since the action, members of the Yasunidos have been facing harassment and public discredit on behalf of Correa’s government and those backing the fossil project.

### **May 15: Turkey**

Community leaders, led two thousand people in Aliağa in a march through to a coal waste site and called for the stopping of four fossil fuel projects in the surrounding area. The activists made a human chain and spelled out the word “Stop” (“Dur” in Turkish).

## QUOTE SHEET:

“As global temperatures continue to rise, so are the people. Across continents people are challenging the status quo by pushing the boundaries of conventional protest to demand fossil fuels are kept in the ground. Ordinary people are joining the fight for our collective survival as communities worldwide are experiencing first hand the consequences of climate change and the damage inflicted by the fossil fuel industry. It’s up to us to break free from fossil fuels and accelerate the shift towards a just transition to 100% renewable energy,” **Payal Parekh, 350.org Program Director**

“This is the hottest year we’ve ever measured, and so it is remarkably comforting to see people rising up at every point of the compass to insist on change,” **Bill McKibben, co-founder of 350.org**

“In our fight against fossil fuels, Southeast Asia is a major battleground and we cannot afford to cede to those who think of nothing but profit instead of people, and plunder instead of protecting the environment. As our communities rise against this addiction to coal, we hope to inspire massive civil participation all over the planet. Break Free is a breath of hope for all communities who are standing up to the fossil fuel industry’s relentless expansion despite climate change,” **Yeb Saño Executive Director of Greenpeace Southeast Asia.**

“Every new tonne of coal that is dug up is one too many. We are hitting the emergency brakes now. We won’t leave climate action to governments and corporations any longer. We are taking matters into our own hands now,” **Hannah Eichberger, Ende Gelände (Here And No Further), grassroots anti-coal alliance**

“Breaking free from fossil fuels is a vote for life and for the planet. The Paris Agreement signed by world leaders ignored the fact that burning fossil fuels is the major culprit in global warming. In these actions the peoples of the world will insist that we must come clean of the fossil fuels addiction,” **Nnimmo Bassey, Nigerian activist from the Health of Mother Earth Foundation**

“The global climate justice movement is rising fast. But so are the oceans. So are global temperatures. This is a race against time. Our movement is stronger than ever, but to beat the odds, we have to grow stronger,” **Naomi Klein, award winning journalist/author**

“People power in our cities, in our villages and on the frontlines of climate change have brought us to a point where we have a global climate deal – but we do not stop now, we need more action and faster. Civil society is set to rise up again, to fight for our societies to break free from fossil fuels, to propel them even faster towards a just future powered by 100% renewable energy,” **Wael Hmaidan, Director of Climate Action Network**

# Global Warming's Terrifying New Math

Three simple numbers that add up to global catastrophe - and that make clear who the real enemy is



Illustration by Edel Rodriguez

**By Bill McKibben**

July 19, 2012

If the pictures of those towering wildfires in Colorado haven't convinced you, or the size of your AC bill this summer, here are some hard numbers about climate change: June broke or tied 3,215 high-temperature records



across the United States. That followed the warmest May on record for the Northern Hemisphere – the 327th consecutive month in which the temperature of the entire globe exceeded the 20th-century average, the odds of which occurring by simple chance were  $3.7 \times 10^{-99}$ , a number considerably larger than the number of stars in the universe.

Meteorologists reported that this spring was the warmest ever recorded for our nation – in fact, it crushed the old record by so much that it represented the "largest temperature departure from average of any season on record." The same week, Saudi authorities reported that it had rained in Mecca despite a temperature of 109 degrees, the hottest downpour in the planet's history.

Not that our leaders seemed to notice. Last month the world's nations, meeting in Rio for the 20th-anniversary reprise of a massive 1992 environmental summit, accomplished nothing. Unlike George H.W. Bush, who flew in for the first conclave, Barack Obama didn't even attend. It was "a ghost of the glad, confident meeting 20 years ago," the British journalist George Monbiot wrote; no one paid it much attention, footsteps echoing through the halls "once thronged by multitudes." Since I wrote one of the

first books for a general audience about global warming way back in 1989, and since I've spent the intervening decades working ineffectively to slow that warming, I can say with some confidence that we're losing the fight, badly and quickly – losing it because, most of all, we remain in denial about the peril that human civilization is in.

When we think about global warming at all, the arguments tend to be ideological, theological and economic. But to grasp the seriousness of our predicament, you just need to do a little math. For the past year, an easy and powerful bit of arithmetical analysis first published by financial analysts in the U.K. has been making the rounds of environmental conferences and journals, but it hasn't yet broken through to the larger public. This analysis upends most of the conventional political thinking about climate change. And it allows us to understand our precarious – our almost-but-not-quite-finally hopeless – position with three simple numbers.

The First Number: 2° Celsius

If the movie had ended in Hollywood fashion, the Copenhagen climate conference in 2009 would have marked the culmination of the global fight to slow a changing climate. The world's nations had gathered in the December gloom of the Danish capital for what a leading climate economist, Sir Nicholas Stern of Britain, called the "most important gathering since the Second World War, given what is at stake." As Danish energy minister Connie Hedegaard, who presided over the conference, declared at the time: "This is our chance. If we miss it, it could take years before we get a new and better one. If ever."

In the event, of course, we missed it. Copenhagen failed spectacularly. Neither China nor the United States, which between them are responsible for 40 percent of global carbon emissions, was prepared to offer dramatic concessions, and so the conference drifted aimlessly for two weeks until world leaders jetted in for the final day. Amid considerable chaos, President Obama took the lead in drafting a face-saving "Copenhagen Accord" that fooled very few. Its purely voluntary agreements committed no one to anything, and even if countries signaled their intentions to cut carbon

emissions, there was no enforcement mechanism. "Copenhagen is a crime scene tonight," an angry Greenpeace official declared, "with the guilty men and women fleeing to the airport." Headline writers were equally brutal: COPENHAGEN: THE MUNICH OF OUR TIMES? asked one.

The accord did contain one important number, however. In Paragraph 1, it formally recognized "the scientific view that the increase in global temperature should be below two degrees Celsius." And in the very next paragraph, it declared that "we agree that deep cuts in global emissions are required... so as to hold the increase in global temperature below two degrees Celsius." By insisting on two degrees – about 3.6 degrees Fahrenheit – the accord ratified positions taken earlier in 2009 by the G8, and the so-called Major Economies Forum. It was as conventional as conventional wisdom gets. The number first gained prominence, in fact, at a 1995 climate conference chaired by Angela Merkel, then the German minister of the environment and now the center-right chancellor of the nation.

Some context: So far, we've raised the average temperature of the planet just under 0.8 degrees Celsius, and that has caused far more damage than most scientists expected. (A third of summer sea ice in the Arctic is gone, the oceans are 30 percent more acidic, and since warm air holds more water vapor than cold, the atmosphere over the oceans is a shocking five percent wetter, loading the dice for devastating floods.) Given those impacts, in fact, many scientists have come to think that two degrees is far too lenient a target. "Any number much above one degree involves a gamble," writes Kerry Emanuel of MIT, a leading authority on hurricanes, "and the odds become less and less favorable as the temperature goes up." Thomas Lovejoy, once the World Bank's chief biodiversity adviser, puts it like this: "If we're seeing what we're seeing today at 0.8 degrees Celsius, two degrees is simply too much." NASA scientist James Hansen, the planet's most prominent climatologist, is even blunter: "The target that has been talked about in international negotiations for two degrees of warming is actually a prescription for long-term disaster." At the Copenhagen summit, a spokesman for small island nations warned that many would not survive a two-degree rise: "Some countries will flat-out disappear." When delegates from developing nations were warned that two degrees would represent a "suicide pact" for drought-stricken Africa, many of them started chanting, "One degree, one Africa."

Despite such well-founded misgivings, political realism bested scientific data, and the world settled on the two-degree target – indeed, it's fair to say that it's the only thing about climate change the world has settled on. All told, 167 countries responsible for more than 87 percent of the world's carbon emissions have signed on to the Copenhagen Accord, endorsing the two-degree target. Only a few dozen countries have rejected it, including Kuwait, Nicaragua and Venezuela. Even the United Arab Emirates, which makes most of its money exporting oil and gas, signed on. The official position of planet Earth at the moment is that we can't raise the temperature more than two degrees Celsius – it's become the bottomest of bottom lines. Two degrees.

The Second Number: 565 Gigatons

Scientists estimate that humans can pour roughly 565 more gigatons of carbon dioxide into the atmosphere by midcentury and still have some reasonable hope of staying below two degrees. ("Reasonable," in this case, means four chances in five, or somewhat worse odds than playing Russian roulette with a six-shooter.)

This idea of a global "carbon budget" emerged about a decade ago, as scientists began to calculate how much oil, coal and gas could still safely be burned. Since we've increased the Earth's temperature by 0.8 degrees so far, we're currently less than halfway to the target. But, in fact, computer models calculate that even if we stopped increasing CO<sub>2</sub> now, the temperature would likely still rise another 0.8 degrees, as previously released carbon continues to overheat the atmosphere. That means we're already three-quarters of the way to the two-degree target.

How good are these numbers? No one is insisting that they're exact, but few dispute that they're generally right. The 565-gigaton figure was derived from one of the most sophisticated computer-simulation models that have been built by climate scientists around the world over the past few decades. And the number is being further confirmed by the latest climate-simulation models currently being finalized in advance of the next report by the Intergovernmental Panel on Climate Change. "Looking at them as they come in, they hardly differ at all," says Tom Wigley, an Australian climatologist at the National Center for Atmospheric Research. "There's maybe 40 models in the data set now, compared with 20 before. But so far the numbers are pretty much the same. We're just fine-tuning things. I don't think much has changed over the last decade." William Collins, a senior climate scientist at the Lawrence Berkeley National Laboratory, agrees. "I think the results of this round of simulations will be quite similar," he says. "We're not getting any free lunch from additional understanding of the climate system."



We're not getting any free lunch from the world's economies, either. With only a single year's lull in 2009 at the height of the financial crisis, we've continued to pour record amounts of carbon into the atmosphere, year after year. In late May, the International Energy Agency published its latest figures – CO2 emissions last year rose to 31.6 gigatons, up 3.2 percent from the year before. America had a warm winter and converted more coal-fired power plants to natural gas, so its emissions fell slightly; China kept booming, so its carbon output (which recently surpassed the U.S.) rose 9.3 percent; the Japanese shut down their fleet of nukes post-Fukushima, so their emissions edged up 2.4 percent. "There have been efforts to use more renewable energy and improve energy efficiency," said Corinne Le Quéré, who runs England's Tyndall Centre for Climate Change Research. "But what this shows is that so far the effects have been marginal." In fact, study after study predicts that carbon emissions will keep growing by roughly three percent a year – and at that rate, we'll blow through our 565-gigaton allowance in 16 years, around the time today's preschoolers will be graduating from high school. "The new data provide further evidence that the door to a two-degree trajectory is about to close," said Fatih Birol, the IEA's chief economist. In fact, he continued, "When I look at this data, the trend is perfectly in line with a temperature increase of

about six degrees." That's almost 11 degrees Fahrenheit, which would create a planet straight out of science fiction.

So, new data in hand, everyone at the Rio conference renewed their ritual calls for serious international action to move us back to a two-degree trajectory. The charade will continue in November, when the next Conference of the Parties (COP) of the U.N. Framework Convention on Climate Change convenes in Qatar. This will be COP 18 – COP 1 was held in Berlin in 1995, and since then the process has accomplished essentially nothing. Even scientists, who are notoriously reluctant to speak out, are slowly overcoming their natural preference to simply provide data. "The message has been consistent for close to 30 years now," Collins says with a wry laugh, "and we have the instrumentation and the computer power required to present the evidence in detail. If we choose to continue on our present course of action, it should be done with a full evaluation of the evidence the scientific community has presented." He pauses, suddenly conscious of being on the record. "I should say, a *fuller evaluation* of the evidence."

So far, though, such calls have had little effect. We're in the same position we've been in for a quarter-century: scientific warning followed by political inaction. Among scientists speaking off the record, disgusted candor is the rule. One senior scientist told me, "You know those new cigarette packs, where governments make them put a picture of someone with a hole in their throats? Gas pumps should have something like that."

The Third Number: 2,795 Gigatons

This number is the scariest of all – one that, for the first time, meshes the political and scientific dimensions of our dilemma. It was highlighted last summer by the Carbon Tracker Initiative, a team of London financial analysts and environmentalists who published a report in an effort to educate investors about the possible risks that climate change poses to their stock portfolios. The number describes the amount of carbon already

contained in the proven coal and oil and gas reserves of the fossil-fuel companies, and the countries (think Venezuela or Kuwait) that act like fossil-fuel companies. In short, it's the fossil fuel we're currently planning to burn. And the key point is that this new number – 2,795 – is higher than 565. Five times higher.

The Carbon Tracker Initiative – led by James Leaton, an environmentalist who served as an adviser at the accounting giant PricewaterhouseCoopers – combed through proprietary databases to figure out how much oil, gas and coal the world's major energy companies hold in reserve. The numbers aren't perfect – they don't fully reflect the recent surge in unconventional energy sources like shale gas, and they don't accurately reflect coal reserves, which are subject to less stringent reporting requirements than oil and gas. But for the biggest companies, the figures are quite exact: If you burned everything in the inventories of Russia's Lukoil and America's ExxonMobil, for instance, which lead the list of oil and gas companies, each would release more than 40 gigatons of carbon dioxide into the atmosphere.

Which is exactly why this new number, 2,795 gigatons, is such a big deal. Think of two degrees Celsius as the legal drinking limit – equivalent to the 0.08 blood-alcohol level below which you might get away with driving home. The 565 gigatons is how many drinks you could have and still stay below that limit – the six beers, say, you might consume in an evening. And the 2,795 gigatons? That's the three 12-packs the fossil-fuel industry has on the table, already opened and ready to pour.

We have five times as much oil and coal and gas on the books as climate scientists think is safe to burn. We'd have to keep 80 percent of those reserves locked away underground to avoid that fate. Before we knew those numbers, our fate had been likely. Now, barring some massive intervention, it seems certain.

Yes, this coal and gas and oil is still technically in the soil. But it's already economically aboveground – it's figured into share prices, companies are borrowing money against it, nations are basing their budgets on the presumed returns from their patrimony. It explains why the big fossil-fuel companies have fought so hard to prevent the regulation of carbon dioxide – those reserves are their primary asset, the holding that gives their companies their value. It's why they've worked so hard these past years to figure out how to unlock the oil in Canada's tar sands, or how to drill miles beneath the sea, or how to frack the Appalachians.

If you told Exxon or Lukoil that, in order to avoid wrecking the climate, they couldn't pump out their reserves, the value of their companies would plummet. John Fullerton, a former managing director at JP Morgan who now runs the Capital Institute, calculates that at today's market value, those 2,795 gigatons of carbon emissions are worth about \$27 trillion. Which is to say, if you paid attention to the scientists and kept 80 percent of it underground, you'd be writing off \$20 trillion in assets. The numbers aren't exact, of course, but that carbon bubble makes the housing bubble look

small by comparison. It won't necessarily burst – we might well burn all that carbon, in which case investors will do fine. But if we do, the planet will crater. You can have a healthy fossil-fuel balance sheet, or a relatively healthy planet – but now that we know the numbers, it looks like you can't have both. Do the math: 2,795 is five times 565. That's how the story ends.

So far, as I said at the start, environmental efforts to tackle global warming have failed. The planet's emissions of carbon dioxide continue to soar, especially as developing countries emulate (and supplant) the industries of the West. Even in rich countries, small reductions in emissions offer no sign of the real break with the status quo we'd need to upend the iron logic of these three numbers. Germany is one of the only big countries that has actually tried hard to change its energy mix; on one sunny Saturday in late May, that northern-latitude nation generated nearly half its power from solar panels within its borders. That's a small miracle – and it demonstrates that we have the technology to solve our problems. But we lack the will. So far, Germany's the exception; the rule is ever more carbon.

This record of failure means we know a lot about what strategies *don't* work. Green groups, for instance, have spent a lot of time trying to change individual lifestyles: the iconic twisty light bulb has been installed by the millions, but so have a new generation of energy-sucking flatscreen TVs. Most of us are fundamentally ambivalent about going green: We like cheap flights to warm places, and we're certainly not going to give them up if everyone else is still taking them. Since all of us are in some way the beneficiaries of cheap fossil fuel, tackling climate change has been like trying to build a movement against yourself – it's as if the gay-rights movement had to be constructed entirely from evangelical preachers, or the abolition movement from slaveholders.

People perceive – correctly – that their individual actions will not make a decisive difference in the atmospheric concentration of CO<sub>2</sub>; by 2010, a poll found that "while recycling is widespread in America and 73 percent of those polled are paying bills online in order to save paper," only four percent had reduced their utility use and only three percent had purchased



hybrid cars. Given a hundred years, you could conceivably change lifestyles enough to matter – but time is precisely what we lack.

A more efficient method, of course, would be to work through the political system, and environmentalists have tried that, too, with the same limited success. They've patiently lobbied leaders, trying to convince them of our peril and assuming that politicians would heed the warnings. Sometimes it has seemed to work. Barack Obama, for instance, campaigned more aggressively about climate change than any president before him – the night he won the nomination, he told supporters that his election would mark the moment "the rise of the oceans began to slow and the planet began to heal." And he has achieved one significant change: a steady increase in the fuel efficiency mandated for automobiles. It's the kind of measure, adopted a quarter-century ago, that would have helped enormously. But in light of the numbers I've just described, it's obviously a very small start indeed.

At this point, effective action would require actually keeping most of the carbon the fossil-fuel industry wants to burn safely in the soil, not just

changing slightly the speed at which it's burned. And there the president, apparently haunted by the still-echoing cry of "Drill, baby, drill," has gone out of his way to frack and mine. His secretary of interior, for instance, opened up a huge swath of the Powder River Basin in Wyoming for coal extraction: The total basin contains some 67.5 gigatons worth of carbon (or more than 10 percent of the available atmospheric space). He's doing the same thing with Arctic and offshore drilling; in fact, as he explained on the stump in March, "You have my word that we will keep drilling everywhere we can... That's a commitment that I make." The next day, in a yard full of oil pipe in Cushing, Oklahoma, the president promised to work on wind and solar energy but, at the same time, to speed up fossil-fuel development: "Producing more oil and gas here at home has been, and will continue to be, a critical part of an all-of-the-above energy strategy." That is, he's committed to finding even more stock to add to the 2,795-gigaton inventory of unburned carbon.

Sometimes the irony is almost Borat-scale obvious: In early June, Secretary of State Hillary Clinton traveled on a Norwegian research trawler to see firsthand the growing damage from climate change. "Many of the predictions about warming in the Arctic are being surpassed by the actual data," she said, describing the sight as "sobering." But the discussions she traveled to Scandinavia to have with other foreign ministers were mostly

about how to make sure Western nations get their share of the estimated \$9 trillion in oil (that's more than 90 billion barrels, or 37 gigatons of carbon) that will become accessible as the Arctic ice melts. Last month, the Obama administration indicated that it would give Shell permission to start drilling in sections of the Arctic.

Almost every government with deposits of hydrocarbons straddles the same divide. Canada, for instance, is a liberal democracy renowned for its internationalism – no wonder, then, that it signed on to the Kyoto treaty, promising to cut its carbon emissions substantially by 2012. But the rising price of oil suddenly made the tar sands of Alberta economically attractive – and since, as NASA climatologist James Hansen pointed out in May, they contain as much as 240 gigatons of carbon (or almost half of the available space if we take the 565 limit seriously), that meant Canada's commitment to Kyoto was nonsense. In December, the Canadian government withdrew from the treaty before it faced fines for failing to meet its commitments.

The same kind of hypocrisy applies across the ideological board: In his speech to the Copenhagen conference, Venezuela's Hugo Chavez quoted

Rosa Luxemburg, Jean-Jacques Rousseau and "Christ the Redeemer," insisting that "climate change is undoubtedly the most devastating environmental problem of this century." But the next spring, in the Simon Bolivar Hall of the state-run oil company, he signed an agreement with a consortium of international players to develop the vast Orinoco tar sands as "the most significant engine for a comprehensive development of the entire territory and Venezuelan population." The Orinoco deposits are larger than Alberta's – taken together, they'd fill up the whole available atmospheric space.

So: the paths we have tried to tackle global warming have so far produced only gradual, halting shifts. A rapid, transformative change would require building a movement, and movements require enemies. As John F. Kennedy put it, "The civil rights movement should thank God for Bull Connor. He's helped it as much as Abraham Lincoln." And enemies are what climate change has lacked.

But what all these climate numbers make painfully, usefully clear is that the planet does indeed have an enemy – one far more committed to action

than governments or individuals. Given this hard math, we need to view the fossil-fuel industry in a new light. It has become a rogue industry, reckless like no other force on Earth. It is Public Enemy Number One to the survival of our planetary civilization. "Lots of companies do rotten things in the course of their business – pay terrible wages, make people work in sweatshops – and we pressure them to change those practices," says veteran anti-corporate leader Naomi Klein, who is at work on a book about the climate crisis. "But these numbers make clear that with the fossil-fuel industry, wrecking the planet is their business model. It's what they do."

According to the Carbon Tracker report, if Exxon burns its current reserves, it would use up more than seven percent of the available atmospheric space between us and the risk of two degrees. BP is just behind, followed by the Russian firm Gazprom, then Chevron, ConocoPhillips and Shell, each of which would fill between three and four percent. Taken together, just these six firms, of the 200 listed in the Carbon Tracker report, would use up more than a quarter of the remaining two-degree budget. Severstal, the Russian mining giant, leads the list of coal companies, followed by firms like BHP Billiton and Peabody. The numbers are simply staggering – this industry, and this industry alone, holds the power to change the physics and chemistry of our planet, and they're planning to use it.

They're clearly cognizant of global warming – they employ some of the world's best scientists, after all, and they're bidding on all those oil leases made possible by the staggering melt of Arctic ice. And yet they relentlessly search for more hydrocarbons – in early March, Exxon CEO Rex Tillerson told Wall Street analysts that the company plans to spend \$37 billion a year through 2016 (about \$100 million a day) searching for yet more oil and gas.

There's not a more reckless man on the planet than Tillerson. Late last month, on the same day the Colorado fires reached their height, he told a New York audience that global warming is real, but dismissed it as an "engineering problem" that has "engineering solutions." Such as? "Changes to weather patterns that move crop-production areas around – we'll adapt to that." This in a week when Kentucky farmers were reporting that corn kernels were "aborting" in record heat, threatening a spike in global food prices. "The fear factor that people want to throw out there to say, 'We just have to stop this,' I do not accept," Tillerson said. Of course not – if he did accept it, he'd have to keep his reserves in the ground.

Which would cost him money. It's not an engineering problem, in other words – it's a greed problem.

You could argue that this is simply in the nature of these companies – that having found a profitable vein, they're compelled to keep mining it, more like efficient automatons than people with free will. But as the Supreme Court has made clear, they are people of a sort. In fact, thanks to the size of its bankroll, the fossil-fuel industry has far more free will than the rest of us. These companies don't simply exist in a world whose hungers they fulfill – they help create the boundaries of that world.

Left to our own devices, citizens might decide to regulate carbon and stop short of the brink; according to a recent poll, nearly two-thirds of Americans would back an international agreement that cut carbon emissions 90 percent by 2050. But we aren't left to our own devices. The Koch brothers, for instance, have a combined wealth of \$50 billion, meaning they trail only Bill Gates on the list of richest Americans. They've made most of their money in hydrocarbons, they know any system to regulate carbon would cut those profits, and they reportedly plan to lavish as much as \$200 million

on this year's elections. In 2009, for the first time, the U.S. Chamber of Commerce surpassed both the Republican and Democratic National Committees on political spending; the following year, more than 90 percent of the Chamber's cash went to GOP candidates, many of whom deny the existence of global warming. Not long ago, the Chamber even filed a brief with the EPA urging the agency not to regulate carbon – should the world's scientists turn out to be right and the planet heats up, the Chamber advised, "populations can acclimatize to warmer climates via a range of behavioral, physiological and technological adaptations." As radical goes, demanding that we change our physiology seems right up there.

Environmentalists, understandably, have been loath to make the fossil-fuel industry their enemy, respecting its political power and hoping instead to convince these giants that they should turn away from coal, oil and gas and transform themselves more broadly into "energy companies." Sometimes that strategy appeared to be working – emphasis on appeared. Around the turn of the century, for instance, BP made a brief attempt to restyle itself as "Beyond Petroleum," adapting a logo that looked like the sun and sticking solar panels on some of its gas stations. But its investments in alternative energy were never more than a tiny fraction of its budget for hydrocarbon exploration, and after a few years, many of those were wound down as new CEOs insisted on returning to the company's "core business." In



December, BP finally closed its solar division. Shell shut down its solar and wind efforts in 2009. The five biggest oil companies have made more than \$1 trillion in profits since the millennium – there's simply too much money to be made on oil and gas and coal to go chasing after zephyrs and sunbeams.

Much of that profit stems from a single historical accident: Alone among businesses, the fossil-fuel industry is allowed to dump its main waste, carbon dioxide, for free. Nobody else gets that break – if you own a restaurant, you have to pay someone to cart away your trash, since piling it in the street would breed rats. But the fossil-fuel industry is different, and for sound historical reasons: Until a quarter-century ago, almost no one knew that CO<sub>2</sub> was dangerous. But now that we understand that carbon is heating the planet and acidifying the oceans, its price becomes the central issue.

If you put a price on carbon, through a direct tax or other methods, it would enlist markets in the fight against global warming. Once Exxon has to pay for the damage its carbon is doing to the atmosphere, the price of its

products would rise. Consumers would get a strong signal to use less fossil fuel – every time they stopped at the pump, they'd be reminded that you don't need a semimilitary vehicle to go to the grocery store. The economic playing field would now be a level one for nonpolluting energy sources. And you could do it all without bankrupting citizens – a so-called "fee-and-dividend" scheme would put a hefty tax on coal and gas and oil, then simply divide up the proceeds, sending everyone in the country a check each month for their share of the added costs of carbon. By switching to cleaner energy sources, most people would actually come out ahead.

There's only one problem: Putting a price on carbon would reduce the profitability of the fossil-fuel industry. After all, the answer to the question "How high should the price of carbon be?" is "High enough to keep those carbon reserves that would take us past two degrees safely in the ground." The higher the price on carbon, the more of those reserves would be worthless. The fight, in the end, is about whether the industry will succeed in its fight to keep its special pollution break alive past the point of climate catastrophe, or whether, in the economists' parlance, we'll make them internalize those externalities.

It's not clear, of course, that the power of the fossil-fuel industry can be broken. The U.K. analysts who wrote the Carbon Tracker report and drew attention to these numbers had a relatively modest goal – they simply wanted to remind investors that climate change poses a very real risk to the stock prices of energy companies. Say something so big finally happens (a giant hurricane swamps Manhattan, a megadrought wipes out Midwest agriculture) that even the political power of the industry is inadequate to restrain legislators, who manage to regulate carbon. Suddenly those Chevron reserves would be a lot less valuable, and the stock would tank. Given that risk, the Carbon Tracker report warned investors to lessen their exposure, hedge it with some big plays in alternative energy.

"The regular process of economic evolution is that businesses are left with stranded assets all the time," says Nick Robins, who runs HSBC's Climate Change Centre. "Think of film cameras, or typewriters. The question is not whether this will happen. It will. Pension systems have been hit by the dot-com and credit crunch. They'll be hit by this." Still, it hasn't been easy to convince investors, who have shared in the oil industry's record profits.

"The reason you get bubbles," sighs Leaton, "is that everyone thinks they're the best analyst – that they'll go to the edge of the cliff and then jump back when everyone else goes over."

So pure self-interest probably won't spark a transformative challenge to fossil fuel. But moral outrage just might – and that's the real meaning of this new math. It could, plausibly, give rise to a real movement.

Once, in recent corporate history, anger forced an industry to make basic changes. That was the campaign in the 1980s demanding divestment from companies doing business in South Africa. It rose first on college campuses and then spread to municipal and state governments; 155 campuses eventually divested, and by the end of the decade, more than 80 cities, 25 states and 19 counties had taken some form of binding economic action against companies connected to the apartheid regime. "The end of apartheid stands as one of the crowning accomplishments of the past century," as Archbishop Desmond Tutu put it, "but we would not have succeeded without the help of international pressure," especially from "the divestment movement of the 1980s."

The fossil-fuel industry is obviously a tougher opponent, and even if you could force the hand of particular companies, you'd still have to figure out a strategy for dealing with all the sovereign nations that, in effect, act as fossil-fuel companies. But the link for college students is even more obvious in this case. If their college's endowment portfolio has fossil-fuel stock, then their educations are being subsidized by investments that guarantee they won't have much of a planet on which to make use of their degree. (The same logic applies to the world's largest investors, pension funds, which are also theoretically interested in the future – that's when their members will "enjoy their retirement.") "Given the severity of the climate crisis, a comparable demand that our institutions dump stock from companies that are destroying the planet would not only be appropriate but effective," says Bob Massie, a former anti-apartheid activist who helped found the Investor Network on Climate Risk. "The message is simple: We have had enough. We must sever the ties with those who profit from climate change – now."

Movements rarely have predictable outcomes. But any campaign that weakens the fossil-fuel industry's political standing clearly increases the chances of retiring its special breaks. Consider President Obama's signal achievement in the climate fight, the large increase he won in mileage requirements for cars. Scientists, environmentalists and engineers had advocated such policies for decades, but until Detroit came under severe financial pressure, it was politically powerful enough to fend them off. If people come to understand the cold, mathematical truth – that the fossil-fuel industry is systematically undermining the planet's physical systems – it might weaken it enough to matter politically. Exxon and their ilk might drop their opposition to a fee-and-dividend solution; they might even decide to become true energy companies, this time for real.

Even if such a campaign is possible, however, we may have waited too long to start it. To make a real difference – to keep us under a temperature increase of two degrees – you'd need to change carbon pricing in Washington, and then use that victory to leverage similar shifts around the world. At this point, what happens in the U.S. is most important for how it

will influence China and India, where emissions are growing fastest. (In early June, researchers concluded that China has probably under-reported its emissions by up to 20 percent.) The three numbers I've described are daunting – they may define an essentially impossible future. But at least they provide intellectual clarity about the greatest challenge humans have ever faced. We know how much we can burn, and we know who's planning to burn more. Climate change operates on a geological scale and time frame, but it's not an impersonal force of nature; the more carefully you do the math, the more thoroughly you realize that this is, at bottom, a moral issue; we have met the enemy and they is Shell.

Meanwhile the tide of numbers continues. The week after the Rio conference limped to its conclusion, Arctic sea ice hit the lowest level ever recorded for that date. Last month, on a single weekend, Tropical Storm Debby dumped more than 20 inches of rain on Florida – the earliest the season's fourth-named cyclone has ever arrived. At the same time, the largest fire in New Mexico history burned on, and the most destructive fire in Colorado's annals claimed 346 homes in Colorado Springs – breaking a record set the week before in Fort Collins. This month, scientists issued a new study concluding that global warming has dramatically increased the likelihood of severe heat and drought – days after a heat wave across the Plains and Midwest broke records that had stood since the Dust Bowl,

threatening this year's harvest. You want a big number? In the course of this month, a quadrillion kernels of corn need to pollinate across the grain belt, something they can't do if temperatures remain off the charts. Just like us, our crops are adapted to the Holocene, the 11,000-year period of climatic stability we're now leaving... in the dust.



# Exxon is Flooding the World with Fossil Fuels that Could Destroy Life As We Know It

***Exxon's never-ending big dig.***

By **Bill McKibben** / **Tom Dispatch**

*February 20, 2016*

Here's the story so far. We have the chief legal representatives of the eighth and 16th largest economies on Earth (California and New York) probing the biggest fossil fuel company on Earth (ExxonMobil), while both Democratic presidential candidates are demanding that the federal Department of Justice join the investigation of what may prove to be one of the biggest corporate scandals in American history. And that's just the beginning. As bad as Exxon has been in the past, what it's doing now -- entirely legally -- is helping push the planet over the edge and into the biggest crisis in the entire span of the human story.

Back in the fall, you might have heard something about how Exxon had covered up what it knew early on about climate change. Maybe you even thought to yourself: that doesn't surprise me. But it should have. Even as someone who has spent his life engaged in the bottomless pit of greed that is global warming, the news and its meaning came as a shock: we could have avoided, it turns out, the last quarter century of pointless climate debate.

As a start, investigations by the Pulitzer-Prize winning *Inside Climate News*, the *Los Angeles Times*, and Columbia Journalism School revealed in extraordinary detail that Exxon's top officials had known everything there was to know about climate change back in the 1980s. Even earlier, actually. Here's what senior company scientist James Black told Exxon's management committee in 1977: "In the first place, there 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." To determine if this was so, the company outfitted an oil tanker

with carbon dioxide sensors to measure concentrations of the gas over the ocean, and then funded elaborate computer models to help predict what temperatures would do in the future.

The results of all that work were unequivocal. By 1982, in an internal “**corporate primer**,” Exxon’s leaders were told that, despite lingering unknowns, dealing with climate change “would require major reductions in fossil fuel combustion.” Unless that happened, the primer said, citing independent experts, “there are some potentially catastrophic events that must be considered... Once the effects are measurable, they might not be reversible.” But that document, “given wide circulation” within Exxon, was also stamped “Not to be distributed externally.”

So here’s what happened. Exxon used its knowledge of climate change to plan its own future. The company, for instance, leased large tracts of the Arctic for oil exploration, territory where, as a company scientist **pointed out** in 1990, “potential global warming can only help lower exploration and development costs.” Not only that but, “from the North Sea to the Canadian Arctic,” Exxon and its affiliates **set about** “raising the decks of offshore platforms, protecting pipelines from increasing coastal erosion, and designing helipads, pipelines, and roads in a warming and buckling Arctic.” In other words, the company started climate-proofing its facilities to head off a future its own scientists knew was inevitable.

But in public? There, Exxon didn’t own up to any of this. In fact, it did precisely the opposite. In the 1990s, it started to put money and muscle into obscuring the science around climate change. It **funded** think tanks that spread climate denial and even recruited lobbying talent from the tobacco industry. It also **followed** the tobacco playbook when it came to the defense of cigarettes by highlighting “uncertainty” about the science of global warming. And it **spent** lavishly to back political candidates who were ready to downplay global warming.

Its CEO, Lee Raymond, even traveled to China in 1997 and urged government leaders there to go full steam ahead in developing a fossil fuel economy. The globe was cooling, not warming, **he insisted**, while his engineers were raising drilling platforms to compensate for rising seas. “It is highly unlikely,” he said, “that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now.” Which wasn’t just wrong, but completely and overwhelmingly wrong -- as wrong as a man could be.

## **Sins of Omission**

In fact, Exxon's deceit -- its ability to discourage regulations for 20 years -- may turn out to be absolutely crucial in the planet's geological history. It's in those two decades that greenhouse gas emissions soared, as did global temperatures until, in the twenty-first century, "hottest year ever recorded" has become a tired cliché. And here's the bottom line: had Exxon told the truth about what it knew back in 1990, we might not have wasted a quarter of a century in a phony debate about the science of climate change, nor would anyone have accused Exxon of being "alarmist." We would simply have gotten to work.

But Exxon didn't tell the truth. A Yale study published last fall in the *Proceedings of the National Academy of Sciences* showed that money from Exxon and the Koch Brothers played a key role in polarizing the climate debate in this country.

The company's sins -- of omission and commission -- may even turn out to be criminal. Whether the company "lied to the public" is the question that New York Attorney General Eric Schneiderman decided to investigate last fall in a case that could make him the great lawman of our era if his investigation doesn't languish. There are various consumer fraud statutes that Exxon might have violated and it might have failed to disclose relevant information to investors, which is the main kind of lying that's illegal in this country of ours. Now, Schneiderman's got backup from California Attorney General Kamala Harris, and maybe -- if activists continue to apply pressure -- from the Department of Justice as well, though its highly publicized unwillingness to go after the big banks does not inspire confidence.

Here's the thing: all that was bad back then, but Exxon and many of its Big Energy peers are behaving at least as badly now when the pace of warming is accelerating. And it's all legal -- dangerous, stupid, and immoral, but legal.

On the face of things, Exxon has, in fact, changed a little in recent years.

For one thing, it's stopped denying climate change, at least in a modest way. Rex Tillerson, Raymond's successor as CEO, stopped telling world leaders that the planet was cooling. Speaking in 2012 at the Council on Foreign Relations, he said, "I'm not disputing that increasing CO2 emissions in the atmosphere is going to have an impact. It'll have a warming impact."

Of course, he immediately went on to say that its impact was uncertain indeed, hard to estimate, and in any event entirely manageable. His language was striking. "We will adapt to this.

Changes to weather patterns that move crop production areas around -- we'll adapt to that. It's an engineering problem, and it has engineering solutions.”

Add to that gem of a comment [this one](#): the real problem, he insisted, was that “we have a society that by and large is illiterate in these areas, science, math, and engineering, what we do is a mystery to them and they find it scary. And because of that, it creates easy opportunities for opponents of development, activist organizations, to manufacture fear.”

Right. This was in 2012, within months of floods across Asia that displaced tens of millions and during the hottest summer ever recorded in the United States, when much of our grain crop failed. Oh yeah, and just before Hurricane Sandy.

He's continued the same kind of belligerent rhetoric throughout his tenure. At last year's ExxonMobil shareholder meeting, for instance, he [said](#) that if the world had to deal with “inclement weather,” which “may or may not be induced by climate change,” we should employ unspecified “new technologies.” Mankind, he explained, “has this enormous capacity to deal with adversity.”

In other words, we're no longer talking about outright denial, just a denial that much really needs to be done. And even when the company has proposed doing something, its proposals have been strikingly ethereal. Exxon's PR team, for instance, has [discussed](#) supporting a price on carbon, which is only what economists left, right, and center have been recommending since the 1980s. But the minimal price they recommend -- somewhere in the range of \$40 to \$60 a ton -- wouldn't do much to slow down their business. After all, they insist that all their reserves are still recoverable in the context of such a price increase, which would serve mainly to make life harder for the already terminal coal industry.

But say you think it's a great idea to put a price on carbon -- which, in fact, it is, since every signal helps sway investment decisions. In that case, Exxon's done its best to make sure that what they pretend to support in theory will never happen in practice.

Consider, for instance, their political contributions. The website [Dirty Energy Money](#), organized by Oil Change International, makes it easy to track who gave what to whom. If you look at all of Exxon's political contributions from 1999 to the [present](#), a huge majority of their political harem of politicians have signed the famous Taxpayer Protection Pledge from Grover Norquist's Americans for Tax Reform that binds them to vote against any new taxes. Norquist himself

wrote Congress in late January that “a carbon tax is a VAT or Value Added Tax on training wheels. Any carbon tax would inevitably be spread out over wider and wider parts of the economy until we had a European Value Added Tax.” As he told a reporter last year, “I don’t see the path to getting a lot of Republican votes” for a carbon tax, and since he’s been called “the most powerful man in American politics,” that seems like a good bet.

The only Democratic senator in Exxon’s top 60 list was former Louisiana solon Mary Landrieu, who made a great virtue in her last race of the fact that she was “the key vote” in blocking carbon pricing in Congress. Bill Cassidy, the man who defeated her, is also an Exxon favorite, and lost no time in co-sponsoring a bill opposing any carbon taxes. In other words, you could really call Exxon’s supposed concessions on climate change a Shell game. Except it’s Exxon.

### **The Never-Ending Big Dig**

Even that’s not the deepest problem.

The deepest problem is Exxon’s business plan. The company spends huge amounts of money searching for new hydrocarbons. Given the recent plunge in oil prices, its capital spending and exploration budget was indeed cut by 12% in 2015 to \$34 billion, and another 25% in 2016 to \$23.2 billion. In 2015, that meant Exxon was spending \$63 million a day “as it continues to bring new projects on line.” They are still spending a cool \$1.57 billion a year looking for new sources of hydrocarbons -- \$4 million a day, every day.

As Exxon looks ahead, despite the current bargain basement price of oil, it still boasts of expansion plans in the Gulf of Mexico, eastern Canada, Indonesia, Australia, the Russian far east, Angola, and Nigeria. “The strength of our global organization allows us to explore across all geological and geographical environments, using industry-leading technology and capabilities.” And its willingness to get in bed with just about any regime out there makes it even easier. Somewhere in his trophy case, for instance, Rex Tillerson has an Order of Friendship medal from one Vladimir Putin. All it took was a joint energy venture estimated to be worth \$500 billion.

But, you say, that’s what oil companies do, go find new oil, right? Unfortunately, that’s precisely what we can’t have them doing any more. About a decade ago, scientists first began figuring out a “carbon budget” for the planet -- an estimate for how much more carbon we could burn before we completely overheated the Earth. There are potentially many thousands of gigatons of carbon that could be extracted from the planet if we keep exploring. The fossil fuel industry has

already **identified** at least 5,000 gigatons of carbon that it has told regulators, shareholders, and banks it plans to extract. However, we can only burn **about** another 900 gigatons of carbon before we disastrously overheat the planet. On our current trajectory, we'd burn through that "budget" in about a couple of decades. The carbon we've burned has already raised the planet's temperature a degree Celsius, and on our present course we'll burn enough to take us past two degrees in **less than 20 years**.

At this point, in fact, no climate scientist thinks that even a two-degree rise in temperature is a safe target, since one degree is already melting the ice caps. (Indeed, new data **released** this month shows that, if we hit the two-degree mark, we'll be living with drastically raised sea levels for, oh, twice as long as human civilization has existed to date.) That's why in November world leaders in Paris agreed to try to limit the planet's temperature rise to 1.5 degrees Celsius, or just under three degrees Fahrenheit. If you wanted to meet that target, however, you would need to be **done** burning fossil fuels by perhaps 2020, which is in technical terms just about now.

That's why it's wildly irresponsible for a company to be leading the world in oil exploration when, as scientists have carefully explained, we already have access to four or five times as much carbon in the Earth as we can safely burn. We have it, as it were, on the shelf. So why would we go looking for more? Scientists have even done us the useful service of **identifying precisely** the kinds of fossil fuels we should never dig up, and -- what do you know -- an awful lot of them are on Exxon's future wish list, including the tar sands of Canada, a particularly carbon-filthy, environmentally destructive fuel to produce and burn.

Even Exxon's one attempt to profit from stanching global warming has started to come apart. Several years ago, the company began a **calculated pivot** in the direction of natural gas, which produces less carbon than oil when burned. In 2009, Exxon acquired XTO Energy, a company that had mastered the art of extracting gas from shale via hydraulic fracturing. By now, Exxon has become America's **leading** fracker and a pioneer in natural gas markets around the world. The trouble with fracked natural gas -- other than what Tillerson once **called** "farmer Joe's lit his faucet on fire" -- is this: in recent years, it's become clear that the process of fracking for gas releases large amounts of methane into the atmosphere, and methane is a far more potent greenhouse gas than carbon dioxide. As Cornell University scientist Robert Howarth has recently **established**, burning natural gas to produce electricity probably warms the planet faster than burning coal or crude oil.

Exxon's insistence on finding and producing ever more fossil fuels certainly benefited its shareholders for a time, even if it cost the Earth dearly. Five of the 10 largest annual profits ever reported by any company belonged to Exxon in these years. Even the financial argument is now, however, weakening. Over the last five years, Exxon has lagged behind many of its competitors as well as the broader market, and a big reason, according to the Carbon Tracker Initiative (CTI), is its heavy investment in particularly expensive, hard-to-recover oil and gas.

In 2007, as CTI reported, Canadian tar sands and similar "heavy oil" deposits accounted for 7.5% of Exxon's proven reserves. By 2013, that number had risen to 17%. A smart business strategy for the company, according to CTI, would involve shrinking its exploration budget, concentrating on the oil fields it has access to that can still be pumped profitably at low prices, and using the cash flow to buy back shares or otherwise reward investors.

That would, however, mean exchanging Exxon's Texan-style big-is-good approach for something far more modest. And since we're speaking about what was the biggest company on the planet for a significant part of the twentieth century, Exxon seems to be set on continuing down that bigger-is-better path. They're betting that the price of oil will rise in the reasonably near future, that alternative energy won't develop fast enough, and that the world won't aggressively tackle climate change. And the company will keep trying to cover those bets by aggressively backing politicians capable of ensuring that nothing happens.

### **Can Exxon Be Pressured?**

Next to that fierce stance on the planet's future, the mild requests of activists for the last 25 years seem... well, next to pointless. At the 2015 ExxonMobil shareholder meeting, for instance, religious shareholder activists asked for the umpteenth time that the company at least make public its plans for managing climate risks. Even BP, Shell, and Statoil had agreed to that much. Instead, Exxon's management campaigned against the resolution and it got only 9.6% of shareholder votes, a tally so low it can't even be brought up again for another three years. By which time we'll have burned through... oh, never mind.

What we need from Exxon is what they'll never give: a pledge to keep most of their reserves underground, an end to new exploration, and a promise to stay away from the political system. Don't hold your breath.

But if Exxon seems hopelessly set in its ways, revulsion is growing. The investigations by the New York and California attorneys general mean that the company will have to turn over lots of documents. If journalists could find out as much as they did about Exxon's deceit in public archives, think what someone with subpoena power might accomplish. Many other jurisdictions could jump in, too.

At the Paris climate talks in December, a panel of law professors led a well-attended session on the different legal theories that courts around the world might apply to the company's deceptive behavior. When that begins to happen, count on one thing: the spotlight won't shine exclusively on Exxon. As with the tobacco companies in the decades when they were covering up the dangers of cigarettes, there's a good chance that the Big Energy companies were in this together through their trade associations and other front groups. In fact, just before Christmas, *Inside Climate News* published some revealing new documents about the role that Texaco, Shell, and other majors played in an American Petroleum Institute study of climate change back in the early 1980s. A trial would be a transformative event -- a reckoning for the crime of the millennium.

But while we're waiting for the various investigations to play out, there's lots of organizing going at the state and local level when it comes to Exxon, climate change, and fossil fuels -- everything from politely asking more states to join the legal process to politely shutting down gas stations for a few hours to pointing out to New York and California that they might not want to hold millions of dollars of stock in a company they're investigating. It may even be starting to work.

Vermont Governor Peter Shumlin, for instance, singled Exxon out in his state of the state address last month. He called on the legislature to divest the state of its holdings in the company because of its deceptions. "This is a page right out of Big Tobacco," he said, "which for decades denied the health risks of their product as they were killing people. Owning ExxonMobil stock is not a business Vermont should be in."

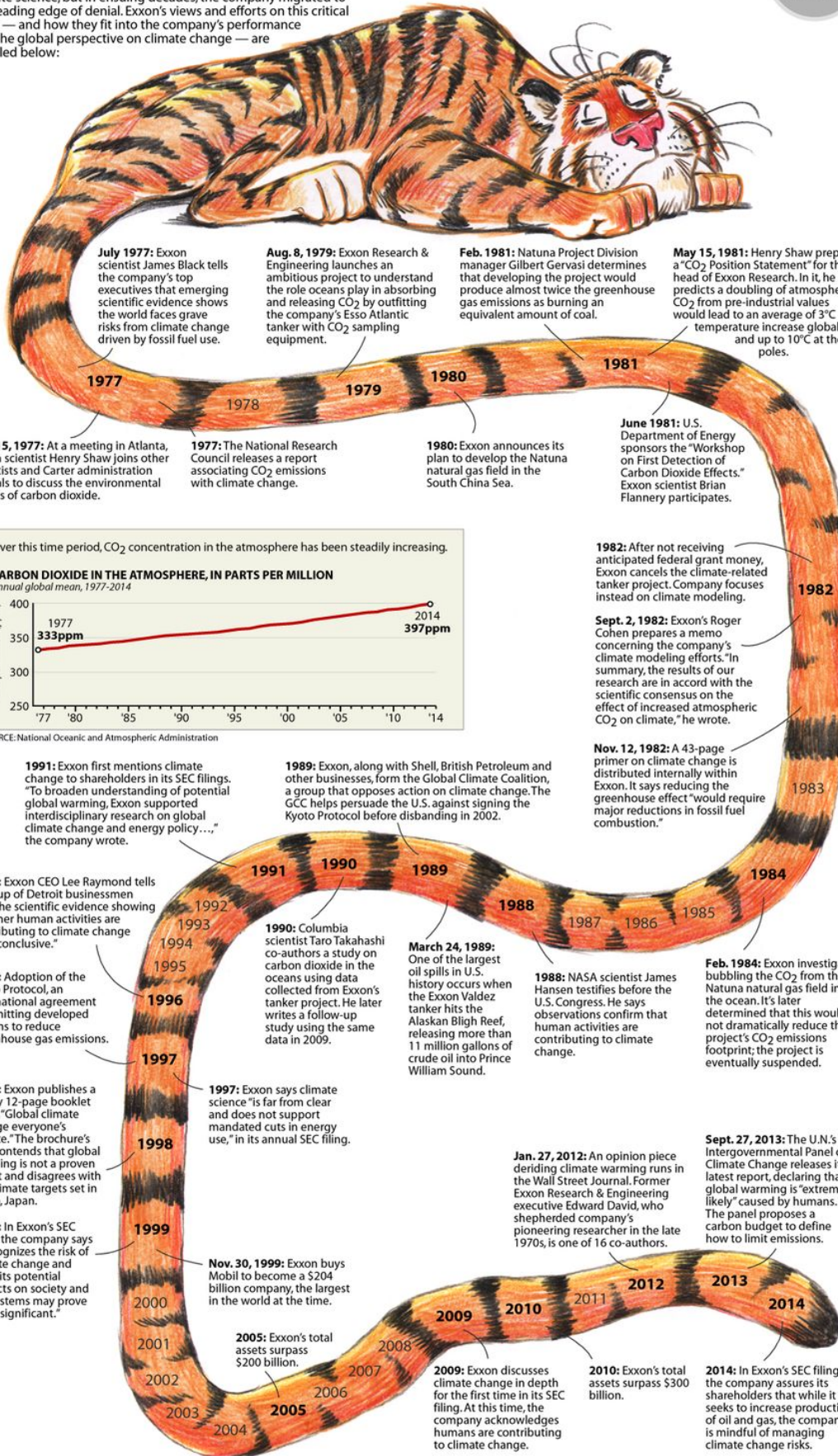
The question is: Why on God's-not-so-green-Earth-anymore would *anyone* want to be Exxon's partner?



# The Long Tail of Exxon and Climate Change



In the late 1970s, Exxon staked out a position at the forefront of climate science, but in ensuing decades, the company migrated to the leading edge of denial. Exxon's views and efforts on this critical issue — and how they fit into the company's performance and the global perspective on climate change — are detailed below:



**July 1977:** Exxon scientist James Black tells the company's top executives that emerging scientific evidence shows the world faces grave risks from climate change driven by fossil fuel use.

**Aug. 8, 1979:** Exxon Research & Engineering launches an ambitious project to understand the role oceans play in absorbing and releasing CO<sub>2</sub> by outfitting the company's Esso Atlantic tanker with CO<sub>2</sub> sampling equipment.

**Feb. 1981:** Natuna Project Division manager Gilbert Gervasi determines that developing the project would produce almost twice the greenhouse gas emissions as burning an equivalent amount of coal.

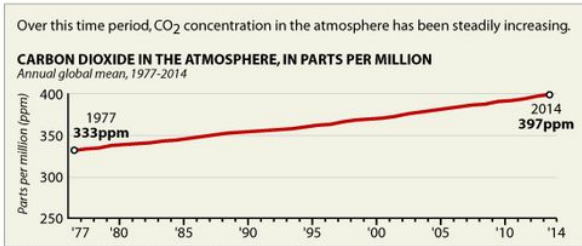
**May 15, 1981:** Henry Shaw prepares a "CO<sub>2</sub> Position Statement" for the head of Exxon Research. In it, he predicts a doubling of atmospheric CO<sub>2</sub> from pre-industrial values would lead to an average of 3°C temperature increase globally and up to 10°C at the poles.

**Oct. 15, 1977:** At a meeting in Atlanta, Exxon scientist Henry Shaw joins other scientists and Carter administration officials to discuss the environmental effects of carbon dioxide.

**1977:** The National Research Council releases a report associating CO<sub>2</sub> emissions with climate change.

**1980:** Exxon announces its plan to develop the Natuna natural gas field in the South China Sea.

**June 1981:** U.S. Department of Energy sponsors the "Workshop on First Detection of Carbon Dioxide Effects." Exxon scientist Brian Flannery participates.



**1982:** After not receiving anticipated federal grant money, Exxon cancels the climate-related tanker project. Company focuses instead on climate modeling.

**Sept. 2, 1982:** Exxon's Roger Cohen prepares a memo concerning the company's climate modeling efforts. "In summary, the results of our research are in accord with the scientific consensus on the effect of increased atmospheric CO<sub>2</sub> on climate," he wrote.

**Nov. 12, 1982:** A 43-page primer on climate change is distributed internally within Exxon. It says reducing the greenhouse effect "would require major reductions in fossil fuel combustion."

**1991:** Exxon first mentions climate change to shareholders in its SEC filings. "To broaden understanding of potential global warming, Exxon supported interdisciplinary research on global climate change and energy policy..." the company wrote.

**1989:** Exxon, along with Shell, British Petroleum and other businesses, form the Global Climate Coalition, a group that opposes action on climate change. The GCC helps persuade the U.S. against signing the Kyoto Protocol before disbanding in 2002.

**1996:** Exxon CEO Lee Raymond tells a group of Detroit businessmen that the scientific evidence showing whether human activities are contributing to climate change "is inconclusive."

**1990:** Columbia scientist Taro Takahashi co-authors a study on carbon dioxide in the oceans using data collected from Exxon's tanker project. He later writes a follow-up study using the same data in 2009.

**March 24, 1989:** One of the largest oil spills in U.S. history occurs when the Exxon Valdez tanker hits the Alaskan Bligh Reef, releasing more than 11 million gallons of crude oil into Prince William Sound.

**1988:** NASA scientist James Hansen testifies before the U.S. Congress. He says observations confirm that human activities are contributing to climate change.

**Feb. 1984:** Exxon investigates bubbling the CO<sub>2</sub> from the Natuna natural gas field into the ocean. It's later determined that this would not dramatically reduce the project's CO<sub>2</sub> emissions footprint; the project is eventually suspended.

**1997:** Adoption of the Kyoto Protocol, an international agreement committing developed nations to reduce greenhouse gas emissions.

**1997:** Exxon says climate science "is far from clear and does not support mandated cuts in energy use," in its annual SEC filing.

**1998:** Exxon publishes a glossy 12-page booklet titled, "Global climate change everyone's debate." The brochure's text contends that global warming is not a proven threat and disagrees with the climate targets set in Kyoto, Japan.

**1999:** In Exxon's SEC filing, the company says it recognizes the risk of climate change and says, "its potential impacts on society and ecosystems may prove to be significant."

**Nov. 30, 1999:** Exxon buys Mobil to become a \$204 billion company, the largest in the world at the time.

**Jan. 27, 2012:** An opinion piece deriding climate warming runs in the Wall Street Journal. Former Exxon Research & Engineering executive Edward David, who shepherded company's pioneering researcher in the late 1970s, is one of 16 co-authors.

**Sept. 27, 2013:** The U.N.'s Intergovernmental Panel on Climate Change releases its latest report, declaring that global warming is "extremely likely" caused by humans. The panel proposes a carbon budget to define how to limit emissions.

**2005:** Exxon's total assets surpass \$200 billion.

**2009:** Exxon discusses climate change in depth for the first time in its SEC filing. At this time, the company acknowledges humans are contributing to climate change.

**2010:** Exxon's total assets surpass \$300 billion.

**2014:** In Exxon's SEC filing, the company assures its shareholders that while it seeks to increase production of oil and gas, the company is mindful of managing climate change risks.

## Exxon's Own Research Confirmed Fossil Fuels' Role in Global Warming Decades Ago

**Top executives were warned of possible catastrophe from greenhouse effect, then led efforts to block solutions.**

BY NEELA BANERJEE, LISA SONG AND DAVID HASEMYER

SEP 16, 2015



*Exxon's Richard Werthamer (right) and Edward Garvey (left) are aboard the company's Esso Atlantic tanker working on a project to measure the carbon dioxide levels in the ocean and atmosphere. The project ran from 1979 to 1982. (Credit: Richard Werthamer)*

At a meeting in Exxon Corporation's headquarters, a senior company scientist named James F. Black addressed an audience of powerful oilmen. Speaking without a text as he flipped through detailed slides, Black delivered a sobering message: carbon dioxide from the world's use of fossil fuels would warm the planet and could eventually endanger humanity.

"In the first place, there 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," Black told Exxon's Management Committee, according to a written version he recorded later.

It was July 1977 when Exxon's leaders received this blunt assessment, well before most of the world had heard of the looming climate crisis.

A year later, Black, a top technical expert in Exxon's Research & Engineering division, took an updated version of his presentation to a broader audience. He warned Exxon scientists and managers that independent researchers estimated a doubling of the carbon dioxide (CO<sub>2</sub>) concentration in the atmosphere would increase average global temperatures by 2 to 3 degrees Celsius (4 to 5 degrees Fahrenheit), and as much as 10 degrees Celsius (18 degrees Fahrenheit) at the poles. Rainfall might get heavier in some regions, and other places might turn to desert.

"Some countries would benefit but others would have their agricultural output reduced or destroyed," Black said, in the written summary of his 1978 talk.

His presentations reflected uncertainty running through scientific circles about the details of climate change, such as the role the oceans played in absorbing emissions. Still, Black estimated quick action was needed. "Present thinking," he wrote in the 1978 summary, "holds that man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical."

Exxon responded swiftly. Within months the company launched its own extraordinary research into carbon dioxide from fossil fuels and its impact on the earth. Exxon's ambitious program included both empirical CO<sub>2</sub> sampling and rigorous climate modeling. It assembled a brain trust that would spend more than a decade deepening the company's understanding of an environmental problem that posed an existential threat to the oil business.

Then, toward the end of the 1980s, Exxon curtailed its carbon dioxide research. In the decades that followed, Exxon worked instead at the forefront of climate denial. It put its muscle behind efforts to manufacture doubt about the reality of global warming its own scientists had once confirmed. It lobbied to block federal and international action to control greenhouse gas emissions. It helped to erect a vast edifice of misinformation that stands to this day.

This untold chapter in Exxon's history, when one of the world's largest energy companies worked to understand the damage caused by fossil fuels, stems from an eight-month investigation by InsideClimate News. ICN's reporters interviewed former Exxon employees, scientists, and federal officials, and consulted hundreds of pages of internal Exxon documents, many of them written between 1977 and 1986, during the heyday of Exxon's innovative climate research program. ICN combed through thousands of documents from archives including those held at the University of Texas-Austin, the Massachusetts Institute of Technology and the American Association for the Advancement of Science.

The documents record budget requests, research priorities, and debates over findings, and reveal the arc of Exxon's internal attitudes and work on climate and how much attention the results received.

Of particular significance was a project launched in August 1979, when the company outfitted a supertanker with custom-made instruments. The project's mission was to sample carbon dioxide in the air and ocean along a route from the Gulf of Mexico to the Persian Gulf.

In 1980, Exxon assembled a team of climate modelers who investigated fundamental questions about the climate's sensitivity to the buildup of carbon dioxide in the air. Working with university scientists and the U.S. Department of Energy, Exxon strove to be on the cutting edge of inquiry into what was then called the greenhouse effect.

Exxon's early determination to understand rising carbon dioxide levels grew out of a corporate culture of farsightedness, former employees said. They described a company that continuously examined risks to its bottom line, including environmental factors. In the 1970s, Exxon modeled its research division after Bell Labs, staffing it with highly accomplished scientists and engineers.

In written responses to questions about the history of its research, ExxonMobil spokesman Richard D. Keil said that "from the time that climate change first emerged as a topic for scientific study and analysis in the late 1970s, ExxonMobil has committed itself to scientific, fact-based analysis of this important issue."

"At all times," he said, "the opinions and conclusions of our scientists and researchers on this topic have been solidly within the mainstream of the consensus scientific opinion of the day and our work has been guided by an overarching principle to follow where the science leads. The risk of climate change is real and warrants action."

At the outset of its climate investigations almost four decades ago, many Exxon executives, middle managers and scientists armed themselves with a sense of urgency and mission.

One manager at Exxon Research, [Harold N. Weinberg](#), shared his "grandiose thoughts" about Exxon's potential role in climate research in a March 1978 internal company memorandum that read: "This may be the kind of opportunity that we are looking for to have Exxon technology, management and leadership resources put into the context of a project aimed at benefitting mankind."

His sentiment was echoed by [Henry Shaw](#), the scientist leading the company's nascent carbon dioxide research effort.

"Exxon must develop 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," Shaw wrote to his boss [Edward E. David](#), the president of Exxon Research and Engineering in 1978. "This

team must be recognized for its excellence in the scientific community, the government, and internally by Exxon management."

### **Irreversible and Catastrophic**

Exxon budgeted more than \$1 million over three years for the tanker project to measure how quickly the oceans were taking in CO<sub>2</sub>. It was a small fraction of Exxon Research's annual \$300 million budget, but the question the scientists tackled was one of the biggest uncertainties in climate science: how quickly could the deep oceans absorb atmospheric CO<sub>2</sub>? If Exxon could pinpoint the answer, it would know how long it had before CO<sub>2</sub> accumulation in the atmosphere could force a transition away from fossil fuels.

Exxon also hired scientists and mathematicians to develop better climate models and publish research results in peer-reviewed journals. By 1982, the company's own scientists, collaborating with outside researchers, created rigorous climate models – computer programs that simulate the workings of the climate to assess the impact of emissions on global temperatures. They confirmed an emerging scientific consensus that warming could be even worse than Black had warned five years earlier.



*Between 1979 and 1982, Exxon researchers sampled carbon dioxide levels aboard the company's Esso Atlantic tanker (shown here).*

Exxon's research laid the groundwork for a 1982 corporate primer on carbon dioxide and climate change prepared by its environmental affairs office. Marked "not to be distributed externally," it contained information that "has been given wide circulation to Exxon management." In it, the company recognized, despite the many lingering unknowns, that heading off global warming "would require major reductions in fossil fuel combustion."

Unless that happened, "there are some potentially catastrophic events that must be considered," the primer said, citing independent experts. "Once the effects are measurable, they might not be reversible."

## **The Certainty of Uncertainty**

Like others in the scientific community, Exxon researchers acknowledged the uncertainties surrounding many aspects of climate science, especially in the area of forecasting models. But they saw those uncertainties as questions they wanted to address, not an excuse to dismiss what was increasingly understood.

"Models are controversial," [Roger Cohen](#), head of theoretical sciences at Exxon Corporate Research Laboratories, and his colleague, Richard Werthamer, senior technology advisor at Exxon Corporation, wrote in a May 1980 status report on Exxon's climate modeling program. "Therefore, there are research opportunities for us."

When Exxon's researchers confirmed information the company might find troubling, they did not sweep it under the rug.

"Over the past several years a clear scientific consensus has emerged," Cohen wrote in September 1982, reporting on Exxon's own analysis of climate models. It was that a doubling of the carbon dioxide blanket in the atmosphere would produce average global warming of 3 degrees Celsius, plus or minus 1.5 degrees C (equal to 5 degrees Fahrenheit plus or minus 1.7 degrees F).

"There is unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth's climate," he wrote, "including rainfall distribution and alterations in the biosphere."

He warned that publication of the company's conclusions might attract media attention because of the "connection between Exxon's major business and the role of fossil fuel combustion in contributing to the increase of atmospheric CO<sub>2</sub>."

Nevertheless, he recommended publication.

Our "ethical responsibility is to permit the publication of our research in the scientific literature," Cohen wrote. "Indeed, to do otherwise would be a breach of Exxon's public position and ethical credo on honesty and integrity."

Exxon followed his advice. Between 1983 and 1984, its researchers published their results in at least three peer-reviewed papers in *Journal of the Atmospheric Sciences* and an American Geophysical Union monograph.

David, the head of Exxon Research, **told a global warming conference** financed by Exxon in October 1982 that "few people doubt that the world has entered an energy transition away from dependence upon fossil fuels and toward some mix of renewable resources that will not pose problems of CO<sub>2</sub> accumulation." The only question, he said, was how fast this would happen.

But the challenge did not daunt him. "I'm generally upbeat about the chances of coming through this most adventurous of all human experiments with the ecosystem," David said.

Exxon considered itself unique among corporations for its carbon dioxide and climate research. The company boasted in a January 1981 report, "Scoping Study on CO<sub>2</sub>," that no other company appeared to be conducting similar in-house research into carbon dioxide, and it swiftly gained a reputation among outsiders for genuine expertise.

"We are very pleased with Exxon's research intentions related to the CO<sub>2</sub> question. This represents very responsible action, which we hope will serve as a model for research contributions from the corporate sector," said David Slade, manager of the federal government's carbon dioxide research program at the Energy Department, in a May 1979 letter to Shaw. "This is truly a national and international service."

## **Business Imperatives**

In the early 1980s Exxon researchers often repeated that unbiased science would give it legitimacy in helping shape climate-related laws that would affect its profitability.

Still, corporate executives remained cautious about what they told Exxon's shareholders about global warming and the role petroleum played in causing it, a review of federal filings shows. The company did not elaborate on the carbon problem in annual reports filed with securities regulators during the height of its CO<sub>2</sub> research.

Nor did it mention in those filings that concern over CO<sub>2</sub> was beginning to influence business decisions it was facing.

Throughout the 1980s, the company was worried about developing an enormous gas field off the coast of Indonesia because of the vast amount of CO<sub>2</sub> the unusual reservoir would release.

Exxon was also concerned about reports that synthetic oil made from coal, tar sands and oil shales could significantly boost CO<sub>2</sub> emissions. The company was banking on synfuels to meet growing demand for energy in the future, in a world it believed was running out of conventional oil.

In the mid-1980s, after an unexpected oil glut caused prices to collapse, Exxon cut its staff deeply to save money, including many working on climate. But the climate change problem remained, and it was becoming a more prominent part of the political landscape.

"Global Warming Has Begun, Expert Tells Senate," declared the headline of a June 1988 New York Times article describing the Congressional testimony of NASA's James Hansen, a leading climate expert. Hansen's statements compelled Sen. Tim Wirth (D-Colo.) to declare during the hearing that "Congress must begin to consider how we are going to slow or halt that warming trend."

With alarm bells suddenly ringing, Exxon started financing efforts to amplify doubt about the state of climate science.

Exxon helped to found and lead the Global Climate Coalition, an alliance of some of the world's largest companies seeking to halt government efforts to curb fossil fuel emissions. Exxon used the American Petroleum Institute, right-wing think tanks, campaign contributions and its own lobbying to push a narrative that climate science was too uncertain to necessitate cuts in fossil fuel emissions.

As the international community moved in 1997 to take a first step in curbing emissions with the Kyoto Protocol, Exxon's chairman and CEO [Lee Raymond](#) argued to stop it.

"Let's agree there's a lot we really don't know about how climate will change in the 21st century and beyond," Raymond said in his speech before the World Petroleum Congress in Beijing in October 1997.

"We need to understand the issue better, and fortunately, we have time," he said. "It is highly unlikely that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now."

Over the years, several Exxon scientists who had confirmed the climate consensus during its early research, including Cohen and David, took Raymond's side, publishing views that ran contrary to the scientific mainstream.

## **Paying the Price**

Exxon's about-face on climate change earned the scorn of the scientific establishment it had once courted.

In 2006, the Royal Society, the United Kingdom's science academy, sent a harsh letter to Exxon accusing it of being "inaccurate and misleading" on the question of climate uncertainty. Bob Ward, the Academy's senior manager for policy communication, demanded that Exxon stop giving money to dozens of organizations he said were actively distorting the science.

In 2008, under mounting pressure from activist shareholders, the company announced it would end support for some prominent groups such as those Ward had identified.



Still, the millions of dollars Exxon had spent since the 1990s on climate change deniers had long surpassed what it had once invested in its path-breaking climate science aboard the *Esso Atlantic*.

"They spent so much money and they were the only company that did this kind of research as far as I know," Edward Garvey, who was a key researcher on Exxon's oil tanker project, said in a recent interview with InsideClimate News and Frontline. "That was an opportunity not just to get a place at the table, but to lead, in many respects, some of the discussion. And the fact that they chose not to do that into the future is a sad point."

Michael Mann, director of the Earth System Science Center at Pennsylvania State University, who has been a frequent target of climate deniers, said that inaction, just like actions, have consequences. When he recently spoke to InsideClimate News, he was unaware of this chapter in Exxon's history.

"All it would've taken is for one prominent fossil fuel CEO to know this was about more than just shareholder profits, and a question about our legacy," he said. "But now because of the cost of inaction—what I call the 'procrastination penalty'—we face a far more uphill battle."

## Exxon Believed Deep Dive Into Climate Research Would Protect Its Business

Outfitting its biggest supertanker to measure the ocean's absorption of carbon dioxide was a crown jewel in Exxon's research program.

NEELA BANERJEE, LISA SONG, DAVID HASEMYER

SEP 17, 2015



Researchers conducted Exxon's first climate-related project aboard the Esso Atlantic tanker, pictured here, between 1979 and 1982.

In 1981, 12-year-old Laura Shaw won her seventh-grade science fair at the Solomon Schechter Day School in Cranford, N.J. with a project on the greenhouse effect.

For her experiment, Laura used two souvenir miniatures of the Washington Monument, each with a thermometer attached to one side. She placed them in glass bowls and covered one with

plastic wrap – her model of how a blanket of carbon dioxide traps the reflected heat of the sun and warms the Earth. When she turned a lamp on them, the thermometer in the plastic-covered bowl showed a higher temperature than the one in the uncovered bowl.

If Laura and her two younger siblings were unusually well-versed in the emerging science of the greenhouse effect, as global warming was known, it was because their father, **Henry Shaw**, had been busily tracking it for Exxon Corporation.



*Henry Shaw, a former Exxon scientist, and his son David Shaw. (Credit: Family of Henry Shaw)*

"I knew what the greenhouse effect was before I knew what an actual greenhouse was," David Shaw, Henry's son, said in a recent interview.

Henry Shaw, who died in 2003, was one of the Exxon scientists engaged in an ambitious quest to comprehend the potentially devastating effects that carbon dioxide emissions could have on the climate. From the late 1970s to the mid-80s, Exxon scientists worked at the cutting edge of climate change research, documents examined by InsideClimate News show. This history of that research emerged from an eight-month investigation by InsideClimate News.

Exxon documents show that top corporate managers were aware of their scientists' early conclusions about carbon dioxide's impact on the climate. They reveal that scientists warned management that policy changes to address climate change might affect profitability. After a decade of frank internal discussions on global warming and conducting unbiased studies on it,

Exxon changed direction in 1989 and spent more than 20 years discrediting the research its own scientists had once confirmed.

After reading the first chapter of InsideClimate News' series on Exxon's carbon dioxide research, the company declined to answer specific questions. In an email, Exxon spokesman Richard D. Keil said he would no longer respond to inquiries from InsideClimate News, and added, "ExxonMobil scientists have been involved in climate research and related policy analysis for more than 30 years, yielding more than **50 papers in peer-reviewed publications.**"

## **Building the Team**

Henry Shaw was part of an accomplished group at Exxon tasked with studying the greenhouse effect. In the mid-70s, documents show that Shaw was responsible for seeking out new projects that were "of national significance," and that could win federal funding. Others included **Edward E. David, Jr.**, a former science advisor to President Richard Nixon, and **James F. Black**, who worked on hydrogen bomb research at Oak Ridge National Laboratory in the 1950s.

Black, who died in 1988, was among the first Exxon scientists to become acquainted with the greenhouse effect. Esso, as Exxon was known when he started, allowed him to pursue personal scientific interests. Black was fascinated by the idea of intentionally modifying weather to improve agriculture in arid countries, said his daughter, Claudia Black-Kalinsky.

"He believed that big science could save the world," she said. In the early 1960s, Black helped draft a National Academy of Sciences report on weather and climate modification. Published in 1966, it said **the buildup of carbon dioxide in the atmosphere** "agrees quite well with the rate of its production by man's consumption of fossil fuels."

In the same period, a report for President Lyndon Johnson from the President's Science Advisory Council in 1965 said the burning of fossil fuels "may be sufficient to produce measurable and perhaps marked changes in climate" by the year 2000.

By 1977, Black had become a top technical expert at Exxon Research & Engineering, a research hub based in Linden, N.J., and a science advisor to Exxon's top management. **That year he made a presentation** to the company's leading executives warning that carbon dioxide accumulating in the upper atmosphere would warm the planet and if the CO<sub>2</sub> concentration continued to rise, it could harm the environment and humankind.

"The management committee consisted of the top level senior managers at Exxon. The chairman, the president, the senior vice presidents, corporate wide," **N. Richard Werthamer**,

who worked at Exxon Research, said in a recent interview with InsideClimate News. "The management committee only has a limited amount of time and they're only going to deal with issues that are of relevance to the corporation as a whole. They're not interested in science per se, they are interested in the implications, so it was very significant."

In those years, the evidence of global warming justified neither panic nor complacency. "A lively sense of urgency," is what the National Academy of Sciences (NAS) **called for in a 1977 report** that contained a comprehensive survey of what was understood about global warming at that time.

The NAS report said that it would be understandable if the uncertainties of climate science elicited a cautious response from researchers and policymakers. But "if the decision is postponed until the impact of man-made climate changes has been felt, then, for all practical purposes, the die will already have been cast," it concluded.

Shaw heard these conclusions in October 1977 at a meeting in Atlanta organized by scientists and officials from the Carter administration who had formed a "study group on global environmental effects of carbon dioxide," **he told Exxon colleagues in a memo two weeks later.**

The NAS report had concluded that the climatic effects of rising carbon dioxide "may be the primary limiting factor on energy production from fossil fuels over the next few centuries," Shaw wrote, quoting the report's central conclusion almost verbatim.

Along with an awareness of the science, Shaw gained a sense of opportunity, Exxon documents show. The U.S. Energy Department, which had only been created in 1977 in response to a global oil shortage, was launching a research program into carbon dioxide's effects and planned to disburse about \$9 million to research laboratories, Shaw learned.

At the time, two major uncertainties plagued climate science: how much of the CO<sub>2</sub> in the air came from fossil fuels as opposed to deforestation? And how quickly could the oceans absorb atmospheric CO<sub>2</sub>? The scientists at the Atlanta meeting considered it crucial to investigate those questions immediately, Shaw wrote.

Both issues were vital to the oil industry's future. If deforestation played as great a role as fossil fuels in CO<sub>2</sub> accumulation, then responsibility for reducing carbon dioxide emissions would not fall entirely on the energy industry. If the oceans could slow the greenhouse effect by absorbing more CO<sub>2</sub>, there would be time before the fossil fuel industry had to adjust.

In a **memo to a colleague in March 1978**, one of Shaw's bosses, **Harold N. Weinberg**, wrote: "I propose that Exxon be the initiator of a worldwide 'CO<sub>2</sub> in the Atmosphere' R&D program...What would be more appropriate than for the world's leading energy company and leading oil company [to] take the lead in trying to define whether a long-term CO<sub>2</sub> problem really exists, and if so, what counter measures would be appropriate."

GENERAL - 154-1-1B  
INTER-OFFICE CORRESPONDENCE

DATE 3/7/78

TO  E. J. Gornowski	REFERENCE
FROM  H. N. Weinberg	SUBJECT  CO <sub>2</sub>

Ed:

The following are some grandiose thoughts on what we, Exxon, might undertake to do in connection with the "CO<sub>2</sub> problem." I propose that Exxon be the initiator of a worldwide "CO<sub>2</sub> in the Atmosphere" R&D program along the lines of the International Geophysical Year concept. This may be the kind of opportunity that we are looking for to have Exxon technology, management and leadership resources put into the context of a project aimed at benefitting mankind. What would be more appropriate than for the world's leading energy company and leading oil company take the lead in trying to define whether a long-term CO<sub>2</sub> problem really exists and, if so, what counter measures would be appropriate.

But Weinberg's vision proved too ambitious for Exxon.

Exxon Research "considered an independent research program but concluded that the amount of effort required and the scope of disciplines involved made it impractical for a single institution to attack this problem alone," Walter R. Eckelmann, an executive at the Science & Technology Department at Exxon headquarters in New York wrote to a senior vice president.

Eckelmann's letter was one of many instances when Exxon's CO<sub>2</sub>research would reach beyond Exxon Research & Engineering in New Jersey and to executives at the company's New York headquarters, documents show.

Exxon's extensive research was driven by the threat accumulating CO<sub>2</sub> posed to the company's core business, according to participants and documents.

"My guess is they were looking for what might happen if we keep burning fossil fuels; what that would mean to them," said **Taro Takahashi**, an adjunct professor at Columbia University's

Lamont-Doherty Earth Observatory. Takahashi, who spent his career studying climate change, collaborated on a research project with Exxon in the late 1970s to early 80s and used data from the research in several studies he later published in peer-reviewed journals.

The project he worked on—outfitting an ocean tanker to measure the ocean's absorption of carbon dioxide—was a crown jewel in Exxon's research program.

## **Groundbreaking Experiments**

Bold research projects were not uncommon at Exxon, which in the 1970s considered gradually shifting from oil to become a diversified energy company. Through its research units, Exxon explored ways to encourage more efficient consumption of petroleum and a wide range of alternative fuels. After company scientist Elliot Berman found a way to slash the cost of making photovoltaic solar cells by 80 percent, Exxon's chairman Clifton Garvin publicized how he heated his family swimming pool with solar power to show support for energy diversification.

To nudge greater innovation, Garvin hired Edward E. David, Jr. in 1977 to run Exxon Research. David had spent two decades at Bell Labs, a leader in the blue-sky research that led to big leaps in technology, and eventually became its director of research. While serving as Nixon's science advisor from 1970-'73, White House staff taught him about climate science as part of a report on energy and electricity issues, one former staff member recalled.

At Exxon, David opened the door wide to studying carbon dioxide.

In a letter to David and 14 other Exxon Research executives in December 1978, Shaw spelled out why Exxon should take on carbon dioxide research—specifically, with the ambitious ocean-sampling initiative.

"The rationale for Exxon's involvement and commitment of funds and personnel is based on our need to assess the possible impact of the greenhouse effect on Exxon business," Shaw wrote. "Exxon must develop 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.

"We see no better method to acquire the necessary reputation than by attacking one of the major uncertainties in the global CO<sub>2</sub> balance, i.e., the flux to the oceans and providing the necessary data."

Scientists knew the oceans had some ability to absorb CO<sub>2</sub> and potentially neutralize climate change. Any CO<sub>2</sub> that made its way from the atmosphere into the deep oceans—more than 50 to 100 feet below the surface—would be sequestered away for hundreds of years. But they also

knew the rate of absorption was limited, and determining the exact rate was crucial for understanding the oceans' ability to delay the greenhouse effect.

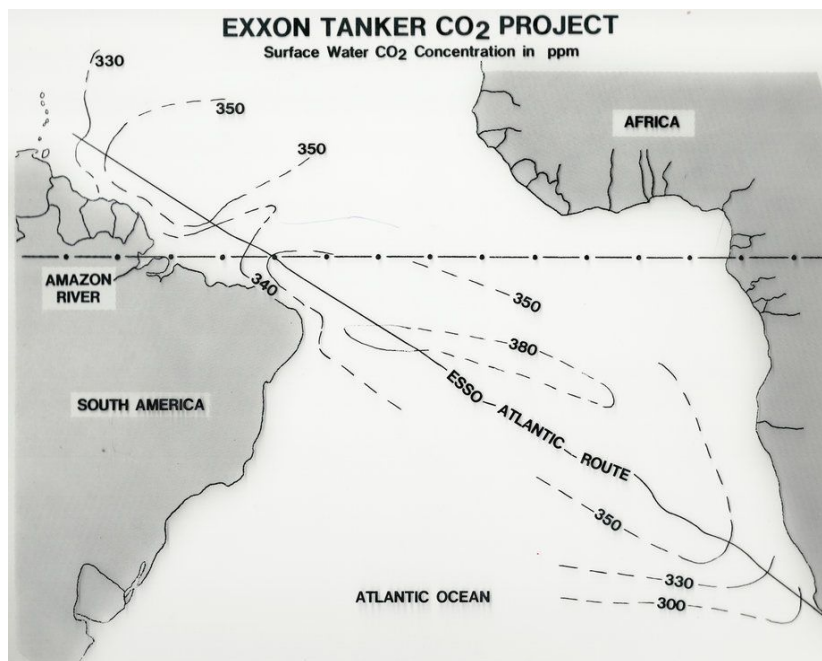
## Exxon's Floating Lab

Exxon delved into the oceans' role by installing a state-of-the-art lab aboard the *Esso Atlantic*, one of the biggest supertankers of the time.

Exxon planned to gather atmospheric and oceanic CO<sub>2</sub> samples along the *Esso Atlantic's* route from the Gulf of Mexico to the Persian Gulf. If the sensors revealed a deep enough oceanic sink, or absorption, the fossil fuel industry might have more time before it had to make tough decisions about its role in warming the planet.

"We couldn't account for everything because the exchanges between the atmosphere and the oceans weren't fully understood," Edward Garvey, Shaw's main researcher on the tanker project, said in an interview. "Our goal was to complete the carbon cycle to understand where global carbon production would end up and then make forecasts of how the system would react in the future."

The experiment began on August 8, 1979, when Garvey oversaw the equipping of the *Esso Atlantic*, which was docked by the Lago Refinery in Aruba, an island in Dutch West Indies.





*The route of Exxon's Esso Atlantic tanker.*

Werthamer, Shaw's boss in 1980-81, said the project wouldn't have happened without Shaw's initiative.

"Henry Shaw was a very forceful guy, quiet, he didn't hit you over the head, but he presented his case in ways that made it hard to not agree with it," Werthamer said in a recent interview. "He had the political savvy to put it over and the technical savvy to make it happen."

While the company had the wherewithal to carry out the study on the oceans, it lacked the expertise. So Exxon recruited two experts, **Wallace Broecker and Takahashi**, his colleague at Columbia University's Lamont-Doherty Geological Observatory.

Takahashi said he made it clear that he and **Broecker** would not compromise their scientific integrity. "The one condition that was not negotiable was we shall publish our results to the open public no matter the results," he said in an interview.

Exxon scientists and managers involved with the project agreed.

"The tanker project was intended to provide valid, legitimate, scientific data, unassailable hopefully, on key questions in atmospheric chemistry [of] CO<sub>2</sub> emissions," Werthamer said. "Henry's additional goal was to make Exxon a credible participant in that research and in the dialogue that would inevitably follow...He wanted Exxon to be respected as a valid player and have Exxon's opinions solicited, and participate in discussions on policy, rather than have the issue suddenly dumped with Exxon's back turned."

Responding to ICN's questions about the tanker research last week, Exxon spokesman Richard Keil said it "was actually aimed at increasing understanding of the marine carbon cycle – it had nothing to do with CO<sub>2</sub> emissions."

But from the beginning of the research, documents show, its participants described it differently.

In a memo to Harold Weinberg on July 3, 1979, Shaw described in detail the tanker's route and its instruments, explaining that "this will provide information on the possible growth of CO<sub>2</sub> in the atmosphere."

In a **November 1979 memo** to Weinberg, he wrote, "It behooves us to start a very aggressive defensive program in the indicated areas of atmospheric science and climate because there is a good probability that legislation affecting our business will be passed."

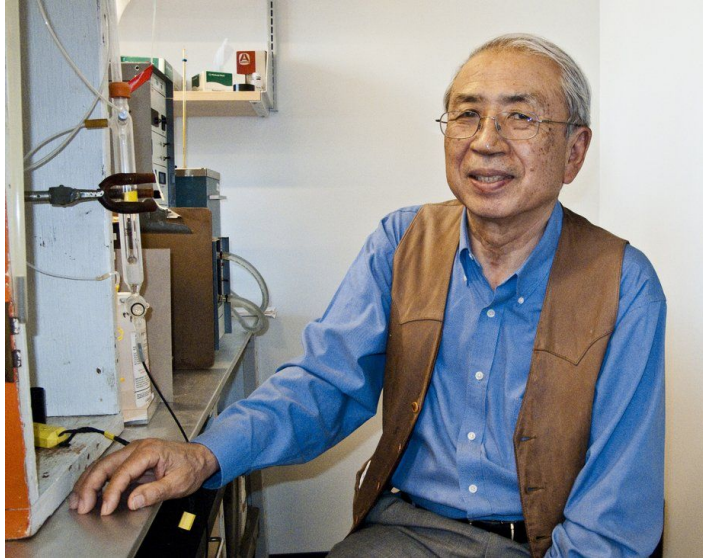
Depending on its findings, the research might provide an escape valve from the carbon problem, or point to some new direction in energy.

The research "could well influence Exxon's view about the long-term attractiveness of coal and synthetics relative to nuclear and solar energy" David wrote in a November 1979 letter to senior vice president **George T. Piercy**.

Exxon's enthusiasm for the project flagged in the early '80s when federal funds fell through. Exxon Research cancelled the tanker project in 1982, but not before Garvey, Shaw and other company engineers **published an initial paper in a highly specialized journal** on the project's methodology.

"We were anxious to get the word out that we were doing this study," Garvey said of the paper, which did not reach sweeping conclusions. "The paper was the first of what we hoped to be many papers from the work," he said in a recent email. But the other publications never materialized.

Takahashi later **co-authored a study in 1990** partially based on the tanker data that said land-based ecosystems—boreal forests, for example—absorbed more atmospheric CO<sub>2</sub> than the oceans. He used Exxon's tanker records again in 2009, **in an updated study that compiled** 30 years of oceanic CO<sub>2</sub> data from dozens of reports. This time, his team concluded the oceans absorb only about 20 percent of the CO<sub>2</sub> emitted annually from fossil fuels and other human activities. The paper earned Takahashi a "Champions of the Earth" prize from the United Nations.



*Columbia scientist Taro Takahashi helped review and process the climate-related data collected aboard Exxon's Esso Atlantic tanker. (Credit: Taro Takahashi)*

Other research ideas that bubbled up in those days were even more imaginative.

Shaw and Garvey sketched out a second project to determine how much carbon dioxide in the atmosphere was attributable to fossil fuels as compared to deforestation. Shaw's team proposed measuring the carbon isotopes—a chemical fingerprint—in 100 bottles of vintage French wine over time. To ensure data quality, they would only sample wine from long-established vineyards that kept careful records of temperatures and growing conditions. In the same file was a New York Times review by wine critic Frank Prial of classic Bordeaux vintages, including a \$300 Lafite-Rothschild bottle from 1945.



"The C-isotope studies of biological material also appear useful and novel," David Slade, the head of the Energy Department's carbon dioxide research, wrote to Shaw in a May 1979 letter. "We congratulate (with some envy) Exxon's resourcefulness in selecting aged wines as the biological material."

### **Implications Become Clearer**


As Exxon worked to reduce the uncertainties of climate science, its employees developed a sophisticated understanding of the potential effects of rising CO<sub>2</sub> concentrations, documents show. They understood that the Earth's poles would warm more quickly than the rest of the

planet, and how a reduction in ice and snow cover would change the planet's ability to reflect sunlight.


**What Exxon Understood About Climate Science**  
In various letters and memos from the late 1970s to mid-1980s, Exxon scientists, managers and executives discussed these climate change concepts and potential impacts:




**Albedo:** reduced ice and snow cover would speed up warming by limiting the planet's ability to reflect sunlight




**The carbon cycle:** how carbon moves between the air, oceans and land helps determine the rate of CO<sub>2</sub> accumulation in the atmosphere




**Sea level rise:** melting ice caps would raise sea levels around the globe




**Increased human migration:** a consequence of agricultural changes and other global warming impacts




**Changing precipitation patterns:** some areas will receive additional rainfall, while other places will turn into desert



**Agricultural impacts:** changing agricultural patterns could lead to global consequences



**Human health impacts:** a result of changing temperatures and ecosystem impacts



**Increased pests and weeds:** caused by shifting ecosystems

SOURCE: InsideClimate News research

PAUL HORN / InsideClimate News

They also discussed among themselves and with corporate executives other potential effects of climate change, including an increase in weeds, pests, and human migration, the documents show.

Some of the company's highest-ranking executives were told of the studies and of estimates about when the impact of global warming might be felt. On November 9, 1979, Edward David wrote a three-page letter to senior vice president Piercy explaining the importance of the ocean investigations.

In January 1980, Science & Technology's Eckelmann wrote to senior vice president **M.E.J. "Morey" O'Loughlin** that his unit "feels that the build-up of carbon dioxide in the atmosphere is a potentially serious problem requiring the results of a huge worldwide research effort before quantitative predictions can be reached on the probabilities and timing of world climate changes."

Piercy and O'Loughlin seemed particularly interested in following the emerging climate science, **internal documents indicate**. In a memo to Werthamer and Shaw in June 1980, Weinberg

wrote that Piercy "questioned him closely" at an Exxon meeting about the movement of carbon dioxide between the atmosphere and the oceans.

### **Outside Experts Take Notice**

During this time, Exxon was building a reputation for expertise on carbon dioxide, prompting government and industry to seek its input on the issue. As early as 1979, the American Petroleum Institute formed a CO<sub>2</sub> and Climate Task Force, and Exxon sent Shaw to the group's meetings as its representative, according to documents. The other industry members were Sohio, Texaco, and Shell. They often met in a conference room at LaGuardia Airport.

Shaw was a regular on advisory committees and government task forces, rubbing shoulders with many leading climate scientists, including NASA's James Hansen and Columbia's Stephen Schneider, whom Exxon even considered as a possible recruit, according to one document.

U.S. government officials expressed their appreciation to Exxon for the company's contributions, calling it a valued partner.

In a letter to Shaw in May 1979, David Slade, the head of the Energy Department's Carbon Dioxide and Climate Research program, wrote: "This represents very responsible action, which we hope will serve as a model for research contributions from the corporate sector."

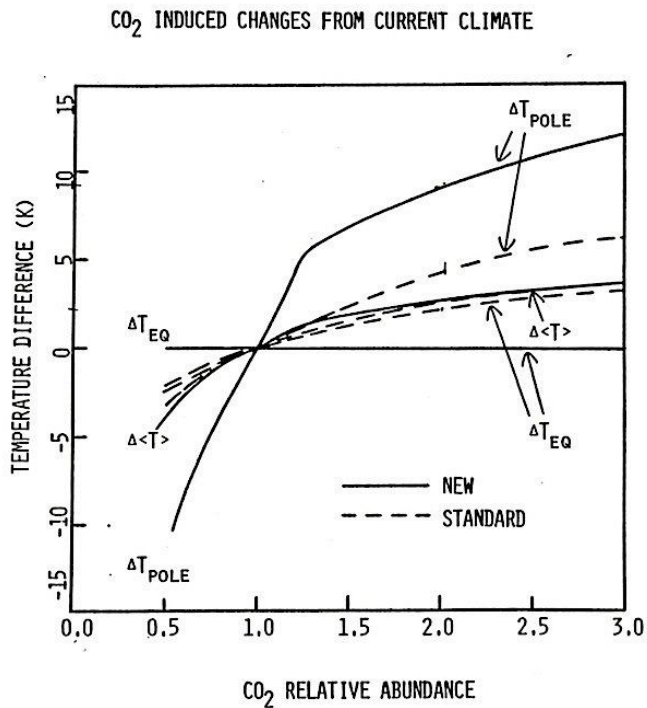
Two years later, Slade's successor in President Ronald Reagan's administration, Frederick A. Koomanoff, wrote: "We feel that Exxon should be commended for their initiatives to investigate the carbon dioxide issue."

# Exxon Confirmed Global Warming Consensus in 1982 with In-House Climate Models

The company chairman would later mock climate models as unreliable while he campaigned to stop global action to reduce fossil fuel emissions.

LISA SONG, NEELA BANERJEE, DAVID HASEMYER

SEP 22, 2015



In 1982, Exxon scientist Andrew Callegari put together a presentation on Exxon modeling results including the chart pictured here.

Steve Knisely was an intern at Exxon Research and Engineering in the summer of 1979 when a vice president asked him to analyze how global warming might affect fuel use.

"I think this guy was looking for validation that the greenhouse effect should spur some investment in alternative energy that's not bad for the environment," Knisely, now 58 and a partner in a management consulting company, recalled in a recent interview.

**Knisely projected** that unless fossil fuel use was constrained, there would be "noticeable temperature changes" and 400 parts per million of carbon dioxide (CO<sub>2</sub>) in the air by 2010, up from about 280 ppm before the Industrial Revolution. The summer intern's predictions turned out to be very close to the mark.

Knisely even concluded that the fossil fuel industry might need to leave 80 percent of its recoverable reserves in the ground to avoid doubling CO<sub>2</sub> concentrations, a notion **now known as the carbon budget**. In 2013, the United Nations' Intergovernmental Panel on Climate Change formally endorsed the idea.

"The potential problem is great and urgent," Knisely wrote. "Too little is known at this time to recommend a major U.S. or worldwide change in energy type usage but it is very clear that immediate research is necessary."

The report, which circulated within the company through the early 1980s, reflected Exxon's growing need to understand when the climate implications of increased CO<sub>2</sub> emissions would begin to spur policy changes.

So Exxon (now ExxonMobil) shelved an ambitious but costly program that sampled carbon dioxide in the oceans—the centerpiece of its climate research in the 1970s—as it created its own computerized climate models. The models aimed to simulate how the planet's climate system would react to rising CO<sub>2</sub> levels, relying on a combination of mathematics, physics, and atmospheric science.

Through much of the 1980s, Exxon researchers worked alongside university and government scientists to generate objective climate models that yielded papers published in peer-reviewed journals. Their work confirmed the emerging scientific consensus on global warming's risks.

Yet starting in 1989, Exxon leaders went down a different road. They repeatedly argued that the uncertainty inherent in computer models makes them useless for important policy decisions. Even as the models grew more powerful and reliable, Exxon publicly derided the type of work its own scientists had done. The company continued its involvement with climate research, but its reputation for objectivity began to erode as it campaigned internationally to cast doubt on the science.

This **eight-month InsideClimate News investigation** details Exxon's early research into global warming, based on hundreds of pages of internal documents and interviews with former employees and scientists. The company declined to provide comment or answer questions for this article.



*Brian Flannery. (Credit: © Academia Engelberg Foundation)*

One scientist who crossed over from academia to Exxon Research was **Brian Flannery**, an associate professor of astronomy from Harvard and an expert in mathematical modeling. Flannery joined the company in 1980. At about the same time, Exxon hired **Andrew Callegari**, a mathematics professor at New York University. When the company shifted its focus to modeling in 1981, Callegari became head of the company's CO<sub>2</sub> research, replacing **Henry Shaw**, who had steered the ocean sampling project.

Callegari approached **Martin Hoffert**, an old colleague at NYU, to work with the Exxon team as a consultant on modeling. Hoffert jumped at the chance. He was already deeply concerned about the consequences of atmospheric carbon and saw the opportunity as an "all hands on deck" approach to heading off an environmental disaster.

"We were all interested as geek scientists at the time," Hoffert, who is now retired, recalled in a recent interview. "There were no divisions, no agendas."

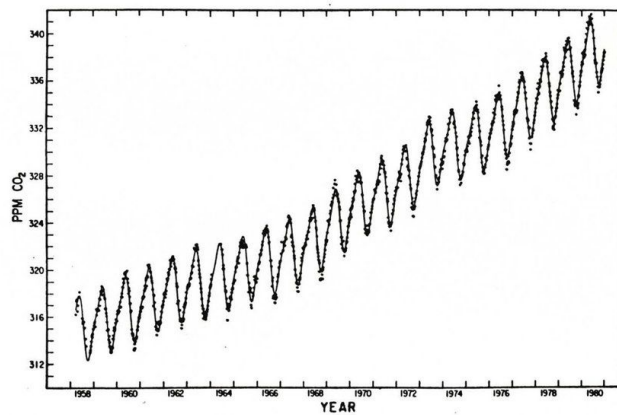


Flannery and Callegari were "very legitimate research guys," Hoffert said. "We talked about the politics of this stuff a lot, but we always separated the politics from the science."

## Climate 'Catastrophe' Foreseen

By 1981, Exxon scientists were no longer questioning whether the buildup of CO<sub>2</sub> would cause the world to heat up. Through their own studies and their participation in government-sponsored conferences, company researchers had concluded that rising CO<sub>2</sub> levels could create catastrophic impacts within the first half of the 21st century if the burning of oil, gas and coal wasn't contained.

CONCENTRATION OF ATMOSPHERIC CO<sub>2</sub> AT MAUNA LOA OBSERVATORY, HAWAII



A chart showing the increase in the growth rate of carbon dioxide measurements in Hawaii. Exxon scientists shared this chart in their documents discussing the company's climate modeling efforts.

"When I arrived there, I was quite surprised to discover that people in the research lab were very aware of the increase in the growth rate of carbon dioxide measurements in Hawaii [at the Mauna Loa observatory]," Morrel H. Cohen, a senior scientist at Exxon Research from 1981 to 1996, said in a recent interview. "They were very aware of the greenhouse effect."

As the researchers alerted Exxon's upper management about the CO<sub>2</sub> problem, the scientists worked to provide better estimates of when the warming trend would create noticeable damage, and how large the impacts might be.

One scientist, Werner Glass, wrote an analysis in 1981 for a senior vice president that said the rise in global temperatures would begin to be noticed in a few decades. But Glass hedged his bet, saying the magnitude of the change would be "well short of catastrophic" in the early years.

Exxon manager **Roger Cohen** saw things differently.

"I think that this statement may be too reassuring," Cohen, director of the Theoretical and Mathematical Sciences Laboratory at Exxon Research, **wrote in an August 18, 1981 memo to Glass.**

GENERAL - 184-1-1B  
INTER-OFFICE CORRESPONDENCE

DATE August 18, 1981

TO	REFERENCE
W. Glass	
FROM	SUBJECT
R. W. Cohen	

I have looked over the draft of the EED reply to the request from O'Loughlin. The only real problem I have is with the second clause of the last sentence in the first paragraph: "but changes of a magnitude well short of catastrophic..." I think that this statement may be too reassuring. Whereas I can agree with the statement that our best guess is that observable effects in the year 2030 are likely to be "well short of catastrophic", it is distinctly possible that the CPD scenario will later produce effects which will indeed be catastrophic (at least for a substantial fraction of the earth's population). This is because the global ecosystem in 2030 might still be in a transient, headed for much more significant effects after time lags perhaps of the order of decades. If this indeed turns out to be case, it 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 CO<sub>2</sub> effect. The effects of such a recognition on subsequent fossil fuel combustion are unpredictable, but one can say that predictions based only on our knowledge of availability and economics become hazardous.

He called it "distinctly possible" that the projected warming trend after 2030 "will indeed be catastrophic (at least for a substantial fraction of the earth's population)."

Cohen continued: "This is because the global ecosystem in 2030 might still be in a transient, headed for much significant effects after time lags perhaps of the order of decades."

Cohen demonstrated a sophisticated understanding of the climate system. He recognized that even if the impacts were modest in 2030, the world would have locked in enough CO<sub>2</sub> emissions to ensure more severe consequences in subsequent decades. By 2030, he warned, the damage could be irreversible.

## **Unanimous Agreement**

"Over the past several years a clear scientific consensus has emerged regarding the expected climatic effects of increased atmospheric CO<sub>2</sub>," **Cohen wrote to A.M. Natkin** of Exxon Corporation's Science and Technology Office in 1982. "The consensus is that a doubling of atmospheric CO<sub>2</sub> from its pre-industrial revolution value would result in an average global temperature rise of  $(3.0 \pm 1.5)^{\circ}\text{C}$ ." (Equal to  $5.4 \pm 2.7^{\circ}\text{F}$ ).

"There is unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth's climate, including rainfall distribution and alterations in the biosphere."

Exxon's own modeling research confirmed this and the company's results were later published in at least three peer-reviewed science articles. Two of them were **co-authored by Hoffert**, and a third was **written entirely by Flannery**.

Exxon's modeling experts also explained away the less-dire predictions of a 1979 study led by Reginald Newell, a prominent atmospheric scientist at the Massachusetts Institute of Technology. **Newell's model projected** that the effects of climate change would not be as severe as most scientists were predicting.

Specifically, Newell and a co-author from the Air Force named Thomas Dopplack challenged the prevailing view that a doubling of the earth's CO<sub>2</sub> blanket would raise temperatures about 3°C (5°F)— a measure known as climate sensitivity. Instead, they said the earth's true climate sensitivity was roughly less than 1°C (2°F).

They based their results on a mechanism called "evaporative buffering," in which excess warming at the equator causes increased evaporation, cooling the planet in the same way that perspiration cools a marathon runner.

**Exxon's research team disagreed.** Even if the mechanism cooled the equator, the worldwide warming would still be higher, they found, according to the researchers' peer-reviewed studies.

"In summary, the results of our research are in accord with the scientific consensus on the effect of increased atmospheric CO<sub>2</sub> on climate," Cohen wrote in the 1982 letter he sent to Natkin.



*Martin Hoffert (Credit: NASA)*

Exxon's science turned out to be spot on, and the company's early modeling projections still hold up more than 30 years later, Hoffert said in an email to InsideClimate News. The Arctic's rapid warming and the extreme vulnerability of Antarctica's ice sheets are "consistent with the results of our theory which predicted them before they happened," Hoffert wrote.

Exxon "should be taking credit for their role in developing useful model predictions of the pattern of global warming by their research guys, as opposed to their denialist lobbyists saying global warming from fossil fuel burning doesn't exist or is at best 'unproven,'" he wrote.

### **Spreading the Word, Internally**

The conclusions of Exxon's climate modeling were being circulated broadly within the company in the 1980s.

Marvin B. Glaser, an Environmental Affairs Manager at Exxon, **distributed a 43-page primer** on climate change on Nov. 12, 1982.

In a cover letter to 15 Exxon executives and managers, Glaser said the document provided guidance "on the CO<sub>2</sub> 'Greenhouse' Effect which is receiving increased attention in both the scientific and popular press as an emerging environmental issue." He continued: "The material

has been given wide circulation to Exxon management and is intended to familiarize Exxon personnel with the subject."

"However, it should be restricted to Exxon personnel and not distributed externally," he wrote.

Glaser's primer drew from the best research of the time, including Exxon's, to explain how global temperatures would rise considerably by the end of the 21<sup>st</sup> century. Because of the warming, "there are some potentially catastrophic events that must be considered," including sea level rise from melting polar ice sheets, according to the document. It noted that some scientific groups were concerned "that once the effects are measurable, they might not be reversible."

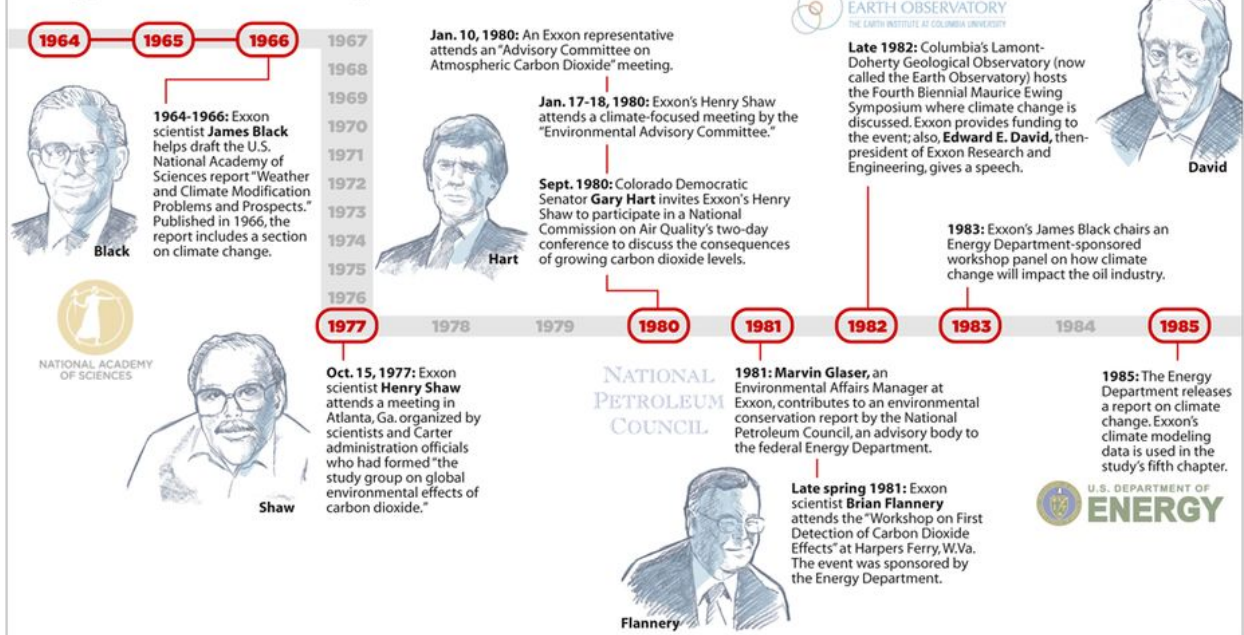
Reining in "the greenhouse effect," the primer said, "would require major reductions in fossil fuel combustion."

Yet the report also argued against a rapid shift to non-fossil fuel energy sources, noting that "making significant changes in energy consumption...amid all the scientific uncertainties would be premature in view of the severe impact such moves could have on the world's economies and societies."

Exxon's reputation for conducting serious carbon dioxide research was growing outside the company. Its scientists were frequent participants on industry and government panels.

## For Decades, Exxon Mingled with the Climate Science Elite

Between the 1960s and mid-1980s, Exxon carved out a position as a leader on climate change research. Besides tackling its own research and modeling efforts during this time, Exxon employees attended multiple government workshop panels, conferences and committee meetings on the issue. Some of those events are listed below.



SOURCE: InsideClimate News research

PAUL HORN / InsideClimate News

Flannery, for example, contributed to a multi-volume series of Energy Department reports published in 1985 on the state of climate change science. It concluded that atmospheric carbon dioxide concentrations had already increased by about 25 percent in the past century, and continued use of fossil fuels would lead to substantial temperature increases in the future.

Flannery was the only industry representative among 15 scientists **who wrote the volume titled "Projecting the Climatic Effects of Increasing Carbon Dioxide."**

Hoffert and Flannery co-authored a chapter that concluded that since the Industrial Revolution the Earth would warm 1°C (or 2°F) by 2000 and rise another 2 to 5°C (4 to 9°F) over the next hundred years.

As it turned out, the world's temperature has risen about 0.8°C (1.4°F) and mainstream scientists continue to predict, with increasing urgency, that if emissions are not curtailed, carbon pollution would lock in warming of as much as 3 to 6°C (or 5 to 11°F) over the next several decades.

## Quantifying the Uncertainty

Throughout its climate modeling phase, Exxon researchers, like outside scientists, grappled with the uncertainties inherent in climate model projections.

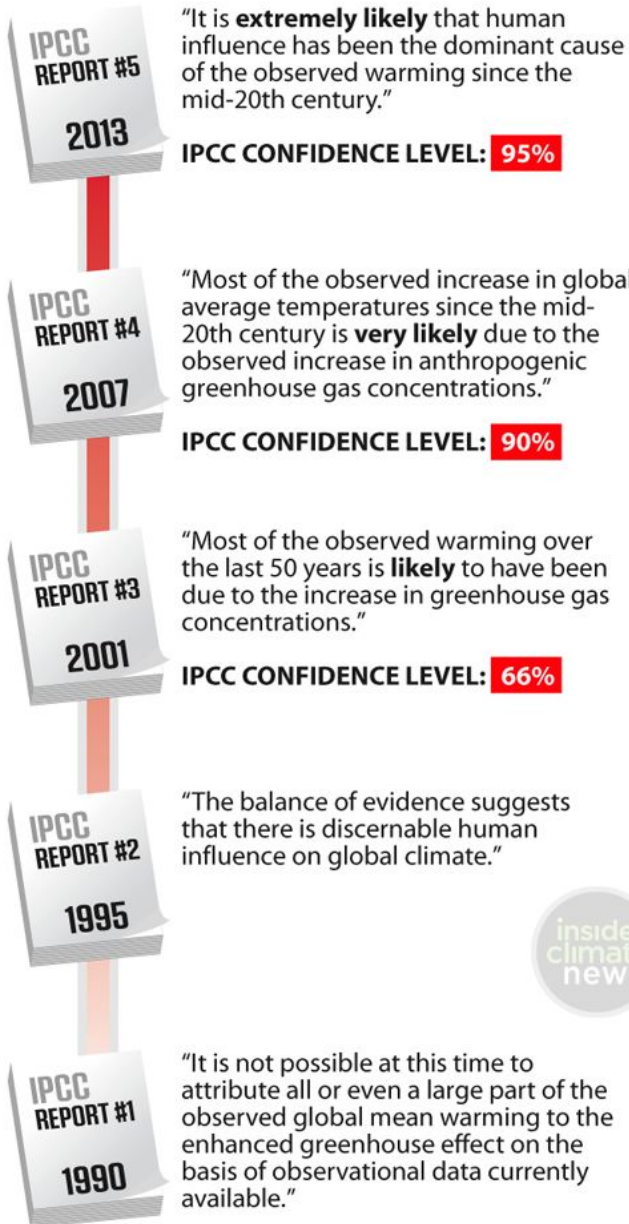
"Models are being used to explore physical effects (scenarios) and as a predictive tool," **Andrew Callegari said in a Feb. 2, 1984 presentation** for colleagues. The "validity of models [are] not established," Callegari wrote. "Complexity of carbon cycle and climate system require many approximations."

Scientists, regulators and Exxon all had to ask themselves: what should be done, given that uncertainty? Should governments and corporations wait for the ambiguities to be resolved before acting to cut fossil fuel emissions? Or should the researchers recommend immediate action because of a preponderance of evidence?

Since then, modeling has become an increasingly useful and reliable tool. The IPCC, the United Nations institution that compiles the scientific consensus on global warming, has issued a series of reports since 1990 based on those models. Each report has grown more certain. By the fifth report in 2013, the IPCC said it was "*extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20<sup>th</sup> century."

# The Growing Certainty of IPCC Climate Models and Assessments

Relying on better and better climate models, the **Intergovernmental Panel on Climate Change (IPCC)** has expressed increasing confidence that human activity is driving global warming.





As the consensus grew within the scientific world, Exxon doubled down on the uncertainty. Its campaign to muddy research results placed the company outside the scientific mainstream. Some of the researchers who once led the company's modeling became vocal climate contrarians, among them Brian Flannery and Roger Cohen.

Flannery survived the lay-offs of the mid-1980s that decimated the Exxon Research staff and rose in the corporate ranks to become the company's chief scientist. He attended IPCC meetings from the outset and by the early 1990s, he emerged as a prominent skeptic of the science he had once conducted.

For example, in a 1999 paper based on a speech to Exxon's European affiliates, Flannery derided the second IPCC assessment that concluded in 1995 that the scientific evidence suggested "a discernible human influence on climate."

"You'll note that this is a very carefully worded statement, recognizing that the jury is still out, especially on any quantifiable connection to human actions," Flannery wrote. "The conclusion does not refer to global warming from increases in greenhouse gases. Indeed, many scientists say that a great deal of uncertainty still needs to be resolved."

The change in Cohen's thinking was also stark, as he acknowledged in 2008. While still at Exxon he was "well convinced, as were most technically trained people, that the IPCC's case for Anthropogenic Global Warming (AGW) is very tight." But he wrote in a 2008 essay for the Science and Public Policy Institute, a climate denial website, that upon closer inspection of the research he found it to be "flimsy."

In 2007, the American Physical Society, the country's largest organization of physicists, adopted a strong statement on climate change that said "The evidence is incontrovertible: Global warming is occurring."

Cohen, an APS fellow, helped lead a campaign to weaken the APS's official position and earlier this year succeeded in stripping out the word 'incontrovertible' from a draft text. APS members will vote on the final language in November.

Flannery and Cohen declined to comment, despite multiple requests.

Exxon's former chairman and CEO, **Lee Raymond**, took an even tougher line against climate science. Speaking before the World Petroleum Congress in Beijing in 1997, Raymond mocked climate models in an effort to stop the imminent adoption of the Kyoto Protocol, an international accord to reduce emissions.

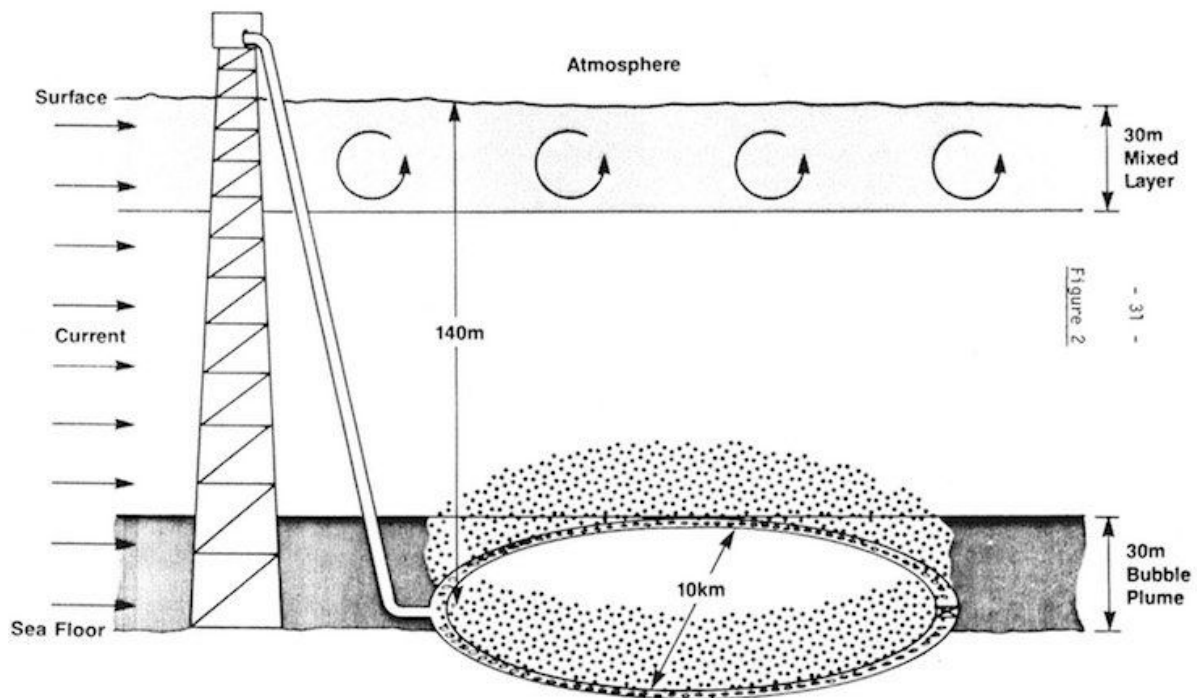
"They are notoriously inaccurate," Raymond said. "1990's models were predicting temperature increases of two to five degrees Celsius by the year 2100," he said, without explaining the source of those numbers. "Last year's models say one to three degrees. Where to next year?"

# Exxon's Business Ambition Collided with Climate Change Under a Distant Sea

Throughout the 1980s, the company struggled to solve the carbon problem of one of the biggest gas fields in the world out of concern for climate impacts.

BY NEELA BANERJEE & LISA SONG

OCT 8, 2015



After Exxon got the rights to develop the Natuna gas field, company researchers determined that the project site was contaminated with much more carbon dioxide than normal. This picture is from one of the company's documents exploring how to address the carbon dioxide issue.

In 1980, as Exxon Corp. set out to develop one of the world's largest deposits of natural gas, it found itself facing an unfamiliar risk: the project would emit immense amounts of carbon dioxide, adding to the looming threat of climate change.

The problem cropped up shortly after Exxon signed a contract with the Indonesian state oil company to exploit the Natuna gas field in the South China Sea—big enough to supply the blossoming markets of Japan, Taiwan and Korea with liquefied natural gas into the 21st century.

Assessing the environmental impacts, Exxon Research and Engineering quickly identified Natuna's greenhouse gas problem. The reservoir was contaminated with much more carbon dioxide than normal. It would have to be disposed of somehow—and simply venting it into the air could have serious consequences, Exxon's experts warned.

Exxon's dawning realization that carbon dioxide and the greenhouse effect posed a danger to the world collided with the company's fossil fuel ambitions.

"They were being farsighted," recalled John L. Woodward, who wrote an internal report in 1981 on Natuna's climate implications.

"They weren't sure when CO<sub>2</sub> controls would be required and how it would affect the economics of the project."

Since 1978, long before the general public grew aware of the climate crisis, Exxon had worked at the cutting edge of emerging climate science. At first, Exxon's internal studies had described climate change as an important but somewhat distant problem. Now, sooner than expected, climate considerations were affecting strategic business decisions. Natuna was one example; another was **Exxon's proposed leap into synthetic fuels**.

Releasing Natuna's carbon pollution would make it "the world's largest point source emitter of CO<sub>2</sub> and raises concern for the possible incremental impact of Natuna on the CO<sub>2</sub> greenhouse problem," **declared an October 1984 report** from Exxon's top climate modeler, Brian Flannery, and his boss Andrew Callegari.

Documents and other evidence uncovered by InsideClimate News also show that Exxon calculated that Natuna's emissions would have twice the climate impact of coal. The company

spent years researching possible remedies, but found them all too costly or ineffective, ICN's eight-month investigation found.

Exxon managers saw the problem as both technically vexing and environmentally fraught. Not only was there carbon dioxide to be dealt with, it was mixed with toxic, flammable hydrogen sulfide, a contributor to acid rain.

"I think we generally agree that we are seeking a method of disposing of the off gases in a manner which will minimize the risk of environmental damage," wrote Exxon's manager of environmental affairs Alvin M. Natkin in **an October 1983 letter to Natuna project executive Richard L. Preston**. "We must also have the data which will be convincing not only to ourselves but also to the international environmental community that the method selected is environmentally sound."

The company consulted with leading scientists, including NASA's pioneering expert James E. Hansen, to understand the effect on atmospheric CO<sub>2</sub> concentrations if the gas from Natuna were released. It sent staff to facilities at Dalhousie University in Halifax, Canada to simulate the diffusion of the gas into ocean water. Over the years, Exxon scientists developed mathematical models to assess the options.

Because the project was so complex and expensive, the Natuna staff presented regular updates, including details of the CO<sub>2</sub> issue, to Exxon's board of directors, whose members were drawn almost entirely from the company's upper management.

Some Exxon directors accepted the emerging climate consensus. Others were less sure of the science, but agreed that as popular attention to global warming mounted, releasing Natuna's greenhouse gases into the air could turn into a public relations debacle, former employees said.

Either way, directors repeatedly told project staff Natuna could not proceed unless the CO<sub>2</sub> was handled in a cost-effective way that did not harm the atmosphere.

"Their concerns kept getting stronger," said a former employee with knowledge of the project, who asked for anonymity because the issue remains sensitive even years later. "Their attitude went from, 'Maybe we have to remove the CO<sub>2</sub>,' to, as the years went by, their saying, 'This project cannot go ahead unless we remove the CO<sub>2</sub>.'"

In 1984, Lee Raymond joined Exxon's board of directors. A senior vice president, Raymond's responsibilities included overseeing Exxon Research and Engineering, which conducted the

Natuna studies. In the summer of 1985, ER&E prepared documents for Raymond about a study that examined disposing Natuna's CO<sub>2</sub> into the ocean, an Exxon memo shows.

Eventually, Raymond would rise to become chairman and chief executive, and to lead a public campaign discrediting the scientific consensus on climate change and fighting measures to control greenhouse gas emissions.

In the meantime Exxon, now known as ExxonMobil, appears to have kept its years of climate-related deliberations about Natuna mostly to itself. Exxon only began to disclose climate risks to its shareholders years after it first weighed Natuna's risks, federal filings show.

ExxonMobil declined to answer specific questions for this article. In July, when ICN questioned him for an earlier article about Natuna, spokesman Richard Keil said, "It is company policy not to comment on potential commercial operations."

## **The Carbon Footprint**

First discovered by the Italian oil company Agip in the early 1970s, the Natuna gas field lies about 700 miles north of Jakarta and holds about 46 trillion cubic feet of recoverable methane, or natural gas. But the undersea formation also contains 154 trillion cubic feet of other gases, mostly CO<sub>2</sub>.

To liquefy Natuna's methane for shipping, it must be supercooled. At those low temperatures, the carbon dioxide would freeze into dry ice and clog equipment, so it had to be removed. The question was where to put it.

The Indonesian government and the state-run oil company had no issue with releasing the CO<sub>2</sub> into the air, former Exxon staff said. But awareness of carbon dioxide's impact on global temperatures had been seeping through Exxon, from its rank-and-file engineers to its board of directors.

"Within Exxon in those days, there were probably two to three believers in global warming for every denier or those who emphasized the uncertainty," said another former Exxon Research executive, who asked not to be identified for fear of reprisal.

## Exxon's Natuna Gas Field a Major Source of CO<sub>2</sub>

In 1980, Exxon acquired the rights to develop the Natuna field, one of the world's largest untapped reservoirs of natural gas. Soon after, the company determined the field would be the world's largest point source of carbon dioxide. Exxon still owns the Natuna license but has shelved its development indefinitely.



SOURCE: Exxon

PAUL HORN / InsideClimate News

Among the key people searching for a solution was Gilbert Gervasi, the Natuna project manager, who worked in Houston under executive Richard Preston for Esso Eastern, the unit that oversaw projects in East Asia. Gervasi spearheaded the effort from the early to mid-1980s to figure out how big Natuna's carbon footprint would be and what to do about it.

In a **Feb. 3, 1981 letter to Gene Northington** at Research and Engineering, Gervasi challenged a "rough calculation" that Northington had made of the CO<sub>2</sub> emissions from producing Natuna's gas and burning it as fuel. Northington's math showed Natuna's total CO<sub>2</sub> emissions would be "no higher than what would be emitted by burning" an equivalent amount of coal, Gervasi wrote.

After conducting what he described as "more rigorous" calculations, Gervasi concluded "that the total release of CO<sub>2</sub> from producing Natuna gas and burning of the LNG manufactured from the gas would be almost twice that emitted by burning an equivalent amount of coal."

Six months later, Research and Engineering sent Gervasi a report, entitled "Possible Climate Modification Effects of Releasing Carbon Dioxide to the Atmosphere from the Natuna LNG Project." It commissioned assessments of Natuna by seven eminent atmospheric scientists, including the climatologists Helmut Landsberg of University of Maryland and NASA's Hansen.

The report, written by John Woodward, a high level engineer at Exxon Research, presented a mixed message. Natuna would constitute a "small fraction of worldwide CO<sub>2</sub> budget," it found. But it also found that "emissions are nonetheless substantial by several comparisons."

## **Disposal Options**

Woodward examined the option of flaring the CO<sub>2</sub> after it had been stripped from the natural gas.

Although not combustible, the CO<sub>2</sub> had to be flared rather than simply vented because it was mixed with hydrogen sulfide, which is often burned to convert it to safer compounds. But flaring would not eliminate Natuna's greenhouse gas emissions.

Next, Woodward looked at releasing the CO<sub>2</sub> into seawater around Natuna, a process known as sparging. The gas from the Natuna well would be piped to a nearby platform where the valuable methane would be separated from the waste CO<sub>2</sub> and the toxic hydrogen sulfide. Those unwanted gases, in turn, would then be sent from the platform to a pipe about 300 feet below on the ocean floor. The pipe would be arranged in a circle 6 miles in diameter and the gas would be bubbled out of perforations every six to 10 feet, like aerating an aquarium.

Woodward said that in 1982 he visited the oceanography department at Dalhousie University in Nova Scotia to use their equipment to collect data for sparging models. Dalhousie had a tank about 40 feet high and 10 feet wide, filled with ocean water. Researchers released CO<sub>2</sub> at the bottom of the tank, and Woodward measured the size and quantity of the bubbles at various depths as they rose to the surface to understand how the gas dissipated.

In the end, the hydrogen sulfide released with the CO<sub>2</sub> stymied the sparging idea, Woodward said. Exxon worried that a toxic plume might kill fish and result in bad press.

## **Back to Square One**



The Natuna project staff and Research and Engineering specialists probed for answers through the 1980s, sometimes revisiting the approaches that Woodward had examined.

In October 1983, **Gervasi sent a letter and background paper on Natuna** to about a dozen staff and executives from different branches of the corporation to develop "a study program which over the next 1-2 years will put Exxon in a position to reach a final decision on the environmental aspects of the project."

The background paper laid out options to dispose of the CO<sub>2</sub>, none of them optimal. Releasing the waste gases into the air remained the simplest, cheapest method. "However, this raises environmental questions concerning the 'greenhouse' effect of the CO<sub>2</sub>," the paper said.

Gervasi's paper said the only effective way to dispose of carbon dioxide and hydrogen sulfide without harming the atmosphere or ocean would involve injecting the gases underground into the Natuna formation itself or a nearby reservoir. But that option appeared prohibitively expensive.

Thwarted by cost or environmental impact, Exxon returned to mathematical models over the next two years to home in on a suitable approach.

By February 1984, Exxon Research began modelling once more the feasibility of sparging.

The scientists found that the ocean would release the CO<sub>2</sub> into the atmosphere, probably in 10 years or sooner. Further, increased CO<sub>2</sub> would raise the acidity of the ocean water, damaging the local environment. "Our conclusion is that atmospheric discharge is preferable to seawater sparging," Flannery and others concluded.

Study after study returned Exxon back to square one with Natuna: it held the rights to an enormously promising field but was unable to develop it because it was unwilling to pump so much CO<sub>2</sub> into the air.

The scientists' conclusions were reflected in **papers prepared for a 1985** meeting with Lee Raymond on Exxon Research's activities.

Their synopsis said: "We modeled the sub-sea disposal of CO<sub>2</sub> in the shallow basin near the Natuna site and found that retention in the sea is only about a decade, as opposed to 1000 years if the CO<sub>2</sub> is disposed in the deep ocean. We recommend that the sub-sea sparging of CO<sub>2</sub> not be implemented since it offers little advantage over direct atmospheric release."

By the late 1980s, Exxon started to explore pumping the CO<sub>2</sub> back into the Natuna formation, the safest option but probably the priciest.

The company found a cost-effective method to dispose of half of Natuna's CO<sub>2</sub> underground, but calculated that the rest of the CO<sub>2</sub> would still be the equivalent of half of Canada's annual greenhouse gas emissions, said Roger Witherspoon, a former Program Officer in Corporate Contributions in the Public Affairs department.

Company officials asked Witherspoon to find a way to plant 100,000 trees annually to offset Natuna's remaining CO<sub>2</sub> emissions. The total acreage would eventually equal the size of Connecticut, Witherspoon said.

As Witherspoon researched the options starting around 1993, Exxon had embarked on a public campaign casting doubt on climate science as a basis for strong policy actions. Internally, the attitude was different.

"It was that greenhouse gas buildup could pose a threat to our business," said Witherspoon, a longtime journalist who worked at Exxon's Texas headquarters from 1990 to 1995. "You didn't want climate change caused by oil and gas. So the responsible thing to do was offset any greenhouse gases you were putting into the atmosphere."

Witherspoon said Exxon started his tree planting plan, but he does not know how long it lasted.

Exxon continued to investigate possibilities for responsibly disposing of Natuna's CO<sub>2</sub>. The project remains dormant, but Exxon never gave up. After an on-and-off relationship with Indonesia, the company still holds the license, which is up for renewal next summer.

## Highlighting the Allure of Synfuels, Exxon Played Down the Climate Risks

In the 1980s, Exxon lobbied to replace scarce oil with synthetic fossil fuels, but it glossed over the high carbon footprint associated with synfuels.

BY JOHN H. CUSHMAN JR., INSIDECLIMATE NEWS

OCT 8, 2015



*In 1980, Exxon acquired the Colony Shale Oil Project in Colorado to support the production of synfuels. Two years later, Exxon announced the termination of the project, in part due to low oil prices. (Credit: U.S. National Archives via Wikimedia Commons)*

Early in the 1980s, the lingering fear of oil scarcity and the emerging threat of climate change were beginning to intersect. And at that junction stood Exxon Corp., working out its strategy for survival in the uncertain 21<sup>st</sup> century.

At the time, Exxon believed oil supplies could not keep up with demand, so it put its weight behind a crusade to develop synthetic fossil fuels as a costly and carbon intensive, but potentially profitable alternative. It could liquefy the vast deposits of coal, oil shale and tar sands that were readily available in North America. This would be the new black gold, supplying as much as a third of the energy the United States would use in the early 21<sup>st</sup> century, company executives estimated.

"These resources are adequate to support a 15 million barrel a day industry for 175 years," said Randall Meyer, a senior vice president, in a 1981 speech before the U.S. Chamber of Commerce.

By then, however, researchers at Exxon were well aware of the looming problem of climate change. Years earlier, one climate researcher at the company, Henry Shaw, had called management's attention to a key conclusion of a landmark National Academy of Sciences report: global warming caused by carbon dioxide emissions, not a scarcity of supply, would likely set the ultimate limit on the use of fossil fuels.

Yet in his speech, Meyer said nothing about the carbon footprint of synfuels – even though the company was aware that making and burning them would release much more carbon dioxide into the atmosphere than ordinary oil.

In a 21-page speech, Meyer explained that a national synfuels program would require investing almost \$800 billion (in 1980 dollars) over three decades. He said it would create 870,000 jobs. It would, he promised, carry the nation through a long-term transition to "non-depleting and renewable" energy sources.

"Over the past couple of years my associates and I have talked about synthetic fuels as a major national need to a lot of audiences," he noted. "In the federal government, that included the White House and most cabinet members. At the state level, we visited with governors, and a good many senators and congressmen. We have had audiences like GM's and Ford's senior managements, the Business Roundtable, national labor leaders, major media companies, influential academics and many others."

The government did respond, with a costly synfuels program that ultimately folded as oil markets turned from shortage to glut and the technology proved to be unaffordable. Congress

withdrew funding from the United States Synfuels Corporation, and most forms of synfuels production never grew to global significance.

One important remnant that survived was the industry's foray into tar sands oil, especially in Canada, where Exxon would become a major player – and where the carbon dioxide problem still plagues the industry after more than three decades. Recent research finds that substantial growth in tar sands production is incompatible with keeping CO<sub>2</sub> emissions below the internationally accepted target of 2 degrees C.

But in the early days of synfuels, as Exxon defended them as a costly but plausible solution to oil scarcity, it sidestepped the carbon problem. In the text of a speech by Exxon chief executive Clifton Garvin before a particularly skeptical audience, the Environmental Defense Fund, in April 1981, global warming was never mentioned among the environmental risks that he said the industry would be "held primarily responsible for solving."

Nor, it appears, did Exxon elaborate on the link between synfuels and global warming in annual reports to shareholders filed with regulatory agencies in those early days, when synfuels remained at the heart of the company's long term ambitions.

Yet all along, there had been a bubbling concern among researchers, including some inside Exxon, about the carbon implications of synfuels.

Company documents discovered during an eight-month investigation by InsideClimate News show that Exxon Research & Engineering estimated that producing and burning oil shales would release 1.4 to 3 times more carbon dioxide than conventional oil, and would accelerate the doubling of greenhouse gases in the atmosphere by about five years. The company knew that a doubling would risk about 3 degrees Celsius of warming, or 5.4 degrees Fahrenheit.

The company was tracking the research closely. When two U.S. Geological Survey scientists estimated in *Science* magazine in 1979 that the carbon footprint from synfuels might be three to five times more than conventional fuels, ER&E climate researcher Henry Shaw wrote in a memo that the upper range "may alarm the public unjustifiably."

As early as November, 1979, Shaw had told Harold Weinberg in a memo on atmospheric research that environmental groups "have already attempted to curb the budding synfuels industry because it could accelerate the buildup of CO<sub>2</sub> in the atmosphere." He warned Exxon not to be caught off guard, the way the aviation industry had been surprised by the threat to supersonic airplane development when the ozone hole was discovered.

In 1980, after attending a federal advisory committee meeting, Shaw explained why he didn't think the carbon dioxide problem would block work on synfuels any time soon.

"I attended the last meeting of this committee on January 17 and 18, 1980, and found such a vast diversity of interests and backgrounds that I believe no imminent action is possible," he wrote in a memo.

"For example, some environmentalists suggested that all development of synthetic fuels be terminated until sufficient information becomes available to permit adequate strategic decisions to be made. The industrial representation, on the other hand, indicated that the build up of CO<sub>2</sub> in the atmosphere was not necessarily anthropogenic, and is of little consequence for the next century."

But Shaw also circulated a clipping from The New York Times in August 1981, under the headline "Synthetic Fuels Called a Peril to the Atmosphere."

In the article, the Associated Press quoted an economist named Lester Lave as testifying before Congress that "if we take CO<sub>2</sub> seriously, we would change drastically the energy policy we are pursuing."

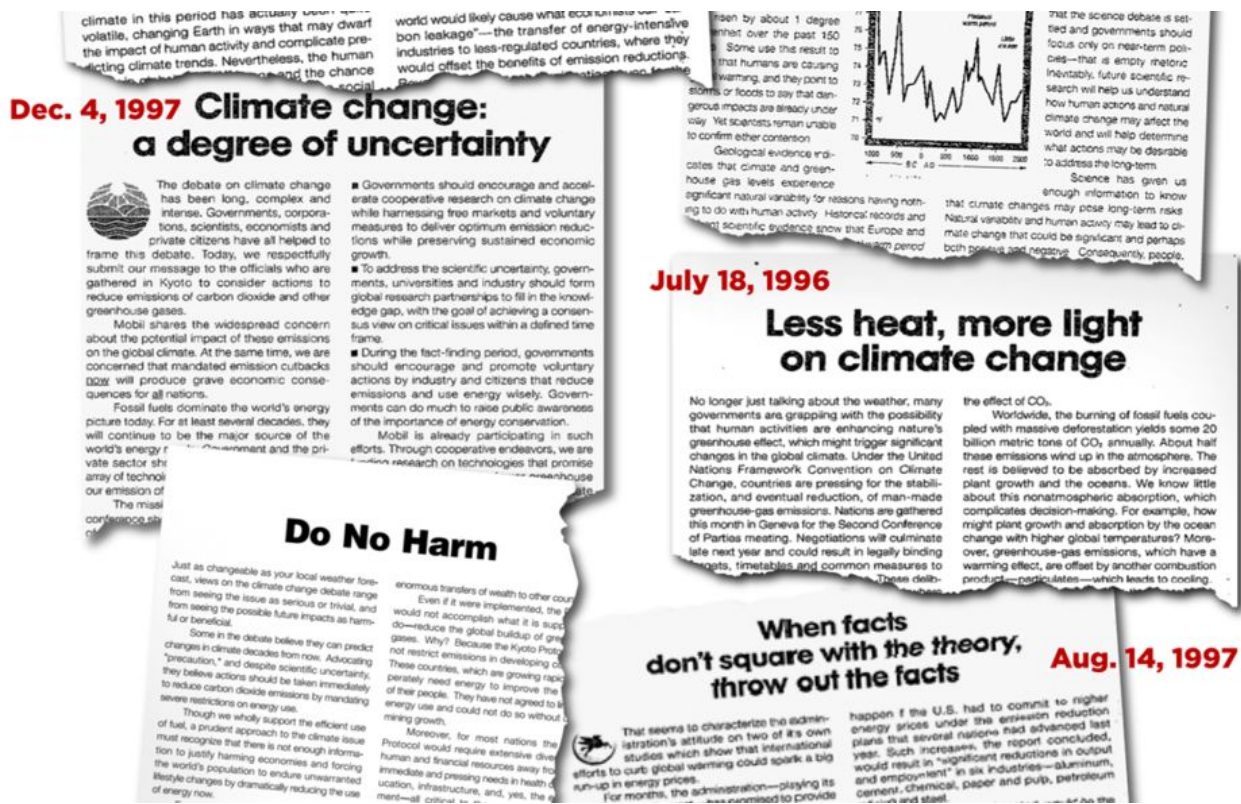
As in so many other realms of its research, Exxon studied a potential future of synthetic fuels while recognizing that carbon dioxide could be a powerful factor in its business decisions for decades to come.

# Exxon Sowed Doubt About Climate Science for Decades by Stressing Uncertainty

Collaborating with the Bush-Cheney White House, Exxon turned ordinary scientific uncertainties into weapons of mass confusion.

BY DAVID HASEMYER AND JOHN H. CUSHMAN JR.

OCT 22, 2015



Credit: Paul Horn/InsideClimate News

As he wrapped up nine years as the federal government's chief scientist for global warming research, Michael MacCracken lashed out at ExxonMobil for opposing the advance of climate science.

His own great-grandfather, he told the Exxon board, had been John D. Rockefeller's legal counsel a century earlier. "What I rather imagine he would say is that you are on the wrong side of history, and you need to find a way to change your position," he wrote.

Addressed to chairman **Lee Raymond** on the letterhead of the United States Global Change Research Program, **his September 2002 letter** was not just forceful, but unusually personal.

No wonder: in the opening days of the oil-friendly Bush-Cheney administration, Exxon's chief lobbyist had written the new head of the White House environmental council demanding that **MacCracken** be fired for "political and scientific bias."

Exxon was also attacking other officials in the U.S. government and at the UN's Intergovernmental Panel on Climate Change (IPCC), MacCracken wrote, interfering with their work behind the scenes and distorting it in public.

Exxon wanted scientists who disputed the mainstream science on climate change to oversee Washington's work with the IPCC, the authoritative body that defines the scientific consensus on global warming, documents written by an Exxon lobbyist and one of its scientists show. The company persuaded the White House to block the reappointment of the IPCC chairman, a World Bank scientist. Exxon's top climate researcher, **Brian Flannery**, was pushing the White House for a wholesale revision of federal climate science. The company wanted a new strategy to focus on the uncertainties.





Michael MacCracken (Credit: Michael MacCracken)

"To call ExxonMobil's position out of the mainstream is thus a gross understatement," MacCracken wrote. "To be in opposition to the key scientific findings is rather appalling for such an established and scientific organization."

MacCracken had a long history of collaboration with Exxon researchers. He knew that during the 1970s and 1980s, well before the general public understood the risks of global warming, the company's researchers had worked at the cutting edge of climate change science. He had edited and even co-authored some of their reports. So he found it galling that Exxon was now leading a concerted effort to sow confusion about fossil fuels, carbon dioxide and the greenhouse effect.

Exxon had turned a colleague into its enemy.

It was a vivid example of Exxon's undermining of mainstream science and embrace of denial and misinformation, which became most pronounced after President George W. Bush took office. The campaign climaxed when Bush pulled out of the Kyoto Protocol in 2001. Taking the

U.S. out of the international climate change treaty was Exxon's key goal, and the reason for its persistent emphasis on the uncertainty of climate science.

This **in-depth series by InsideClimate News** has explored Exxon's early engagement with climate research more than 35 years ago – and its subsequent use of scientific uncertainty as a shield against forceful action on global warming. The series is based on Exxon documents, interviews, and other evidence from an eight-month investigation.

"What happened was an incredible disconnect in people trained in physical science and engineering," recalled **Martin Hoffert**, a New York University professor who collaborated with Exxon's team as its early computer modeling confirmed the emerging scientific consensus on global warming. "It's an untold story of how we got to the point where climate change has become a threat to the world."

## **The Uncertainty Agenda**

As the Bush-Cheney administration arrived in the White House in 2001, ExxonMobil (NYSE: XOM) now had partners for a climate uncertainty strategy.

Just weeks after Bush was sworn in, Exxon's top lobbyist Randy Randol **sent the White House a memo** complaining that "Clinton/Gore carry-overs with aggressive agendas" were still playing a role at the IPCC as it prepared its next assessment of the climate science consensus.

MacCracken and three colleagues should be replaced, or at least kept out of "any decisional activities," he wrote. Meanwhile, U.S. input to the IPCC should be delayed.

Further, two scientists highly critical of the prevailing consensus should be enlisted: John Christy of the University of Alabama should take the science lead and Richard Lindzen of MIT should review U.S. submissions to the IPCC.

Exxon had been circulating a proposal to fundamentally overhaul MacCracken's global change research program, by emphasizing the uncertainties of climate science.

The timing was not coincidental because the administration, as required by law, was about to lay out a new federal climate research strategy. Exxon and its allies wanted the work done during the Clinton-Gore years to be marginalized.

In March 2002, Flannery, Exxon's science strategy and programs manager, contacted John H. Marburger, the president's incoming assistant for science and technology, **to pitch the company's favored approach of emphasizing the uncertainty**. Earlier discussions, he

asserted, "have not sought to place the uncertainty in the context of why it is important to public policy."

Exxon's position paper, attached to his letter, took a dig at the work of the IPCC.

"A major frustration to many is the all-too-apparent bias of IPCC to downplay the significance of scientific uncertainty and gaps," the memo said.

## **A Seat at the Table**

Exxon had not always been so at odds with the prevailing science.

Since the late 1970s, Exxon scientists had been **telling top executives** that the most likely cause of climate change was carbon pollution from the combustion of fossil fuels, and that it was important to get a grip on the problem quickly. Exxon Research & Engineering had **launched innovative ocean research** from aboard the company's biggest supertanker, the Esso Atlantic. ER&E's modeling experts, by the early 1980s, had **confirmed the consensus** among outside scientists about the climate's sensitivity to carbon dioxide.

"The facts are that we identified the potential risks of climate change and have taken the issue very seriously," said Ken Cohen, Exxon's vice president of public and government affairs, **in a press release** on October 21 addressing the ICN reports. "We embarked on decades of research in collaboration with many parties."

Exxon has declined to answer specific questions from InsideClimate News.

# Exxon: Science vs. Misinformation



**James F. Black**  
Exxon Senior Scientist  
1978

“In the first place, there 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.”



**James F. Black**  
Exxon Senior Scientist  
1978

“Present thinking holds that man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical.”



**Roger Cohen**  
Exxon Sciences Lab Director  
1982

“There is unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth’s climate, including rainfall distribution and alterations in the biosphere.”



**Dr. James J. McCarthy**  
American Association for the Advancement of Science  
2007

“It is now clear that for a number of years, both Bush administration political appointees and a network of organizations funded by the world’s largest private energy company, ExxonMobil, have sought to distort, manipulate, and suppress climate science, so as to confuse the American public about the reality and urgency of the global warming problem, and thus forestall a strong policy response.”



**Lee Raymond**  
Exxon Chairman and CEO  
1997

“Currently, the scientific evidence is inconclusive as to whether human activities are having a significant effect on the global climate.”



**Lee Raymond**  
Exxon Chairman and CEO  
1997

“It is highly unlikely that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now.”



**Brian Flannery**  
Exxon Position Paper  
2002

“A major frustration to many is the all-too-apparent bias of IPCC to downplay the significance of scientific uncertainty and gaps.”



**Ken Cohen**  
Exxon VP of Public & Government Affairs  
2015

“ExxonMobil has always advocated for good public policy that is based on sound science. We will continue to do that despite criticism from those who make unsupported and inaccurate claims about our company.”



A **1980 memo proposed an ambitious public-relations plan** aimed at "achieving national recognition of our CO<sub>2</sub> Greenhouse research program."

"It is significant to Exxon since future public decisions aimed at controlling the build-up of atmospheric CO<sub>2</sub> could impose limits on fossil fuel combustion," said the memo. "It is significant to all humanity since, although the CO<sub>2</sub> Greenhouse Effect is not today widely perceived as a threat, the popular media are giving increased attention to doom-saying theories about dramatic climate changes and melting polar icecaps."

Most of all, Exxon wanted a seat at the policy-making table, and the credibility of its research had earned that. In 1979, David Slade, manager of carbon dioxide research at the Energy Department, called it "a model for research contributions from the corporate sector."

Sen. Gary Hart, a Colorado Democrat, invited **Henry Shaw**, an early Exxon scientist, to join the policy deliberations. He was the only industry representative invited to an October 1980 conference of the National Commission on Air Quality, newly set up by Congress, to discuss "whether potential consequences of increased carbon dioxide levels warrant development of policies to mitigate adverse effects."

Shaw's bosses agreed that he should attend, "both to be informed as to what actions or proposals that result and to bring objective thinking and information to the meeting," **Harold Weinberg**, Shaw's boss in Exxon Research and Engineering, wrote in a memo. But first, he said, Shaw needed to be briefed by public affairs executives "on possible hidden agenda and individual biases of which we may not already be aware."

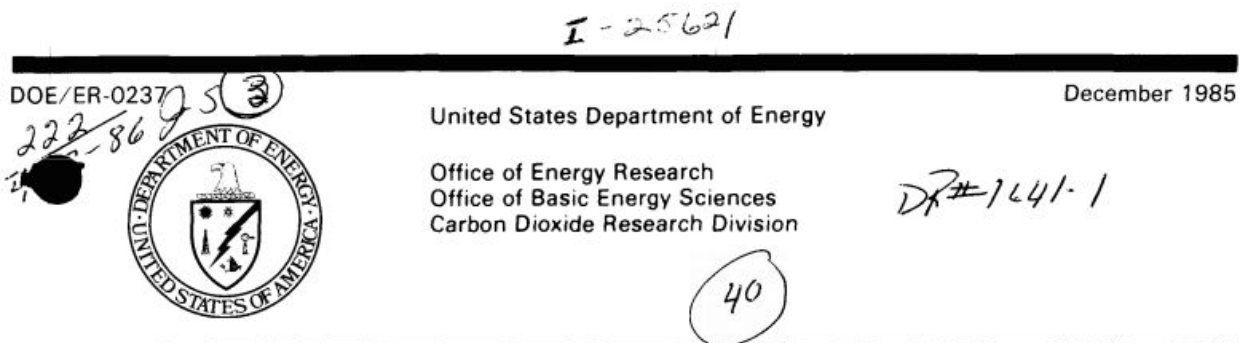
When Shaw gave feedback to the commission in December, **he noted the uncertainties about carbon dioxide and climate change**. At the same time, he wrote that it was "important" to place CO<sub>2</sub> on the nation's public policy agenda, as the commission was recommending, and supported the panel's suggestion that it was "timely to consider ways of reducing CO<sub>2</sub> emissions now."

He also backed a recommendation that the U.S. "seek to develop discussions on national and international policies."

In late spring of 1981, Flannery was one of the few industry representatives at a large gathering of accomplished scientists at Harper's Ferry, W. Va., for a Department of Energy "Workshop on First Detection of Carbon Dioxide Effects." He sat on a panel with NASA's James Hansen, who was about to publish a landmark study in Science magazine warning of significant warming even if controls were placed on carbon emissions.

The **workshop's proceedings** would declare that "scientists are agreed" that carbon dioxide was building up in the atmosphere, that the effects "are well known" and "will bring about an increase in the mean global temperature," and that it is "commonly accepted" that warming "will affect the biosphere through a change in climate."

Working with Hoffert, Flannery wrote a highly technical 50-page chapter to a **1985 Energy Department report**. Their modeling projected up to 6 degrees Celsius of warming by the end of the 21st century unless emissions of greenhouse gases were curtailed.



## PROJECTING THE CLIMATIC EFFECTS OF INCREASING CARBON DIOXIDE

Exxon researchers contributed key climate modeling to a 1985 Energy Department study that projected significant global warming, and said some climate change was already locked in.

(Credit: DoE)

The influential government report said the models provided a "firm basis" for this kind of projection, and that "we are already committed to some of this warming as a result of emissions over the last several decades."

The Harper's Ferry conference was chaired by MacCracken; he also edited the warming report. He recalled recently that "the underlying push was for a level of understanding that was convincing enough to let policymakers become aware of what the issue was that society faced."

As Hoffert put it in a recent interview, in those days at Exxon "there were no divisions, no agendas. We were coming together as scientists to address issues of vital importance to the world."

## **Fork in the Road**

In 1988, James Hansen told Congress that there was now enough warming to declare that the greenhouse effect had arrived. Also that year, the United Nations set up the Intergovernmental Panel on Climate Change.

It was a moment that Exxon's climate experts had been forecasting for a decade: that as warming became unmistakable, governments would move to control it.

Looking backward, one Exxon document from the early 1990s reflects a trail of research into global warming stretching back "long before the issue achieved its current prominence."

An internal compendium of the company's environmental record, on file in the official ExxonMobil historical archives at the University of Texas-Austin, acknowledged the uncertainties that have always faced climate researchers, but it didn't downplay the risks.

"Fossil fuel use dominates as the source of man-made emissions of carbon dioxide," said one section of the encyclopedic review. "Current scientific understanding demonstrates the potential for climate change to produce serious impacts."

"For Exxon and the petroleum industry, potential enhancement of the greenhouse effect and the possibility of adverse climate are of particular and fundamental concern," it said.

## **Drilling for Uncertainty**

The IPCC published its first report in 1990. Despite the scientific gaps, the panel warned that unrestrained emissions from burning fossil fuels would surely warm the planet in the century ahead. The conclusion, the IPCC said after intense deliberations, was "certain." It prescribed deep reductions in greenhouse gas emissions to stave off a crisis in the coming decades.

At this crucial juncture, Exxon pivoted toward uncertainty and away from the global scientific consensus.

At the IPCC's final session to draft its summary for policymakers, Exxon's Flannery was in the room as an observer. He took the microphone to challenge both the certainty and the remedy. None of the other scientists agreed with Flannery, and the IPCC brushed off Exxon's advice to

water down the report, according to Jeremy Leggett's eyewitness account in his book, *The Carbon War*.

At a conference in June 1991, MacCracken joined a panel chaired by Flannery to work together on a climate change project involving geo-engineering.

The contact, according to MacCracken, led to an unexpected solicitation from the oil lobby in Washington. Will Ollison, a science adviser at the American Petroleum Institute, in a fax marked urgent, asked MacCracken, then at the Lawrence Livermore National Laboratory, to write a paper highlighting the scientific uncertainties surrounding global warming.

The API, where Exxon held enormous sway, wanted him to write up the complex nuances in plain English – with an emphasis on the unknown, not the known.

Ollison said the IPCC's 1990 report "may not have adequately addressed alternative views."

"A review of these alternative projections would be useful in illustrating the uncertainties inherent in the 'consensus' views expressed in the IPCC report," Ollison wrote.

MacCracken rejected the task as "fruitless."

"I would caution you about too readily accepting whatever the naysayers put forth as a means of achieving balance," MacCracken wrote back.

Flannery, for his part, continued to emphasize uncertainty. And so did Exxon's new chairman and chief executive, Lee Raymond, who spoke of it repeatedly in public.

"Currently, the scientific evidence is inconclusive as to whether human activities are having a significant effect on the global climate," Raymond claimed in a speech delivered in 1996 to the Economic Club of Detroit.

"Many people, politicians and the public alike, believe that global warming is a rock-solid certainty," he said the next year in a speech in Beijing. "But it's not."

Addressing the World Petroleum Congress, which was meeting just before the conclusion of the Kyoto Protocol negotiations, Raymond even disputed that the planet was warming at all. "The earth is cooler today than it was 20 years ago," he said.



That was false. Authoritative climate agencies declared **1997 the warmest year** ever measured. Decade by decade, the warming has continued, in line with the climate models.

But Raymond, turning his back on Exxon researchers and their state-of-the-art work, mocked those climate models.

"1990's models were predicting temperature increases of two to five degrees Celsius by the year 2100. Last year's models say one to three degrees. Where to next year?"

"It is highly unlikely," he said, "that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now."

### **The Doubt Industry**

Exxon and its allies had been working hard to spread this dilatory message.

First, they set up the Global Climate Coalition (GCC), a lobbying partnership of leading oil and automobile companies dedicated to defeating controls on carbon pollution.

"As major corporations with a high level of internal scientific and technical expertise, they were aware of and in a position to understand the available scientific data," recounts an **essay on corporate responsibility for climate change published last month** in the peer-reviewed journal Climatic Change.

"From 1989 to 2002, the GCC led an aggressive lobbying and advertising campaign aimed at achieving these goals by sowing doubt about the integrity of the IPCC and the scientific evidence that heat-trapping emissions from burning fossil fuels drive global warming," says the article, by Harvard climate science historian Naomi Oreskes and two co-authors.

# Exxon's Uncertainty Campaign in Black and White

As part of Exxon's campaign to sow doubt about global warming, the oil giant ran a series of newspaper advertisements, some of which highlighted the uncertainty of climate science.

July 25, 1996

## With climate change, what we don't know can hurt us

It has been said climate is what we expect; weather is what we get. Weather is capricious and chaotic. By contrast, climate in the 10,000 years since the last Ice Age has been assumed to be quite stable and serene, an assumption that is crumbling in the face of ever more sophisticated measurements. It now appears that the climate in this period has actually been quite volatile, changing Earth in ways that may dwarf the impact of human activity and complicate predicting climate trends. Nevertheless, the human

social, and economic information.

There is great pressure to assign responsibility for the stabilization and reduction of emissions, along with the cost, almost entirely to the industrialized world. While the developing world would be spared the initial burden, such selective controls would penalize all nations in the long run. Imposing controls only on the industrialized world would likely cause what economists call "carbon leakage"—the transfer of energy-intensive industries to less-regulated countries, where they would offset the benefits of emission reductions.

Dec. 4, 1997 Climate change: a degree of uncertainty



The debate on climate change has been long, complex and intense. Governments, corporations, scientists, economists and private citizens have all helped to frame this debate. Today, we respectfully submit our message to the officials who are gathered in Kyoto to consider actions to reduce emissions of carbon dioxide and other greenhouse gases.

Mobil shares the widespread concern about the potential impact of these emissions on the global climate. At the same time, we are concerned that mandated emission cutbacks today will produce grave economic consequences for all nations.

Fossil fuels dominate the world's energy picture today. For at least several decades, they will continue to be the major source of the world's energy. The oil and gas industry and the private sector are arraying an array of technology to reduce our emission of carbon dioxide.

■ Governments should encourage and accelerate cooperative research on climate change while harnessing free markets and voluntary measures to deliver optimum emission reductions while preserving sustained economic growth.

■ To address the scientific uncertainty, governments, universities and industry should form global research partnerships to fill in the knowledge gap, with the goal of achieving a consensus view on critical issues within a defined time frame.

■ During the fact-finding period, governments should encourage and promote voluntary actions by industry and citizens that reduce emissions and use energy wisely. Governments can do much to raise public awareness of the importance of energy conservation.

Mobil is already participating in such efforts. Through cooperative endeavors, we are conducting research on technologies that promise to reduce greenhouse gas emissions.

## Do No Harm

Just as changeable as your local weather forecast, views on the climate change debate range from seeing the issue as serious or trivial, and full or beneficial.

Some in the debate believe they can predict changes in climate decades from now. Advocating "precaution," and despite scientific uncertainty, they believe actions should be taken immediately to reduce carbon dioxide emissions by mandating severe restrictions on energy use.

Though we wholly support the efficient use of fuel, a prudent approach to the climate issue must recognize that there is not enough information to justify harming economies and forcing the world's population to endure unwarranted lifestyle changes by drastically reducing the use of energy now.

Enough is known about climate change to recognize it may pose a legitimate long-term risk, and that more needs to be learned about it. Many scientists and economists believe that it is inappropriate to impose costly policies such as the Kyoto Protocol—the result of a 1997 negotiation by governments to reduce greenhouse gas emissions only in certain countries.

In the United States, the Department of Energy has estimated that the Kyoto Protocol would require a dramatic 50 percent near-term reduction in the projected use of energy. Most economists tell us that such a step would damage our economy and almost certainly require large increases in taxes on gas and oil. It could also entail

enormous transfers of wealth to other countries.

Even if it were implemented, the Kyoto Protocol would not accomplish what it is supposed to—reduce the global buildup of greenhouse gases. Why? Because the Kyoto Protocol does not restrict emissions in developing countries. These countries, which are growing rapidly, need energy to improve the lives of their people. They have not agreed to limit their energy use and could not do so without stalling growth.

Moreover, for most nations the Kyoto Protocol would require extensive diversion of immediate and pressing needs in health care, education, infrastructure, and, yes, the environment—at critical to the well-being of generations.

We support and are undertaking legitimate and affordable ways to voluntarily use less energy today. In addition, we propose an approach that continues a strong focus on scientific understanding, carefully evaluates the costs and benefits of policies, and promotes the development of technical options to reduce emissions, if they are not few weeks, we'll discuss more detail.

Although it is hard to predict, weather is going to be this with us with certainty that climate change properly formulated, will restrict

March 16, 2000

ExxonMobil

## Directions for climate research

Climate science is experiencing rapid development fueled by significant research budgets and government support. Progress has occurred in generating new knowledge and in better defining risks and uncertainties that limit our current ability to know the extent to which humans are affecting climate and to predict future changes caused by both human and natural forces.

Expansion of scientific knowledge will take time and money. It requires extensive, long-term data acquisition, breakthroughs in theoretical understanding of key climate processes, efforts to reconstruct better information about past climate

to establish a structured effort to assess the consequences of climate change (accounting for both the facts and uncertainties) and the feasibility and effectiveness of policies to adapt to and mitigate climate change.

Areas of uncertainty that require attention have been identified in numerous reports, including several by the National Research Council. Important areas include the role of clouds and aerosols (small particles in the atmosphere), natural climate variability, oceanic currents and heat transfer, the hydrological cycle, and the ability of climate models to predict

Research should address policy needs

March 23, 2000

## Unsettled Science

Knowing that weather forecasts are reliable for a few days at best, we should recognize the enormous challenge facing scientists seeking to predict climate change and its impact over the next century. In spite of everyone's desire for clear answers, it is not surprising that fundamental gaps in knowledge leave scientists unable to make reliable predictions about future changes.

A recent report from the National Research Council (NRC) raises important issues, including the still-unanswered questions: (1) Has human activity already begun to change temperature and the future change be?

The NRC report confirms Earth's surface temperatures risen by about 1 degree Celsius over the past 150 years. Some use the result to argue that humans are causing global warming, and they point to the numerous impacts already underway. Yet scientists remain unable to confirm either contention.

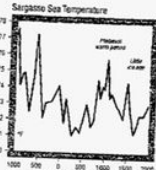
Geological evidence indicates that climate and greenhouse gas levels experience significant natural variability for reasons having nothing to do with human activity. Historical records and scientific evidence show that Europe and North America experienced a warm period

Moreover, computer models relied upon by climate scientists predict that lower atmospheric temperatures will rise as fast as or faster than temperatures at the surface. However, only within the last 20 years have reliable global measurements of temperatures in the lower atmosphere been available through the use of satellite technology. These measurements show little if any warming.

Even less is known about the potential positive or negative impacts of climate change. In fact, many academic studies and field experiments have demonstrated that increased levels of carbon dioxide can promote crop and forest growth.

So, while some argue that the science debate is settled and governments should focus only on near-term policies—that is simply not true. In fact, future scientific research will help us understand how human actions and natural climate change may affect the world and will help determine what actions may be desirable to address the long term.

Science has given us enough information to know that climate changes may pose long-term risks. Natural variability and human activity may lead to climate change that could be significant and perhaps both positive and negative. Consequently, people,



July 18, 1996

## Less heat, more light on climate change

No longer just talking about the weather, many governments are grappling with the possibility that human activities are enhancing nature's greenhouse effect, which might trigger significant changes in the global climate. Under the United Nations Framework Convention on Climate Change, countries are pressing for the stabilization, and eventual reduction, of man-made greenhouse-gas emissions. Nations are gathered this month in Geneva for the Second Conference of Parties meeting. Negotiations will culminate late next year and could result in legally binding targets, timetables and common measures to

the effect of CO<sub>2</sub>. Worldwide, the burning of fossil fuels coupled with massive deforestation yields some 20 billion metric tons of CO<sub>2</sub> annually. About half these emissions wind up in the atmosphere. The rest is believed to be absorbed by increased plant growth and the oceans. We know little about this nonatmospheric absorption, which complicates decision-making. For example, how might plant growth and absorption by the ocean change with higher global temperatures? Moreover, greenhouse-gas emissions, which have a warming effect, are offset by another combustion product—particulates—which leads to cooling.

## When facts don't square with the theory, throw out the facts

Aug. 14, 1997



That seems to characterize the administration's attitude on two of its own studies which show that international efforts to curb global warming could spark a big

run-up in energy prices. For months, the administration—playing its cards close to the vest—has promised to provide details of the emission-reduction plan it will put on the table at the climate change meeting in Kyoto, Japan, later this year. It also promised to evaluate the economic cost of that policy and measure its impact. Those results are important because the proposals submitted by other countries will be disrupted and costly to the U.S.

happen if the U.S. had to commit to higher energy prices under the emission-reduction plans that several nations had advanced last year. Such increases, the report concluded, would result in "significant reductions in output and employment" in six industries—aluminum, cement, chemical, paper and pulp, petroleum refining and steel.

Highest, the study noted, would be the chemicals industry, with estimates that up to 30 percent of U.S. chemical manufacturing capacity would move offshore to developing countries. Job losses could amount to some 200,000 in the steel sector. And despite the substantial loss of U.S. jobs and manufacturing capacity, the net emissions reduction could be insignificant since de-

veloping countries would not be bound by the same emission-reduction targets. The study also found that the U.S. would be the only major industrialized nation to experience a net loss of jobs and manufacturing capacity.

Jan. 21, 2004

inside climate news

Then, in 1998 Exxon also helped create the Global Climate Science Team, an effort involving Randy Randol, the company's top lobbyist, and Joe Walker, a public relations representative for API.

**Their memo**, leaked to The New York Times, asserted that it is "not known for sure whether (a) climate change actually is occurring, or (b) if it is, whether humans really have any influence on it." Opponents of the Kyoto treaty, it complained, "have done little to build a case against precipitous action on climate change based on the scientific uncertainty."

The memo declared: "Victory will be achieved when average citizens 'understand' (recognize) uncertainties in climate science," and when "recognition of uncertainty becomes part of the 'conventional wisdom.'"

Exxon wholeheartedly embraced that theme. For example, an advertisement called "Unsettled Science" that ran in major papers in the spring of 2000, prompted one scientist to complain that it had distorted his work by suggesting it supported the notion that global warming was just a natural cycle. "It's a shame," Lloyd Keigwin later told the Wall Street Journal. "The implication is that these data show that we don't need to worry about global warming."

Another ad, one of a series placed in The New York Times, cast aspersions on scientists who "believe they can predict changes in climate decades from now."

Then, in the heat of the 2000 presidential race between climate champion Al Gore and erstwhile oilman George W. Bush, Exxon placed an ad in the Washington Post accusing MacCracken's office of putting the "political cart before a scientific horse."

## **Blowing the Whistle**

The collaboration between Exxon, its surrogates, **and the Bush administration** to emphasize uncertainty and stave off action came to light in 2005. A **whistleblower named Rick Piltz** disclosed that Philip Cooney, an oil lobbyist who had become chief of staff at the White House environmental council, had been heavily editing the work of government researchers. Cooney resigned, and was hired by Exxon.

But the clashes continued between the scientific establishment and Exxon's purveyors of uncertainty.

The Royal Society of the United Kingdom, for centuries a renowned arbiter of science, harshly criticized Exxon in 2006 for publishing "very misleading" statements about the IPCC's Third

Assessment Report. The IPCC found that most of the observed warming of the planet in the late 20th century was probably caused by humans.

The Society's communications manager Bob Ward reminded Exxon pointedly that one of its own scientists had contributed to the IPCC chapter in question.

**The Royal Society said** it had no problem with Exxon funding scientific research, but "we do have concerns about ExxonMobil's funding of lobby groups that seek to misrepresent the scientific evidence relating to climate change."

Ward said Exxon **was funding at least 39 organizations** "featuring information on their websites that misrepresented the science on climate change, by outright denial of the evidence that greenhouse gases are driving climate change, or by overstating the amount and significance of uncertainty in knowledge."

*Appendix B*

**GROUPS AND INDIVIDUALS ASSOCIATED WITH EXXONMOBIL'S DISINFORMATION CAMPAIGN**

Table 1 **Select ExxonMobil-Funded Organizations Providing Disinformation on Global Warming**<sup>174</sup>

Organization	Total ExxonMobil Funding <sup>175</sup> (1998–2005)	Illustrative Information
Africa Fighting Malaria	\$30,000	AFM received \$30,000 donation in 2004 for "climate change outreach." This grant represents 10% of their total expenses for that year. AFM's website has an extensive collection of articles and commentary that argue against urgent action on climate change. <sup>176</sup>
American Council for Capital Formation, Center for Policy Research	\$1,604,523	One-third of the total ExxonMobil grants to ACCF-CPR between 1998 and 2005 were specifically designated for climate change activities. ExxonMobil funds represent approximately 36% of their total expenses in 2005. <sup>177</sup>
American Council on Science and Health	\$125,000	ExxonMobil donated \$15,000 to ACSH in 2004 for "climate change issues." A September 2006 Better Business Bureau Wise Giving Alliance Charity Report concludes that the ACSH does not meet all the standards for charity accountability. <sup>178</sup>
American Enterprise Institute	\$1,625,000	Lee R. Raymond, retired chair and CEO of ExxonMobil, is vice chairman of AEI's Board of Trustees. <sup>179</sup>
American Friends of the Institute of Economic Affairs	\$50,000	American Friends of the IEA received a \$50,000 ExxonMobil donation in 2004 for "climate change issues." This grant represents 29% of their total expenses for that year. The 2004 IEA study, <i>Climate Alarmism Reconsidered</i> , "demonstrates how the balance of evidence supports a benign, enhanced greenhouse effect." <sup>180</sup>
American Legislative Exchange Council	\$1,111,700	Of the total ExxonMobil grants to ALEC, \$327,000 was specifically for climate change projects. ALEC received \$241,500 in 2005 from ExxonMobil.

In 2007, the Union of Concerned Scientists published a report detailing Exxon's campaign of uncertainty, including a table identifying dozens of organizations that the group said had

received \$16 million in Exxon contributions over several years. (Credit: Union of Concerned Scientists)

Exxon's uncertainty campaign was detailed in three exhaustive reports published in 2007 by the Union of Concerned Scientists and the Government Accountability Project.



*James McCarthy (Credit: Kris Snibbe/Harvard Staff Photographer)*

At a **Congressional hearing in 2007**, Harvard scientist James McCarthy, who was a member of the UCS board and the newly elected president of the American Association for the Advancement of Science, declared: "The Bush administration and a network of Exxon-funded, ExxonMobil funded organizations have sought to distort, manipulate and suppress climate science so as to confuse the American public about the urgency of the global warming problem, and thus, forestall a strong policy response."

To this day, top Exxon officials sometimes argue that models are no basis for policy.

While Rex Tillerson, the current chairman, doesn't echo Lee Raymond's science denial **in his formal speeches**, he sometimes backslides when speaking off the cuff.

At Exxon's annual meeting in 2015, Tillerson said it would be best to wait for more solid science before acting on climate change. "What if everything we do, it turns out our models are lousy, and we don't get the effects we predict?" he asked.

And in its formal annual energy forecasts, as well as in its latest report on the implications of its carbon footprint, Exxon adopts business-as-usual assumptions. It deflects the question of how much carbon will build up in the world's atmosphere over the next few decades, or how much the planet will warm as a result.


"As part of our energy outlook process, we do not project overall atmospheric GHG [greenhouse gas] concentration, nor do we model global average temperature impacts," both reports say.

In footnotes, Exxon offers this excuse: "These would require data inputs that are well beyond our company's ability to reasonably measure or verify."

# A Deep Dive into What Exxon Knew About Global Warming and When (1978) it Knew It

By ANDREW C. REVKIN September 16, 2015 9:33 am

The rationale for Exxon's involvement and commitment of funds and personnel is based on our need to assess the possible impact of the greenhouse effect on Exxon business. Exxon must develop 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. This team must be recognized for its excellence in the scientific community, the government, and internally by Exxon management. We see no better method to acquire the necessary reputation than by attacking one of the major uncertainties in the global CO<sub>2</sub> balance, i.e., flux to the oceans and providing the necessary data. In addition, the international significance of the proposed programs will enhance the Exxon image in the public domain and provide great public relations value. As a consequence of the above, these programs are prime candidates for early implementation under the National Impact Pro



A 1978 letter from Exxon researchers to management described the logic for investing in research on global warming. Credit InsideClimate News

**Updates below** | InsideClimate News, showing the [value of focused and sustained investigative reporting](#), has published the first piece in an illuminating review of what [Exxon Mobil Corp.](#) (and its earlier incarnations) learned through its own research from the 1970s onward about the potential climate impacts of rising emissions of carbon dioxide from fossil fuel use.

The article is built [around documents from various archives](#) and interviews with former employees. A companion video report by the Frontline television team tells the story in the voices of former company scientists.

The probe by this team takes the timeline on Exxon's focus on climate change several years earlier than [a previous investigation of oil industry assessments of global warming by the Union of Concerned Scientists](#).

The first story, by Neela Banerjee, Lisa Song and David Hasemyer, starts in the late 1970s when an Exxon scientist James Black, briefed company scientists and managers:

“In the first place, there 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,” Black told Exxon’s Management Committee, according to a written version he recorded later.

It was July 1977 when Exxon’s leaders received this blunt assessment, well before most of the world had heard of the looming climate crisis.

A year later, Black, a top technical expert in Exxon’s Research & Engineering division, took an updated version of his presentation to a broader audience. He warned Exxon scientists and managers that independent researchers estimated a doubling of the carbon dioxide (CO<sub>2</sub>) concentration in the atmosphere would increase average global temperatures by 2 to 3 degrees Celsius (4 to 5 degrees Fahrenheit), and as much as 10 degrees Celsius (18 degrees Fahrenheit) at the poles. Rainfall might get heavier in some regions, and other places might turn to desert.

“Some countries would benefit but others would have their agricultural output reduced or destroyed,” Black said, in the written summary of his 1978 talk.

His presentations reflected uncertainty running through scientific circles about the details of climate change, such as the role the oceans played in absorbing emissions. Still, Black estimated quick action was needed. “Present thinking,” he wrote in the 1978 summary, “holds that man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical.”

[\[Read the rest.\]](#)





A scene in an [InsideClimate News/Frontline video](#) on ExxonMobil's research into global warming, including ocean measurements taken from a supertanker more than 30 years ago. Credit

The commendable InsideClimate package adds a remarkable level of detail showing just how methodical this giant company has been in assessing, and ultimately fending off, risks to its business model.

It's worth reading with a copy of Steve Coll's masterful book, "[Private Empire: Exxon Mobil and American Power](#)," nearby.

The article and posted documents show how carefully Exxon's corporate and legal side, more than manufacturing doubt, exploited the real uncertainty in the science to frame an argument against moving to stronger instruments than the non-binding 1992 climate treaty:

As the international community moved in 1997 to take a first step in curbing emissions with the Kyoto Protocol, Exxon's chairman and CEO [Lee Raymond](#) argued to stop it. "Let's agree there's a lot we really don't know about how climate will change in the 21st century and beyond," Raymond said in his speech before the World Petroleum Congress in Beijing in October 1997.

The piece shows how Raymond artfully used the inertia in the climate system and a short time frame to argue for doing more research before enacting policies restricting emissions:

"We need to understand the issue better, and fortunately, we have time," he said. "It is highly unlikely that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now."

At that time, and even now, that statement would essentially be in line with the conclusions of the Intergovernmental Panel on Climate Change (unless the enacted policy was some grand global shutdown of economies).

There's a familiar echo in President George W. Bush's statements in 2001 after the White House [asked the National Academy of Sciences](#) to identify the most and least certain findings related to global warming.

The president chose, not surprisingly, to focus on the unknowns in abandoning his campaign pledge to regulate carbon dioxide from power plants:

Concentration of greenhouse gases, especially CO<sub>2</sub>, have increased substantially since the beginning of the industrial revolution. And the National

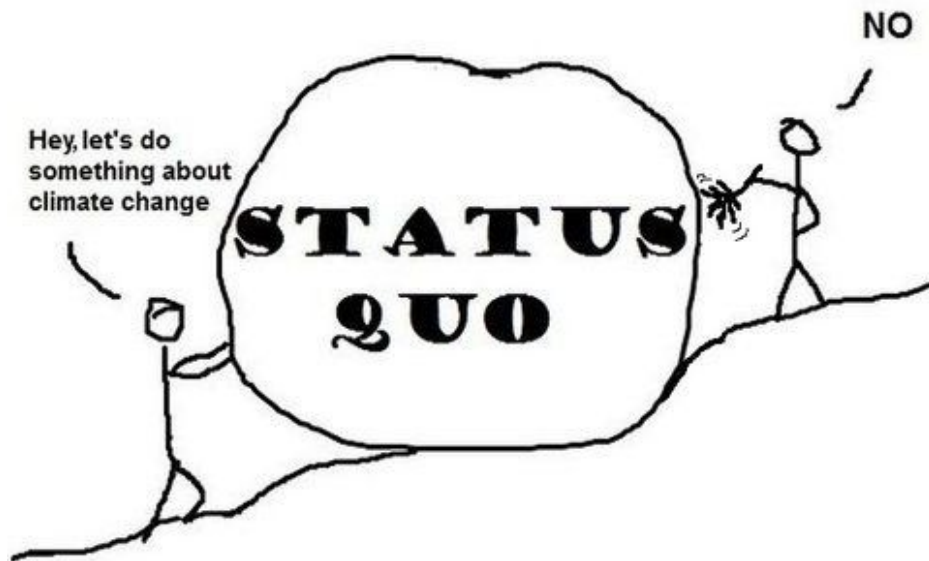
Academy of Sciences indicate that the increase is due in large part to human activity.

Yet, the Academy's report tells us that we do not know how much effect natural fluctuations in climate may have had on warming. We do not know how much our climate could, or will change in the future. We do not know how fast change will occur, or even how some of our actions could impact it...

And so it goes with climate policy and the public debate.

There's plenty of certainty, and uncertainty, for everyone to play with.

And as I've written before, all it takes is a sprinkling of uncertainty to maintain the fossil-fueled status quo.



A cartoon by Kathy Zhang illustrates the asymmetrical nature of the fight over climate policy. Stasis is easy. Credit Kathy Zhang

We're quite comfortable with it given the realtime benefits of abundant cheap energy.

As a kicker, here's some of what one former employee, Ed Garvey, says in a [videotaped interview](#) about the company's climate research around 1980, and what he sees as a lost opportunity:

It saw that this is an opportunity to lead in the science and the discussion. I think, had Exxon continued in that role, there might not be such a cacophony of

anti-climate arguments that are ongoing now because there would have been somebody at the table who came from the side of fossil fuel use and would have been shown to be a leader in terms of the science and this was their reasoned opinion as to what was going on. That just didn't happen, but I really think that was their intention when I was working there.

*Postscript*, 11:05 a.m. | Via Facebook, Matt Nisbet of Northeastern University led me to a relevant piece on The Conversation on the merits and drawbacks of “[NGO Journalism](#),” of which this InsideClimate report is an example.

Here's a snippet of the essay, by Matthew Powers, an assistant professor of communications at the University of Washington, followed by my reaction:

NGOs have long sought publicity, but the growth of “NGO journalism” stems from recent changes in the news media, advocacy and technology.

The news media's [financial woes](#) make it difficult to adequately cover issues like climate change, human rights and global poverty. Because many NGOs rely on credible reporting in order to have their causes taken seriously, they're increasingly inclined to report on certain issues themselves, utilizing digital tools that reduce the costs of publishing and promoting articles.

But my research, which focuses on humanitarian and human rights groups, suggests that this development of NGO journalism is a double-edged sword.

On the one hand, by [taking journalistic values](#) like credibility and fairness seriously, these groups are able to produce the sorts of coverage that news organizations would if they had the time and resources to do so. Moreover, by fusing their reporting with recommendations for taking action, these groups also provide the public with potential solutions to the problems they describe.

For example, a recent [multimedia feature](#) from Human Rights Watch about human rights violations in the Central Africa Republic was based on months of on-the-ground reporting. The report – which documents war crimes and their effects on civilians – nicely demonstrates the positive contributions advocacy groups can make by committing themselves to news production.

However, the entrance of NGOs into journalism presents complications. Advocacy groups produce information not just to inform and enlighten but also to boost donations and promote their brands. Sometimes, these latter

aims lead organizations to sensationalize their coverage, which can, in turn, distort public perceptions about the nature of social problems.

I agree that there can be problems, but anyone — whether in journalism or activism — who seeks to retain authority and credibility over the long haul needs to adhere to the same standards. Just think about that last sentence in this excerpt with some slight adjustments (the *italics*) to make it about news media instead of campaigners:

*News media* produce information not just to inform and enlighten but also *to sustain income and build attract audiences*. Sometimes, these latter aims lead organizations to sensationalize their coverage, which can, in turn, distort public perceptions about the nature of social problems.

The lure of the [“front-page thought”](#) can be a problem for everyone. And the biggest risk, in the end, may be disengaging the public, weary of [information whiplash](#), just when you were hoping for traction.

# Exxon has known about climate change since the 1970s

Laura Lorenzetti

SEPTEMBER 16, 2015, 5:58 PM EDT

## Exxon research scientists warned about the effects of fossil fuels as early as 1977.

Exxon has known about climate change for almost 40 years, despite its efforts to continue to promote fossil fuels and deny its existence throughout the 1990s as a leader of the Global Climate Coalition, according to an [internal investigation by InsideClimate News](#).

The reporters reviewed internal records from Exxon [XOM 0.46%](#) and found that the company long knew about [the harmful effects](#) of fossil fuels on the environment. Exxon researchers even said in a 1978 internal memo that a doubling of carbon dioxide levels would increase average global temperatures by as much as 2 to 3 degrees Celsius.

The [InsideClimate News] investigation found that long before global warming emerged as an issue on the national agenda, Exxon formed an internal brain trust that spent more than a decade trying to understand the impact of rising CO<sub>2</sub> levels in the atmosphere — even launching a supertanker with custom-made instruments to sample and understand whether the oceans could absorb the rising atmospheric CO<sub>2</sub> levels. Today, Exxon says the study had nothing to do with CO<sub>2</sub> emissions, but an Exxon researcher involved in the project remembered it differently.

# Investigation Finds Exxon Ignored Its Own Early Climate Change Warnings

SEPTEMBER 16, 2015

by JASON M. BRESLO

Despite its efforts for nearly two decades to raise doubts about the science of climate change, newly discovered company documents show that as early as 1977, Exxon research scientists warned company executives that carbon dioxide was increasing in the atmosphere and that the burning of fossil fuels was to blame.

The internal records are detailed in [a new investigation](#) published Wednesday by InsideClimate News, a Pulitzer Prize-winning news organization covering energy and the environment.

The investigation found that long before global warming emerged as an issue on the national agenda, Exxon formed an internal brain trust that spent more than a decade trying to understand the impact of rising CO<sub>2</sub> levels in the atmosphere — even launching a supertanker with custom-made instruments to sample and understand whether the oceans could absorb the rising atmospheric CO<sub>2</sub> levels. Today, Exxon says the study had nothing to do with CO<sub>2</sub> emissions, but an Exxon researcher involved in the project remembered it differently in the below video, which was produced by FRONTLINE in association with the InsideClimate News report.

In 1978, the Exxon researchers warned that a doubling of CO<sub>2</sub> levels in the atmosphere would increase average global temperatures by 2 to 3 degrees Celsius and would have a major impact on the company's core business. "Present thinking holds that man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical," one scientist wrote in [an internal document](#).

The warnings would later grow more urgent. In [a 1982 document](#) marked "not to be distributed externally," the company's environmental affairs office wrote that preventing global warming would require sharp cuts in fossil fuel use. Failure to do so, the document said, could result in "some potentially catastrophic events" that "might not be reversible."

Some on the Exxon internal research team saw the potential for a greater impact in their work. “This may be the kind of opportunity that we are looking for to have Exxon technology, management and leadership resources put into the context of a project aimed at benefitting mankind,” Harold N. Weinberg, an Exxon manager, wrote in a March 1978 internal memo.

But in the mid-1980s, collapsing oil prices, among other pressures, pushed Exxon to change course, according to the Inside Climate News investigation, widening a gulf between its research arm and the company’s executive suite. The report notes that by the 1990s:

Exxon helped to found and lead the Global Climate Coalition, an alliance of some of the world’s largest companies seeking to halt government efforts to curb fossil fuel emissions. Exxon used the American Petroleum Institute, right-wing think tanks, campaign contributions and its own lobbying to push a narrative that climate science was too uncertain to necessitate cuts in fossil fuel emissions.

“Let’s agree there’s a lot we really don’t know about how climate change will change in the 21st century and beyond,” Lee Raymond, the company’s former chairman and chief executive officer told an audience in a 1997 speech to the World Petroleum Conference.

In a written response to the InsideClimate News investigation, an Exxon spokesman said that, “At all times, the opinions and conclusions of our scientists and researchers on this topic have been solidly within the mainstream of the consensus scientific opinion of the day and our work has been guided by an overarching principle to follow where the science leads. The risk of climate change is real and warrants action.”

While it’s impossible to know where the climate change debate would be today without Exxon’s early decision to shift course on the science, the about-face was a lost opportunity in the overall effort to slow the rise of CO2 emissions, according to one climate researcher interviewed by InsideClimate News.

“All it would have taken is for one prominent fossil fuel CEO to know this was about more than just shareholder profits, and a question about our legacy,” said Michael Mann, the director of the Earth System Science Center at Pennsylvania State University. “But now because of the cost of inaction — what I call the ‘procrastination penalty’ — we face a far more uphill battle.”

# Warned of climate catastrophe, Exxon blocks 30 yrs of action

Scott Sutherland

Thursday, September 17, 2015, 11:40 - Warned of an impending climate catastrophe by their own scientists in the late '70s, Exxon executives chose to fund climate change denial and block all action. **Exxon responds to climate warning with years of denial**

The year was 1977.

Despite a few studies receiving wide media attention regarding their prediction of an impending ice age, the vast majority of climate science pointed to a global warming crisis looming on the horizon.

According to a new report by InsideClimate News, this vast majority included research conducted by scientists employed by Exxon, one of the biggest oil companies in the world and a major contributor to the increasing carbon dioxide in the atmosphere.

Later recounting the warning he delivered to his superiors, Exxon's chief scientist James Black wrote: "In the first place, there 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."

"Present thinking holds that man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical," Black wrote.

Informed of the impending climate catastrophe, and the narrow timeline for making the difficult decisions about taking action, what did the Exxon executives do?

As InsideClimate News relates, for the first 10 years or so after the warning, Exxon spend considerable resources and effort researching the problem, developing some of the most advanced climate models of the time.

However, by the late 1980s, their response turned from study to denial. Rather than taking the opportunity given to them, to become the leading effort in the shift towards clean energy, they put considerable funding into casting doubt on the very science they had just confirmed, and blocking government action on climate change.

## **Climate change deniers have "pre-traumatic stress disorder"**

According to psychiatrist Lise Van Susteren, who co-wrote a [2012 report](#) on the psychological effects of global warming on the American public, thoughts of the impending climate change catastrophe are so stressful, they simply cannot deal with it, and instead choose to deny that there is any problem at all.

## **Was Summer 2015 the hottest on record?**

The National Oceanic and Atmospheric Administration releases their Global Analysis for August and Summer 2015 later today. Stay tuned to see their results.



# WHAT EXXON KNEW ABOUT CLIMATE CHANGE

By [Bill McKibben](#)

SEPTEMBER 18, 2015

Wednesday morning, journalists at InsideClimate News, a Web site that has won the Pulitzer Prize for its reporting on oil spills, published the [first installment](#) of a multi-part exposé that will be appearing over the next month. The documents they have compiled and the interviews they have conducted with retired employees and officials show that, as early as 1977, Exxon (now ExxonMobil, one of the world's largest oil companies) knew that its main product would heat up the planet disastrously. This did not prevent the company from then spending decades helping to organize the campaigns of disinformation and denial that have slowed—perhaps fatally—the planet's response to global warming.

There's a sense, of course, in which one already assumed that this was the case. Everyone who's been paying attention has known about climate change for decades now. But it turns out Exxon didn't just "know" about climate change: it conducted some of the original

research. In the nineteen-seventies and eighties, the company employed top scientists who worked side by side with university researchers and the Department of Energy, even outfitting one of the company's tankers with special sensors and sending it on a cruise to gather CO<sub>2</sub> readings over the ocean. By 1977, an Exxon senior scientist named James Black was, according to his own notes, able to tell the company's management committee that there was "general scientific agreement" that what was then called the greenhouse effect was most likely caused by man-made CO<sub>2</sub>; a year later, speaking to an even wider audience inside the company, he said that research indicated that if we doubled the amount of carbon dioxide in the planet's atmosphere, we would increase temperatures two to three degrees Celsius. That's just about where the scientific consensus lies to this day. "Present thinking," Black wrote in summary, "holds that man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical."

Those numbers were about right, too. It was precisely ten years later—after a decade in which Exxon scientists continued to do systematic climate research that showed, as one internal report put it, that stopping "global warming would require major reductions in fossil fuel combustion"—that nasa scientist James Hansen took climate change to the broader public, telling a congressional hearing, in June of 1988, that the planet was already warming. And how did Exxon respond? By saying that its own independent research

supported Hansen’s findings? By changing the company’s focus to renewable technology?

That didn’t happen. Exxon responded, instead, by helping to set up or fund extreme climate-denial campaigns. (In a [blog post](#) responding to the I.C.N. report, the company said that the documents were “cherry-picked” to “distort our history of pioneering climate science research” and efforts to reduce emissions.) The company worked with veterans of the tobacco industry to try and infuse the climate debate with doubt. Lee Raymond, who became the Exxon C.E.O. in 1993—and was a senior executive throughout the decade that Exxon had studied climate science—gave a key speech to a group of Chinese leaders and oil industry executives in 1997, on the eve of treaty negotiations in Kyoto. He told them that the globe was cooling, and that government action to limit carbon emissions “defies common sense.” In recent years, it’s gotten so hot (InsideClimate’s exposé coincided with the release of data showing that this past summer was the United States’ hottest in recorded history) that there’s no use denying it any more; Raymond’s successor, Rex Tillerson, has grudgingly accepted climate change as real, but has referred to it as an “engineering problem.” In May, at a shareholders’ meeting, he mocked renewable energy, and said that “mankind has this enormous capacity to deal with adversity,” which would stand it in good stead in the case

of “inclement weather” that “may or may not be induced by climate change.”

The influence of the oil industry is essentially undiminished, even now. The Obama Administration may have stood up to Big Coal, but the richer Big Oil got permission this summer to drill in the Arctic; Washington may soon grant the rights for offshore drilling along the Atlantic seaboard, and end a longstanding ban on oil exports. All these measures help drive the flow of carbon into the atmosphere—the flow of carbon that Exxon knew almost forty years ago would likely be disastrous.

We’ve gotten so inured to this kind of corporate power that the report in InsideClimate News received relatively little coverage. The big news of the day on social media came from Irving, Texas, where the police handcuffed a young Muslim boy for taking his homemade alarm clock to school; all day people tweeted #IStandWithAhmed, and rightly so. It’s wondrous to see the power of an Internet-enabled world shining the light on particular (and in this case telling) injustice; there’s a principal and a police chief in Irving that will likely think differently next time. But we badly need the same kind of focus on the long-lasting, underlying abuses of corporate might. As it happens, Exxon is based in Irving, Texas too.



# ExxonMobil Faces Heightened Risk of Climate Litigation, Its Critics Say

Advocates explore holding the company accountable after new evidence shows it's long understood that global warming threatened its business and the planet.

BY BOB SIMISON, INSIDECLIMATE NEWS

SEP 30, 2015

ExxonMobil may face renewed legal challenges from plaintiffs claiming that it should have acted to address the risks of climate change, based on new evidence that its own researchers warned management about the emerging threat decades ago.

In an online petition drive, in public statements and behind the scenes, environmental advocates and their political allies are pressing federal and state authorities to launch investigations, subpoenas or prosecutions to pin down what Exxon knew and when. The oil giant's critics say Exxon might be held liable either for failing to disclose the risks to shareholders and financial regulators, or for manufacturing doubt to deceive people about the science of climate change.

"I think the case is already there to be made," said Sen. Sheldon Whitehouse, a Democrat from Rhode Island. He has raised the possibility of a Justice Department investigation under federal racketeering law. A former prosecutor, he is one of the Senate's leading voices for action to address the climate crisis.

The interest in pursuing legal action against Exxon has been sharpened by new disclosures from an [eight-month InsideClimate News investigation](#) documenting extensive concern within the company about the risks of global warming dating back nearly 40 years, according to environmental advocates, litigators and legal experts.

The evidence, much of it drawn from internal Exxon documents, shows Exxon understood that climate change posed catastrophic risks to people if nothing was done

to control pollution from fossil fuels. It was also aware of material risks to the company if the use of fossil fuels had to be limited.

The new documentation of Exxon's internal study of climate science would influence the tactics in future litigation, said several people active in the long-running strategizing among the company's most determined antagonists.

Pressure could come from the U.S. Justice Department, state attorneys general, private plaintiffs in the U.S. or abroad, or shareholders, legal authorities said. While no legal pathway is assured, and Exxon would surely mount a powerful defense, at the very least the litigation might lead the company to reveal new details of Exxon's actions, or force it to be more forthcoming in its public statements.

Whitehouse, for one, has outlined the case for a Justice Department probe of whether Exxon violated the federal Racketeer Influenced and Corrupt Organizations Act, known as RICO. The advocacy group Climate Hawks has mounted an online petition drive to urge Attorney General Loretta Lynch to open such an investigation. Prosecution under that law, which was used against the tobacco industry in the 1990s, would require evidence of a conspiracy.

Another frequently mentioned option is for Attorney General Eric Schneiderman of New York to invoke the state's powerful stock-fraud statute, the Martin Act, as the state has done in recent years to force other fossil fuel companies to disclose more about the financial risks they face from climate change.

A third possible approach is seeking compensation for people harmed by global warming, tort lawyers say. But that might not be the likeliest course, given the unsuccessful track record of this kind of lawsuit.

# Exxon and Climate Change: Litigation Risks

ExxonMobil and other energy companies may face litigation from multiple directions claiming that the industry understood the threat their products posed to the climate decades ago, yet kept that knowledge from the public and shareholders.



## **RICO** (*Racketeer Influenced and Corrupt Organizations Act*)

This law, originally designed to fight organized crime, was used successfully against tobacco companies.



## **Martin Act**

A New York specific law that the state attorney general has used in the past to force disclosures over fossil fuel emissions.



## **Securities Law**

These laws require companies to make disclosures to shareholders of risks that could have a material impact on the company's business.



## **Torts**

Individuals or groups seeking compensation for harm they claim was caused by a company's actions, such as the effects of climate change caused by using fossil fuels.



## **International**

Exxon may be vulnerable to litigation under the laws of other countries where it operates, as well as under international law.



Whatever the approach, an important objective of Exxon's critics would be to turn up even more information similar to that already disclosed in ICN's unfolding investigation of Exxon's decades-long engagement with climate science.

ICN reported that researchers told Exxon's management between the late 1970s and the mid 1980s that the most likely cause of climate change was the burning of fossil fuels. They pursued climate science partly on the grounds that Exxon's management must be kept informed of the "bad news, if any." Their own models confirmed a "clear scientific consensus" of the severity of climate change, and they warned that by the time the rise in temperatures became unmistakable it might be irreversible, and some people could face "catastrophic" harm. They understood that solving the problem might involve laws or treaties to cut the use of fossil fuels – the company's main product.

Only in about 2007, after 20 or 30 years of warnings like these, did Exxon's annual reports begin to reflect the risks, and even then only obliquely. In the meantime, the company mounted a public campaign to undermine the scientific consensus.

"These revelations confirm that Exxon was well aware of the catastrophe it was inflicting on the world with climate change and that it knew what it was doing with reasonable scientific certainty," said attorney Matt Pawa. He is head of the Pawa Law Group in Boston and Washington.

There is "no way, no way," Pawa said, for Exxon to escape eventual legal accountability. "Not when it's in plain sight and they recognized it decades ago."

Pawa is one of many lawyers who, along with advocacy groups, have struggled to hold Exxon and other fossil fuel companies legally accountable for climate change. Pawa and others sued Exxon and 23 other companies in 2008 on behalf of the Inupiat village of Kivalina, Alaska, alleging that the companies' activities were causing the sea level to rise and inundate the village. The case died in a tangle of appeals.

That was one of a series of failures as the climate change docket bubbled in recent years. Holding corporations legally accountable for climate change is a tough challenge because of regulatory and jurisdictional issues, statutes of limitation, the difficulty of assigning specific damages to any one company, and fossil fuel companies' arguments that they acted prudently based on their assessments of risk at the time.

For cases under New York's anti-stock fraud Martin Act, there are "dozens of defense strategies," according to Jeffrey A. Smith of Crowell & Moring, a New York-based law firm.

As for use of RICO, the federal racketeering statute has been so widely invoked in a variety of cases, ranging from labor to insurance to the environment, that its use has been limited by a considerable body of case law.

"To see a RICO count get past a motion to dismiss is now the exception rather than the rule," Smith said.

Any litigation would eat up time and money, said Richard Ayres, a Washington, D.C., environmental lawyer who co-founded the Natural Resources Defense Council. Ayres and his firm have looked into a private RICO complaint or suing on behalf of shareholders, but so far have concluded they couldn't make a strong enough case and didn't have enough resources.

When asked for comment Sept. 29 on Exxon's legal risk, spokesman Richard Keil referred to the company's Sept. 9 statement that "from the time that climate change first emerged as a topic for scientific study and analysis in the late 1970s, ExxonMobil has committed itself to scientific, fact-based analysis of this important issue."

### **Calls for RICO Probe**

A federal prosecution under the 1970 RICO statute would probably have the biggest impact, Ayres and other lawyers said. The Department of Justice has the deepest pockets and the broadest powers for discovery.

Whitehouse, who is a former U.S. attorney and a former state attorney general, outlined the argument for deploying federal racketeering laws against Exxon and other oil companies in a speech last May on the Senate floor.

The government's RICO investigation of the tobacco industry in the 1990s "opened up discovery into the files of the tobacco companies and showed finally and unequivocally that for decades the tobacco industry knew about smoking's harm," Whitehouse said before the Senate. Oil companies similarly make "products that put health and safety at risk, and they don't tell the truth about their products," he said.

"In the tobacco case, people were harmed by false beliefs propagated by the companies and were tricked into dangerous behavior," he said in an interview. "In the case of climate change, there is the general harm, the damage that carbon is wreaking, and the cost to the government of flooding, wildfires and other disasters."

Tobacco probes by the Justice Department and attorneys general of more than 40 states produced a trove of "millions and millions" of documents, said Jeffrey Smith, a partner in the law firm Wolf Haldenstein Adler Freeman & Herz in New York. He sued Phillip Morris's four most senior officers in 1994 on behalf of a group of shareholders, based on evidence in the documents. The suit alleged that by not informing investors that cigarettes were addictive, the company misled them. Phillip Morris ultimately settled the class action lawsuit for more than \$100 million.

In a Sept. 1 letter to Attorney General Lynch and President Barack Obama, a group of 20 climate scientists also called for a RICO probe "of corporations and other organizations that have knowingly deceived the American people about the risks of climate change, as a means to forestall America's response to climate change."

The political action group Climate Hawks Vote started an online petition urging supporters, "Tell the DOJ:**Prosecute Exxon's deliberate climate denial.**"

The Department of Justice didn't respond to a request for comment.

### **Many Legal Avenues**

Whatever course of action lawyers might select, one of the main objectives would be to uncover more of what Exxon knew, and to publicly compare that with what the company has been saying over the years.

"What we know now is probably just the tip of the iceberg," said Pawa, the Massachusetts litigator. "No doubt there is much more out there."

New York's Martin Act, which forbids "any fraud, deception, concealment, suppression, false pretense" or "any representation or statement which is false," gives the state broad powers of discovery.

"The attorney general of New York could subpoena the oil companies for what they know deep down about climate change and the perils to their business and hiring phony scientists and all kinds of things, including emails," said Michael Gerrard, a professor of environmental law at Columbia University in New York.

The office of Schneiderman, a second-term Democrat, declined to make him available for an interview. His spokesman Doug Cohen said he couldn't discuss ongoing cases and declined to elaborate. Former Attorney General Andrew Cuomo, now the governor, investigated five coal-burning utility companies under the Martin Act, arguing that they failed to provide a complete picture of the risks related to climate change in their regulatory filings. They agreed to make more complete disclosures.

A comprehensive review of more than a decade of corporate disclosure statements found that Exxon's inclusion of seven words on the subject in its annual report for 2007

"can only be described as one of the most cursory and insubstantial discussions concerning climate change risks." The review was done by legal experts at the University of Colorado in 2009. Over the years, the Securities and Exchange Commission has toughened its disclosure requirements, and Exxon has become somewhat more forthcoming.

Exxon and other fossil fuel companies could face "a huge universe of potential plaintiffs" in civil liability suits in coming years, said Carroll Muffett, a lawyer who is president and CEO of the Center for International Environmental Law, with offices in Washington and Geneva.

"The fossil fuel companies are much more vulnerable than before," Muffett said. The U.S. isn't the only place where fossil fuel companies can be sued; these companies could face "a raft of cases" arising from any country where they do business, Muffett said.

# Exxon's Climate Concealment

By NAOMI ORESKES OCT. 9, 2015



The Exxon Mobil Refinery in Torrance, Calif. Credit Jamie Rector/Bloomberg

CAMBRIDGE, MASS. — MILLIONS of Americans once wanted to smoke. Then they came to understand how deadly tobacco products were. Tragically, that understanding was long delayed because the tobacco industry worked for decades to hide the truth, promoting a message of scientific uncertainty instead.

The same thing has happened with [climate change](#), as Inside Climate News, a nonprofit news organization, has been reporting in a [series of articles](#) based on internal documents from [Exxon Mobil](#) dating from the 1970s and interviews with former company scientists and employees.

Had Exxon been upfront at the time about the dangers of the greenhouse gases we were spewing into the atmosphere, we might have begun decades ago to develop a less carbon-intensive energy path to avert the worst impacts of a changing climate. Amazingly, politicians are still debating the reality of this threat, thanks in no small part to industry disinformation.

Government and academic scientists alerted policy makers to the potential threat of human-driven climate change in the 1960s and '70s, but at that time climate change was still a prediction. By the late 1980s it had become an observed fact.

But Exxon was sending a different message, even though its own evidence contradicted its public claim that the science was highly uncertain and no one really knew whether the climate was changing or, if it was changing, what was causing it.

Exxon (which became Exxon Mobil in 1999) was a leader in these [campaigns of confusion](#). In 1989, the company helped to create the [Global Climate Coalition](#) to question the scientific basis for concern about climate change and prevent the United States from signing on to the international Kyoto Protocol to control greenhouse gas emissions. The coalition disbanded in 2002, but the disinformation continued. Journalists and scientists have identified more than 30 different organizations funded by the company that have worked to undermine the scientific message and prevent policy action to control greenhouse gas emissions.

These efforts turned the problem from a matter of fact into a matter of opinion. When the Exxon chief executive, Lee Raymond, insisted in the late 1990s that the science was still uncertain, the media covered it, business leaders accepted it and the American people were confused.

For people close to the issue, it was never credible that Exxon — a company that employs thousands of scientists and engineers and whose core business depends on their expertise — could be that confused about the science. We now know that they not only understood the science, but contributed to it.

As early as 1977, one of Exxon's senior scientists warned a gathering of oilmen of a "general scientific agreement" that the burning of fossil fuels was influencing the climate. A year later, he had updated his assessment, warning that "present thinking holds that man has a time window of five to 10 years before the need for hard decisions regarding changes in energy strategies might become critical."

In the 1980s, Exxon scientists collaborated with academic and government researchers to build climate models and understand their implications. When one researcher

expressed the opinion that the impacts would be “well short of catastrophic,” the director of the Theoretical and Mathematical Sciences Laboratory at Exxon Research responded in a memo, “I think that this statement may be too reassuring.” He said it was “distinctly possible” that the projected warming trend after 2030 “will indeed be catastrophic (at least for a substantial fraction of the earth’s population),” a conclusion that most climate scientists now hold, assuming we continue business as usual.

What did Exxon executives do with this information? Until 1989, they circulated reports summarizing it inside the company. They allowed their scientists to attend academic meetings, to participate in panels, and to publish their findings in peer-reviewed journals — in short, to behave as scientists. And they did acknowledge the “potentially catastrophic events that must be considered.”

Then corporate executives turned about face. As the scientific community began to speak out more strongly, first about the risks of unmitigated climate change and then about the fact that it was underway, Exxon executives and organizations funded by them embarked on a campaign designed to prevent governments from taking meaningful action. These [activities continue](#) today.

Exxon (whose [spokesman](#) has disputed the Inside Climate News reporting) had a choice. As one of the [most profitable companies](#) in the world, Exxon could have acted as a corporate leader, helping to explain to political leaders, to shareholders and institutional investors, and to the public what it knew about climate change. It could have begun to shift its business model, investing in renewables and biofuels or introducing a major research and development initiative in carbon capture. It could have endorsed [sensible policies](#) to foster a profitable transition to a 21st-century energy economy.

Instead — like the tobacco industry — Exxon chose the path of disinformation, denial and delay. More damagingly, the company set a model for the rest of the industry. More than 30 years ago, Exxon scientists acknowledged in internal company memos that climate change could be catastrophic. Today, scientists who say the exact same thing are ridiculed in the business community and on the editorial page of The Wall Street Journal.

We have lost precious time as a result: decades during which we could have built a smart electricity grid, fostered efficiency and renewables and generated thousands of jobs in a cleaner, greener economy. There is still time to prevent the worst disruptions of human-driven climate change, but the challenge is now much greater than it needed to be, in no small part because of the choices that Exxon Mobil made.



# What Exxon knew about the Earth's melting Arctic

By SARA JERVING, KATIE JENNINGS, MASAKO MELISSA HIRSCH AND SUSANNE RUST

OCT. 9, 2015

Back in 1990, as the debate over climate change was heating up, a dissident shareholder petitioned the board of Exxon, one of the world's largest oil companies, imploring it to develop a plan to reduce carbon dioxide emissions from its production plants and facilities.

The board's response: Exxon had studied the science of global warming and concluded it was too murky to warrant action. The company's "examination of the issue supports the conclusions that the facts today and the projection of future effects are very unclear."

Yet in the far northern regions of Canada's Arctic frontier, researchers and engineers at Exxon and Imperial Oil were quietly incorporating climate change projections into the company's planning and closely studying how to adapt the company's Arctic operations to a warming planet.

Ken Croasdale, senior ice researcher for Exxon's Canadian subsidiary, was leading a Calgary-based team of researchers and engineers that was trying to determine how global warming could affect Exxon's Arctic operations and its bottom line.



Top, the loss of sea ice due to climate change has taken a toll on wildlife. (Mike Lockhart / U.S. Geological Survey, Associated Press) Bottom, rapidly thawing permafrost is changing the landscape in Canada's Northwest Territories. (Scott Zolkos / The Canadian Press)

“Certainly any major development with a life span of say 30-40 years will need to assess the impacts of potential global warming,” Croasdale told an engineering conference in 1991. “This is particularly true of Arctic and offshore projects in Canada, where warming will clearly affect sea ice, icebergs, permafrost and sea levels.”

Between 1986 and 1992, Croasdale's team looked at both the positive and negative effects that a warming Arctic would have on oil operations, reporting its findings to Exxon headquarters in Houston and New Jersey.

The good news for Exxon, he told an audience of academics and government researchers in 1992, was that “potential global warming can only help lower exploration and development costs” in the Beaufort Sea.

But, he added, it also posed hazards, including higher sea levels and bigger waves, which could damage the company's existing and future coastal and offshore infrastructure, including drilling platforms, artificial islands, processing plants and pump stations. And a thawing earth could be troublesome for those facilities as well as pipelines.

As Croasdale's team was closely studying the impact of climate change on the company's operations, Exxon and its worldwide affiliates were crafting a public policy position that sought to downplay the certainty of global warming.

The gulf between Exxon's internal and external approach to climate change from the 1980s through the early 2000s was evident in a review of hundreds of internal documents, decades of peer-reviewed published material and dozens of interviews conducted by Columbia University's Energy & Environmental Reporting Project and the Los Angeles Times.

Documents were obtained from the Imperial Oil collection at Calgary's Glenbow Museum and the Exxon Mobil Historical Collection at the University of Texas at Austin's Briscoe Center for American History.

“We considered climate change in a number of operational and planning issues,” said Brian Flannery, who was Exxon's in-house climate science advisor from 1980 to 2011. In a recent interview, he described the company's internal effort to study the effects of

global warming as a competitive necessity: “If you don’t do it, and your competitors do, you’re at a loss.”

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Imperial Oil’s Dartmouth refinery in Halifax, Canada. Exxon Mobil owns about 70% of the company. (Andrew Vaughan / The Canadian Press, Associated Press)

The Arctic holds about one-third of the world’s untapped natural gas and roughly 13% of the planet’s undiscovered oil, according to the U.S. Geological Survey. More than three-quarters of Arctic deposits are offshore.

Imperial Oil, about 70% of which is owned by Exxon Mobil, began drilling in the frigid Arctic waters of the Canadian Beaufort Sea in the early 1970s. By the early 1990s, it had drilled two dozen exploratory wells.

The exploration was expensive, due to bitter temperatures, wicked winds and thick sea ice. And when a worldwide oil slump drove petroleum prices down in the late 1980s, the company began scaling back those efforts.

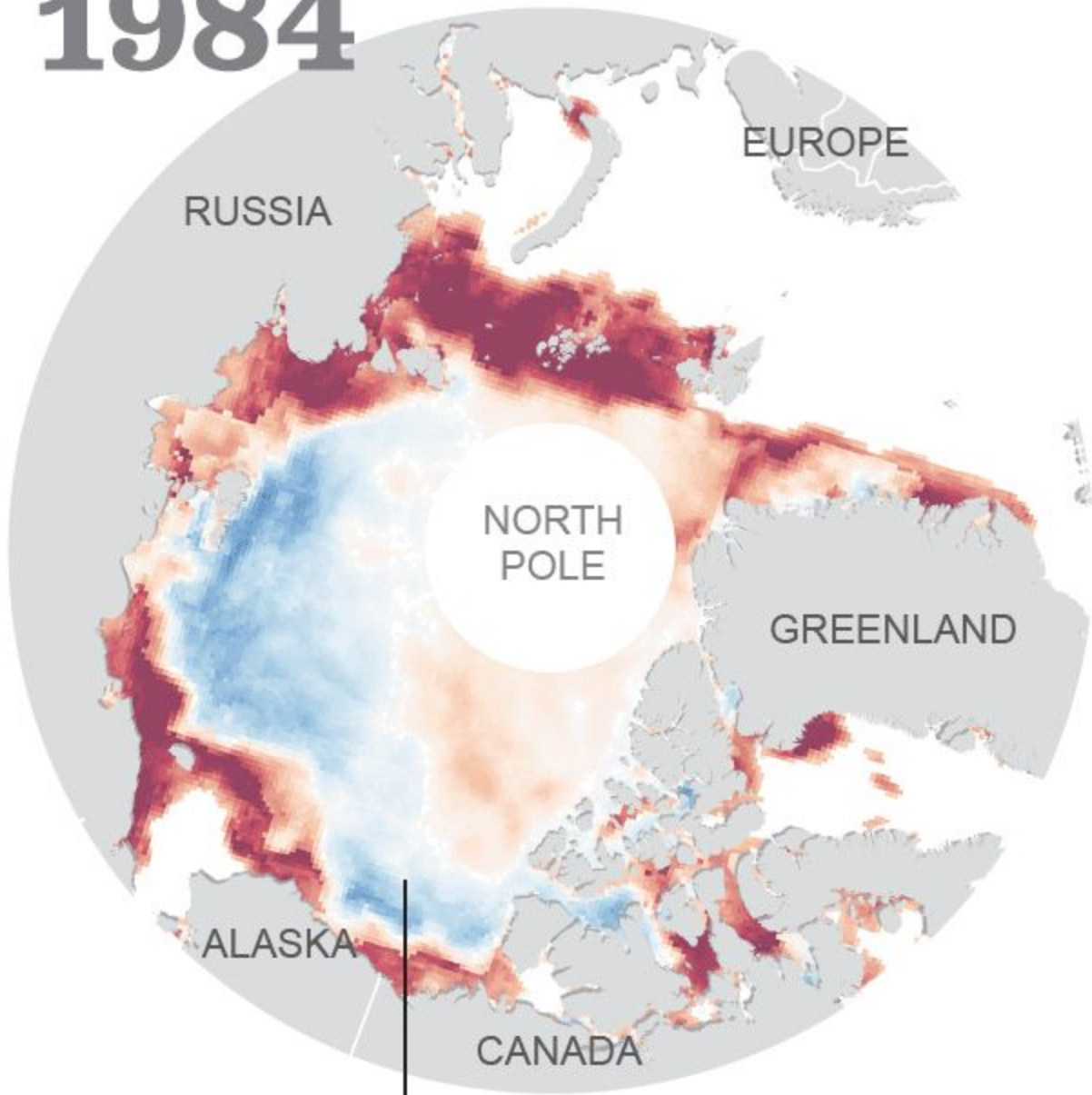
# Changes in Arctic sea ice from 1984 to 2013

Less ice

More ice



**1984**



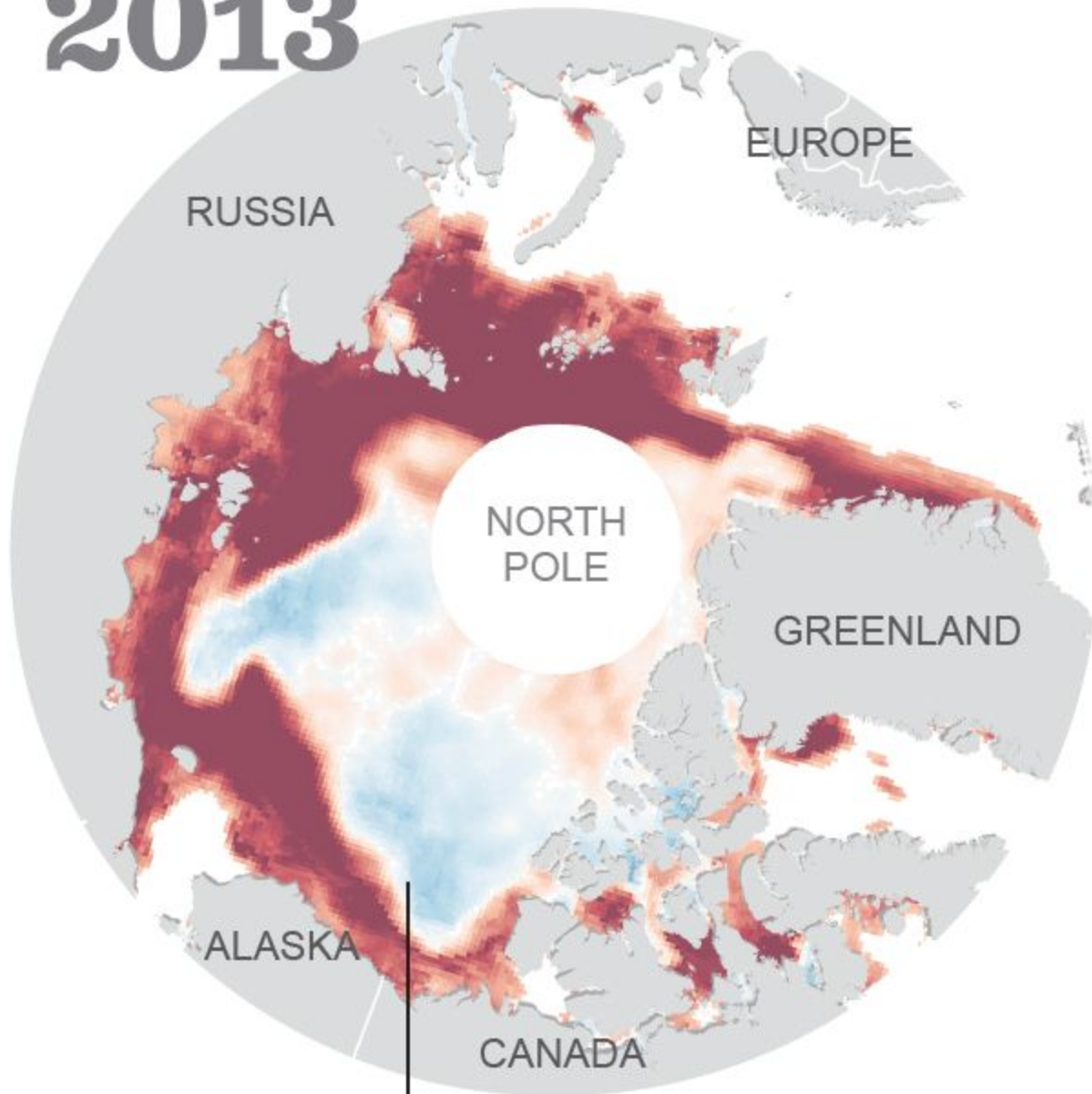
**Beaufort Sea**

Less ice

More ice



# 2013



**Beaufort Sea**

Before: Arctic ice coverage in 1984. After: Receding coverage in 2013.

But with mounting evidence the planet was warming, company scientists, including Croasdale, wondered whether climate change might alter the economic equation. Could it make Arctic oil exploration and production easier and cheaper?

“The issue of CO<sub>2</sub> emissions was certainly well-known at that time in the late 1980s,” Croasdale said in an interview.

Since the late 1970s and into the 1980s, Exxon had been at the forefront of climate change research, funding its own internal science as well as research from outside experts at Columbia University and MIT.

With company support, Croasdale spearheaded the company’s efforts to understand climate change’s effects on its Arctic operations. A company such as Exxon, he said, “should be a little bit ahead of the game trying to figure out what it was all about.”

Exxon Mobil describes its efforts in those years as standard operating procedure. “Our researchers considered a wide range of potential scenarios, of which potential climate change impacts such as rising sea levels was just one,” said Alan Jeffers, a spokesman for Exxon Mobil.

The Arctic seemed an obvious region to study, Croasdale and other experts said, because it was likely to be most affected by global warming.

That reasoning was backed by models built by Exxon scientists, including Flannery, as well as Marty Hoffert, a New York University physicist. Their work, published in 1984, showed that global warming would be most pronounced near the poles.

Between 1986, when Croasdale took the reins of Imperial’s frontier research team, until 1992, when he left the company, his team of engineers and scientists used the global circulation models developed by the Canadian Climate Centre and NASA’s Goddard Institute for Space Studies to anticipate how climate change could affect a variety of operations in the Arctic.

These were the same models that — for the next two decades — Exxon’s executives publicly dismissed as unreliable and based on uncertain science. As Chief Executive Lee Raymond explained at an annual meeting in 1999, future climate “projections are based on completely unproven climate models, or, more often, on sheer speculation.”



One of the first areas the company looked at was how the Beaufort Sea could respond to a doubling of carbon dioxide in the atmosphere, which the models predicted would happen by 2050.

Greenhouse gases are rising “due to the burning of fossil fuels,” Croasdale told an audience of engineers at a conference in 1991. “Nobody disputes this fact,” he said, nor did anyone doubt those levels would double by the middle of the 21st century.

Using the models and data from a climate change report issued by Environment Canada, Canada’s environmental agency, the team concluded that the Beaufort Sea’s open water season — when drilling and exploration occurred — would lengthen from two months to three and possibly five months.

They were spot on.



Seismic lines are used to detect natural gas and other underground deposits on the frozen Beaufort Sea. (Tom Cohen / Associated Press)

In the years following Croasdale’s conclusions, the Beaufort Sea has experienced some of the largest losses in sea ice in the Arctic and its open water season has increased significantly, according to Mark Serreze, a senior researcher at the National Snow and Ice Data Center in Boulder, Colo.

For instance, in Alaska's Chukchi Sea, west of the Beaufort, the season has been extended by 79 days since 1979, Serreze said.

An extended open water season, Croasdale said in 1992, could potentially reduce exploratory drilling and construction costs by 30% to 50%.



Members of the environmental group Greenpeace work to hang a banner protesting oil drilling at the Alyeska Pipeline Service Co.'s Valdez, Alaska terminal, on August 5, 1991. (Carey Anderson / Associated Press)

He did not recommend making investment decisions based on those scenarios, because he believed the science was still uncertain. However, he advised the company to consider and incorporate potential “negative outcomes,” including a rise in the sea level, which could threaten onshore infrastructure; bigger waves, which could damage offshore drilling structures; and thawing permafrost, which could make the earth buckle and slide under buildings and pipelines.

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The most pressing concerns for the company centered on a 540-mile pipeline that crossed the Northwest Territories into Alberta, its riverside processing facilities in the

remote town of Norman Wells, and a proposed natural gas facility and pipeline in the Mackenzie River Delta, on the shores of the Beaufort Sea.

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The company hired Stephen Lonergan, a Canadian geographer from McMaster University, to study the effect of climate change there.

Lonergan used several climate models in his analysis, including the NASA model. They all concluded that things would get warmer and wetter and that those effects “cannot be ignored,” he said in his report.

As a result, the company should expect “maintenance and repair costs to roads, pipelines and other engineering structures” to be sizable in the future, he wrote. A warmer Arctic would threaten the stability of permafrost, he noted, potentially damaging the buildings, processing plants and pipelines that were built on the solid, frozen ground.

In addition, the company should expect more flooding along its riverside facilities, an earlier spring breakup of the ice pack, and more-severe summer storms.

But it was the increased variability and unpredictability of the weather that was going to be the company’s biggest challenge, he said.

Record-breaking droughts, floods and extreme heat — the worst-case scenarios — were now events that not only were likely to happen, but could occur at any time, making planning for such scenarios difficult, Lonergan warned the company in his report. Extreme temperatures and precipitation “should be of greatest concern,” he wrote, “both in terms of future design and ... expected impacts.”

The fact that temperatures could rise above freezing on almost any day of the year got his superiors’ attention. That “was probably one of the biggest results of the study and that shocked a lot of people,” he said in a recent interview.

Lonergan recalled that his report came as somewhat of a disappointment to Imperial’s management, which wanted specific advice on what action it should take to protect its operations. After presenting his findings, he remembered, one engineer said: “Look, all I want to know is: Tell me what impact this is going to have on permafrost in Norman Wells and our pipelines.”

As it happened, J.F. “Derick” Nixon, a geotechnical engineer on Croasdale’s team, was studying that question.

He looked at historical temperature data and concluded Norman Wells could grow about 0.2 degrees warmer every year. How would that, he wondered, affect the frozen ground underneath buildings and pipelines?

“Although future structures may incorporate some consideration of climatic warming in their design,” he wrote in a technical paper delivered at a conference in Canada in 1991, “northern structures completed in the recent past do not have any allowance for climatic warming.” The result, he said, could be significant settling.

Nixon said the work was done in his spare time and not commissioned by the company. However, Imperial “was certainly aware of my work and the potential effects on their buildings.”

Exxon Mobil declined to respond to requests for comment on what steps it took as a result of its scientists’ warnings. According to Flannery, the company’s in-house climate expert, much of the work of shoring up support for the infrastructure was done as routine maintenance.

“You build it into your ongoing system and it becomes a part of what you do,” he said. Today, as Exxon’s scientists predicted 25 years ago, Canada’s Northwest Territories has experienced some of the most dramatic effects of global warming. While the rest of the planet has seen an average increase of roughly 1.5 degrees in the last 100 years, the northern reaches of the province have warmed by 5.4 degrees and temperatures in central regions have increased by 3.6 degrees.

Since 2012, Exxon Mobil and Imperial have held the rights to more than 1 million acres in the Beaufort Sea, for which they bid \$1.7 billion in a joint venture with BP. Although the companies have not begun drilling, they requested a lease extension until 2028 from the Canadian government a few months ago. Exxon Mobil declined to comment on its plans there.

Croasdale said the company could be “taking a gamble” the ice will break up soon, finally bringing about the day he predicted so long ago — when the costs would become low enough to make Arctic exploration economical.

# How Exxon went from leader to skeptic on climate change research

By **KATIE JENNINGS, DINO GRANDONI AND SUSANNE RUST**

OCT. 23, 2015

Throughout much of the 1980s, Exxon earned a public reputation as a pioneer in climate change research. It sponsored workshops, funded academic research and conducted its own high-tech experiments exploring the science behind global warming.

But by 1990, the company, in public, took a different posture.

While still funding select research, it poured millions into a campaign that questioned climate change. Over the next 15 years, it took out prominent ads in the Washington Post, the Wall Street Journal and the New York Times, contending climate change science was murky and uncertain. And it argued regulations aimed at curbing global warming were ill-considered and premature.

How did one of the world's largest oil companies, a leader in climate research, become one of its biggest public skeptics?

The answer, gleaned from a trove of archived company documents and the recollections of former employees, is that Exxon, now known as Exxon Mobil, feared a growing public consensus would lead to financially burdensome policies.

Duane LeVine, Exxon's manager of science and strategy development, gave a primer to the company's board of directors in 1989, noting that scientists generally agreed gases released by burning fossil fuels could raise global temperatures significantly by the middle of the 21st century — between 2.7 and 8.1 degrees Fahrenheit — causing glaciers to melt and sea levels to rise, “with generally negative consequences.”

But he also made it clear the company was facing another threat as well — from public policymakers.

“Arguments that we can’t tolerate delay and must act now can lead to irreversible and costly Draconian steps,” LeVine said.

Heat waves and drought had scorched North America in 1988, fueling public concern that the planet was warming. Top government scientists testified in Congress that year, pushing for action.

Lawmakers at home and abroad began calling for reductions in carbon dioxide emissions from fossil fuels — the lifeblood of Exxon’s business. And, in 1988, the United Nations established a panel of scientists to study the issue and make policy recommendations.



William W. George, left, a director on the Exxon Mobil board, talks with Brian Flannery before the Exxon Mobil annual shareholders meeting in Dallas. (Brian Harkin / Getty Images)

Brian Flannery, Exxon’s longtime in-house climate expert, outlined the threat in a note to his colleagues in an internal company newsletter in 1989.

Government and regulatory efforts to reduce the risk of climate change, Flannery wrote, would “alter profoundly the strategic direction of the energy industry.” And he warned that the impact on the company from those efforts “will come sooner ... than from climate change itself.”



The company's shift — from embracing the science of climate change to publicly questioning it — emerged from interviews with former and current Exxon Mobil employees, and a review of internal company documents by Columbia University's Energy & Environmental Reporting Project and the Los Angeles Times.

The documents were obtained from the Exxon Mobil Historical Collection at the University of Texas at Austin's Briscoe Center for American History. (Some of those documents have also been the [subject of recent reports by InsideClimate News](#).)

In a recent interview, Flannery said the company was understandably concerned in the 1980s that government regulations being proposed were simplistic and drastic.

"I followed the climate negotiations, and they'd say things like, 'We should reduce our emissions of CO<sub>2</sub> by 10% by 1990.' And you're sitting there, and you say, 'You guys haven't a clue'" how difficult and disruptive that would be to global industry and the average consumer, he said.

"This isn't like making low-fat yogurt," he said.

In an internal draft memo from August 1988 titled "The Greenhouse Effect," a company public affairs manager laid out what he called the "Exxon Position." Toward the end of the document, after an analysis that noted scientific consensus on the role fossil fuels play in global warming, he wrote that the company should "Emphasize the uncertainty."

### EXXON POSITION

- EMPHASIZE THE UNCERTAINTY IN SCIENTIFIC CONCLUSIONS REGARDING THE POTENTIAL ENHANCED GREENHOUSE EFFECT.
- URGE A BALANCED SCIENTIFIC APPROACH.

An internal Exxon memo from August 1988 titled “The Greenhouse Effect.”

In 1989, Exxon scientists and managers began briefing employees at all levels of the company on the policy implications of climate change.

LeVine made his presentation to the Exxon board as part of that effort, describing the known science and outlining the company’s position.

Other documents in the archives indicate Exxon scientists had been researching the topic for more than a decade — outfitting an oil tanker with carbon dioxide detectors and analyzers and building models to project how a doubling of the gas in the atmosphere would affect global temperatures.

“Data confirm that greenhouse gases are increasing in the atmosphere,” LeVine told the board, according to a copy of his presentation in the Exxon Mobil archive. “Fossil fuels contribute most of the CO<sub>2</sub>.”

LeVine argued that the growing push by lawmakers to address the problem was “rooted in the evolution of the just-completed Montreal Protocol.”

Two years earlier, the Montreal Protocol, which was signed by the United States and other countries and went into effect in 1989, had called for phasing out chlorofluorocarbons, or CFCs, a group of chemicals responsible for thinning the ozone layer, which protects Earth from harmful solar radiation.

LeVine pointed out that CFCs had been increasing in the atmosphere, just as carbon dioxide levels were increasing. And just as in the case of greenhouse gases, scientific models predicted that CFCs could have serious future environmental effects.

After years of resistance, chemical companies like DuPont were forced to develop alternatives to CFCs.

CFCs might never have been regulated, LeVine noted, had it not been for one crucial event: the discovery of the ozone hole over Antarctica. That discovery, he said, was just the evidence environmentalists needed to rally the public.

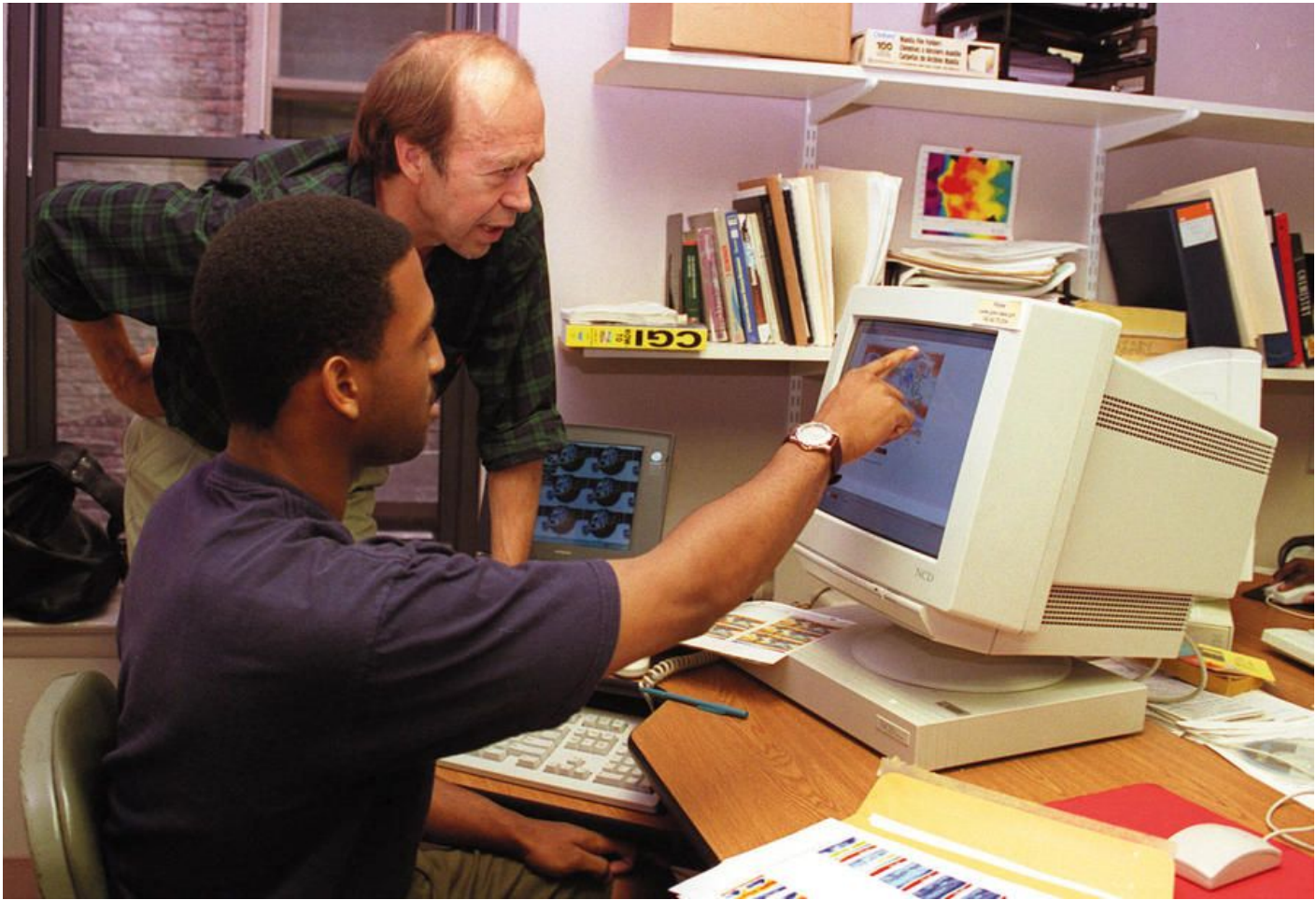
The greenhouse gas issue, LeVine explained, had now reached a similar “critical event”: the hot and dry summer of 1988, which caused one of the worst droughts in U.S. history.



Walking through his drought-damaged cornfield in Gilbertville, Iowa, in June 1988, Firmin Rottinghauf, 72, calls the conditions “the worst I’ve seen since ‘36.” (John Gaps III / Associated Press)

At the time, a growing number of experts were “talking about what climate change could mean in the near-term and long-term future,” recalled Joseph Carlson, a now-retired public affairs manager for Exxon who helped draft the company’s position.

That summer, James Hansen, then a NASA climate scientist, told Congress global warming had already begun. His testimony, enhanced by the sweltering temperatures outside, prompted many Americans to begin taking the threat of a hotter planet seriously. Time magazine even put the Earth on its cover as “Planet of the Year.”



Jim Hansen, background, works with student Josh Wilder at NASA's Goddard Institute of Space Studies in New York in 1997. (Jim Cooper / Associated Press)

Climate scientists, then and now, note that isolated heat waves and droughts are not necessarily the direct result of planetary warming. But, coming in the midst of that debate, that heat wave, which caused more than 5,000 deaths in the United States and cost nearly \$40 billion, had a big impact.

So LeVine laid out a plan for the “Exxon Position”: In order to stop the momentum behind the issue, LeVine said Exxon should emphasize that doubt. Tell the public that more science is needed before regulatory action is taken, he argued, and emphasize the “costs and economics” of restricting carbon dioxide emissions.

Banning CFCs “pales by comparison to the difficulties of applying similar approaches” to carbon dioxide, an unavoidable byproduct of burning fossil fuels, which produce most of the world’s electricity, he said.

The company recently declined to comment on the 1989 board meeting. LeVine declined to comment for this story as well. Of the six living members of that board of directors, one declined to comment and five could not be reached.

Alan Jeffers, an Exxon Mobil spokesman, said: “Exxon Mobil has always advocated for good public policy that is based on sound science” and the archived documents reflect “a balanced approach to communicating the risk of climate change.” And he provided a list of more than 50 peer-reviewed publications showing the company continued investigating climate change science throughout the 1990s and 2000s.

By the early 1990s, Exxon began putting its new public relations strategy into practice.

At the company’s annual shareholders’ meeting in 1990, the board of directors denounced a dissident shareholder proposal that called for Exxon to reduce carbon dioxide emissions, citing “great scientific uncertainties” about the environmental effects of global climate change. The board also criticized “drastic and precipitant proposals,” like those being considered by the United Nations.

In 1992, Exxon joined the Global Climate Coalition, an association of companies from industries linked to fossil fuels, which vigorously fought potential climate change regulations by emphasizing scientific uncertainty and underscoring the negative economic impact of such laws on consumers.

From 1998 to 2005, Exxon contributed almost \$16 million to at least 43 organizations to wage a campaign raising questions about climate change, according to the Union of Concerned Scientists, an environmental activist group. Greenpeace has estimated that Exxon spent more than \$30 million in that effort.

Exxon's executives also publicly questioned climate change science.

In 1997, Exxon's chairman and chief executive, Lee Raymond, derided potential regulations on carbon emissions at a meeting of the World Petroleum Council in Beijing.

"Many people — politicians and the public alike — believe that global warming is a rock-solid certainty," Raymond said. "But it's not."

# Political cart before a scientific horse

The Clinton administration has released a draft overview of the purported potential effects of climate change on specific U.S. geographic regions and economic sectors. It's called the National Assessment Synthesis Report. Such an assessment would be of great value to policymakers and the public if it were possible to produce an accurate one. But as climate scientists will tell you, we currently have neither the knowledge nor the tools to do that.

The report bases many of its conclusions on two climate models developed in Canada and the United Kingdom. Climate models are evolving research tools but are

not yet capable of predicting Earth's global climate and are currently unsuitable for making national or regional assessments. Professor Freeman J. Dyson of Princeton's Institute for Advanced Study said it best at the March 1999 American Physical Society Centennial Meeting: "[T]he climate models on which so much effort is expended are unreliable....[W]e must continue to warn the politicians and the public, don't believe the numbers just because they come out of a supercomputer."

Today's global models simply don't work at the regional level. For example, one of the report models says the Great Lakes' water level will be five feet *lower*; the other says it will be one foot *higher*. One model says most of the country will be *wetter*; the other says it will be *drier*. Even apparent agreement between the models in some

places does not mean they are accurate.

The overview report was released even though most of the underlying reports and analyses are not yet available for scientific peer review or public comment. Important cautions and caveats from academic authorities are buried in detailed language that makes it easy for key scientific uncertainties to be missed and for conclusions to be misunderstood or misrepresented.

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## Climate models are currently unsuitable for making national assessments.

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So why base the report on unreliable models, and why release it now? The report's language and logic appear designed to emphasize selective results to convince people that climate change will

adversely impact their lives. In releasing this report, the administration seeks to gain support for its own policies, which could damage the economy and employment while accomplishing little in addressing potential long-term climate risks. The report is written as a political document, not an objective summary of the underlying science.

Climate change is an important public issue. That is why we support emphasis on further climate research, the development and encouragement of promising technology, the promotion of more efficient use of energy, the removal of barriers to innovation, and cost-benefit assessments of proposed policies.

Sound science and policy are at the core of this approach, which should never become the horse behind anyone's political cart.

**ExxonMobil**



Exxon Mobil ad from the Washington Post in 2000.

In the U.S., Exxon took out newspaper ads disparaging federal research into the effect of climate change on different areas of the U.S.

“Today’s global models simply don’t work at a regional level,” read an Exxon Mobil ad in an August 2000 edition of the Washington Post. It went on: “That is why we support emphasis on further climate research.”

In 1997, the U.S. Senate refused to ratify a U.N. treaty committing states to reduce greenhouse gases because restrictions on carbon dioxide emissions “could result in serious harm to the United States economy” — an argument Exxon used repeatedly in its public-relations campaign.

Today, the effect of climate change is widely accepted. Average global temperatures have risen approximately 1.5 degrees since 1880, and the sea level has risen at a rate of 0.06 of an inch per year and is accelerating. Moreover, Arctic sea ice coverage is shrinking so drastically that last August, National Geographic had to redraw its atlas maps.

In 2007, the company, for the first time since the early 1980s, publicly conceded that climate change was occurring and that it was in large part the result of the burning of fossil fuels.

“There was a fork in the road. They had the opportunity to make a decision to go one way or the other way,” said Martin Hoffert, an Exxon consultant in the 1980s and professor emeritus of physics at New York University. “If Exxon had listened to its scientists and endorsed our research — and not started that campaign — it would have had, in my opinion, an enormous impact.”

# What Exxon knew about climate change, and when it knew it

10/12/15 12:43 PM

By **Steve Benen**

It's been well established over many years that Exxon is one of the world's leading voices when it comes to denying the evidence of climate change. What's new, however, are reports that the oil giant has quietly operated for decades on the assumption that the scientific evidence is real.

The L.A. Times had a [fascinating piece](#) on this yesterday, which deserves to have an impact on the broader policy discussion.

[In 1990] in the far northern regions of Canada's Arctic frontier, researchers and engineers at Exxon and Imperial Oil were quietly incorporating climate change projections into the company's planning and closely studying how to adapt the company's Arctic operations to a warming planet.

Of particular interest are the efforts of Ken Croasdale, a senior researcher for Exxon's Canadian subsidiary, who reportedly focused considerable effort into "trying to determine how global warming could affect Exxon's Arctic operations and its bottom line."

Between 1986, when Croasdale took the reins of Imperial's frontier research team, until 1992, when he left the company, his team of engineers and scientists used the global circulation models developed by the Canadian Climate Centre and NASA's Goddard Institute for Space Studies to anticipate how climate change could affect a variety of operations in the Arctic.

These were the same models that – for the next two decades – Exxon's executives publicly dismissed as unreliable and based on uncertain science.

This is no small detail. Based on the L.A. Times' reporting, Exxon accepted the fact that climate change is real. Exxon also put those beliefs into action, basing company decisions on the available science.

But at the same time, Exxon also seems to have denied the very evidence it was acting upon.

Also over the weekend, the New York Times published [a piece](#) from Harvard's Naomi Oreskes, who noted, "As early as 1977, one of Exxon's senior scientists warned a gathering of oilmen of a 'general scientific agreement' that the burning of fossil fuels was influencing the climate. A year later, he had updated his assessment, warning that 'present thinking holds that man has a

time window of five to 10 years before the need for hard decisions regarding changes in energy strategies might become critical.”

In the years that followed, however, Exxon, which became ExxonMobil, urged policymakers around the world not to take steps to address the intensifying climate crisis that its own scientists and engineers recognized.

All of this evidence is important in the context of the policy discussion, but there’s a political angle that’s worth appreciating. Every conservative – in Congress, in state legislatures, in the media – who has dutifully regurgitated far-right talking points and denied climate science, thought they were aligned with Exxon. They weren’t – the oil giant recognized the science as true, even when the company’s political allies didn’t.

Consider the implications for a policymaker like Republican Sen. Jim Inhofe of Oklahoma ([Senator Snowball](#)), who continues to believe the entirety of climate science is an elaborate “hoax.” These latest revelations suggest Inhofe has positioned himself to Exxon’s right.

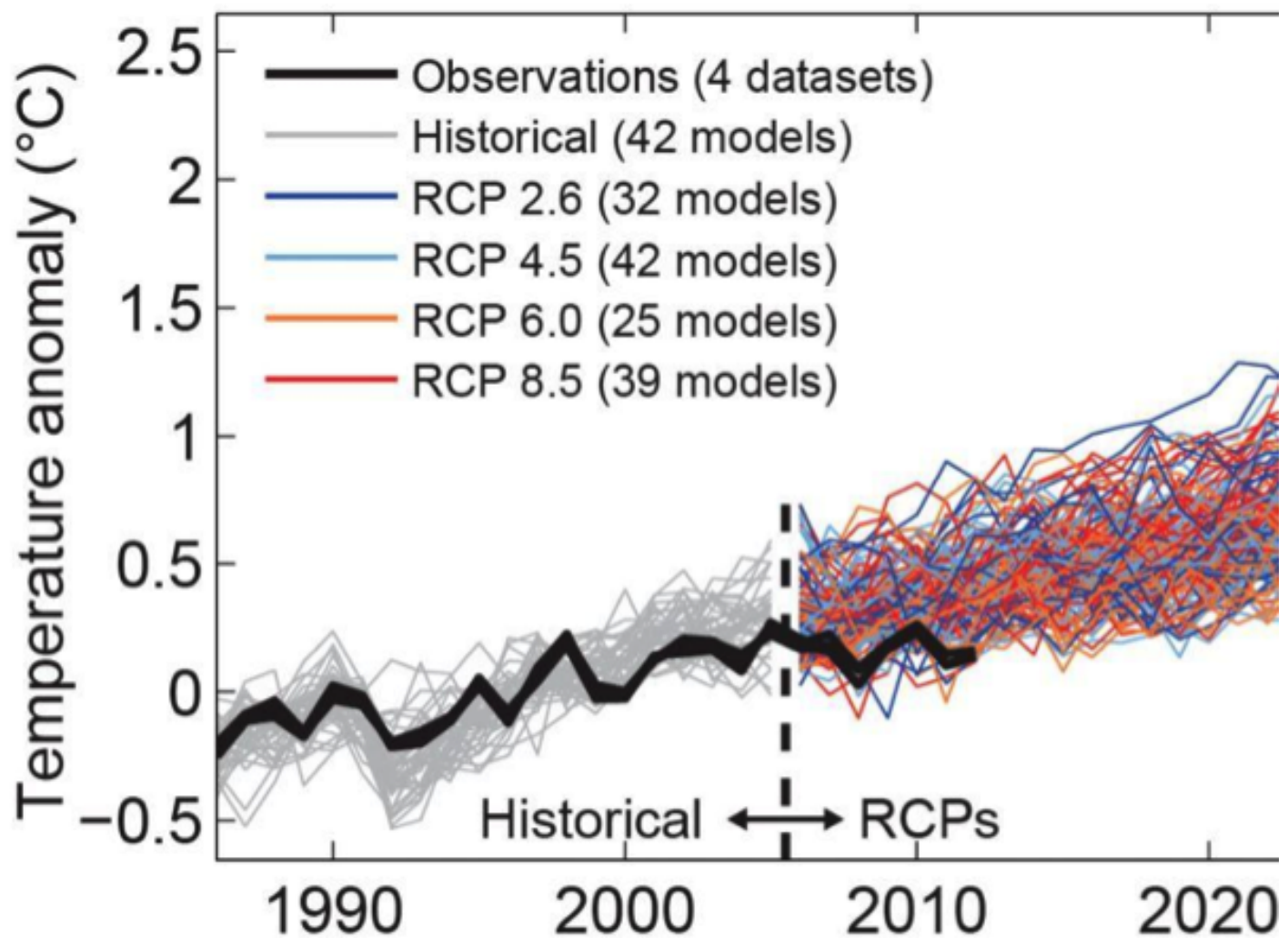
Or put another way, when the far-right senator makes his case against global warming, it’s not just the reality-based community who considers Inhofe’s ridiculous – even Exxon engineers believe the senator is wrong.

# How Exxon Overstates the Uncertainty in Climate Science

Exxon mistakes climate policy choices for scientific uncertainty.

BY JOHN H. CUSHMAN JR., INSIDECLIMATE NEWS

OCT 29, 2015



Exxon spokesman Ken Cohen either misunderstood or misrepresented the chart pictured above as he pushed back against an InsideClimate News investigation into what Exxon's own scientists knew about the emerging risks of climate change, and when they knew it.

When ExxonMobil's public relations department plucks a complex chart from the authoritative report by the world panel on climate science and starts chanting an uncertainty mantra, put your thinking cap on.

Apparently, it's too easy to misunderstand—and just as easy to misrepresent—a rainbow-hued chart full of squiggly lines and obscure acronyms.

Exxon spokesman Ken Cohen either misunderstood or misrepresented his selected chart the other day as he pushed back against an [InsideClimate News investigation](#) into what Exxon's own scientists knew about the emerging risks of climate change, and when they knew it.

As it happens, a new peer-reviewed study shows that even well informed and highly educated people tend to misread this kind of chart. Like Cohen, test subjects got it wrong in a way that made the unknowns of climate science seem like insurmountable barriers to strong climate policies.

Cohen made it sound like the chart's wide range of climate outcomes was due to scientific uncertainty, when in fact much of the range is tied to social and economic unknowns. What path will the world choose to take? Will society decide on deep decarbonization, on half-measures, or on business as usual?

The charts in question are among the best known in the portfolio of the Intergovernmental Panel on Climate Change (IPCC), the established curators of the scientific consensus on global warming and the UN's chief scientific advisors to climate treaty negotiators.

The graphs show this century's rising global surface temperatures as simulated by climate models under different policy options.

Testing people's reaction to **one such complicated graph**, Rosemarie McMahon and two other Zurich experts found that the test-takers commonly missed the point. People didn't see that our choices, not the models, will determine how much warming we are in for.

The result, says an article they published in the journal *Climatic Change*, is "a misguided perception that climate science is too uncertain to play any significant role in policy decisions."

If the researchers found many of their test subjects utterly befuddled by the graph, Cohen did little to clarify things.

His point in highlighting that particular chart was to emphasize scientific uncertainty, an approach Exxon has pursued for decades.

The graph Cohen cited was an updated version from the latest IPCC scientific review. It was just as complicated as the version used in the Zurich research—maybe even more so. But its message was the same—within a range of uncertainty, models project that reductions in greenhouse gas emissions will lower global warming, and failure to act decisively will increase the warming.

The comments of the test subjects, when they were asked to describe the message, displayed "poor understanding of the graph," the Zurich researchers said.

"There is a lot of scientific uncertainty," said a government administrator. "Errors are huge," said a doctoral student in physics. "Impossible to model the climate with any level of accuracy," said a Swiss member of parliament.

And a lobbyist said: "I know you can make any model say anything about the same situation and the total opposite."

Here, by comparison, is how Cohen treated a similar, more recent IPCC graphic in **a posting on his corporate blog** on October 15:

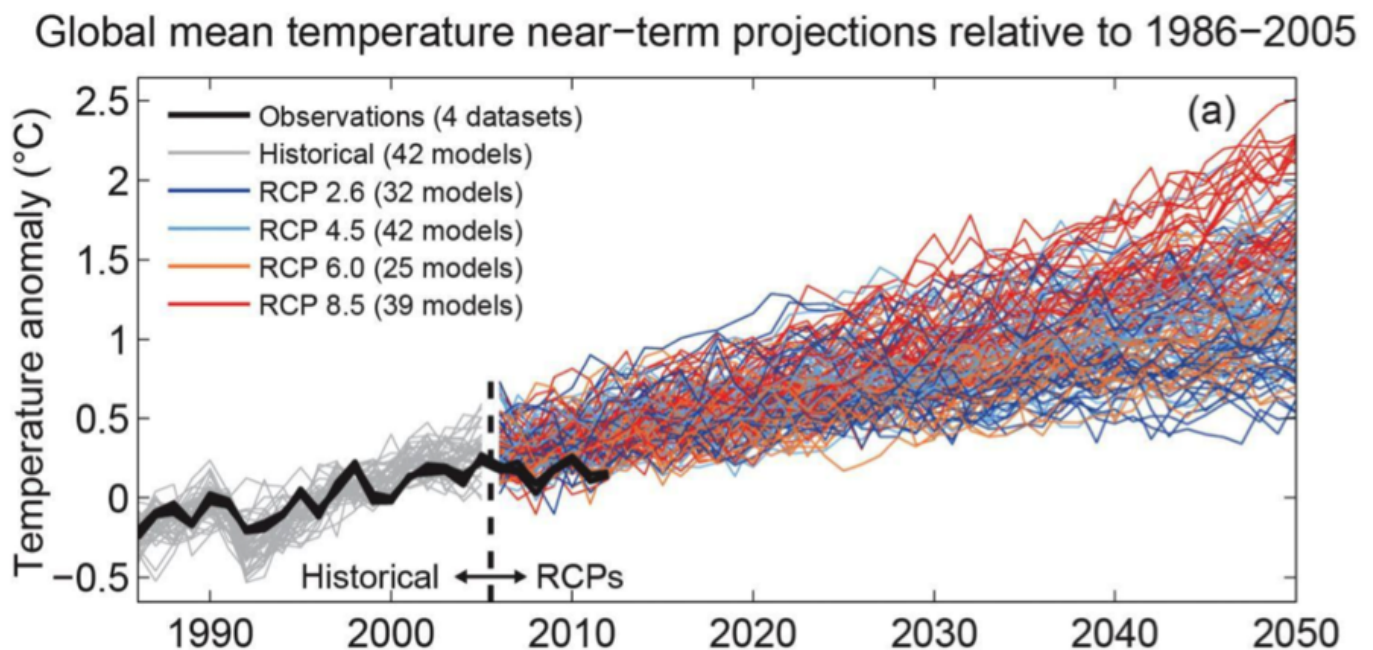
"This should refute the claim, central to activists' conspiracy theories, that anyone had reached a firm conclusion about catastrophic impacts of climate change back in the 1970s and '80s.

"As you can see, the scientific community that contributes to the IPCC report is, even today, still projecting a broad range of potential outcomes."

But wait. Examine the chart (below) for yourself. Especially if you are versed in the underlying science, you'll see that it presents two kinds of uncertainties—those inherent in climate models, and those in the emission scenarios that are fed into the models.

Modeling uncertainty is only part of the story. Just as important are our future emissions pathways—and those are a matter of social choice.

"Novice readers were unable to identify the two different types of uncertainties in this graph without substantial guidance," the Zurich researchers wrote. "Instead they saw a great deal of uncertainty but falsely attributed it to the climate models."



A recurring theme in the InsideClimate News reporting on what Exxon knew is that its scientists understood early on what their computer models were saying about the risks of global warming. But even as the certainty of the models improved, Exxon focused instead on their uncertainty in its campaign to delay climate action.

In a [response to this article](#), Exxon's Cohen said on Friday:

"At no point did I attribute the ranges in the chart solely to uncertainty in climate models. In fact, I clearly stated that the chart was an 'evaluation of the range of possible climate change scenarios.'

"Just to be clear, the ranges in the chart are due to uncertainty in a number of factors including uncertainty in the climate models but, more importantly, to uncertainty in future technology development as well as uncertainty about expected policy responses."

To really understand this graphic, you have to see what the various colors of the squiggly lines mean. Each color denotes a plausible scenario of how the world may choose to cut fossil fuel emissions. The red lines denote a pathway, in plain English, of business as usual. And the dark blue lines represent a pathway of making deep cuts quickly. The light blue and orange lines, in turn, represent middle-of-the-road policies.

Of course, many people looking at the chart's with cryptic code letters may be confused. They might not know that RCPs are so-called "representative concentration pathways," that they stand for how we might adopt new policies and technologies to control carbon pollution. They are, in short, scenarios and not predictions.

If you are interested in the details, the numbers for each pathway, such as 2.6 or 8.5, represents the radiative forcing that would ensue, measured in watts per square meter.

So this graph is meant to communicate with climate geeks. As the Swiss lawmaker in Zurich put it, this was not made for politicians or the general public, but for "scientists, because nobody else understands it and nobody else has the patience."

Still, if you put your mind to it, it's not impossible to understand the chart Cohen displayed, or the one the researchers presented to their test subjects.

Looking like the sash from Joseph's many-colored coat unraveling at one end, it simply depicts multiple modeling runs for each pathway scenario. Different models get different results for the red, business-as-usual choice. And different models get different results for the light blue, crisis-averting choice.

Why do the models differ at all?



Because models, like tennis players, have different strengths and weaknesses. Some pros play better on grass; some have more powerful serves, or nurse old injuries. Some have nerves of steel, others throw temper tantrums. Nobody wins every time.

Likewise, no one model is the best every time. So the IPCC uses multiple models, and feeds into them multiple scenarios, and presents the range of outcomes that we see here.

But you'll notice that the red lines tend to the top of the range, and the light blue lines toward the bottom, and the orange lines toward the middle.

What the model ensembles are saying is this: if society makes the right choices, warming is likely to slow, and if society makes the wrong choices, warming is likely to intensify.

If Cohen read his graph correctly, here's what he'd say: a lot of the uncertainty facing the world is due to our inability to predict what policies we'll choose to follow. And even though models are inherently imprecise, their combined evidence is strong that firm action to control pollution will head off the greatest risks of catastrophic climate change.

That, after all, is the advice coming with ever more clarity from mainstream climate scientists. And for decades, Exxon's management has had plenty of scientists to explain it to them.

# The harm Exxon Mobil has done



*Getty Images*

**By Naomi Oreskes and Rep. Ted Lieu (D-Calif.) - 11/04/15 06:19 PM EST**

It may be hard to accept, but a single company may have set back all of humanity.

Had Exxon Mobil listened to its own scientists rather than spread disinformation on climate change, the world might not have wasted three crucial decades during which global warming went from a prediction to a fact.

Rather than apologize, Exxon Mobil's reaction to recent investigations that detail the corporation's deception on climate science has been both profane and righteously indignant. Exxon Mobil is now denying it denied climate change.

The corporation's actions, however, demonstrate something else entirely: An extensive and expensive campaign to deny climate science, deceive the American people about the health and environmental ruin caused by global warming, and stop action by governments to address Earth's rapidly accelerating climate crisis.

In 1977, Exxon scientists began to discuss the threat of disruptive climate change as a direct result of the burning of fossil fuels. The corporation launched cutting-edge research into the effects that carbon dioxide emissions would have on the climate. Based on that research, Exxon scientists warned corporate leadership that carbon dioxide emissions would warm the planet, with potentially catastrophic repercussions.

Rather than accept what their own scientists were saying, top executives at Exxon started a massive campaign of disinformation. By 1997, the chief executive of Exxon, Lee Raymond, was publicly claiming that the connection between human activities and climate change was inconclusive and uncertain. Forbes magazine wrote that Raymond “used his executive chair as a platform for espousing his disbelief in global warming.”

Exxon created advertisements that contradicted its own research on global warming. The company funded the Global Climate Coalition, an organization of companies dedicated to derailing government efforts to slash emissions from fossil fuels.

Exxon also spent millions of dollars in the form of political campaign donations, lobbying fees and public relations strategies to discredit climate science and disrupt any forceful state or federal action to cut carbon dioxide emissions. The company also supported think tanks that attempted to discredit climate science and scientists.

In 2001, Exxon Mobil lobbyists helped convince President George W. Bush to pull out of the Kyoto Protocol. By 2006, the corporation was funneling tens of millions of dollars to at least 43 organizations dedicated to discrediting climate science. Exxon Mobil opposed historic climate and energy legislation such as the American Clean Energy and Security Act, also known as the Waxman-Markey Bill. The measure died in the Senate in 2009.

Despite protests to the contrary, Exxon Mobil continues to undermine efforts to combat climate change. Last week, it asserted in a press release: “We will continue to advocate for policies that reduce emissions.” In fact, the company played a major role in stripping provisions in California’s S.B. 350, which would have reduced fossil fuel consumption.

Exxon has profited from climate change even while denying it. The corporation has invested \$1.7 billion in drilling rights in more than 1 million acres in the Arctic’s Beaufort Sea, drilling that will only be possible as the Arctic ice breaks up and melts away, which scientists say is now virtually certain.

It’s as if tobacco companies, knowing full well that cigarettes were killing millions of people, had invested in vast tracts of land to be developed into cemeteries.

A new word needs to be invented in the English language for what Exxon Mobil has done. The level of corporate hypocrisy and the potential consequences are staggering, as is the company's blatant denial of the facts of science and of its own shameful history.

That's why the U.S. Department of Justice must investigate the full extent of the corporation's actions and determine if any laws have been broken. In the past, the Department of Justice successfully prosecuted tobacco companies for denying science and profiting from it.

The department — and Congress, as needed — should guarantee full immunity for anyone who steps forward with information about Exxon Mobil's actions or about wrongdoing by other fossil fuel corporations.

The full extent of Exxon Mobil's deception deserves to be known because that may help the company change its ways. The future health of humankind, of all life on our planet, may well depend upon it.

# New York is investigating Exxon Mobil for allegedly misleading the public about climate change

By [Chris Mooney](#) November 5, 2015



A view of the Exxon Mobil refinery in Baytown, Texas in this file photo from September 15, 2008. REUTERS/Jessica Rinaldi

The state of New York is investigating whether Exxon Mobil misled the public and investors about the risks of climate change, a move sought by

environmentalists that could signal a broader reckoning with the conduct of big energy companies.

A spokesman for Exxon Mobil confirmed Thursday that the company had received a subpoena from the office of the attorney general of New York, Eric Schneiderman, related to the subject of climate change and was “assessing” its response.

The investigation focuses on whether Exxon Mobil intentionally clouded public debate about science and hid from investors the risks that climate change could pose to its business according to a person familiar with the matter.

Schneiderman has broad leeway to take on such a sweeping target under both consumer protection laws and New York’s [Martin Act](#), a securities law that protects investors.

The inquiry seeks a variety of documents and records from the company, according to the person familiar with the probe, who spoke on condition of anonymity because the contents of the subpoena have not been made public.

“We unequivocally reject allegations that Exxon Mobil suppressed climate change research contained in media reports that are inaccurate distortions of Exxon Mobil’s nearly 40-year history of climate research that was conducted

publicly in conjunction with the Department of Energy, academics and the UN Intergovernmental Panel on Climate Change,” Exxon Mobil spokesman Scott Silvestri said.

Schneiderman, the New York attorney general, is also conducting a similar investigation regarding Peabody Energy, a leading coal company. The person familiar with the matter suggested that other energy companies could also face scrutiny.

Environmental advocates hailed the probes as a major victory. For well over a decade, such organizations have been probing alleged links between Exxon, the world’s largest publicly traded energy company, and the raising of public doubt about climate change. They cited not only direct statements and advertisements by Exxon Mobil, but also its alleged past support for think tanks and advocacy organizations that express climate change skepticism.

“We have watched Exxon sow doubt on climate science and delay action on climate change for nearly a generation,” said Kert Davies, formerly with Greenpeace and now the Climate Investigations Center.

Similarly, in a 2006 letter to the company, the British Royal Society [charged](#) that a variety of statements in Exxon Mobil’s public documents at the time

“are not consistent with the scientific literature that has been published on this issue.”

“The context here is that climate activists have long accused Exxon – along with various other large energy companies – of seeking to influence the climate policy debate to their benefit. The claim that Exxon ‘suppressed’ research is part and parcel of this broader issue. Naturally, the company takes a different view of this issue,” said Pavel Molchanov, an oil industry analyst with Raymond James, in a statement.

Recent news reports have increased calls for action, as the Los Angeles Times and the online publication Inside Climate News both published articles charging that Exxon researchers were concerned about climate change from fossil fuel emissions decades ago, and yet for long periods, the company publicly raised doubts about the science.

The charges have been so prominent that senator and Democratic presidential contender Bernie Sanders recently [called for](#) a Justice Department investigation into Exxon Mobil regarding “what it knew and what it told the public and shareholders about the cause of climate change.”



Naomi Oreskes, a professor of the history of science at Harvard University who has been a critic of the company, likened the investigation to past investigations of the tobacco industry in a statement Thursday.

“We are not physiologically addicted to oil, but we live inside a highly developed infrastructure that fosters fossil fuel dependency and discourages alternatives. We could have begun to shift the incentives, and encourage alternatives, if we had implemented a carbon tax...at any point over the past 20 years,” Oreskes said. “There are many reasons we did not do that, but a significant one, in my view, is the role of Exxon Mobil and others in fomenting disinformation, undermining public support for such initiatives, and lobbying against policies that would have begun to decrease our fossil fuel dependency.”

In the 1990s, Exxon Mobil [took stances](#) that expressed skepticism about climate change. For instance, in 1997 Exxon CEO Lee Raymond stated in Beijing, “Many people, politicians and the public alike, believe global warming is a rock-solid certainty. But it’s not,” according to a contemporary media report.

But matters have changed since then and the company’s current CEO, Rex Tillerson, has [called for a carbon tax](#).

“Exxon Mobil recognizes that climate risks are real and responsible actions are warranted,” said its vice president of public and government affairs, Ken Cohen, on a press call regarding the subpoena. “We have a commitment to helping address this important societal challenge.”

Cohen said on the call that the company began in the late 2000s to inform “shareholders and investors” about climate change and how it could affect the company’s business “through regulatory filings.” In response to the series by Inside Climate News, Cohen said the company has been in “active dialogue” with the publication since the stories came out.

“Our company, beginning in the latter part of the 1970s and continuing to the present day, has been involved in serious scientific research, and we have been supporting since that time scientific understanding of the risk of climate change,” Cohen said.

“Over the last decade, whispering concerns have increased within oil and other fossil fuel companies about a wide range of possible legal vulnerabilities. I think such concerns in fact have driven companies to take public positions acknowledging basic climate science in more recent years, and compelled them to even begin advocating seemingly progressive but politically unlikely policy approaches like carbon pricing,” says Paul Bledsoe, a former Clinton

White House aide on climate change who is now an energy and climate consultant in Washington.

Schneiderman, a Democrat, has been attorney general since 2011 and like other prominent New York-based prosecutors has not shied away from tackling big targets. Over his tenure, he has taken on Apple's foray into E-books, big mortgage banks, and fantasy sports sites. He even filed a \$40 million civil lawsuit against Donald Trump, alleging that the mogul's "Trump University" — which purported to teach real estate investment techniques — in fact offered very little education at a high cost to students.

# *More Oil Companies Could Join Exxon Mobil as Focus of Climate Investigations*

By CLIFFORD KRAUSS NOV. 6, 2015



An oil platform off the coast of Thailand run by Unocal, which Chevron acquired in 2005. Chevron has been one of the companies that supported efforts to derail initiatives to reduce greenhouse gas emissions. CreditUnocal, via Associated Press  
HOUSTON — The opening of [an investigation of Exxon Mobil](#) by the New York attorney general's office into the company's record on [climate change](#) may well spur legal inquiries into other [oil](#) companies, according to legal and climate experts, although successful prosecutions are far from assured.

Many [oil](#) companies have funded lobbying efforts and research on [climate change](#), so prosecutors would most likely be able to search through vast amounts of material. The industry has also resisted pressure for years from environmental groups to warn investors of the risks that stricter limits on carbon emissions could have on their businesses, although that appears to be changing.

“[Exxon Mobil](#) is not alone,” said Stephen Zamora, a professor at the University of Houston Law Center. “This is not likely to be an isolated matter.”

Energy experts said prosecutors may decide to investigate companies that chose to fund or join organizations that questioned climate science or policies designed to address the problem, such as the Global Climate Coalition and the American Legislative Exchange Council, to see if discrepancies exist between the companies’ public and private statements.

[British Petroleum](#) (now [BP](#)), [Shell Oil](#), Texaco (now part of [Chevron](#)) and Exxon, along with several manufacturing companies, were all members of the coalition, a group of companies and trade associations that started an advertising campaign in the 1990s opposing Washington’s involvement in strong international efforts like the Kyoto Protocol initiative to reduce greenhouse gas emissions.

Energy experts said internal documents from member companies about climate change could contradict what the companies said as part of the coalition, which disbanded in 2002.



“There was a concerted effort by multiple American oil companies to obscure the emerging climate science consensus throughout the 1990s,” said Paul Bledsoe, a former White House aide to President Bill Clinton on climate issues. “This group may be vulnerable to legal challenge.”

British Petroleum and [Shell Oil](#) left the coalition early on, setting a pattern in which European oil companies took a very different course on climate and other environmental issues than most of their American competitors.

Shell announced this summer that it would not renew its membership in the American Legislative Exchange Council, or ALEC, a free-enterprise group that has opposed government mandates, subsidies and other efforts to force or encourage companies to develop and use more renewable energy sources.

[Occidental Petroleum](#) and several other companies have also left ALEC, but [Chevron](#) and [Exxon Mobil](#) still support the group.

Big American and European oil companies can point to efforts they have made to support renewable energy, perhaps clouding attempts by prosecutors to paint them as one-sided on the issue of climate change.

Chevron, for example, has been a pioneer in [geothermal](#) energy for decades. Exxon Mobil has a project underway to convert algae into a biofuel that can run vehicles and

soak up carbon. BP is active in wind power. Several companies in the United States have begun working with the Environmental Defense Fund to limit emissions of methane.

“The oil and gas industry has probably been the biggest funder of research into decarbonization, maybe more even than the federal government,” said Michael Webber, deputy director of the Energy Institute at the University of Texas.



The Bayway Refinery in Linden, N.J., once owned by Exxon, became the subject of a battle between the oil company and the state over environmental damage.

Credit Richard Perry/The New York Times

But foreign oil and gas companies, including most recently [Total](#) of France and [BHP Billiton](#) of Australia, have been far more outspoken about the dangers of climate change than American ones.

Last month, 10 of the world's biggest oil companies, including BP, Royal Dutch Shell, Saudi Aramco, Repsol of Spain, Eni of Italy and [Total](#), made a public declaration acknowledging that their industry must help address global climate change.

None of the big American companies joined the group, largely because they oppose carbon taxes and trading of carbon-emission permits — remedies that would raise the price of fossil fuels like oil and [natural gas](#).

Last September, five major European, Asian and Latin American oil and gas companies signed on to a voluntary United Nations-backed program to monitor and disclose methane emissions, as well as invest in technologies to control greenhouse gases from their operations.

The only American company to join was [Southwestern Energy](#), a midsize Houston-based company that mostly invests in [natural gas](#).

“There are times to go off the reservation, and this may be one of them,” said Steven L. Mueller, chief executive of [Southwestern Energy](#), just after his company joined the effort.

Energy experts say it will be harder to make cases against the oil companies than it was against tobacco companies that deliberately hid research from their customers, since many oil company scientists, including those of Exxon Mobil, have presented papers on climate change publicly at conferences and contributed to the research of international groups concerned with the issue.

“Unless they directly lied in Congress, the legal case against them is kind of thin,” said Hal Harvey, chief of Energy Innovation, an energy consultancy. But he added, the record shows that the companies “have walked away from being a credible spokesman on science.”



# ***Exxon Inquiry Both Mirrors and Contrasts With Tobacco Industry Case***

By JOHN SCHWARTZ NOV. 6, 2015

The New York attorney general's [decision to investigate Exxon Mobil](#) over whether the company lied to the public and investors about the risks of [climate change](#) has raised questions about possible similarities to the [Justice Department's successful suit against the tobacco industry in 1997](#).

The new case has reprised the famous question from Watergate — What did they know, and when did they know it? — which also was an important element of that tobacco lawsuit.

But there are important differences [in the two cases](#), legal experts note. The tobacco industry largely hid its evidence of the addictiveness and harm of tobacco, while Exxon published peer-reviewed [climate change](#) research even as it supported groups that criticized policies to deal with climate change and raised doubts on the underlying science.

That basic difference presents a hurdle — but by no means an insurmountable one — for efforts to prosecute the company, the legal experts said.

“The added challenge for both criminal prosecution but also for a civil case against Exxon is that the company talked out of both sides of its mouth,” said [David M. Uhlmann](#), a professor at the University of Michigan who served as chief of the Justice Department's environmental crimes section from 2000 to 2007. The mixed message, he said, could create a “murky evidentiary record.”

Professor Uhlmann said that while he considered what he has learned so far about Exxon's actions to be “morally reprehensible,” prosecutors might have difficulty finding an underlying crime to present in a courtroom.

“Ever since this story broke, I've been struggling to figure out what the underlying crime is,” he said. “Lying to the public isn't, without more, a crime.” If it were, he said, “You'd have to prosecute many politicians, as well.” Besides, he noted, “Exxon is not the

sole source of carbon pollution — nor is the company alone in engaging in reprehensible climate denial.”

As attorney general, [Eric T. Schneiderman](#) has many legal tools at hand. Along with laws like the Racketeer Influenced and Corrupt Organizations Act, or RICO, there are statutes specific to New York that have proved powerful in past suits, including sweeping powers under state law to take action against “[persistent fraud or illegality](#),” and the state’s [deceptive business and trade practices act](#).

Most importantly, there is the Martin Act, which [Michael B. Gerrard](#), an environmental law professor at Columbia, called “one of the most powerful tools available to any government entity in the United States to investigate corporations before actually filing suit.”

Eliot Spitzer, the former New York attorney general, used the law in his attacks on Wall Street, and Mr. Schneiderman employed it in a case that led to a settlement with a task force of state and federal law enforcement officials of more than \$16 billion with Bank of America over mortgage-backed securities.

Under the act, “If the company is found to have knowingly misled investors or regulators, that could have serious legal consequences beyond the reputational injury,” Mr. Gerrard said.

In a conference call with reporters on Thursday, Ken Cohen, Exxon Mobil’s vice president of public and government affairs, said that the company recognized the reality of human-induced climate change and the need for action, and supported a carbon tax.

When asked about statements by executives like former Exxon chairman Lee R. Raymond that questioned climate change and policies to deal with it, Mr. Cohen once again discussed the company’s commitment to research and suggested that the research efforts were more “consistent” than the policy statements.

Phil Barnett, a lawyer and former congressional aide who worked on Representative Henry A. Waxman’s investigation of the tobacco industry, said the trove of archived Exxon documents that had come to light recently — based on reporting by [Inside Climate News](#) and The [Los Angeles Times](#) — was only the beginning.

“That’s not what you get when you issue a subpoena and get all the internal records,” he said.

Those records alone will provide the map for any possible next steps of the investigation, said [James E. Tierney](#), a former Maine attorney general who directs the national state attorneys general program at Columbia University.

Mr. Tierney was deeply involved with the state lawsuits against the tobacco industry that led to a multibillion-dollar settlement. That settlement started with two states, Mississippi and Minnesota.

The tobacco documents proved to be devastating to the companies, including [such statements as](#), “We are, then, in the business of selling [nicotine](#), an addictive drug...,” from a corporate officer.

“The issue with Exxon, just as it was with tobacco, is what did they know and when did they know it,” Mr. Tierney said. “If internal documents at Exxon show that they deliberately misled consumers and investors, then Exxon has potential liability.” But, he added, “If the documents do not exist, then Exxon has nothing to worry about.”

[Naomi Oreskes](#), a Harvard historian who has co-written a book, “Merchants of Doubt,” that [draws comparisons](#) between the two industries and their messages over the years, acknowledged in an emailed response to questions that “no two historical (or legal) situations are ever exactly alike, so I don’t think we should expect that.”

She added that Exxon stands out from other energy companies because its size would have allowed it to do more productive early research into renewable energy and capturing carbon.

Other reasons, she added, included that “they were the most vocal company in publicly expressing doubt about the climate science” and funded organizations that “promoted disinformation or misleading information about the state of climate science” and the impact of warming.

She also pointed out that “the tobacco industry also conducted useful research, much of which was published. And that useful research played a large role in their legal defense strategy.”

# New York's Attorney General Just Won a Settlement With a Coal Giant for Climate Deception. Is Exxon Next?

*Attorney General Eric Schneiderman has issued a subpoena for nearly four decades' worth of documents from ExxonMobil.*

*By Zoë Carpenter*

NOVEMBER 10, 2015

An unprecedented two-year investigation into the nation's largest coal producer ended Monday with a settlement between Peabody Energy and New York Attorney General Eric Schneiderman. Peabody was accused of providing “incomplete and one-sided discussions” to investors regarding the financial implications of policies to combat climate change and falling demand for coal. Though the coal giant won't pay a fine, it agreed to amend its disclosures to the Securities and Exchange Commission to be more transparent about the business risks of selling coal in a carbon-constrained world.

“As a publicly traded company whose core business generates massive amounts of carbon emissions, Peabody Energy has a responsibility to be

honest with its investors and the public about the risks posed by climate change, now and in the future,” Schneiderman said in a statement. “I believe that full and fair disclosures by Peabody and other fossil fuel companies will lead investors to think long and hard about the damage these companies are doing to our planet.”

Chief among the “other fossil fuel companies” Schneiderman alluded to is ExxonMobil. Last week Schneiderman issued a subpoena to the oil company for documents about its research and communications about climate change, from 1977 to the present. The Exxon inquiry, which has been underway for a year, considers whether the company lied to shareholders and the public about the risks of global warming, violating consumer fraud statutes and the Martin Act, a state law covering financial fraud.

Although the Exxon and Peabody investigations are similar in thrust, a person involved in the inquiries said that the relatively benign Peabody settlement should not necessarily be seen as a preview for what’s to come regarding Exxon. Peabody was accused of ignoring climate change, while Exxon has conducted extensive research on the issue. Accordingly, Schneiderman’s office believes the oil company may have engaged in a more deliberate and extensive campaign to deceive the public and its shareholders.

Calls for an official investigation of Exxon have come from lawmakers, political candidates, and environmental groups since InsideClimate News and the *Los Angeles Times* published stories about the company's role in studying climate science, and casting doubt on it. Schneiderman's inquiry is the first to be publicly disclosed.

The attorney general has asked for a huge trove of documents. They include Exxon's research on the causes and impacts of climate change; documents related to how that research was factored into business decisions and financial projections; information about how the impacts of potential climate-related regulations on profits were disclosed to the SEC, the public, and investors; information about climate change presented to the board of directors; exchanges between Exxon and trade associations and industry groups including the American Petroleum Institute, the US Oil and Gas Association, and the Petroleum Marketers Association of America; documents related to funding for groups that did research on climate change; and marketing material concerning climate change, including ads, press releases, and guidance to staff about talking points.

Exxon acknowledged the risks of climate change publicly in 2007, and says it's stopped funding climate deniers since then. But the company continues to support groups—such as the American Legislative Exchange Council and the American Enterprise Institute—and make statements

that downplay the implications of climate change or related policies, said the source with knowledge of the case. One example is a 2014 report on energy demand and the risks of carbon-based assets, in which Exxon addresses the question of whether efforts to reduce carbon emissions “would result in unburnable proved reserves of oil and natural gas.” Probably not, Exxon told stakeholders, “as it is difficult to envision governments choosing this path in light of the negative implications for economic growth and prosperity that such a course poses.” The report goes on to warn of “potentially harmful and destabilizing consequences” from “the artificial capping of needed carbon-based energy sources.”

In all likelihood, Schneiderman’s inquiry is just the opening salvo in a legal battle that could go on for years. Litigation against tobacco companies, often pointed to as a model for prosecuting fossil fuel companies, was also led by state attorneys general. Schneiderman could be joined by other states, but he has a tool that his counterparts don’t: the Martin Law, which gives New York officials more latitude to investigate and prosecute financial fraud. It’s also possible that Schneiderman’s office will expand its investigation to include other fossil-fuel companies. No other subpoenas have been served, but the person familiar with the Exxon case said the attorney general is “concerned about the disclosure issue throughout the industry.”

# Exxon + 49 Other Big Polluters Set to Be Investigated for Causing Extreme Weather Events

Kumi Naidoo

A few weeks ago the first ever **human rights** legal action seeking the accountability of the 50 big polluters was launched. Filed by Filipino typhoon survivors and several environmental organizations, it demands that the Philippines Human Rights Commission (CHR) investigate and acknowledge the complicity of 50 investor-owned fossil fuel companies in causing **extreme weather events**.

This comes from a consensus that the typhoons and catastrophic storms that annually batter the Philippines and many other small island nations, are exacerbated by **climate change** caused by the burning of fossil fuels by distant and faceless energy companies. People in the Philippines know that they are at the end of a terrible chain reaction that destroys homes, ruins health and takes lives and livelihoods. It violates their basic human rights, so they, like many others, are starting to seek climate justice.





People in the Philippines know that they are at the end of a terrible chain reaction that destroys homes, ruins health and takes lives and livelihoods.

Photo credit: Vincent Go / Greenpeace

They are part of a growing number of people that will no longer stand for companies—despite knowledge of the harms associated with their products—continuing to engorge themselves on profit at the expense of the climate and human lives. These companies are morally bound to help communities at the frontline of climate change while financing a just transition to a 100 percent **renewable energy** future.

Cases of negligence, like the May 2014 **Soma mine** disaster in Turkey, which took the lives of 311 workers and injured 80 others and litigation by communities in Peru and Ecuador against **Texaco/Chevron** over claims of pollution are examples of people taking a stand against how fossil fuel companies do business. The Philippines' submission is a reflection of an understanding that fossil fuel companies are acting in violation of human rights in and of itself, no matter how carefully the company undertakes their activity. In short, we and many others are declaring: it's not the way you do business, it's the business itself.

This story of many fossil fuel companies is sewn together by incompetence, corruption and greed. It is a history of companies who relentlessly drive forward their business with an irresponsible outlook and lack of empathy for people and the planet. However, in the era of climate impacts and extreme weather events, the story is changing.

The top 50 investor-owned polluters under public scrutiny are taken from a list of 90 entities who, according to a report by Rick Heede, are responsible for 63 percent of the carbon dioxide and methane emitted between 1751 and 2010. Coalitions of affected communities are developing jurisprudence that recognizes impacts of climate change as a breach of human rights. If successful, this recognition will lay the foundations for what is really required: attribution and action.

The petition was submitted on behalf of Greenpeace Southeast Asia, the Philippine Rural Reconstruction Movement and other local NGOs, with the support of the International Trade Union Confederation, Amnesty International, NGO legal experts and thousands of individuals. The broad coalition was put together because success in fighting climate change will only occur when organizations and individuals join hands across the globe to demand climate justice.

Climate impacts like extreme weather events hit the most vulnerable first; working people and the poor. With altered seasons and rising sea levels whole communities and nations are already suffering from corporate malfeasance. People are involved in every aspect of meeting this threat, from activists campaigning for action on climate to workers in new industries to workers in fossil fuel production.

While virtually all countries continue to depend on burning fossil fuels to drive economic growth, we know this must change rapidly and dramatically.

Companies must commit to leaving at least 80 percent of the fossil fuels in the

ground if we want to salvage any hope of maintaining a stable climate that allows humans and all other life to survive. Companies must engage in this transformation in full consultation with workers and communities to ensure the process is just.

We know that our sons and daughters will work in energy in the future, but they won't work in fossil fuels. We demand that the workers who have brought us the prosperity of today be treated justly and with due respect during the transition to a renewable energy future. We are aiming for a result whereby the Philippines CHR would acknowledge these historic responsibilities and begin framing pathways for the just transition required.

The final word on why we have taken this action is perhaps best described by Elma Reyes, a mother of two who had her livelihood destroyed by Typhoon Rammasun (known in the Philippines as Typhoon Glenda):

"They say it's going to be our way of life from now on, where typhoons will be more intense and affect our livelihood. If that's the case, I won't be able to provide for my family and feed my children. I won't give up and allow big companies to continue to ruin the environment and fuel climate change."

We encourage the Commission for Human Rights to commit to investigating the big polluters for their human rights violations as a matter of urgency.

# Unearthing America's Deep Network of Climate Change Deniers

**A new study attempts the first tally of those driving the peculiarly American strain of climate change denial.**

Eric Roston

November 30, 2015 — 12:48 PM EST

The American public has turned away from outright denial of climate change.

Sixty-three percent of adults describe the problem as "serious" in the latest opinion poll from the *Washington Post* and ABC News, a dip from the 69 percent who held that view in June. The minority who remain skeptical of climate science—a group that includes presidential hopefuls and powerful lawmakers—can count on a dedicated network of several thousand professional supporters.

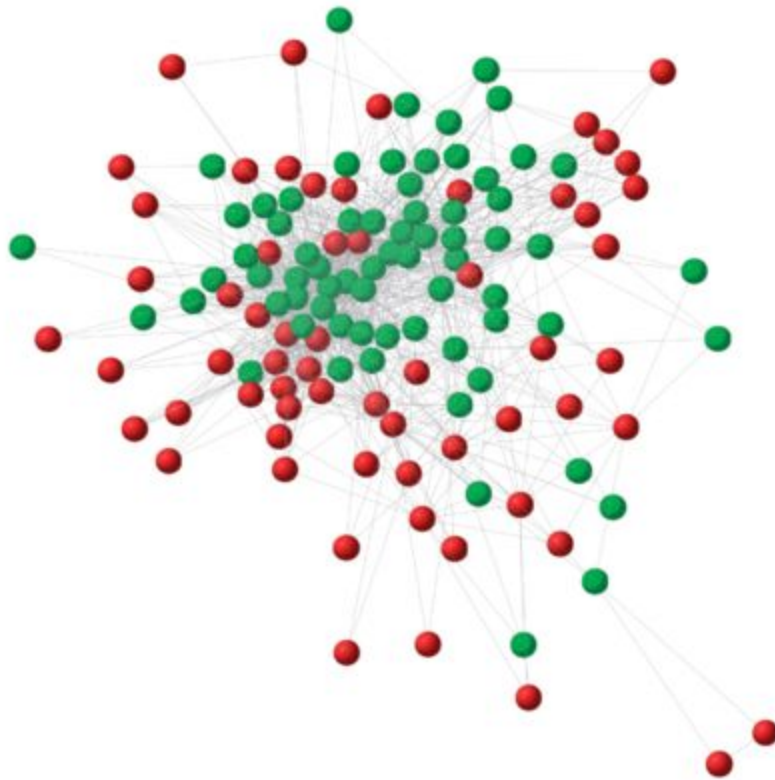
New research for the first time has put a precise count on the people and groups working to dispute the scientific consensus on climate change. A loose network of 4,556 individuals with overlapping ties to 164 organizations do the most to dispute climate change in the U.S., according to a paper published today in *Nature Climate Change*. ExxonMobil and the family foundations controlled by Charles and David Koch emerge as the most significant sources of funding for these skeptics. As a two-week United Nations climate summit begins today in Paris, it's striking to notice that a similarly vast infrastructure of denial isn't found in any other nation.

The role of ExxonMobil and the Kochs in influencing climate denial hadn't been empirically studied before now, according to Justin Farrell, an assistant professor of sociology at the Yale School of Forestry & Environmental Studies and the author of the new paper. He said the flow of money from group to group and person to person is often opaque to researchers.

ExxonMobil has maintained for years that it does not fund denial of climate change. A spokesman pointed out that the company's \$100 million founding commitment to Stanford University's Global Climate & Energy Project was made in 2002, right in the middle of the period covered by the *Nature Climate Change* study. Representatives for any of the Koch family foundations could not be reached for comment.

Farrell said he focused on ExxonMobil and the Koch foundations because "they are reliable indicators of a much larger effort of corporate lobbying in the climate change counter-movement." He examined Internal Revenue Service data showing which groups in the network of climate contrarians accepted funding from ExxonMobil or Koch foundations between 1993 and 2013. Recipients from those two sources tend to occupy central nodes in what he calls a "contrarian network." Groups funded by ExxonMobil or the Kochs "have greater influence over flows of resources, communication, and the production of contrarian information," Farrell wrote.

A graphic from the paper shows how individuals' affiliations tie the organizations (shown as balls) together into a network. The groups shown as green balls received some corporate funding over the 20-year period in Farrell's study from either ExxonMobil or the Kochs; organizations shown as red balls did not. The green balls, Farrell found, make up the highly influential network center that is more effective than the outliers at "the production of contrarian information."



Justin Farrell; Nature Climate Change

The research was neither easy nor glamorous. One particular element of tedium was making sure that individuals were not represented more than once. Farrell analyzed the individuals, eliminated all middle initials, corrected misspellings, and deleted courtesy titles. "This was completed by hand," he noted, "on all 4,556 names." A supplement to the paper lists all 164 of the organizations he identified as promoting climate-change skepticism, a roster that includes the CATO Institute, the Heritage Foundation, and the Heartland Institute.

Once he understood the network, Farrell investigated which organizations were most successful in pushing their view. He found that groups with ties to the two big donors were more likely to see their viewpoints make it into media than those without such ties. Last week, meanwhile, Farrell published a separate study in the *Proceedings of the National Academy of Sciences* that sought to show how funding from corporate donors shapes public thought and opinion on climate science. "Corporate funding influences

the actual language and thematic content of polarizing discourse," he wrote. "These effects were visible over time."

Over the 20 years under review, climate contrarianism increased the most in major media sources—more even than in presidential speeches or congressional floor statements. Farrell's research took him through 40,785 documents from contrarian groups; 14,943 from the *New York Times*, *Washington Times*, and *USA Today*; 1,930 from U.S. presidents; and 7,786 from Congress.

For Robert Brulle, a sociology professor at Drexel University who has conducted research on the topic, Farrell's research helps define how climate denial works.

"Corporate funders create and support conservative think tanks," which then pass off climate misinformation as valid. The mainstream media pick up on it, which helps shape public opinion.

"This brings up the following question," Brulle said. "Why is the media picking up and promulgating the central themes of climate misinformation?"

# More Exxon Documents Show How Much It Knew About Climate 35 Years Ago

Documents reveal Exxon's early CO2 position, its global warming forecast from the 1980s, and its involvement with the issue at the highest echelons.

BY NEELA BANERJEE, INSIDECLIMATE NEWS

DEC 1, 2015

In our series, "**Exxon: The Road Not Taken**," InsideClimate News published **several dozen documents** that established the arc of Exxon's pioneering yet little-known climate research, which began 40 years ago.

Our reporting team chose them from the thousands of mainly internal company documents that we reviewed in our 10-month investigation.

In addition to the ones we have already published since September—which ExxonMobil has now downloaded from the ICN website and **imported to its blog**—there are more worth sharing.

Each illuminates a nuance of Exxon's early internal discussions about climate change, from interactions at the highest echelons to presentations for the rank-and-file. The documents reveal the contrast between Exxon's initial public statements about climate change and the company's later efforts to deny the link between fossil fuel use and higher global temperatures.

A selection of previously unpublished memos and reports are included and explained here, as part of ICN's continuing exploration of Exxon's climate documents.

## **Exxon Senior Vice President Weighs in on the 'Greenhouse Program' (1980)**

*This **memo from June 9, 1980**, indicates that carbon dioxide research was not a project that Exxon's board simply greenlighted. It was an issue so important that at least one senior vice president was paying close attention to the science, and he was interested and versed enough to argue its arcana.*



## INTER-OFFICE CORRESPONDENCE

DATE June 9, 1980

TO	H. Shaw N. R. Werthamer	REFERENCE
FROM	H. N. Weinberg	SUBJECT GREENHOUSE PROGRAM

At the CRIAC Meeting on June 4 I presented the material on the Greenhouse Program as covered in the attached pages 15 and 16. George Piercy questioned me closely on the statement that there is a net CO<sub>2</sub> flux out of the ocean at the upwelling zones. He argued that the concentration of CO<sub>2</sub> in the ocean in parts per million could well be higher than that in the atmosphere in parts per million and that there would be no net flux because those concentrations might be the ones required for equilibrium. On reflection, I think George may be right. Please let me have your comments.

On June 9, 1980, **Harold N. Weinberg, a top manager in Exxon Research and Engineering**, the hub of the company's carbon dioxide research, sent a note to **Richard Werthamer** and **Henry Shaw** with the subject, "Greenhouse Program," the company's CO<sub>2</sub> research initiative. Shaw was the unit's lead climate researcher at the time, Werthamer his boss.

In the note, Weinberg wrote that he gave a presentation at a June 4 meeting about the program and said, "**George Piercy** questioned me closely on the statement that there is a net CO<sub>2</sub> flux out of the ocean at the upwelling zones."

At the time, Exxon had deployed a state-of-the-art supertanker outfitted with equipment for measuring marine CO<sub>2</sub> concentrations to understand the role the oceans play in the world's carbon cycle. Scientists knew that the oceans had absorbed some of the carbon dioxide released from the increased global consumption of fossil fuels. But Exxon's researchers wanted to understand how exactly CO<sub>2</sub> behaved in the oceans—and whether after trapping the gas, the seas would eventually release it into the atmosphere.

**Piercy was a senior vice president at Exxon** in 1980, and a member of the board of directors. According to the note, he challenged Weinberg's assertion that global

circulation patterns move CO<sub>2</sub> out of the deep oceans to the surface where it escapes into the atmosphere, a process known as "upwelling."

Piercy disagreed, arguing the oceans can hold higher concentrations of CO<sub>2</sub> without releasing it into the air. (As it turns out, Weinberg was right, though overall, the world's oceans act as a global sink, pulling CO<sub>2</sub> from the air into the water and helping dampen the effects of climate change.)

Other memos from the early 1980s ([here](#) and [here](#)) show that ER&E staff regularly apprised at least one other senior vice president, M.E.J. O'Loughlin, of the latest climate research, too.

### Exxon's Lead Climate Researcher Presents: The Company's Position on the CO<sub>2</sub> Greenhouse Effect (1981)

*In [this May 15, 1981 memo](#), Exxon estimates a 3-degree Celsius rise in global average temperatures in 100 years, and appears ready to discuss publicly that a time could arrive when the world would have to shift to renewable energy. Exxon thought such a transition could happen in a gradual, "orderly" way.*

GENERAL - 154-1-1B

INTER-OFFICE CORRESPONDENCE

DATE May 15, 1981

TO	REFERENCE
Dr. E. E. David, Jr.	
FROM	SUBJECT
Henry Shaw	CO <sub>2</sub> Position Statement

In case the issue comes up at the San Francisco Symposium, attached is a brief summary of our current position on the CO<sub>2</sub> Greenhouse effect.

HS:ksc  
Attachment

c: R. E. Barnum  
C. M. Eidt, Jr.  
D. Fiske  
L. E. Furlong  
H. C. Hayworth

By 1981, Exxon had already established itself as a leader on the greenhouse effect with many in industry and the government. In early May of that year, Henry Shaw prepared a "brief summary of our current position on the CO<sub>2</sub> Greenhouse effect" for **Edward E. David, Jr.**, president of Exxon Research and Engineering, in case the topic came up at an Exxon symposium in San Francisco where David would be speaking.

Based on documentary evidence, it appears the summary went through several drafts and the final version went to David's office on May 15.

The bullet points that Shaw presented to David start with the idea that "there is sufficient time to study the problem before corrective action is required." Shaw based his caution on estimates that higher global temperatures caused by rising CO<sub>2</sub> would only be felt around the year 2000, and that CO<sub>2</sub> concentrations in the atmosphere would double in about 100 years. Those gaps, Shaw wrote, permit "time for an orderly transition to non-fossil fuel technologies should restrictions on fossil fuel use be deemed necessary."

The document did not raise doubts about the links between fossil fuel use, higher CO<sub>2</sub> concentrations and a warmer planet. Shaw wrote:

- "Atmospheric CO<sub>2</sub> will double in 100 years if fossil fuels grow at 1.4%/ a<sub>2</sub>.
- 3°C global average temperature rise and 10°C at poles if CO<sub>2</sub> doubles.
- Major shifts in rainfall/agriculture
- Polar ice may melt"

Eleven other staff and managers at Exxon Research, besides David, were sent the paper with the corporate position on global warming that Shaw had articulated.

By the end of the 1980s, Exxon would publicly pivot away from open consideration of any restrictions on fossil fuel use because of its effect on the atmosphere.

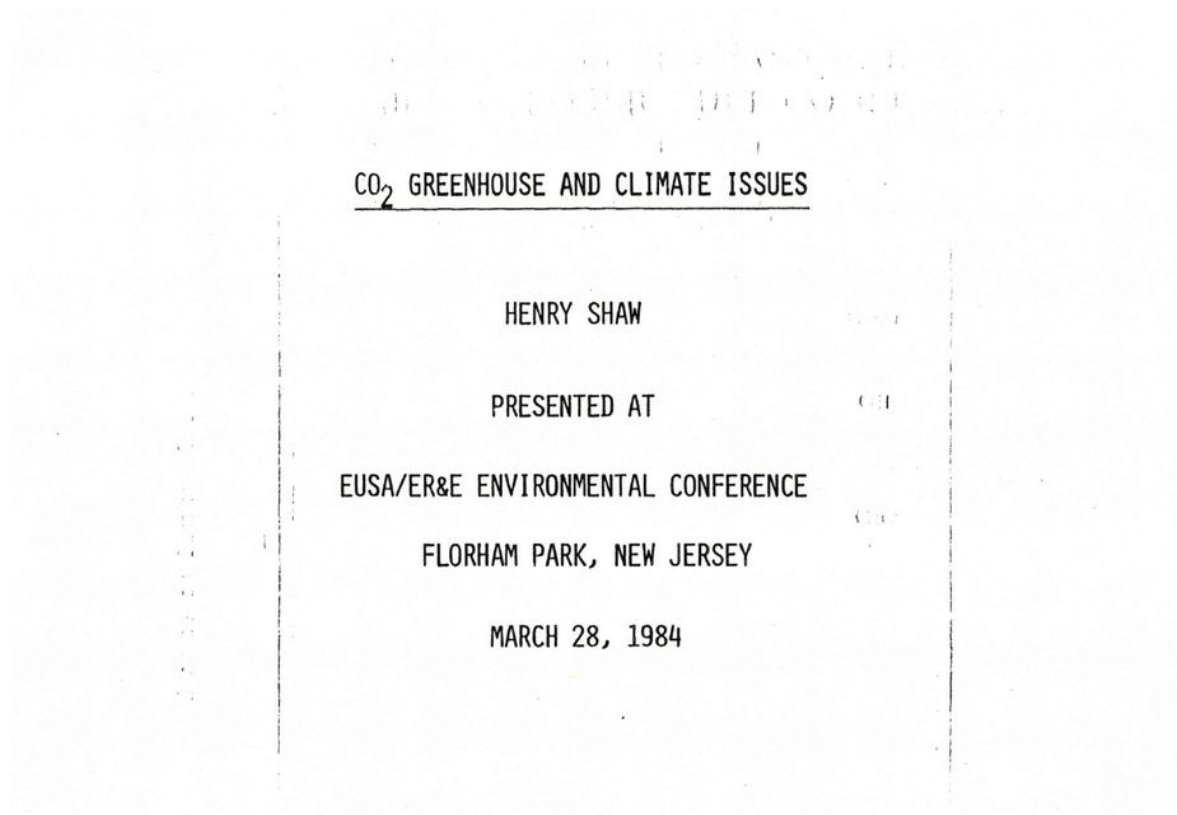
In 1996, when climate research was more certain about the link between fossil fuel combustion and climate change than during the time of Shaw's memo, Exxon's new chairman and chief executive **Lee Raymond said in a speech in Detroit:** "Currently,

the scientific evidence is inconclusive as to whether human activities are having a significant effect on the global climate."

At Exxon's annual meeting in 2015, chairman Rex Tillerson said it would be best to wait for more solid science before acting on climate change. "What if [after] everything we do, it turns out our models are lousy, and we don't get the effects we predict?"

### **A Presentation on 'CO<sub>2</sub> Greenhouse and Climate Issues' (1984)**

*Exxon began incorporating CO<sub>2</sub> estimates into its corporate planning as early as 1981, **this March 28, 1984 presentation shows**. The company acknowledged the link between fossil fuel use and climate change throughout most of the 1980s.*



In 1984, Shaw no longer ran Exxon's CO<sub>2</sub> research. He had been moved from that post a few years earlier as the company shifted its focus from the expensive empirical research on the tanker to cheaper, yet still highly significant, climate modeling. By the

mid-1980s, Shaw worked on keeping track of emerging independent climate research and apprising top managers.

On March 28, Shaw gave a presentation at an internal Exxon environmental conference in Florham Park, N.J. He showed projections of fossil fuel use through the 21st century and the growth in global carbon dioxide expected from it.

Shaw told his audience that he was regularly asked to prepare estimates for Exxon about CO<sub>2</sub> from fossil fuel use. Those estimates used and were integrated into the company's energy projections for the 21st century and circulated within Exxon.

He wrote in the presentation: "As part of CPPD's technology forecasting activities in 1981, I wrote a CO<sub>2</sub> greenhouse forecast based on publically available information. Soon thereafter, S&T [Science & Technology] requested an update of the forecast using Exxon fossil fuel projections. This request was followed late in 1981 with a request by CPD [Corporate Planning Department] for assistance in evaluating the potential impact of the CO<sub>2</sub> effect in the '2030 Study.' After meeting CPD's specific need, a formal technology forecast update was issued to S&T in the beginning of April 1982. It was subsequently sent for review to the Exxon affiliates."

Exxon's affiliates are the company's various divisions, including exploration and production, refining, international units and shipping.

Then Shaw shared with his audience estimates by Exxon and three other entities—the Environmental Protection Agency, the National Academy of Sciences, and the Massachusetts Institute of Technology—about when CO<sub>2</sub> would double in the atmosphere, what kind of increases could occur in average global temperatures and the effects of such changes on human life.

Exxon estimated that CO<sub>2</sub> would double by 2090, which was later than what the other groups had projected. It estimated that average global temperatures would rise by 1.3 to 3.1 degrees Celsius (2.3 to 5.6 degrees Fahrenheit), which was in the mid-range of the four projections that Shaw shared.

Shaw showed the policy recommendations of the three organizations and Exxon to address climate change. According to him, MIT argued for an "extreme reduction in fossil fuel use," while the others, including Exxon, urged a more cautious approach. But

Exxon did not deny the link between fossil fuel use and climate change as it would begin to do just five years later.

# ExxonMobil Spent At Least £5.6m on European Lobbying and Corporate Donations in 2014

Kyla Mandel | January 20, 2016

ExxonMobil has spent at least £5.6m (\$8.08 million) on lobbying the European Commission and in donations to European universities and organisations in 2014 according to the most recent figures available.

A *DeSmog UK* investigation into the oil giant's European activities reveals much of this was spent lobbying on energy and environment issues in addition to donations to organisations such as the United Nations Environment Programme and the Oxford Institute for Energy Studies.

Last September, [Inside Climate News](#) revealed that ExxonMobil knew about the impacts of manmade climate change in the 1970s' and '80s yet went on to fund numerous climate denial efforts. This [prompted the New York Attorney General](#) to subpoena [ExxonMobil](#) to “determine whether the company lied to the public about the risks of climate change or to investors about how those risks might hurt the oil business.”

And now, the Church of England's Commissioners (who run its £6.7bn endowment fund) has [co-filed a shareholders' resolution](#) this week with the New York State Common Retirement Fund calling on ExxonMobil to publish an assessment of how its business portfolio would be affected by a 2C target as agreed in the Paris Agreement in December. Together, the group of investors hold more than \$1bn in ExxonMobil shares.

So, while the oil giant has been getting a lot of heat in the U.S. for funding climate denial, *DeSmog UK* asks: what has ExxonMobil been up to in Europe?

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**EXXONMOBIL 2014 EU SPENDING BREAKDOWN**

**GRAND TOTAL: At Least £5.6m (\$8,083,406)**

**Lobbying: between £3.6m – £3.8m (between €4.75m – €4.99m / \$5.2m – \$5.5m )**

**Universities: £264,550 (\$374,209)**

**Public Policy: £87,631 (\$123,957)**

**Other (ex. health, environment): £1,682,587 (\$2,380,000)**

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### **Exxon Lobby**

ExxonMobil is one of the biggest spenders in EU lobbying. According to the EU's voluntary Transparency Register the company declared its 2014 lobby spend as [between €4,750,000 - €4,999,999](#). That's a minimum of \$5,205,240 or £3,632,562.

This puts [ExxonMobil in top place](#) for the biggest lobby spender in 2014, tied with Shell which declared the same amount of expenses. All of ExxonMobil's lobby efforts were related to energy, the environment and chemicals.

However, as the website LobbyFacts – set up by Corporate Europe Observatory and Lobby Control – points out, lobby expenses may actually be higher as the data in the EU register [remain unreliable](#), with many companies and lobby groups under-reporting their lobby spending.





Source: [Esteban Romero](#) via Flickr

In fact, archival records show that ExxonMobil has reported the exact same amount spent on EU lobbying since 2011. That means over the past four years ExxonMobil has spent at least €19 million lobbying in Europe.

Looking at 2014, ExxonMobil lobbied on everything from greenhouse gas related legislation and natural gas policy including shale gas to air quality, energy efficiency legislation, and offshore safety and emergency preparedness.

Other policies listed as of interest to ExxonMobil include the EU energy strategy 2030, EU Emission Trading System, the Energy Union, the Fuel Quality Directive, biofuel legislation and renewable energy, transport fuels related initiatives, the Industrial Emissions Directive, REACH (EU chemicals legislation), and the EU transparency directive.

Its lobby efforts haven't stopped there, however. Since December 2014 the oil giant has had at least eight meetings with the European Commission to discuss energy and climate, the Energy Union, and agriculture, according to the [Integrity Watch database](#).

The data confirms that ExxonMobil has access to top EU officials responsible for energy and the environment. For example, in March 2015 the company met with the European Commissioner for Energy and Climate Change Miguel Arias Cañete to discuss the "security of supply" under [the Energy Union](#). The Energy Union aims to create a fully-integrated internal European energy market.

Then, in May 2015 ExxonMobil met with the Commission's vice-president for the Energy Union Maroš Šefčovič to deliver a presentation on the Energy Union and world energy market.

And don't forget that according to an [autumn 2015 presentation leaked to Energydesk](#), ExxonMobil has also been lobbying against the decarbonisation and electrification of EU transport.

### **University Donations**

In 2014, ExxonMobil donated a total £264,550 (\$374,209) to European universities according to its annual worldwide giving report.

Durham University's Middle East Centre [received £6,510 \(\\$9,209\) from ExxonMobil](#) – this is listed under the worldwide giving report's 'public policy' donation category.

A New York City-based organisation called [Americans for Oxford received £229,762 \(\\$325,000\)](#): £17,675 (\$25,000) allocated for Women in the World Economy Forum and £212,088 (\$300,000) for the Oxford Council on Women's Economic Empowerment. [Americans for Oxford](#) is the University's main charitable organization in North America. It accepts donations and gifts in support of Oxford and its Colleges.

A similar New York City-based organisation called British Schools and Universities Foundation (BSUF) [received £28,278 \(\\$40,000\)](#) for its Energy and Natural Resources Law Institute. Similar to Americans for Oxford, [BSUF's mission](#) is to "promote active

support of the fundraising efforts of British Commonwealth schools and universities by their U.S. alumni/ae and friends.”

But this is just a small fraction of what British universities may have received from the oil giant. Last November, [DeSmog UK reported](#) that ExxonMobil has donated more than £2.36 million over the last five years to 15 top UK universities.

### **Public Policy Donations**

ExxonMobil made a series of donations to European organisations related to ‘public policy’ according to its 2014 worldwide giving report. These came to a total £87,631 (\$123,957).

This includes £14,139 (\$20,000) to the London-based [Institute for Human Rights and Business](#). The think tank works to shape policy and strengthen accountability to ensure companies do not abuse human rights.

A total £6,332 (\$8,957) went to a dual career initiative at the Permits Foundation in The Hague, Netherlands. The not-for-profit organisation [campaigns globally](#) “to improve work permit regulations to make it easier for partners of expatriate staff to gain employment during an international assignment.”

The Oxford Institute for Energy Studies (OIES) – an independent research centre at Oxford University – [received £24,743 \(\\$35,000\) from the oil giant](#). The OIES focuses on social science aspects of energy issues, particularly oil and natural gas. The research body has been ranked the top energy and resource think tank in the world by the University of Pennsylvania’s annual think tank report for two years running.

Finally, a Washington D.C. international affairs think tank called the [Atlantic Council of the United States](#) got £42,417 (\$60,000) from ExxonMobil for its [Energy and Economic Summit](#). Hosted in Istanbul, Turkey, the November 2014 summit focused on various energy-related topics including the Paris climate change conference and a zero-carbon energy future to energy in the Middle East and the European Energy Union.

### **Other Donations**

Taken together, this final set of 'other' donations is the second highest amount spent by ExxonMobil in 2014 after its lobby expenses, totalling £1,682,586 (\$2,380,000).

The one European donation made by ExxonMobil that was explicitly labelled under its 'environment' worldwide giving category was £56,556 ([\\$80,000](#)) to the [United Nations Environment Programme's \(UNEP\)](#) World Conservation Monitoring Centre based in Cambridge.

ExxonMobil also gave more than £706,971 ([over \\$1m](#)) to [health initiatives](#) in 2014. The company gave £212,088 (\$300,000) to Norway's Red Cross rapid mobile phone malaria survey in Nigeria and £706,971 (\$1m) to anti-malarial drug research carried out by the Geneva-based Medicines for Malaria Venture in Indonesia.

One million dollars (£706,971) was also [donated to the Cherie Blair Foundation](#) in London for its financial literacy and investment readiness blended learning curriculum. The Foundation supports women entrepreneurs in developing and emerging economies.

# Oil Industry Group's Own Report Shows Early Knowledge of Climate Impacts

A report the American Petroleum Institute commissioned in 1982 revealed its knowledge of global warming, predated its campaign to sow doubt.

BY NEELA BANERJEE, INSIDECLIMATE NEWS

FEB 5, 2016

A Columbia University report commissioned by the American Petroleum Institute in 1982 cautioned that global warming "can have serious consequences for man's comfort and survival." It is the latest indication that the oil industry learned of the possible threat it posed to the climate far earlier than previously known.

The report, "**Climate Models and CO2 Warming, A Selective Review and Summary**," was written by Alan Oppenheim and William L. Donn of Columbia's Lamont-Doherty Geological Observatory for API's Climate and Energy task force, said James J. Nelson, the task force's former director. From 1979 to 1983, **API and the nation's largest oil companies convened the task force** to monitor and share climate research, including their in-house efforts. Exxon ran the most ambitious of the corporate programs, but other oil companies had their own projects, smaller than Exxon's and focused largely on climate modeling.

The task force commissioned the report to better understand the models being produced in the nascent field of climate science, Nelson said.

"There was discussion in the committee about all the noise and information" around carbon dioxide, Nelson said. "There were all sorts of numbers being thrown around. We were not trying to find a model to hang our hats on. It was more, 'If you see this model, this is how it's built and these are its strengths and weaknesses.'"

**Obtained from a university library by the Union of Concerned Scientists** and made available to InsideClimate News, the report described in detail five models used at the time by climate scientists. They ranged from simple to complex: the radiation balance model, energy balance, radiative-convective, thermodynamic and general circulation model. A table showed the predictions each model generated of the average increase in global temperature if atmospheric concentrations of CO2 doubled compared to

pre-industrial times, from .6 degrees C per hemisphere under the thermodynamic model to 2 to 3.5 degrees C globally under the general circulation model. The poles were expected to undergo even greater jumps in temperature.

The report did not focus on the forces behind the increase in CO<sub>2</sub> concentrations, but it linked the phenomenon plainly to fossil fuel use. Atmospheric CO<sub>2</sub>, it said, "is expected to double some time in the next century. Just when depends on the particular estimate of the level of increasing energy use per year and the mix of carbon based fuels."

Like many studies at the time, the report stressed the models' inherent uncertainties. "All models are still sufficiently unrealistic that a definitive evaluation of the problem requires continued effort," the authors wrote in the summary.

Still, the report concluded that the models pointed to hikes in global average temperatures as CO<sub>2</sub> concentrations rose. "They all predict some kind of increase in temperature within a global mean range of 4 degrees C," the report stated. "The consensus is that high latitudes will be heated more than the equator and the land areas more than the oceans."

The consensus turned out to accurately predict how global warming has proceeded since then and matches what current models are still predicting for the future.

The consequences for humanity were serious, the authors wrote, "since patterns of aridity and rainfall can change, the height of the sea level can increase considerably and the world food supply can be affected."

The authors concluded that "optimum forecasting of climate changes is a necessity for any realistic long term planning by government and industry."

When it commissioned the report, Nelson said, the API task force did not provide any guidance on which models to use and did not meddle with the assessment. Committee members received periodic updates about the report's progress, he said. The final document "was well received by the committee," Nelson recalled. "We didn't change it at all. Copies were sent to all the member companies since they paid for it."

Nelson said the general feeling of the task force members about climate models echoed the report's findings that models were not yet realistic enough to evaluate global warming definitively.

Nelson said he suggested the Columbia study in part because of his own skepticism of atmospheric modeling. A former Air Force pilot, he had sometimes found himself in hairy situations because of inaccurate weather forecasting based on modeling.

"Everybody kept talking about the doubling of CO<sub>2</sub> in the atmosphere, and we wanted to know where the numbers came from, what kind of assumptions were in the models as definitely as possible," he said, "because I had the experience from a long time before that if you put garbage in, you get garbage out."

Task force members also wanted to understand the modeling because they worried that the predictions could lead to what they believed were unnecessary regulations. "Where we were also coming from, we felt we didn't want the EPA throwing a lot of new rules at this until we knew more precisely what would be the most effective methods of solving the problem," Nelson said.

The report accurately described climate physics and the models used in the early 1980s, said Anthony Del Genio, a NASA atmospheric scientist and expert on the general circulation model and climate feedbacks, who recently read the Columbia document.

But it also reflected "biases prevalent in the academic community at the time" that simpler models were better than the general circulation one, Del Genio said in an email. Further, the report's "failure to critically evaluate the models, some of it justified by the limited knowledge at that time but some of it a failure to think critically about the simple models, is its greatest weakness."

Del Genio also questioned why API commissioned such a paper when the National Academy of Sciences had issued a definitive assessment of climate models in 1979, known as the Charney report.

More telling is what API did with the information once they read their own report. "API could have used that knowledge to invest in developing solutions to climate change," said Peter Frumhoff, director of science and policy for UCS.

Instead, a year after the task force circulated the report to API's members, the organization disbanded the committee and shifted its work on climate change from the environment directorate to its lobbying arm.

The industry's lobbying effort over the years sought to emphasize the uncertainties surrounding global warming, even as the models improved and the scientific consensus around man-made climate change grew stronger. Throughout the 1990s, for instance, it joined Exxon and other fossil fuel interests in the Global Climate Coalition (GCC), whose objective was to derail international efforts to curb greenhouse emissions by questioning climate science. In 1998, API coordinated a multi-million dollar campaign to convince the public and policymakers that the Kyoto Protocol was based on tenuous science.

The groups declared victory when President George W. Bush pulled the U.S. out of the Kyoto Protocol in 2001.

A **June 2001 briefing memorandum** records a top State Department official thanking the GCC because Bush "rejected the Kyoto Protocol in part, based on input from you."



# CO2's Role in Global Warming Has Been on the Oil Industry's Radar Since the 1960s

Historical records reveal early industry concern with air pollutants, including smog and CO<sub>2</sub>, and unwanted regulation.

APR 13, 2016



Documents reveal that the risks of climate change were being discussed in the inner circles of the oil industry in the 1960s, earlier than previously documented. Credit:

Photo of Exxon's Bayway oil refinery in New Jersey by the Environmental Protection Agency

The oil industry's leading pollution-control consultants advised the American Petroleum Institute in 1968 that carbon dioxide from burning fossil fuels deserved as much concern as the smog and soot that had commanded attention for decades.

Carbon dioxide was "the only air pollutant which has been proven to be of global importance to man's environment on the basis of a long period of scientific investigation," two scientists from the Stanford Research Institute (SRI) told the API.

This **paper, along with scores of other publications**, shows that the risks of climate change were being discussed in the inner circles of the oil industry earlier than previously documented. The records, unearthed from archives by a Washington, D.C. environmental law organization, the **Center for International Environmental Law (CIEL)**, reveal that the carbon dioxide question—an obscure corner of research for much of the 20th century—had been closely studied since the 1950s by some oil company researchers.

By the 1960s, the CO<sub>2</sub> problem was gaining wider scientific recognition, especially as President Lyndon B. Johnson's science advisers and leading experts brought it to the attention of the White House in 1965.

"If CO<sub>2</sub> levels continue to rise at present rates, it is likely that noticeable increases in temperature could occur," SRI scientists **Elmer Robinson and R.C. Robbins wrote in their 1968 paper to API.**

"Changes in temperature on the world-wide scale could cause major changes in the earth's atmosphere over the next several hundred years including change in the polar ice caps."

Ten years later, the world's leading oil company, Exxon, would launch an ambitious in-house research program into the emerging science of climate change, as **detailed by InsideClimate News last year** in an investigative series. Beginning in 1978, Exxon researchers hoped their work would identify the risks climate change posed to the company's business and earn it a seat at the table when policymakers moved to limit CO<sub>2</sub> emissions, according to internal documents. By the late 1980s, the company and

its allies would instead challenge the scientific basis for strong action on climate change.

In a new series of articles, ICN begins to examine how the industry confronted pollution concerns during the infancy of climate research in the mid-20th century. It is based on hundreds of public documents assembled by CIEL, along with others gathered by ICN.

The documents trace early academic research into rising carbon dioxide levels. They show how the oil industry monitored that published work, and help explain the beginnings of its own research. They also show how industry's reaction to mid-century regulation to curtail other forms of air pollution, such as smog, helped shape its approach toward the risks of carbon dioxide.

The documents reveal a deep and persistent interest by industry in the CO<sub>2</sub> issue, according to Carroll Muffett, a lawyer who is president of CIEL. If it is shown that oil companies knew fossil fuels posed dangers to the public, he said, the industry might become vulnerable to product liability complaints.

"From a products liability perspective, these documents raise potential claims that oil companies failed to warn consumers about a potentially serious risk linked to their products," he said.

Muffett's institute, an advocacy group that provides policy research and legal counsel on energy and environmental matters, is releasing its findings just as several state attorneys general have begun investigating how much oil companies knew about climate change and what they decided to do with their knowledge.

"Once the companies learned this science, they can't unlearn it," Muffett said.

"Everything they did after this is done against the backdrop of the information they have from at least the 1950s onward.

"This to me is a critical point," he said. "When Exxon and other companies are funding climate change denial in later stages and focusing on uncertainties, how does what they are saying now compare with what they knew at a much earlier stage?"

**Exxon has responded** that its scientists at the time found that "many important questions about climate change remained unanswered and more research was needed." A spokesman for API did not respond to requests for comment.

### **Pollution Concerns Begin Rising**

By the late 1940s, industrial pollution from the wartime surge and post-war boom began alarming the public. In particular, smog increasingly plagued Los Angeles, garnering the attention of the press and new pollution-control agencies. The sky turned a pale yellow, residents routinely became nauseous and their eyes burned, children were forced to play indoors, and acres of crops withered.



Members of the Highland Park Optimist Club in Northeast L.A. wear smog-gas masks at a banquet, circa 1954. Credit: Los Angeles Times photographic archive, UCLA Library

By the early 1950s, new science pointed to the oil industry as a major culprit, showing that nitrogen oxide emissions and uncombusted hydrocarbons from car tailpipes and refineries formed smog when exposed to sunlight.

As new agencies spawned new regulations, API and similar organizations set up a task force called the Smoke and Fumes Committee to monitor air pollution research and to commission projects by a handful of key consultants, including SRI. Originally affiliated with Stanford University, it was the industry's main pollution consultant, and eventually became an independent firm in 1970.

The work of the Smoke and Fumes Committee armed the industry for a prolonged struggle against what it considered overzealous regulation, which was based on what the oil companies and SRI called flawed science.

Meanwhile, a growing number of academics had turned their attention to rising CO<sub>2</sub> concentrations in the atmosphere, tracing where the gas came from and the role that certain "sinks," such as the oceans and forests, played in absorbing it.

Roger Revelle, the director of the Scripps Institution of Oceanography, and his colleague Hans E. Suess **published a landmark paper in 1957 about increasing CO<sub>2</sub> emissions** and the role of the oceans in absorbing some of it. The media, including The New York Times and Time magazine, sporadically wrote stories about increasing CO<sub>2</sub> in the atmosphere.

Scripps scientist Charles David Keeling installed machines at the Mauna Loa Observatory in Hawaii to measure carbon dioxide levels on a regular basis.

The years between 1957, when Revelle first concluded that the oceans would not absorb all industrial CO<sub>2</sub> emissions, and 1960, when Keeling accurately measured atmospheric concentrations and showed that they were definitely increasing, ushered in a new age of expanding climate research.

Already, some oil company scientists were conducting basic CO<sub>2</sub> research, including several with Humble Oil, which eventually became part of Exxon.

By then, it was generally accepted that the burning of fossil fuels had released significant quantities of additional CO<sub>2</sub> into the atmosphere, with some studies putting manmade emissions at 13 percent above natural levels since the Industrial Revolution began.

Humble's researchers **studied the fingerprints of fossil fuel emissions in the wood of growing trees**. Only a small fraction of the CO<sub>2</sub> from fossil fuels showed up. Deciphering what was happening to the rest—mostly absorption into the oceans—was a major focus of research into the carbon cycle then.

As Humble's scientists explored issues like whether the varying climate in wet and dry conditions might influence the rate of carbon uptake by trees, their work intertwined with the rapidly evolving field of climate studies.

A **paper by independent scientists in 1958** determined that Revelle and Suess had probably underestimated how much CO<sub>2</sub> would build up by the year 2000. The rise could be enough, they noted in passing, to have considerable implications for planetary warming.

### **A Presidential Spotlight**

The **report by Robinson and Robbins to API in 1968** was an unusually plainspoken assessment of the risks of CO<sub>2</sub> emissions within the walls of industry. It is significant not as original research, but as confirmation that the industry recognized a consensus reaching the highest levels of government.

"It seems ironic," the report said, "that given this picture of the likely result of massive CO<sub>2</sub> emissions so little concern is given to CO<sub>2</sub> as an important air pollutant."

The SRI report emerged after the carbon dioxide problem had caught the attention of the White House.



President Lyndon B. Johnson/Credit: Yoichi Okamoto

Acting on a warning from his science advisers, Johnson became the first president to publicly mention rising CO<sub>2</sub> levels as a problem on par with smog or bomb test fallout. In a message to Congress in February 1965, he declared: "Air pollution is no longer confined to isolated places. This generation has altered the composition of the atmosphere on a global scale through radioactive materials and a steady increase in carbon dioxide through the burning of fossil fuels."

SRI's report was mostly based on a paper, "**Atmospheric Carbon Dioxide**," that was part of a volume prepared by the President's Science Advisory Committee (PSAC) in November 1965.

That 20-page paper, written by Revelle, Keeling and three other top climate scientists, was submitted to the president at a time when environmental concerns were just blossoming into a policy priority. It said that the latest science suggested the increase in CO<sub>2</sub> "may be sufficient to produce measurable and perhaps marked changes in

climate." Citing a growing body of published research, it discussed the implications for melting polar ice and rising sea levels in the centuries to come.

That SRI was inserting carbon dioxide into a report mainly about conventional pollutants like smog suggests industry had to deal with this new aspect of pollution now that even the president was pointing it out.

"At the point where these issues are matters of public debate, industry has to be looking at them," Muffett said.

In the SRI report's section on CO<sub>2</sub>, Robinson and Robbins identified it as "the most commonly emitted air pollutant." Still, they noted that CO<sub>2</sub> was so ubiquitous that regulators didn't even consider it to be pollution.

"This is perhaps fortunate for our present mode of living, centered as it is around carbon combustion," they wrote. "However, this seeming necessity, the CO<sub>2</sub> emission, is the only air pollutant which has been proven to be of global importance to man's environment on the basis of a long period of scientific investigation."

The report also dealt with other uncertainties, such as a possible cooling effect caused by an increase in particulate matter. It noted that the long-term trend of particulate pollution could neutralize warming caused by CO<sub>2</sub>, but on balance said "the prospect for the future must be of serious concern."

"Although there are other possible sources for the additional CO<sub>2</sub> now being observed in the atmosphere, none seems to fit the presently observed situation as well as the fossil fuel emanation theory," the authors wrote.

The SRI paper explored in detail the possible rates of emission, how concentrations might increase and how much temperatures might rise.

The finding—which matched Revelle's—that about half the CO<sub>2</sub> emitted seemed to stay in the atmosphere was confirmed later by more sophisticated research. It helped explain why emissions over decades of increased reliance on fossil fuels would lead to a doubling of atmospheric CO<sub>2</sub> concentrations from pre-industrial times.

SRI also said that unlike local pollutants such as smog, carbon dioxide would last a long time in the global atmosphere. "The natural scavenging processes for removing CO<sub>2</sub>



from the atmosphere are not sufficient to maintain a stable equilibrium in the atmosphere in the presence of this increase in emissions."

The paper said that better models were needed to estimate more accurately how the increased atmospheric CO<sub>2</sub> might boost global temperatures. (The Revelle report had predicted in 1965 that better models might come along in just a few years.)

SRI also repeated Revelle's assertions that if the earth's temperatures rose substantially, it could lead to significant risks for the planet.

"It is clear that we are unsure as to what our long-lived pollutants are doing to our environment; however, there seems to be no doubt that the potential damage to our environment could be severe," SRI said.

The assessment's frank tone contrasted with the more measured rhetoric Robinson and industry representatives would use in later public reports.

In **a paper presented at the World Petroleum Congress in Moscow in June 1971**, Robinson wrote that increasing carbon dioxide levels might pose a serious problem. He also said estimating the impact rising CO<sub>2</sub> could have on global temperatures would be difficult because of the complexity of atmospheric science.

"The simple conclusion that an increase in absorbed radiation would provide a significantly warmer atmosphere and perhaps would melt the ice caps does not seem to be justified," Robinson wrote.

The National Petroleum Council, an advisory body including top officials of many oil companies, submitted **a report to the government in 1972 entitled "Environmental Conservation."** The NPC report cited the work of Robinson and Robbins but hewed to a more cautious line, quoting from a review of the emerging research written by the American Association for the Advancement of Sciences.

"If at the end of this century, the average temperature has continued to rise and, in addition, measurement shows that the amount of atmospheric carbon dioxide has also increased, this will add validity to the idea that carbon dioxide is a determining factor in causing climate change," the NPC report said.

It continued to say that it would take until at least 2000 to decide whether global temperatures were rising significantly.

"If indications at that time are that major changes are required," it said, "society can meet that requirement as it has met its challenges throughout history by developing alternative social or technological solutions."

But this seemed to evade what was becoming increasingly clear to atmospheric scientists: If the problem of global warming emerged as their calculations suggested, it meant shifting away from fossil fuels.

In one footnote, the petroleum council cited not only the work of Robinson, but also a paper by an official at the federal Bureau of Land Management, Eugene K. Peterson, who had written **a comprehensive overview of climate science** and its ecological implications for the journal *Environmental Science and Technology* in 1969.

Peterson cited projections of increases in the atmospheric concentration of CO<sub>2</sub>, and early estimates of the resulting temperature rise. He also speculated on side effects such as acute water shortages, increased forest fires, and impacts on fisheries.

And he concluded that if current estimates proved to be correct, the time would eventually arrive—"if it has not already been reached"—that "additional CO<sub>2</sub> input through the burning of fossil fuels should cease."

The increasing blanket of CO<sub>2</sub> in the atmosphere, he warned, "could prove to have such an effect upon the environment that it will be a major limiting factor for several centuries upon both industrial development and world population."

It would be several more years before **a National Academy of Sciences review panel chaired by Revelle would sound a similar warning** in 1977—catching the attention of an Exxon employee, Henry Shaw, who helped lead the company's broad climate research in the decade that followed.

But the industry as a whole was already on notice.

# Oil industry knew of 'serious' climate concerns more than 45 years ago

Researchers warned American Petroleum Institute in 1968 that the release of carbon dioxide from fossil fuels could lead to 'worldwide environmental changes'



Protesters demonstrate at the COP 21 climate change summit in Paris. Photograph: NurPhoto/Rex Shutterstock

**Oliver Milman**

Wednesday 13 April 2016 13.59 EDT

The oil industry's knowledge of dangerous climate change stretches back to the 1960s, with unearthed documents showing that it was warned of "serious worldwide environmental changes" more than 45 years ago.

The Stanford Research Institute [presented a report](#) to the [American Petroleum Institute](#) (API) in 1968 that warned the release of carbon dioxide from burning fossil fuels could carry an array of harmful consequences for the planet.

The emergence of this stark advice follows a series of revelations that the fossil fuel industry was aware of climate change for decades, only to publicly deny its scientific basis.

“Significant temperature changes are almost certain to occur by the year 2000 and these could bring about climatic change,” the 1968 Stanford report, found and republished by the [Center for International Environmental Law](#), states. “If the Earth’s temperature increases significantly, a number of events might be expected to occur including the melting of the Antarctic ice cap, a rise in sea levels, warming of the oceans and an increase in photosynthesis.

“It is clear that we are unsure as to what our long-lived pollutants are doing to our environment; however, there seems to be no doubt that the potential damage to our environment could be severe.”

The study, written by scientists Elmer Robinson and RC Robbins, adds that accumulation of CO<sub>2</sub> in the atmosphere could cause “serious worldwide environmental changes”.

The scientists estimated that CO<sub>2</sub> in the atmosphere could reach 400 parts per million by 2000. In fact, CO<sub>2</sub> levels [broke that milestone last year](#), recording their largest leap on record.

This huge increase in CO<sub>2</sub>, the primary driver of the greenhouse effect, has helped global temperatures rise by 1C over the past century. It is estimated [that about three-quarters](#) of the world’s known fossil fuel reserves, including oil, coal and gas, will have to remain unburned if civilisation is to avoid the worst ravages of climate change, such as droughts, floods, food insecurity and inundation from rising seas.

API, the peak body for the oil industry in the US, knew about the dangers of climate change at least 20 years before the issue was brought into mainstream public discourse via the former Nasa scientist James Hansen. Former US president Lyndon Johnson [also received an early warning](#) about climate change, with scientists explaining the mechanism of the greenhouse effect in 1965.

Last year, [it was revealed that ExxonMobil](#), the world’s largest oil company, knew of climate change as early as 1981, only to spend millions of dollars over the following 27 years to promote climate denial. The exposure of this prior knowledge has been led by [Inside Climate News](#).

Exxon had a dedicated in-house team that established the connection between fossil fuels and climate change, but the company still spent years refusing to acknowledge the

issue and funding climate denial activities. Exxon now insists it accepts climate science and doesn't promote denial of the changes to the planet already under way.

The Center for International Environmental Law (CIEL) said hundreds of documents show oil and gas executives met in 1946 to agree that they should fund research into air pollution issues. The subsequent findings were then covered up to protect company profits, according to the environmental law group.

Carroll Muffett, president of CIEL, said the latest documents from 1968 "add to the growing body of evidence that the oil industry worked to actively undermine public confidence in climate science and in the need for climate action even as its own knowledge of climate risks was growing.

"These documents are the tip of an evidentiary iceberg that demands further investigation," Muffett said. "Oil companies had an early opportunity to acknowledge climate science and climate risks, and to enable consumers to make informed choices. They chose a different path. The public deserves to know why."

The prominent climate scientist Michael Mann, of Pennsylvania State University, said it was "disgraceful that industry groups like API knowingly hid the dangers of their project decades ago when they first learned of them, much as the tobacco industry hid the dangers of their product".

API was contacted for comment on the documents.

# ***Pressure on Exxon Over Climate Change Intensifies With New Documents***

By JOHN SCHWARTZ APRIL 14, 2016



An aerial view of Exxon Mobil's refineries in Torrance, Calif. State attorneys general are inquiring the company over its climate claims. Credit Jeffrey Milstein/REX, via Associated Press

Pressure on [Exxon Mobil](#) and the energy industry increased on Wednesday with the release of a new cache of decades-old industry documents about [climate change](#), even as Exxon pushed back against efforts to investigate the company over its climate claims through the years.

The new documents were released by an activist research organization, the [Center for International Environmental Law](#), which published [the project](#) on its website.

The documents, according to the environmental law center’s director, Carroll Muffett, suggest that the industry had the underlying knowledge of climate change even 60 years ago.

“From 1957 onward, there is no doubt that Humble Oil, which is now Exxon, was clearly on notice” about rising CO<sub>2</sub> in the atmosphere and the prospect that it was likely to cause global warming, he said.

What’s more, he said, the documents show the industry was beginning to organize against regulation of air pollution.



The American Petroleum Institute, energy companies and other organizations had created a group, the Smoke and Fumes Committee, to monitor and conduct pollution research, and to “use science and public skepticism to prevent environmental

regulations they deemed hasty, costly and unnecessary,” according to the center’s description of the documents on its website.

Those actions, Mr. Muffett suggested, would be echoed in later efforts to undermine climate science.

The center’s work was first reported by [Inside Climate News](#), which has published stories, as did [The Los Angeles Times](#), suggesting that Exxon Mobil understood the risks of climate change from its own research, which it used to plan activities such as drilling in the Arctic, while it funded groups into the mid-2000s that denied serious climate risks.

Those earlier investigations led to a surge in activism against the company and the energy industry, using the hashtag #exxonknew. The investigations also have been cited by attorneys general, including Eric T. Schneiderman of New York, who have demanded information from Exxon about its internal research and its funding of climate denial.

Inside Climate News announced that [Wednesday’s article](#) is the first of a series based on the work of the environmental law center and documents it has amassed on its own.

Alan Jeffers, a spokesman for Exxon Mobil, called the new allegations absurd.

“To suggest that we had definitive knowledge about human-induced climate change before the world’s scientists is not a credible thesis,” he said.

Four attorneys general are investigating Exxon Mobil’s public statements and private scientific knowledge over the years, and the company struck back on Wednesday in a filing in Texas against Claude Earl Walker, the attorney general of the United States Virgin Islands, and a private law firm working with his office on the investigation.

The filing called Mr. Walker’s actions a “flagrant misuse of law enforcement power” that “violate Exxon Mobil’s constitutionally protected rights of freedom of speech, freedom from unreasonable searches and seizures, and due process of law and constitute the common law tort of abuse of process.”

The company, it noted, has no “physical presence” in the Virgin Islands, and its courts have no jurisdiction over the company.

In addition, the company stated, it has “widely and publicly confirmed” that it recognizes “that the risk of climate change and its potential impacts on society and ecosystems may prove to be significant.”



Kert Davies, the director of the Climate Investigations Center, a group funded by foundations seeking to limit the risks of climate change, said Mr. Muffett's project "has pulled back the curtain on any plausible deniability that Big Oil might have pretended they had on the dangers of climate change." And, he added, "the naked truth is pretty ugly."

But Michael B. Gerrard, the director of the [Sabin Center for Climate Change Law](#) at Columbia Law School, said that the early stirrings of climate science have already been well documented.


"It has been known for years that scientists in that era were talking about climate change," he said.

# “There is no doubt”: Exxon Knew CO2 Pollution Was A Global Threat By Late 1970s

Brendan DeMelle and Kevin Grandia | April 26, 2016

There is no doubt that increases in fossil fuel usage...are aggravating the potential problem of increased CO2 in the atmosphere.”

Technology exists to remove CO2 from stack gases but only 50% of the CO2 would double the cost of power generation.



Throughout Exxon’s global operations, the company knew that CO2 was a harmful pollutant in the atmosphere years earlier than previously reported.

DeSmog has uncovered Exxon corporate documents from the late 1970s stating unequivocally “there is no doubt” that CO2 from the burning of fossil fuels was a growing “problem” well understood within the company.

“It is assumed that the major contributors of CO2 are the burning of fossil fuels... **There is no doubt that increases in fossil fuel usage** and decreases of forest cover are **aggravating the potential problem of increased CO2 in the atmosphere**. Technology exists to remove CO2 from stack gases but

removal of only 50% of the CO<sub>2</sub> would double the cost of power generation.”  
[emphasis added]

Those lines appeared in a 1980 report, “Review of Environmental Protection Activities for 1978-1979,” produced by Imperial Oil, Exxon’s Canadian subsidiary.

B. Summary of Major Topic Issues

(i) Climatic Change, Carbon Cycle

The global biogeochemical carbon cycle is a very complex system. It is assumed that the major contributors of CO<sub>2</sub> are the burping of fossil fuels which has been level at  $4.5 \times 10^{15}$  grams per year and oxidation of carbon stored in trees and soil humus. The major sinks are the atmosphere and the oceans. The atmosphere in 1978 contained  $695 \times 10^{15}$  grams.

There is no doubt that increases in fossil fuel usage and decreases in forest cover are aggravating the potential problem of increased CO<sub>2</sub> in the atmosphere. Technology exists to remove CO<sub>2</sub> from stack gases but removal of only 50% of the CO<sub>2</sub> would double the cost of power generation.

[click on any of the screenshots in this story to see a PDF of the full document]

A distribution list included with the report indicates that it was disseminated to managers across Exxon’s international corporate offices, including in Europe.



# IMPERIAL OIL LIMITED

111 St. Clair Avenue West, Toronto, Canada M5W 1K3

H. H. CLARE  
ENVIRONMENTAL PROTECTION COORDINATOR

1980-08-06

File No. 801

Environmental Quality Committee Members  
Toxic Substances Subcommittee of EQC Members  
Corporate Managers  
Marketing Region Managers  
Refinery Managers  
Region Environmental Advisors  
Mr. R. G. Ernst - Esso Eastern Inc., Houston  
Mr. L. B. Shore - Esso Europe Inc., London  
Mr. H. B. Prall - Esso Inter-America Inc., Coral Gables  
Mr. R. J. Campion - Exxon Company, U.S.A., Houston  
Mr. A. M. Natkin - Exxon Corporation, New York  
Dr. V. A. Newill - Exxon Corporation, East Millstone  
Dr. H. R. Gould - Exxon Production Research Co., Houston  
Dr. J. A. Price - Exxon Research and Engineering Co., Linden  
Dr. M. B. Glaser - Exxon Research and Engineering Co., F. P.

[click here to download the full PDF version of "[Review of Environmental Protection Activities for 1978-1979](#)"]

The next report in the series, "Review of Environmental Protection Activities for 1980-81," noted in an appendix covering "Key Environmental Affairs Issues and Concerns" that: CO2 / GREENHOUSE EFFECT RECEIVING INCREASED MEDIA ATTENTION.

## KEY ENVIRONMENTAL AFFAIRS ISSUES AND CONCERNS

- RELAXATION AT NATIONAL LEVEL WILL MEAN MORE ACTIVITY AT LOCAL LEVELS.
- USE OF ENVIRONMENTAL IMPACT ASSESSMENT GROWING.
- OIL SPILL RESPONSE CAPABILITY MUST BE MAINTAINED.
  - INTERNATIONAL OIL SPILL ORGANIZATION
  - OIL SPILL CHEMICALS
- ACID RAIN HAS NOW EMERGED AS AN ISSUE IN NORTH AMERICA.
- CO<sub>2</sub>/GREENHOUSE EFFECT RECEIVING INCREASED MEDIA ATTENTION.
- INCREASED EMPHASIS ON TOXIC SUBSTANCES/ENVIRONMENTAL HEALTH.

[click here to download the full PDF version of "[Review of Environmental Protection Activities for 1980-1981](#)"]

[InsideClimate News](#) unveiled much new information in its Exxon: The Road Not Taken series clearly demonstrating the depth of climate science knowledge among Exxon's U.S. operations. Additional revelations about the company's early climate research were published by the [Los Angeles Times in collaboration with the Columbia School of Journalism](#).

A 1980 Exxon report explained the company's plans:

"CO<sub>2</sub> Greenhouse Effect: Exxon-supported work is already underway to help define the seriousness of this problem. Such information is needed to assess the implications for future fossil fuel use. Government funding will be sought to expand the use of Exxon tankers in determining the capacity of the ocean to store CO<sub>2</sub>."

Now DeSmog's research confirms that the knowledge of the carbon dioxide pollution threat was indeed global across Exxon's worldwide operations, earlier than previously

known, and considered a major challenge for the company's future operations. The new documents revealed today were found by DeSmog researchers in an Imperial Oil (TSE:IMO) archival collection housed at the Glenbow Museum in Calgary, Alberta. We first learned of the existence of the collection in one of the articles published in the Los Angeles Times in collaboration with the Columbia School of Journalism.

## **“Since Pollution Means Disaster...”**

A document discovered by DeSmog reveals that Exxon was aware as early as the late 1960s that global emissions of CO2 from combustion was a chief pollution concern affecting global ecology.

Those details were found in a 1970 report, “Pollution Is Everybody’s Business,” authored by H.R. Holland, a Chemical Engineer [responsible for environmental protection](#) in Imperial Oil’s engineering division. [[click to download PDF of “Pollution is Everybody's Business”](#)]

Holland wrote:

“Since pollution means disaster to the affected species, the only satisfactory course of action is to prevent it – to maintain the addition of foreign matter at such levels that it can be diluted, assimilated or destroyed by natural processes – to protect man’s environment from man.”

Since pollution means disaster to the affected species, the only satisfactory course of action is to prevent it -- to maintain the addition of foreign matter at such levels that it can be diluted, assimilated or destroyed by natural processes -- to protect man's environment from man.

Included in Holland's report is a table of the "Estimated Global Emissions of Some Air Pollutants." One of those "air pollutants" on the table is carbon dioxide with the listed sources as "oxidation of plant and animal matter" and "combustion."

- 4 -  
Table 1  
ESTIMATED GLOBAL EMISSIONS OF SOME AIR POLLUTANTS

COMPOUND	SOURCE	EMISSION T/YR.
*SO <sub>2</sub>	Combustion - coal	51 x 10 <sup>6</sup> as S
	" - petroleum products	11 "
	Refining Petroleum	3 "
	Smelting	8 "
*H <sub>2</sub> S	Industrial Sources	3 "
	Marine "	30 "
	Terrestrial "	70 "
*SO <sub>4</sub>	Marine "	130 "
Total S Compounds	All Sources	306 "
	Natural *	230 "
*NO <sub>2</sub>	Combustion	16.1 x 10 <sup>6</sup> as N
	Biological Action	150 "
*NH <sub>3</sub>	Combustion	3.5 "
	Biological Action	4900 "
*N <sub>2</sub> O	Biological Action	410 "
Total N Compounds	All Sources	5480 "
	Natural Sources	5460 "
*CO	Combustion Sources	221 x 10 <sup>6</sup> as C
	Incineration	25 "
	Forest Fires	11 "
	Marine - Undetermined but very large	
**CO <sub>2</sub>	Oxidation of Plant and Animal Matter	150,000 "
	Combustion	4,500 "
Total C Compounds	All Sources	154,757 "
	Natural Sources	150,000 "
References:	* Gaseous Atmospheric Pollutants from Urban and Natural Sources - Robinson & Robbins, APCA 69-155.	
	** Carbon Dioxide Affects Global Ecology - E.K. Peterson, P. 1162 - Environmental Science and Technology, November, 1969.	

The double asterisks beside CO<sub>2</sub> in Holland's list of pollutants refer to a citation for a 1969 scientific study, "[Carbon Dioxide Affects Global Ecology](#)," in which the author explains the connections between the burning of fossil fuels, the rise in CO<sub>2</sub> in the atmosphere and the potential effects this will have on future weather patterns and global temperatures.

Holland emphasized the need to control all forms of pollution through regulatory action, noting that "a problem of such size, complexity and importance cannot be dealt with on a voluntary basis." Yet the fossil fuel industry has long argued that its voluntary programs are sufficient, and that regulations are unneeded.

## **Exxon Understood Climate Science, Yet Funded Decades of Climate Science Denial**

Despite Exxon's advanced scientific understanding of the role of CO<sub>2</sub> pollution from fossil fuel burning causing atmospheric disruption, the company shelved its internal concerns and launched a sophisticated, global campaign to sow doubt and create public distrust of climate science. This included extensive lobbying and advertising activities, publishing weekly op-eds in The New York Times for years, and other tactics.

Exxon and Mobil were both founding members of the [Global Climate Coalition](#), an industry front group created in 1989 to sow doubt — despite the GCC's internal understanding of the certainty.

While the GCC distributed a “[backgrounder](#)” to politicians and media in the early 1990s claiming “The role of greenhouse gases in climate change is not well understood,” a [1995 GCC internal memo drafted by Mobil Oil](#) (which merged with Exxon in 1998) stated that: “The scientific basis for the Greenhouse Effect and the potential impact of human emissions of greenhouse gases such as CO<sub>2</sub> on climate is well established and cannot be denied.”

And the most obvious evidence of Exxon's pervasive efforts to attack science and pollution control regulations lies in the more than [\\$30 million traced by Greenpeace researchers](#) to several dozen think tanks and front groups working to confuse the public about the need to curb CO<sub>2</sub> pollution.

As the science grew stronger, Exxon's embrace of its global, multi-million dollar denial campaign grew more intense.

## **Imperial Oil's Public Denial Grew Stronger In 1990s Despite Its Own Prior Scientific Certainty**

Imperial Oil, Exxon's Canadian subsidiary, as these documents demonstrate, had a clear understanding of the environmental and climate consequences of CO<sub>2</sub> pollution



from fossil fuel combustion, yet its public denial of these links grew stronger throughout the 1990s.

Imperial Oil chairman and CEO Robert Peterson wrote in “[A Cleaner Canada](#)” in 1998: “Carbon dioxide is not a pollutant but an essential ingredient of life on this planet.”

FINALLY, I WOULD LIKE TO TURN TO A TOPIC THAT MANY people think is related to air quality and pollution. I refer to global warming. The debate over this controversial issue centres around whether the burning of fossil fuels, by emitting so-called heat-trapping “greenhouse” gases (primarily carbon dioxide), will cause temperatures around the world to rise to the point where we will be faced with a planetary disaster.

It is important to understand that this issue has absolutely nothing to do with pollution and air quality. Carbon dioxide is not a pollutant but an essential ingredient of life on this planet – the plant world cannot live without it. Furthermore, the question of whether or not the trapping of “greenhouse” gases will result in the planet’s getting warmer – and I will comment on this shortly – has no connection whatsoever with our day-to-day weather.

(DeSmog will take a deeper look at Imperial Oil’s conflicting CO2 positioning in public vs. its internal communications in future coverage.)

Reached for comment, Imperial Oil did not respond by press time. ExxonMobil media relations manager Alan Jeffers provided the following response:

“Your conclusions are inaccurate but not surprising since you work with extreme environmental activists who are paying for fake journalism to misrepresent ExxonMobil’s nearly 40-year history of climate research. To suggest that we had reached definitive conclusions, decades before the world’s

experts and while climate science was in an early stage of development, is not credible.”

## **Legal Implications of Fossil Fuel Industry’s Knowledge of CO2 Pollution and Climate Impacts**

Calls are growing louder to [hold Exxon and other fossil fuel interests accountable](#) for funding climate denial campaigns given their advanced understanding of climate science and the implications of CO2 pollution for the atmosphere going back many decades.

In multiple U.S. states and territories — including New York, California, Massachusetts and the Virgin Islands — state Attorneys General are [investigating Exxon’s depth of knowledge](#) regarding the climate impacts of burning fossil fuels, and whether the company broke the law by fueling anti-science campaigns through corporate contributions to organizations and individuals working to sow doubt and confusion about global warming. [DeSmog coverage: [State Investigations Into What Exxon Knew Double, and Exxon Gets Defensive](#)]

Climate activists and [even presidential candidate Hillary Clinton](#) are urging the Department of Justice and other relevant government agencies to investigate the fossil fuel industry’s deliberate efforts to delay policy action to address the climate threat.

Democratic U.S. Senators Sheldon Whitehouse (RI), Ed Markey (MA) and Brian Schatz (HI) [introduced an amendment](#) to the energy bill expressing Congress’s disapproval of the use of industry-funded think tanks and misinformation tactics aimed at sowing doubt about climate change science. But it remains to be seen what action Congress might take to hold the fossil fuel industry accountable for delaying policy solutions and confusing the public on this critical issue.

Imagine where the world would be had Exxon continued to pursue and embrace its advanced scientific understanding of climate change decades ago, rather than pivoting antagonistically against the science by funding decades of denial?

# Exxon Mobil Loses Top Credit Rating It Held Since Depression

Joe Carroll

Asjylyn Loder Asjylyn

April 26, 2016 — 11:04 AM EDT

- Biggest U.S. oil explorer held S&P's top rating since 1930
- Exxon was final holdout against sweeping industry downgrade

The worst oil crash in a generation has cost Exxon Mobil Corp. the gold-plated credit rating it had held since the Great Depression.

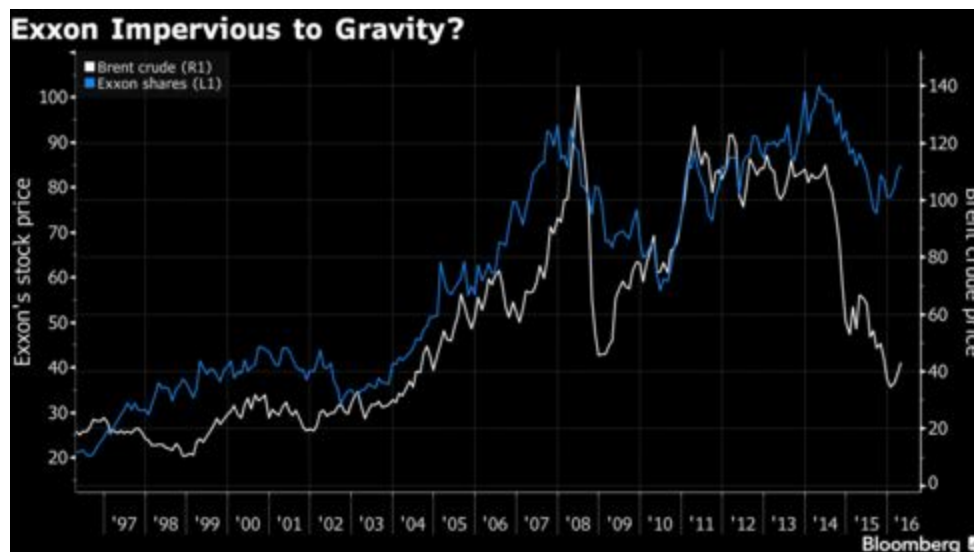
Standard & Poor's on Tuesday stripped Exxon of its highest AAA measure of credit-worthiness, cutting it to AA+, the same as the U.S. government. It's a defeat for Exxon, which sought to retain the rating after S&P placed it on notice in February. Before the downgrade, Exxon shared the distinction with just two other companies: Johnson & Johnson and Microsoft Corp.

"Nothing has changed in terms of the company's financial philosophy or prudent management of its balance sheet," Scott Silvestri, a company spokesman, said in an e-mail. "Exxon Mobil places a high value on its strong credit position and continues to be focused on creating long-term shareholder value despite near-term market volatility." The downgrade is another blow to Chairman and Chief Executive Officer Rex Tillerson's legacy as he approaches the company's mandatory retirement age next year. In the decade he's led the world's most valuable publicly traded oil explorer, he spearheaded a \$35 billion bet on natural gas right before the market collapsed. That was followed by a stillborn partnership with Russia's state-controlled crude driller that stranded \$1 billion behind a wall of international sanctions.

**Stock Buybacks**

S&P questioned Exxon's decision to spend \$54 billion on stock buybacks since 2012 even as its debt load swelled. Exxon's preference for returning cash to shareholders may be hurting its ability to stockpile cash and pay down debt, the credit rating company said. Exxon is scheduled to release first-quarter earnings on Friday before the start of trading.

"The company's debt level has more than doubled in recent years, reflecting high capital spending on major projects in a high commodity price environment and dividends and share repurchases that substantially exceeded internally generated cash flow," S&P wrote in the note.



Exxon also is facing challenges in finding enough new discoveries to replace the crude it's pumping from the ground, S&P said on Tuesday. The company only found enough new oil last year to replace 67 percent of its production.

"In our view, the company's greatest business challenge is replacing its ongoing production," S&P said.

Oil prices have tumbled almost 60 percent since June 2014 and are trading at about \$44 a barrel. The crash has choked crude-producing nations like Nigeria and Venezuela of cash, thrown hundreds of thousands of employees out of work, stalled drilling and pipeline investments around the world and even reverberated into ancillary industries

such as steel-making and railroads. Exxon was one of the last holdouts against the wave of credit downgrades that engulfed oil drillers with diminishing prospects of paying debts, dividends and rig fees.

The downgrade will not only raise Exxon's cost to borrow money but may also erode its status among oil-rich governments as a premier partner with which to do business. As Exxon Vice President of Investor Relations Jeffrey Woodbury said in February, the company's AAA rating was a key selling point when competing for drilling licenses.

# Note to Exxon: Lying About Climate Change Isn't Free Speech—It's Fraud

*Facing hundreds of billions of dollars in potential damages, the fossil-fuel giant is trying to change the subject.*

*By Mark Hertsgaard*

**MAY 5, 2016**

When in trouble, change the subject—or at least try to. So it is that the world's oldest, richest, and most powerful oil company, under investigation for apparently lying to investors and the public for decades about the deadliness of its products, has launched a high-stakes counterattack under the unlikely flag of the First Amendment. On April 13, ExxonMobil filed suit to block a subpoena issued by the attorney general of the US Virgin Islands. Following

revelations from the *Los Angeles Times* and *InsideClimate News*, the subpoena charged that the company may have violated the territory's anti-racketeering law. It questioned whether Exxon told investors, including the territory's pension fund, one thing about climate change (that it wasn't a danger) while its own scientists were privately telling its management the opposite.

New York Attorney General Eric Schneiderman raised the same question when he subpoenaed Exxon in November. The oil giant turned over some 10,000 pages of documents, which Schneiderman's staff is reviewing. But when Virgin Islands Attorney General Claude Walker requested many of the same documents, Exxon not only refused; it went on the offensive. The company's countersuit asserted that Walker's subpoena was an attempt "to deter ExxonMobil from participating in ongoing public deliberations about climate change.... The chilling effect of this inquiry, which discriminates based on viewpoint to target one side of an ongoing policy debate, strikes at protected speech at the core of the First Amendment."

Soon, in an exercise in mass ventriloquism, myriad voices on the right—including the Heritage Foundation, *National Review*, the *New York Post*, *Reason*, and the Hoover Institution—took up the refrain. Outraged that 16 other state attorneys general had pledged action against the fossil-fuel industry, *Washington Post* columnist George

Will charged that the law-enforcement officials were trying “to criminalize skepticism about the supposedly ‘settled’ conclusions of climate science.” Fox News accused the AGs of “collusion” with activists, citing a meeting that a member of Schneiderman’s staff had with a representative of the Union of Concerned Scientists.

The right-wing chorus predictably glided past the fact that, as a matter of law, the First Amendment is no shield for fraud. And telling one thing to investors while privately knowing the opposite to be true, as Big Tobacco once did, is plainly fraud. But now, it was all about Exxon as the victim, with the usual left-wing villains—overreaching government and environmental extremists—trampling the oil company’s free-speech rights because it had dared to take an unconventional position on climate change. Exxon even used the same law firm that defended Big Tobacco—Paul, Weiss, Rifkind, Wharton & Garrison—to file its countersuit.

Will crying “free speech” succeed in blunting the effort to bring Exxon and its fellow fossil-fuel giants to justice? It’s too soon to know, and compelling evidence runs in both directions.

Framing Exxon as a victim isn’t an easy sell beyond the right-wing echo chamber. Nor is climate denial. The vast majority of voters and policy-makers now understand that climate change is a real and growing danger. And most people have little trouble believing that



Exxon knew full well about this danger, even as it spent decades and tens of millions of dollars portraying climate change as a “premise that defies...common sense,” to quote former CEO Lee Raymond.

What’s more, by enabling increased global warming, Exxon’s alleged lying has damaged many people around the world. Crucially, the victims include investors and business owners. The poor suffer first and worst from climate change, but they rarely file—much less win—lawsuits against polluters. But when people of means are damaged, they don’t hesitate to sue for compensation.

Exxon’s exposure on this front is immense. If the allegations are true, the oil giant has in effect transferred massive amounts of risk and loss onto the rest of the market and virtually every business enterprise in it. By confusing the debate, Exxon helped delay government action against climate change. The company made buckets of money, but the resulting higher temperatures and extreme weather events have cost investors, governments, businesses, and ordinary people many billions, with much larger costs ahead. Mark Carney, the governor of the Bank of England, has warned that as climate change intensifies, “parties who have suffered loss or damage [may] seek compensation from those they hold responsible.”

Nor is the right’s cheerleading without its complications for Exxon. The right conflates the First Amendment argument with its cuckoo belief

that climate change is a hoax, but Exxon has a different goal: to protect its public image. Exxon needs to be perceived as a good corporate citizen, and in 2016 a good corporate citizen doesn't deny climate change.

On the other hand, no one familiar with Exxon's history would underestimate the resources it brings to this battle. As Steve Coll documented in *Private Empire*, Exxon has long exercised political power and global reach more akin to that of a nation-state than of a corporation. And it is as calculating and tough as it is mighty and rich. When a jury awarded \$5 billion in damages for the *Exxon Valdez* oil spill, the company fought the decision to the very end. The world had seen the tragedy unfold on television—the oil-drenched seabirds, the idled fishing boats—but Exxon simply refused to accept guilt. Instead, lawyers filed appeal after appeal, dragging out the proceedings for 20 years. By the time Exxon finally paid up in 2009, the damages had been whittled down to a tenth of the original amount.

Exxon will fight this new battle even more ferociously, for the “Exxon Knew” scandal poses an immeasurably graver threat. Exxon's potential exposure on the *Valdez* spill was a \$5 billion fine, a sum it could have paid with ease. By contrast, Exxon Knew could involve hundreds of billions of dollars in damages, enough to bankrupt the company. It also comes when the world's governments have committed to phasing out

Exxon's products over the next decades. These twin threats endanger not merely Exxon's revenue but its very identity as a company that made its name by pulling oil out of the ground. For Exxon, this is shaping up as a fight to the death, and the First Amendment offers scant protection against that.

# Mobil's Chief Executive Warned of CO2 From Oil Sands Fuels in 1982

Concerned that carbon-heavy fuels would speed up global warming, the CEO put his trust in the United Nations and federal scientists to point the way to solutions.

BY LISA SONG

MAY 9, 2016



ExxonMobil subsidiary Imperial Oil is today a leading producer of fuels from Canadian oil sands. Its Kearl oil sands operation (pictured here) produced 168,000 barrels per day last year. Credit: Imperial Oil handout photo

The CEO of Mobil Corporation warned in 1982 that burning Canadian oil sands fuels could lead to a buildup of carbon dioxide in the atmosphere with calamitous effects. His concerns provide further evidence that oil industry executives were aware of the climate

impact of their products decades ago, and of the dangers of exploiting unconventional reserves with a higher carbon footprint.

Mobil's chief executive, Rawleigh Warner, Jr., took notice of the increasing production of tar sands, oil shales and liquefied coal in [an article published by the United Nations Environment Program](#). He was writing 15 years after [Suncor Energy began producing](#) oil sands from the first large-scale mine in Alberta, and less than a decade after the Arab oil embargo propelled industry to search for alternative fuels.

"The switch to heavier fossil fuels has already caused much popular concern, primarily seen in some nations' fear of the effects of acid rain," he wrote, "and the general fear that excessive use of these fuels may so build up carbon dioxide in the atmosphere that the earth's temperature may increase, with some disastrous consequences.

"Both of these fears should be seriously addressed."

His advice was not heeded. Development of the oil sands continued in subsequent decades and boomed after the turn of the century.

Mobil merged with Exxon Corporation in 1999 to form the world's largest oil company. ExxonMobil subsidiary Imperial Oil is now a leading producer of fuels from Canadian oil sands. Exxon did not respond to questions for this article.

At the time Warner published his article, scientists from Mobil, Exxon, Texaco, Shell and six other oil companies were collaborating on a climate change task force of the American Petroleum Institute that operated from 1979 to 1983, an [InsideClimate News investigation](#) revealed. Some also ran their own in-house research units; of those, [Exxon's CO<sub>2</sub> program](#) was the most ambitious. By the late 1980s, Exxon, Mobil

and most of the task force companies had joined campaigns to stall climate regulations and manufacture doubt about global warming science.



Former Mobil Chairman and CEO Rawleigh Warner, Jr./Credit: Dolph Briscoe Center for American History

Warner, who died in 2013, served as Mobil's chairman and CEO from 1969 to 1985. His 1982 comments appeared in a three-page article titled "**Energy and the environment: the next decade**," published by UNEP Industry and Environment. The journal, now discontinued, was a publication of the United Nations Environment Program, founded in 1972 to promote sustainable development. UNEP cofounded the Intergovernmental Panel on Climate Change (IPCC) in 1988.

A copy of Warner's article was obtained from Harvard University's Lamont Library.

In it, Warner expressed optimism that the oil industry could meet global energy needs while minimizing oil spills and releases of toxic gases. He promoted Arctic drilling as a solution to dwindling U.S. oil reserves and said the industry could handle the associated environmental challenges. The article touched briefly on CO<sub>2</sub>, listing it alongside acid rain as one of the "new issues" that "need to be carefully monitored, and action taken if necessary."

"As for the so-called 'greenhouse effect' of carbon dioxide buildup," he wrote, "I recognize that this too may become a serious issue for the future.

"But I believe such international efforts as **UNEP's Earthwatch** international surveillance network, and studies by government agencies and such prestigious institutions as the National Academy of Sciences in the United States, can supply us with the information to deal with this problem well before the catastrophic consequences which some predict can happen."

Warner's article noted that the 1980s would usher in an era of increased fossil fuel production, particularly of coal and synthetic fuels such as liquefied coal, tar sands and oil shale.

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# Energy and the environment: the next decade

**Rawleigh Warner, Jr.**

Chairman  
Mobil Corporation  
United States of America

In the ten years that have passed since the Stockholm conference, the nations of the world have made solid progress in actually improving the quality of the environment while producing and consuming more energy than in any previous decade in history. Official statements<sup>1-4</sup> of the industrialized countries attest to conditions of cleaner air and water than in 1972. Expanding scientific knowledge is helping us in our efforts to deal with the inseparable relationships between energy and the environment. Co-operation between governments and private energy companies, including the development of useful government-industry relationships under the aegis of the United Nations Environment Programme, has matured.

While much remains to be done, I believe that the energy industry can fairly claim that it has taken seriously the basic assumption of the conference's Declaration on the Human Environment — that we all have a responsibility to protect and improve the environment for future generations.

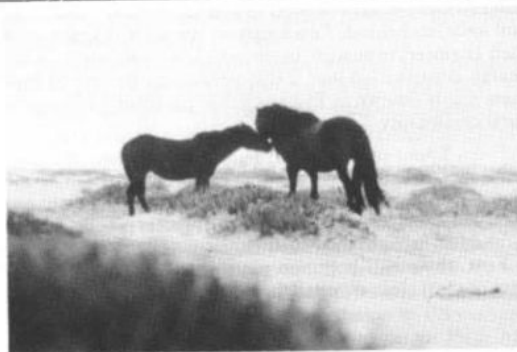
Moreover, we can look back on the past decade as one of growing public understanding of the relationship between energy needs and environment. Demands for "clean" air and water at any cost are giving way to a more sophisticated realization that the cost of environmental improvement beyond a certain point may become prohibitively expensive in relation to any benefits it may provide. While the worldwide concern for the environment in the past decade has been vitally important, I believe this growing appreciation of the economics of the issues involved is also very welcome.

In this climate of greater understanding, I believe that energy companies and governments will make further progress in improving worldwide environmental quality in the coming decade, building on the successful work of such organizations as the International Petroleum Industry Environmental Conservation Association (IPIECA), the International Exploration and Production Forum (E&P Forum), and the Oil Companies International Marine Forum (OCIMF).

At the same time, it is clear that we face some new challenges. I expect that the energy industry will maintain high environmental standards while producing hydrocarbons in increasingly difficult areas, particularly in the Arctic region and offshore; continuing to transport huge volumes of crude oil across the oceans; and moving toward a more complex mix of fuel production, which will involve refinery processing of heavier crude oils, greater use of coal, and more reliance on nuclear power.

What are the prospects for maintaining — or improving — world environmental quality in the 1980s in the face of changing energy demands? Let us look at each fuel in turn, beginning with oil and natural gas, which will continue to be the world's staple fuels for some years.

For various reasons, two developments of the 1970s — increased production of crude oil in the Arctic regions and in offshore waters generally — can be expected to continue. The



**Figure 1** Exploratory drillers exercised the utmost care to protect Sable Island's ecological balance for its famous horses and wildlife. (Nova Scotia)

United States, once virtually self-sufficient in hydrocarbons, is now making intense efforts to replace declining reserves for national security reasons, and some of the best prospects for doing so are in Alaska, both on and offshore, and in other coastal waters. Oil companies operating in Canada have made significant finds, particularly in the Atlantic and the Beaufort Sea. The Soviet Union is also seeking new reserves in offshore areas and in the Arctic regions of Siberia. North Sea oil and gas production will continue. Some developing countries without significant oil reserves are trying hard to find them, frequently in their coastal waters.

I believe the available evidence shows clearly that oil companies can handle the environmental problems posed by Arctic oil production. Companies producing oil and gas on the Alaskan North Slope have maintained an excellent record. The Alaska pipeline has not disturbed the ecology of the tundra or the lifestyle of animals in the area. Furthermore, imaginative solutions to new problems — for example, ways to combat the dangers posed by pack ice and icebergs to offshore oil installations — are coming off the drawing boards including man-made islands strong enough to withstand the movement of pack ice, underwater production equipment buried deep enough in the ocean floor to be protected from the bottom-scouring action of pack ice or icebergs, and floating production systems that can be readily moved when icebergs threaten.

Offshore oil production in other parts of the world should not cause serious environmental problems. In the North Sea coastal waters of the United States, and elsewhere, it has been demonstrated that oil production can be carried out without harming fishing grounds. Serious accidents on offshore drilling



"Venezuela is preparing to make large investments in producing heavier oils from the Orinoco tar belts, Canada should get some increased oil production from the Athabasca tar sands and a long list of countries—including the United States, Australia, the Soviet Union, Morocco and Brazil—have either taken steps to produce oil from shale in this decade, or contemplate doing so," Warner wrote.

Like Warner, Exxon's scientists had also recognized by that time that growing use of carbon-intensive fossil fuels would speed up global warming. According to Exxon's calculations, the extraction and burning of oil shales would release 1.4 to 3 times more carbon dioxide than conventional oil.

In a 1981 speech before the U.S. Chamber of Commerce, Exxon senior vice president Randall Meyer said a thorough investment in synfuels could yield 15 million barrels a day for 175 years.

Ultimately, a lack of federal funding and high costs stymied Exxon's hope for a major synfuels program, but the company's investments in Alberta oil sands proved lucrative. The company has invested in Alberta's oil sands since the 1970s, when subsidiary Imperial Oil began developing the Cold Lake project, one of the largest in-situ mining operations in Canada.

Data from the [Pembina Institute](#), a Canadian think tank, show that Cold Lake produced 158,000 barrels per day in 2015. Another Imperial oil sands mine, the Kearl project, produced 168,000 barrels per day last year.

According to its annual reports and other business filings, ExxonMobil had 1.87 billion barrels of tar sands reserves in 2008—more than five times what the company held in 1982, the year Warner published his article.

Overall, tar sands production in Canada has grown more than 20-fold since then, too, and ExxonMobil is one of the leading producers. Extracting and processing the oil releases about 17 percent more CO<sub>2</sub> than conventional crude oil. The industry's outsized carbon footprint has led to **increased scrutiny as activists fight fossil fuel projects**.

In his article, Warner expressed support for two types of fuel that do not contribute to the greenhouse effect: nuclear power and renewable energy. Solar energy, he wrote, has "major potential. Biomass conversion, along with wind and tidal power, may also play a role" in the world's future energy mix.

Written six years before the creation of the IPCC, Warner's article also reveals his trust in the UN and federal scientists on climate research, in stark contrast to the oil industry's subsequent stance. In 1989, Exxon helped create the Global Climate Coalition, a group of fossil fuel and manufacturing interests—including Mobil—that questioned the scientific consensus on human-caused global warming and the integrity of the IPCC process.

In 2001, ExxonMobil lobbyist Randy Randol **sent a memo** to the Bush-Cheney White House complaining about three federal climate scientists he called "Clinton/Gore carryovers with aggressive agendas." By 2003, all three scientists had left their government jobs. The GCC's efforts and ExxonMobil's lobbying also played a key part in president George W. Bush's decision to pull the U.S. out of the Kyoto Protocol, an international agreement to curb carbon emissions.

# The People vs. Exxon: As Fossil Fuel Cover-Up Exposed, Activists Try Oil Giant for "Climate Crimes"

DECEMBER 31, 2015

The revelations that Exxon concealed its early findings that fossil fuels cause global warming have sparked a criminal investigation by New York's attorney general and calls for a federal probe like the one against Big Tobacco. But some aren't waiting for the justice system to act. During the recent U.N. climate summit in Paris, environmental activists held a "mock trial" charging Exxon with "climate crimes." Hundreds from around the world—including participants in COP21—packed into a large warehouse-like cultural space to hear a stirring indictment of Exxon. A tribunal of judges heard testimony from witnesses that included scientists, energy experts and residents of frontline communities threatened by climate change. The witnesses were questioned by two leading environmentalists acting as chief prosecutors: Bill McKibben, co-founder of 350.org, and journalist Naomi Klein.

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## TRANSCRIPT

**AMY GOODMAN:** The revelations that Exxon concealed its own findings on global warming have sparked a criminal investigation by the New York attorney

general and calls for a federal probe, like the one against Big Tobacco. But some aren't waiting for the justice system to act. During the recent U.N. climate summit in Paris, environmental activists and journalists held a kind of "mock trial" to try Exxon for what they called climate crimes. Hundreds from around the world—including participants in COP21—packed into a large, dark, warehouse-like cultural space to hear a stirring indictment of Exxon. It was overcast. It was gray on this Paris afternoon. A tribunal of judges heard testimony from witnesses that included scientists, energy experts, residents of frontline communities threatened by climate change. The witnesses were questioned by two leading environmentalists acting as chief prosecutors: environmentalist Bill McKibben, co-founder of [350.org](http://350.org), and journalist Naomi Klein.

**NAOMI KLEIN:** These events are sometimes called mock trials. We call this a people's trial. There is nothing mock about this. There's nothing funny about this. The stakes could not be higher. Just as the global climate movement has been doing what our politicians fail to do, by keeping carbon in the ground, stopping pipelines, stopping Arctic drilling, just as our movements are failing—are stepping in where our politicians have failed, what we are doing here is stepping in where our courts have failed. And we firmly believe that this is a preview, that this prosecution of Exxon will happen in real courts very, very soon. So do not consider this a mock trial, but a sneak preview of Exxon's future.

**BILL McKIBBEN:** At the pleasure of the court, we'd like to call our first witness, if we could.

**KATHY JETNIL-KIJINER:** My name is Kathy Jetnil-Kijiner. I'm a poet and activist from the Marshall Islands.

**BILL McKIBBEN:** Could you describe the—the sort of state of mind of people in the Marshall Islands? What is it like to live with the notion that the water is rising?

**KATHY JETNIL-KIJINER:** We're living in a lot of fear. We're living in a lot of fear that we would prefer to push back and not necessarily think about on a daily basis. I, myself, have confronted that fear that we could be losing our livelihoods, we could lose our land, we could lose our culture. And that kind of fear is haunting, because, you know, if we lose our land, we lose our identity. We lose who we are as a people.

**BILL McKIBBEN:** Where would people go?

**KATHY JETNIL-KIJINER:** We don't know. We don't know where we would go. There are certain islands that have, you know, relationships with bigger nations, bigger countries. We do have a bigger nation—a relationship with the United States right now, under the Compact of Free Association. However,

what we're campaigning for and what we tell everyone is that we shouldn't have to go anywhere, and we shouldn't have to have a policy—an evacuation strategy.

**BILL McKIBBEN:** How long have people lived on the Marshall Islands?

**KATHY JETNIL-KIJINER:** We've been living there for 2,000 years. Right? Yeah, 2,000 years. Over 2,000 years, yeah.

**BILL McKIBBEN:** Two thousand years. And in that time, the ocean has stayed at a level that's made it possible to pursue life there.

**KATHY JETNIL-KIJINER:** Yes, actually, we just went out to visit an island, just recent—just this past weekend, that we were told went underwater. That island went underwater within 10 years. Just 10 years ago, that island was lush. It had trees. It had coconut trees. It had animals. Within 10 years, this island is already gone.

**BILL McKIBBEN:** So, within—within the last 25 years—

**KATHY JETNIL-KIJINER:** Yeah.

**BILL McKIBBEN:** —in the period of time that Exxon, for instance, knew about climate change—

**KATHY JETNIL-KIJINER:** Actually, yes, yes.

**BILL McKIBBEN:** —there's been remarkable change.

**KATHY JETNIL-KIJINER:** Mm-hmm. I've talked to my elders, and none of them have seen anything like this in their entire lives. It's just getting worse now. So, yes, within that time period.

**BILL McKIBBEN:** Thank you very much. No further questions.

**KATHY JETNIL-KIJINER:** Thank you.

**BILL McKIBBEN:** The prosecution would call Jannie Staffanson. Tell us your name, and describe your work, please.

**JANNIE STAFFANSON:** My name is Jannie Staffanson, and I am Sami from the Arctic. I was born and I live in a reindeer-herding family.

**BILL McKIBBEN:** Really? Tell us about the role of reindeer in the Sami culture and economy.

**JANNIE STAFFANSON:** It's the center. It's our identity, our traditions. And it's the thing I strive to protect each and every day.

**BILL McKIBBEN:** Your family engages in reindeer herding.

**JANNIE STAFFANSON:** Yes.

**BILL McKIBBEN:** They have a—how do they—how does one family keep its reindeer apart from another? How do you know your own reindeer?

**JANNIE STAFFANSON:** The reindeers are migrating, and we are followers, nomads. They are migrating from the summer to the winter lands, and it's very, very, very long migrations. But sometimes they are stopped, as now. My colleague, he was going up to the mountains to get the reindeers down to the winter area, where there are good vegetation. He cannot cross the rivers. They have not frozen yet. The reindeers cannot come over because they can't get over the rivers and the lakes.



**BILL McKIBBEN:** Do you know how long the Sami have been engaged in reindeer herding in this part of the world?

**JANNIE STAFFANSON:** As long as anyone remembers.

**BILL McKIBBEN:** Many thousands of years?

**JANNIE STAFFANSON:** Yes.

**BILL McKIBBEN:** And in that period of time, they've been able to continue this work without interruption?

**JANNIE STAFFANSON:** Yes, yes.

**BILL McKIBBEN:** What is—has that begun—you've indicated that that's begun to change in recent years.

**JANNIE STAFFANSON:** So, the temperature are increasing and decreasing, which we have never seen at such a rate, and each and every day is different. Usually, we—I have heard stories about good winters, right? where we didn't have to be out tending for the reindeers or digging holes so they can reach the food. But with the increase and decrease of temperature, there are ice crests

on the snow, which makes the reindeer unable to smell the food underneath, and therefore it will not dig for it. And even if they try, it's not strong enough. So they starve to death.

**BILL McKIBBEN:** So, because of these freeze-thaw cycles, it's becoming difficult for the reindeer to access their forage.

**JANNIE STAFFANSON:** Yeah, the food. Yeah, they starve. We have had bad winters as such, as long as I can remember, and my whole generation. We are the generation of climate change.

**BILL McKIBBEN:** Thank you.

**FAITH GEMMILL:** Faith Gemmill, Neets'ait Gwich'in, Pit River and Wintu, and I am from Vashrajj K'oo, Arctic Village, Alaska. And I'm the executive director of Resisting Environmental Destruction on Indigenous Lands.

**NAOMI KLEIN:** One of the things we know because of these investigations into Exxon in recent months is that as they were researching climate change as far back as the 1970s, they were interested in the economic possibilities this would present because ice would melt. And did you have a reaction to hearing that Exxon saw this as a profit-making opportunity?

**FAITH GEMMILL:** It makes me angry. It makes me angry, because we are ground zero. Arctic communities are ground zero for climate change. My children are going to be devastated by what's happening. And we have to do something now. And that makes me angry that they knew, and they're still trying to drill in these places like the Arctic Refuge, but also they've already devastated a whole ecosystem in Alaska. And they knew what they were doing, so it makes me angry, because it affects my children, their children, all of our children.

**NAOMI KLEIN:** Thank you for your testimony today.

**FAITH GEMMILL:** Thank you.

**BILL McKIBBEN:** Your Honors, if it's all right, we will stay with this theme of the Far North for a moment, but switch to the science side of this equation. We'd like to call Jason Box. Mr. Box, could you describe your work, please?

**JASON BOX:** I'm a climatologist and glaciologist. We've been installing and maintaining a network of measurements on the surface of the Greenland ice sheet the last 20 years. And part of our work is to publish articles, so I've managed to be involved with about 90 externally reviewed scientific articles and contributed to the last two Intergovernmental Panel on Climate Change reports.

**MATT PAWA:** Hello, I'm Matt Pawa. You said that mitigation matters, and you indicated also that you had read some of the Exxon disclosures, is that right? I'd like to show you one of the Exxon disclosures. This is a June 6, 1978, document. Is that one of the documents that you recently reviewed from InsideClimate News?

**JASON BOX:** Yes, I've been—I'm halfway through the InsideClimate News report. It's fantastically fascinating reading, because it's a historical account of kind of a corporation that went rogue.

**MATT PAWA:** And describe what you mean by "went rogue."

**JASON BOX:** Well, they initially had a transparent, hardcore science profile. They were doing some of the best science in the discipline. And they then defunded those programs and then started to actively fund disinformation campaigns to perpetuate their profitability, knowing that the true cost accounting of their products would lead to, some of their own scientists are concluding, failed agricultural systems, drought, sea level rise, climate chaos. They knew that, but they went ahead and to—you know, for short-term gain, to lie to the global public. And we will be paying for that for decades to come.

**NAOMI KLEIN:** Can you state your name and your position, please?

**CINDY BAXTER:** My name is Cindy Baxter, and I'm author of the website called [ExxonSecrets.org](http://ExxonSecrets.org), and I've spent the last 15, 20 years researching the fossil fuel industry's funding of climate denial campaigns.

**NAOMI KLEIN:** Based on this research, did Exxon draw inspiration from the tobacco industry and its track record of denying the link between smoking and cancer?

**CINDY BAXTER:** Oh, absolutely. I think—I think Exxon and all the climate deniers that it worked with and the think tanks that it worked with were directly linked back to the tobacco industry's—

**NAOMI KLEIN:** Tell us about that.

**CINDY BAXTER:** —its "doubt is our product." We have, for example—

**NAOMI KLEIN:** Wait, sorry, what was that?

**CINDY BAXTER:** The tobacco industry's "doubt is our product" strategy. Doubt.

**NAOMI KLEIN:** "Doubt is our product."

**CINDY BAXTER:** Engineering doubt is the main thing that the tobacco industry did to try and create debate around the science, so that—of the science of smoking and cancer, so that—so that the public—so that the public wouldn't be pushing for action on tobacco control.

**NAOMI KLEIN:** Now, those tobacco companies were eventually taken to court and held accountable for that. Based on what you've seen of the Exxon revelations, do you believe that we're going to see similar lawsuits?

**CINDY BAXTER:** Well, I would like to see that. I'm not a lawyer, obviously. But I would like to, because I think—I think that if you know something, and we've seen that Exxon knew, and then we saw—and I've been very much looking at what Exxon did next. And what they did was, you know, extraordinary. They spent \$30 million—\$31 million from 1998 to 2014 funding climate denial campaigns run by think tanks and also denying the climate science themselves.

**KEN HENSHAW:** My name is Ken Henshaw. I work with an NGO called Social Action in Nigeria. I'm an environmental rights campaigner.

**NAOMI KLEIN:** So, Rex Tillerson, the CEO, in 2012 said that humans have always adapted, will adapt. One of the ways that humans adapt is by moving, by migrating. Based on what you're seeing of the treatment of refugees in Europe and North America, do you believe that if Africans are forced to migrate because of climate change, that they will be welcomed?

**KEN HENSHAW:** It doesn't feel so, no. To me right now, it does not feel so. It doesn't feel so at all. I mean, I don't get the impression that if, for any reason, people in the Niger Delta, in Nigeria, who are affected by climate change have to move, they'll be welcome here in Europe. No, I don't think so.

**NAOMI KLEIN:** And what do you feel when you hear those words from Exxon's CEO?

**KEN HENSHAW:** I really feel bad, because it seems to me that they don't take into consideration what people are passing through. And the revelations are becoming more and more dire. I mean, I can tell you about a community called Bodo in Ogoniland. It is the place where UNEP carried out an assessment of the environment. And it was confirmed that benzene—and I had never heard the word "benzene" before now—that benzene, a cancer-causing agent, is in the water people drink, 900 times higher than it should be. People still drink that water now. It is the water I learned how to swim in. It is the water I drink 'til now. Life expectancy in the Niger Delta has drastically, you know, dropped. The expectancy level is something between

43 and 46 years old in the Niger Delta. If you drive into Bodo, every weekend, the pastime there now are burials. What you see on each and every wall are posters announcing this burial or that burial or this burial. And every poster has got the age of the person, the deceased. It's hardly up to 50 years old. I am really, really scared, because I still drink that water. On the 1st of August, I was 39 years old. If life expectancy is between 43 and 46, I'm afraid. I'm really getting scared.

**NAOMI KLEIN:** Thank you for your testimony.

**AMY GOODMAN:** That was Ken Henshaw, environmental rights campaigner with Social Action in Nigeria. He says burials are now more common in his community in Ogoniland because oil-related facilities in the region have contaminated the water with benzene. He was being questioned by journalist Naomi Klein. When we come back, more of the Exxon "mock trial" from the alternative climate summit that took place during the U.N. climate summit in Paris earlier this month. Stay with us.

[break]

**AMY GOODMAN:** This is *Democracy Now!*, [democracynow.org](http://democracynow.org), *The War and Peace Report*. I'm Amy Goodman, as we return to the "mock trial" of oil giant ExxonMobil held by activists and journalists and scientists during the recent U.N. climate summit in Paris. We first hear from one of the chief prosecutors, environmentalist Bill McKibben.



**BILL McKIBBEN:** Tell us your name and describe your work a little bit.

**CHERRI FOYTLIN:** Yeah, my name's Cherri Foytlin. I live in Rayne, Louisiana. Mostly I work at being a mom. But when I'm not doing that, I work with [BridgeTheGulfProject.org](https://www.BridgeTheGulfProject.org), and we help people along the Gulf Coast to tell their stories about social and environmental justice.

**BILL McKIBBEN:** Among other impacts of the oil industry, could you explain for a moment about what's happened as they've cut channels and things through the marshes and bayous of Louisiana?

**CHERRI FOYTLIN:** Well, what's happened is Exxon and other oil industry—the other parts of the oil industry has cut these long pipelines that go crisscross, kind of like tic-tac-toe, like a fly swatter, the end of a fly swatter, across our wetlands. And to date—what happens is, the salt water comes up through those channels, kills the root system on the wetlands, and then we have land loss. So, we're losing about a football field of land an hour in South Louisiana, and we've lost a million football fields to this date.

**BILL McKIBBEN:** And what does that mean when the sea level is rising and when storms like Katrina approach?

**CHERRI FOYTLIN:** Well, those wetlands are our protection. They're a buffer zone for us. So, when we have hurricanes like Katrina, really, that killed over a thousand people, come up, we don't have that level of protection that we would have, and it's stronger and hits the—hits harder. And there's far more flooding, because they actually soak up that water.

**BILL McKIBBEN:** As a political activist, the CEO of Exxon recently donated the maximum amount of money possible to congressional candidates or members of Congress on the eve of an important vote. Why is it that you've not decided to donate \$10,000 at a crack to congressional leaders?

**CHERRI FOYTLIN:** Don't have \$10,000, because I'm busy buying sand bags to keep the water out of my front door. I mean, look, just in a couple—you know, a couple more—

**BILL McKIBBEN:** Do you think—

**CHERRI FOYTLIN:** —generations here, and my whole where I live is going to be completely underwater.

**BILL McKIBBEN:** Do think a political system should be open to people handing \$10,000 checks to—

**CHERRI FOYTLIN:** I don't. I think Exxon is corporate serial killers. I think they're murderers. And I think they need to go on trial, and I think the death penalty needs to happen.

**BILL McKIBBEN:** Thank you very much.

**NAOMI KLEIN:** Could you please state your name and your work?

**SANDRA STEINGRABER:** My name is Sandra Steingraber. I am a Ph.D. biologist and a co-founder and members of Concerned Health Professionals of New York.

**NAOMI KLEIN:** You are a specialist in the impacts of fracking. Could you tell us about Exxon's involvement in the fracking industry in the United States?

**SANDRA STEINGRABER:** Sure. So, Exxon is the world's largest public natural gas producer. And it extracts oil and gas via fracking all over the world, particularly in the United States, but more recently it's gone after the shale gas and oil in Argentina.

**NAOMI KLEIN:** We've talked a lot about local health impacts of Exxon's activities, and we'll come to that, but I also would like to ask you about the climate impacts of fracking, since we are here outside a climate conference.

Sometimes natural gas gets marketed as a climate solution. Is that the case in your—based on your expertise?

**SANDRA STEINGRABER:** Natural gas is a climate problem. In fact, it's a catastrophe for the climate. So, in addition to the deceptions that ExxonMobil has precipitated regarding the actual existence of climate change and the role of fossil fuels, Exxon is also implicit in promulgating the idea that somehow natural gas is a more friendly fossil fuel than the other two members of the unholy trinity—oil, gas and coal.

**NAOMI KLEIN:** You are a mother of two children. You have written about motherhood and the responsibilities to future generations. When you learned that Exxon had been researching climate change since the 1970s, research that has been described here today as state-of-the-art, did you have a reaction as a mother or as a scientist—up to you—or both?

**SANDRA STEINGRABER:** I immediately had a reaction as a scientist, because I, myself, was studying climate change and what we then called the greenhouse effect as early as 1977, when I was first introduced to it by my biology professor. So, we, in the scientific community, have known about the reality of climate change for a long time.

As a mother, I know that there's no bigger threat to my children than the dissolving climate. And the disinformation campaign perpetuated by many,

but most notably Exxon, makes it difficult for me to do my job as a mother. I believe that all tasks of parenthood have fallen into one of two categories: We are called upon to plan a future for our children and to keep them safe from harm. And climate change makes that impossible, makes both of those tasks impossible. So, climate change—the climate crisis is really a parenting crisis, which means—which is to say it's a human rights crisis. And for Exxon to be involved in the disinformation about the science of climate, which we, in biology, have known about since the 1970s, is a strike against parenthood and a strike against human knowledge and scientific progress.

**NAOMI KLEIN:** Thank you.

**ANTONIA JUHASZ:** My name is Antonia Juhasz. I'm an oil and energy analyst, the author of three books on the oil industry, and an investigative journalist, including numerous investigations into ExxonMobil.

**BILL McKIBBEN:** Some of your work has talked about the connection between the oil industry and foreign policy. And would it be safe to say that the oil industry plays an important role in U.S. foreign policy?

**ANTONIA JUHASZ:** Absolutely, a key and crucial role.

**BILL McKIBBEN:** At this point, many of the early figures—many of the prominent figures in the war in Iraq, for instance, have said that it was a war for oil. Is that correct?

**ANTONIA JUHASZ:** Absolutely. We've seen over the last several years increasing statements by those who were deeply involved in the processes of the decision to invade Iraq, to make clear that while oil was not the only or sole objective of the war, it was a clear intention and objective of the war. And as I have reported extensively, in that objective, it was exceptionally successful.

**BILL McKIBBEN:** And did Exxon play some role in this politics?

**ANTONIA JUHASZ:** ExxonMobil was a major funder of George Bush as well as George Bush's father. And for those here who aren't from the United States, George Bush the junior, the longest experience he had working prior to working for the government was working in the oil sector. The only other U.S. president to come out of the oil sector was his father, George Bush Sr. They were heavily supported by Exxon and the oil industry. Bush and Cheney, the oil industry spent more money to get them into office than it had spent on any election previously. And that immediately paid off, so that the oil industry was essentially able to stop lobbying and start legislating directly. And within a week of the Bush White House, Bush taking office, Bush and Cheney taking office—and, of course, Cheney, the former head of

Halliburton, one of the largest energy services companies in the world—they started meetings as part of the energy task force, which laid out America and the world's energy future.

But one of the meetings that took place within the energy task force was, early on—and this is in 2000, early 2000, in the 2000, early 2001—looking at a series of maps and charts that were Iraq's oil fields and a list that was called "foreign suitors to Iraqi oil." And this was other companies in other countries that were already in negotiations with Saddam Hussein for his oil fields. And he was in negotiation with these other countries because they were members of the Security Council. And if he could convince them to drop the sanctions, he would essentially let them have access to oil. Well, nobody from those countries was in this room. This was the U.S. and British oil companies, BP and Shell, Exxon, oil guys from within the Bush administration, oil guys from outside of the Bush administration. And they essentially began the process of planning a war. One of the objectives would be to gain access to that oil, which they did. And ExxonMobil was one of the largest beneficiaries of that war, gaining access to the West Qurna oil field in Iraq, one of the largest oil fields in the world. Essentially, a country that was completely shut to Western oil companies prior to the invasion is now the home of Exxon, Chevron, BP, Shell, with Exxon being one of the significantly largest beneficiaries.

**BILL McKIBBEN:** You've heard now a collection of witnesses from every corner of the planet. Perhaps, if it pleases you, a short summation from

Counselor Klein and myself before your deliberations. We believe that the testimony makes it very clear that this is some not just run-of-the-mill, usual corporate malfeasance, that this is not just Volkswagen turning back—you know, resetting its exhaust controls. It's not the sort of thing that we've come to expect. Instead, this is a—this is a crime of the first order, and one that has carried the most severe implications for our planet and its future. You have heard eminent scientists explain that because of the delay in action caused by Exxon's failure to present the truth, we're going to see increases in the level of the sea. And you've heard from people who will be driven from their homes by that rise in the level of the oceans. It's hard to imagine a set of corporate practices that could have done more damage, and more damage needlessly, since Exxon knew, as we now know, early on, precisely what the problem that we faced was, the crisis that we faced. That crisis has grown over those 25 years. But over those 25 years, Exxon continued to maintain that architecture and ecosystem of denial and deception and disinformation. And for that, we ask for a judgment against Exxon and in favor of the future of this planet.

**NAOMI KLEIN:** So, we aren't asking you to put a price on that which is priceless. We have heard stories of lives lost directly because of melting life—melting ice. We have heard stories of ancient cultures threatened because of climate change. We have heard stories of the most reckless and discriminatory disregard for human life and human well-being and human health. It is Exxon's crime that it believes that money trumps life, trumps everything. So we aren't going to try to do the same thing. There is no price that can be placed on the Marshall Islands, on Arctic cultures, on the lives of



our loved ones, on what we are unable to pass on to our children. But we have a duty to seek justice, and that is what we ask of you in rendering your verdict. Thank you.

**PETER SARSGAARD:** If examinations by other authorities are able to document the pattern of abuse suggested by today's testimony, we judge that this will represent one of and perhaps the most remarkable instance of corporate crime in human history. We note that even as we meet delegates from around the world, are assembled in this city trying to work it out, at this late date, some kind of governmental response to climate change—we note, as well, that their efforts continue to be hampered by climate denial and deception. We find the evidence persuasive and compelling that had Exxon 25 years ago merely stated publicly what its scientists already concluded—notably, that climate change was real and perilous and demanded immediate action—then the world would have moved far more quickly and decisively, and extraordinary damage could have been avoided. We add, in our capacity as individual judges, that the burden of proof now rests squarely on this corporation to somehow prove that the documents and memos don't show what *prima facie* they seem to demonstrate—namely, a profound disregard for the safety of the planet and its people. We render this verdict unanimously on the 5th of December, 2015, the hottest year yet measured on our Earth.

**Bill McKibben**, Co-Founder of 350.org, environmentalist, author, and journalist who has written extensively on the impact of global warming. He is the Schumann Distinguished Scholar at Middlebury College.

**Naomi Klein**, Canadian author, social activist, and filmmaker known for her political analyses and criticism of corporate globalization and of corporate capitalism. She is a member of the board of directors of the climate activist group 350.org.

**Peter Sarsgaard** is an American actor, best known for his role in the 2004 comedy-drama *Garden State*.

**Clayton Thomas-Muller**, Stop It At The Source Campaigner with 350.org, a member of the Mathias Colomb Cree Nation, also known as Pukatawagan in Northern Manitoba, Canada. Based out of Ottawa, Ontario, Clayton is an organizer for the Defenders of the Land and Idle No More, as well as a co-director of the Indigenous Tar Sands (ITS) Campaign of the Polaris Institute.

**Milañ Loek**, a Pacific Climate Warrior from the Marshall Islands, and daughter of the president of the Marshall Islands.

**Kathy Jetnil-Kijiner**, a Pacific Climate Warriors from the Marshall Islands. Jetnil-Kijiner is a poet, writer, performance artist and journalist.

**Joydeep Gupta**, Director of Third Pole Network, a multilingual platform dedicated to promoting information and discussion about the Himalayan watershed and the rivers that originate there. He was honored by the Green Globe Foundation Awards, which are given to outstanding green campaigners, in 2012 for “his contribution on campaigning on behalf of Mother Earth and contributing to the environmental issues through his sustained write-ups in the media.”

**Jannie Staffansson**, from the Saami council: the Sami people are an indigenous people inhabiting the Arctic area of Sápmi, which today encompasses parts of far northern Norway, Sweden, Finland, the Kola Peninsula of Russia, and the border area between south and middle Sweden and Norway.

**Faith Gemmill**, a Pit River/ Wintu and Neets’aii Gwich’in Athabascan from Arctic Village, Alaska, is a campaign organizer for REDOIL (Resisting Environmental Destruction on Indigenous Lands).

**Jason Box**, a professional climatologist and glaciologist, PhD in climatology and certification from the University of Colorado in atmospheric and oceanic science, 90 externally reviewed scientific publications, 10 years university lecturing on climate and environmental science, and 22 years field experience working on Greenland maintaining a network of measurements of ice accumulation and melt. The measurement networks are designed to understand Greenland ice climate sensitivity, to check models and satellite measurements.

**Cindy Baxter**, Co-author of [exxonsecrets.org](http://exxonsecrets.org), activist from New Zealand.

**Ken Henshaw**, Senior Programs Manager at Social Action, an organisation based in Port Harcourt in the Niger Delta.

**Bryan Parras**, serves as an Advisor to the Gulf Coast Fund, and sits on the board of the Environmental Support Center, and the Bridge the Gulf Fellow with the Texas Environmental Justice Advocacy Services (T.E.J.A.S.)

**Sandra Steingraber**, an American biologist, author, and cancer survivor in the tradition of Rachel Carson. Steingraber writes and lectures on the environmental factors that contribute to reproductive health problems and environmental links to cancer.

**Antonia Juhasz**, an American oil and energy analyst, author, journalist and activist. She has authored three books: *The Bush Agenda* (2006), *The Tyranny of Oil* (2008), and *Black Tide* (2011).

**Esperanza Martínez**, was the Paraguayan Minister of Public Health and Social Welfare under President Fernando Lugo. She belongs to the Participación Ciudadana party.

# *Exxon Mobil Climate Change Inquiry in New York Gains Allies*

By JOHN SCHWARTZ MARCH 29, 2016



California, where an explosion and fire damaged the Exxon Mobil Torrance refinery last year, is investigating company statements on climate change.

CreditPatrick T. Fallon/Bloomberg, via Getty Images

More government officials are asking what Exxon Mobil knew about [climate change](#).

Attorneys general from Massachusetts and the Virgin Islands announced Tuesday that they would join [Eric T. Schneiderman](#), New York's attorney general, in his investigation into whether Exxon Mobil lied in decades past to investors and the public about the threat of climate change.

The additional participation was announced during a news conference at Mr. Schneiderman's offices in Lower Manhattan announcing support from 15 states, the District of Columbia and the Virgin Islands for the Obama administration's Clean Power Plan.

Attorneys general from Vermont, Maryland, Massachusetts, Virginia, Connecticut and the Virgin Islands, as well as former Vice President [Al Gore](#), attended the event.

While none of the other officials present, aside from Maura Healey of Massachusetts and Claude Walker of the Virgin Islands, announced inquiries of their own, Mr. Schneiderman said, "not every investigation gets announced at the outset."

Mr. Schneiderman [began his investigation](#) in November. His staff is looking at whether [statements](#) the company made to investors about climate risks — some as recently as last year — conflicted with the company's own scientific research.

Part of that inquiry includes the company's funding, for at least a decade, of outside groups that worked to dispute climate science, even as its in-house scientists were describing the possible consequences of climate change, along with the areas of uncertainty.

The company has supplied thousands of documents in response to the inquiry. While the inquiry could be expanded to include other energy companies and trade organizations, none have been named so far.

Many legal experts have questioned whether the actions and statements by Exxon Mobil can be construed as criminal and outside the protections of the First Amendment.



Mr. Schneiderman said, “The First Amendment, ladies and gentlemen, does not give you the right to commit fraud.”

The attorneys general have a range of laws to work with, including the Racketeer Influenced and Corrupt Organizations Act, or RICO. Mr. Schneiderman has statutes specific to New York, including the Martin Act, which gives the government broad investigative powers; laws allowing the

state to take action against “[persistent fraud or illegality](#)”; and the state’s [deceptive business and trade practices act](#).

Mr. Schneiderman [reached a settlement](#) last year with the coal giant Peabody Energy over that company’s financial statements and disclosures with regard to climate change.

In terms of the current investigation, Mr. Schneiderman said, “It’s too early to say what we’re going to find.” He added, “We intend to work as aggressively as possible, but also as carefully as possible.”

California [started its own investigation](#) into Exxon Mobil this year, but no other state had announced it was joining the effort until Tuesday. States can share information under agreements of confidentiality, and speculation has grown that Mr. Schneiderman has been working to bring other attorneys general into the New York investigation.

Last year, [Inside Climate News](#) and [The Los Angeles Times](#) published articles from Exxon Mobil archives describing the company’s research into the risks of climate change. An activist uproar ensued, complete with a popular Twitter hashtag: [#ExxonKnew](#).

Suzanne McCarron, Exxon Mobil’s vice president for public and government affairs, said accusations against the company “are politically motivated and based on discredited reporting by activist organizations.”

She added, “We are actively assessing all legal options.”

The accusations, she said, are based on the “preposterous” claim that the company “reached definitive conclusions about anthropogenic climate change

before the world's experts" and withheld it. The company, she noted, shared its findings in peer-reviewed publications.

The company "recognizes the risks posed by climate change," she said, and added, "the investigations targeting our company threaten to have a chilling effect on private sector research."

At the news conference, Mr. Gore drew an analogy to the actions taken during the Clinton administration against the tobacco industry, which denied risks of its products for decades, and noted that state attorneys general had been crucial to that effort. "I do think the analogy may hold up rather precisely," he said.



# California to investigate whether Exxon Mobil lied about climate-change risks

Exxon Mobil, which operates a refinery in Torrance, above, has issued statements denying news reports that it suppressed climate-change research. (Christina House / For The Times)

Ivan Penn

California Atty. Gen. [Kamala D. Harris](#) is investigating whether Exxon Mobil Corp. repeatedly lied to the public and its shareholders about the risk to its business from climate change — and whether such actions could amount to securities fraud and violations of environmental laws.

Harris' office is reviewing what Exxon Mobil knew about global warming and what the company told investors, a person close to the investigation said.

The move follows published reports, based on internal company documents, suggesting that during the 1980s and 1990s the company, then known as Exxon, used climate research as part of its planning and other business practices but simultaneously argued publicly that climate-change science was not clear cut.

Those documents were cited in stories by reporters for [Columbia University Energy and Environmental Reporting Fellowship](#), published in partnership with the [Los Angeles Times](#). The nonprofit InsideClimate News also published several stories based on the documents.

Shortly after the news reports, Harris' office launched the investigation in response to the findings, the person said. New York's attorney general also is investigating the oil company as a result of the published reports.

Exxon Mobil did not respond to several requests for comment made by telephone and email.

A spokesman for Harris declined to confirm the investigation.

U.S. Rep. [Ted Lieu](#) (D-Torrance), who has called on federal authorities to investigate Exxon Mobil, praised Harris' decision.

Lieu said the investigation means that any damages won from Exxon Mobil could benefit Californians.

"I commend ... Harris for taking this action," he said.

Lieu said he has sent letters to U.S. Atty. Gen. Loretta Lynch and the [U.S. Securities and Exchange Commission](#) calling for federal investigations of securities fraud and violations of racketeering, consumer protection, truth in advertising, public health, shareholder protection or other laws.

Lieu said he hopes the decision by Harris, representing a state with the eighth-largest economy in the world, will prompt other states and the [Justice Department](#) to investigate.

"I think this action will be taken very seriously by Exxon Mobil," Lieu said.

Richard Keil, an Exxon Mobil spokesman, previously said that the company denies any wrongdoing in regard to the climate-change reports.

"We unequivocally reject allegations that Exxon Mobil suppressed climate change research contained in media reports," Keil said in a statement issued in response to the letters sent in October by Lieu and [Mark DeSaulnier](#) (D-Concord). Keil issued a statement with the same quote in early November when the New York investigation became public.

Exxon Mobil continues to face calls from several current and former U.S. lawmakers for criminal investigations based on the media reports. They include Hillary Clinton, Bernie Sanders and Al Gore.

It is unclear what approach Harris intends to take in California's investigation.

Harris' office is casting a wide net and looking at a variety of issues, according to the person familiar with the matter.

Legal experts say the SEC requires that companies disclose the risks of climate change to their business operations but that the agency has taken almost no action to enforce it.

The moves by California and New York are seen as a step to fill that void.

Exxon Mobil already has received a subpoena for documents dating from 1977 from the office of Eric Schneiderman, New York's attorney general.

Schneiderman has at his disposal New York's Martin Act, a law that gives the state's attorney general broad power to prosecute companies for financial fraud.

Unlike federal securities law, the New York statute does not require the state to prove that a company intended to defraud — only that it misrepresented relevant information or withheld it from investors.

The law applies to any company doing business in the state.

# A Rockefeller explains: Why I lost faith in Exxon Mobil, and donated my shares

Neva Rockefeller Goodwin

My great-grandfather, John D. Rockefeller Sr., created the Standard Oil Company and I inherited shares in the companies it spun off, including Exxon Mobil. But this year I donated those shares to the nonprofit Rockefeller Family Fund's Environmental program, which sold them and is using the \$400,000 proceeds to fight global warming.

I lost faith in Exxon Mobil's future value. A prime reason is that Exxon's valuation is based largely on the immense untapped reserves of oil and gas it owns. And yet if future generations are to inherit a livable world, most of those reserves must stay in the ground.

After it was revealed that tobacco companies  
knew smoking caused cancer even as they

## funded hack scientists to deny it, they had to pay billions in fines and damages.

Cynics may say that foreknowledge of the dire consequences won't stop humanity from using this fossil fuel. I would answer that Exxon Mobil may not have any choice in the matter. The company bases its growth and stability projections on increasing its sale of fossil fuels to developing countries. And yet those are the places that will be hurt first and worst by climate change — indeed, many are already suffering the effects. As those nations confront ecological harm and consequent economic damage — in some cases even possible economic collapse — will they really provide Exxon Mobil with the growth it forecasts?

In shareholder resolutions and meetings with company representatives over the last 15 years, I and other members of my family have argued that it is shortsighted for Exxon to insist on remaining “an oil and gas company” — rather than evolving into an energy company prepared to transition to a post-carbon economy. I thought the company was being foolish. But we now know it was worse: it was being deceitful, in a way that is almost unimaginably heartless to future generations.

Reporting by two publications, working independently of each other — [InsideClimate News](#) and [the Los Angeles Times](#) — has shown that, starting in the late 1970s, Exxon's scientists were leaders both in understanding the role of carbon emissions in global warming and in projecting its effects. By the mid-1980s, however, the company took a different public stance. It began to

finance think tanks and researchers who cast doubt on the reliability of climate science.

Internally, though, the company continued to accept the validity of the science it had helped pioneer. In the midst of its denial campaign, for instance, Exxon projected business opportunities presented by global warming: As polar sea ice melted, there would be new possibilities for oil drilling in the Arctic. At the same time, Exxon scientists warned the company of more dire climate change implications — for the planet and corporate revenue. These findings were given to the company's management, but not released to shareholders or to securities regulators.

Way back in 1982 Exxon Mobil's environmental affairs office printed a primer on climate change marked “not to be distributed externally.” It laid out for company leaders the reality that major reductions in fossil fuel combustion would be required to avert “potentially catastrophic events.” Since then globally catastrophic events have become virtually certain. We already feel the oncoming wave in storms, flooding, droughts, hunger, human immiseration and migration. How different things might be if Exxon and others had begun to pivot away from fossil fuels 34 years ago.

As the enormity of the effects of its lies becomes more evident, Exxon Mobil is positioned to supplant Big Tobacco as global Public Enemy No. 1. This is not good for a company's bottom line. The attorneys general in New York and California have launched investigations into whether Exxon defrauded its shareholders by hiding what it knew about climate change.

Such investigations, with their legal power of discovery, are likely to unearth even more about what the company knew and when it knew it. That, in turn, likely will lead to lawsuits. After it was revealed that tobacco companies knew smoking caused cancer even as they funded hack scientists to deny it, they had to pay billions in fines and damages. Exxon could face much worse.

Even before Exxon Mobil feels the loss in spending power among its expected developing country clients, public anger is likely to find other ways to take the company down. Just when Exxon's stock price will begin to reflect these realities is hard to predict. But I'm glad that the recipients of my Exxon stock sold it immediately.



# Philippines investigates Shell and Exxon over climate change

A legal case will consider if the emissions of 50 fossil fuel companies violate the human rights of those hit by extreme weather



Heavy rains and high waves brought by Typhoon Linfa crash along a breakwater in Manila in 2015. Photograph: Romeo Ranoco/Reuters

## **Emma Howard** in Manila

Can Chevron, ExxonMobil and BP be held accountable for the vulnerable communities most affected by climate change? It's a question a legal case in the [Philippines](#) could answer.

Last month, lawyers for the petitioners met with the Commission on Human Rights of the Philippines (CHR), a constitutional body tasked with investigating human rights violations. Their goal was to identify expert witnesses for a hearing into the liability of [50 of the biggest fossil fuel](#)

[companies](#) for violating the human rights of Filipinos as a result of catastrophic climate change.

This follows a petition filed on 22 September 2015 by Greenpeace and the Philippine Rural Reconstruction Movement on behalf of typhoon survivors, which called for the devastation of extreme weather-related disasters to be properly recognised: “The real-life pain and agony of losing loved ones, homes, farms – almost everything – during strong typhoons, droughts, and other weather extremes, as well as the everyday struggle to live, to be safe, and to be able to cope with the adverse, slow onset impacts of climate change, are beyond numbers and words.”

The hearing will consider whether companies’ policies and investments adequately address the human rights issues specified in the petition.

The Philippines is among the countries [most exposed](#) to natural hazards in the world, with [130m Filipinos](#) affected by weather-related disasters between 1995 and 2015. In 2013, for example, Typhoon Haiyan wreaked devastation, killing [more than 6,300](#) people and causing [billions of dollars](#) worth of damage. It is widely acknowledged – including by the Filipino government’s [Climate Change Commission](#) – that climate change is exacerbating these problems.

The decision to invite climate scientists as witnesses to the Philippines investigation is seen as a significant opportunity to demonstrate the links between climate change and extreme weather.

“It’s encouraging because it shows that we managed to get the message out there that this branch of science [the attribution of extreme weather events to climate change] can robustly say things,” says Dr Friederike Otto, senior researcher at the University of Oxford’s Environmental Change Institute.

A decade ago the field was dominated by generalised predictions about the frequency of events. Today, advancements in computer modelling mean that scientists can make quantitative assessments in real time. When Storm Desmond hit the UK in December, for example, researchers [pronounced](#) within days that climate change had increased the likelihood of the floods by 40%.



Survivors of Typhoon Haiyan rush for fresh water delivered by helicopter to their isolated village north of Tacloban in November 2013. Photograph: Damir Sagolj/Reuters

But, despite progress in the scientific understanding of the connection between extreme weather events and climate change, the Filipino case still faces challenges. Jurisdiction is a major one. The CHR can only compel the seven major carbon companies that have branches in the Philippines –

although this does include Shell, [BHP Billiton](#) and ExxonMobil – to defend their policies in writing and at public hearings. The 43 other companies will also be asked to attend. If they resist, the complainants have recommended that the CHR seeks the assistance of the UN to encourage them to co-operate.

The jurisdictional issue touches on one of the central legal hurdles that those suffering from the impacts of climate change face in attempting to hold governments and corporations to account – does an actor operating in one country have legal responsibility towards those who may suffer the consequences in another?

Lawyers face many other questions. Is it possible to hold any one corporation responsible for its relatively small contribution to a global crisis caused by many? Can anyone be held accountable for harm caused by emissions that go back to the industrial revolution?

“The amorphous nature of climate change presents unique problems that courts are now being asked to rule upon,” says climate lawyer Gillian Lobo from [ClientEarth](#), who cites cases including the [claim of public nuisance](#) brought by the Alaskan Village of Kivalina against 22 energy companies, and the Urgenda Foundation case, where the Dutch government was ordered to reduce its emissions by a minimum of 25% by 2020. “Judges are generally cautious when it comes to developing the law, but given the urgent need to

tackle the harmful effects of climate change they must be willing to do,” says Lobo.

When the investigation concludes, the Filipino government will be mandated to consider the recommendations of the CHR. Although the companies will not be legally bound to any changes to their policies and investments requested by the CHR unless they agree to be so early on in the process (the case is yet to reach this point), Zelda Soriano, the lawyer at Greenpeace acting on the case, says that the findings would hold weight with the courts and the CHR could recommend that specific cases be filed against corporations by victims.

“The world will be watching this investigation and how the carbon majors are responding and behaving,” says Soriano. “If there was a positive finding [against these companies] by the commission, it should move the shareholders and investors to think if it is worth investing in the carbon majors, not just on moral grounds but because the very social licence and the profitability of these corporations would also be in question ... It will set a precedent.”

# Church of England and New York State Fund to Press Exxon on Climate Change

**Potential carbon taxes could affect viability of long-term investment plans**

By [JULIET SAMUEL](#)

Jan. 15, 2016 11:28 a.m. ET

New York's state pension fund and the Church of England, both investors in [Exxon Mobil Corp.](#), plan to file a shareholder resolution demanding the largest U.S. oil company assess the impact on its business of climate change policy.

The shareholder resolution would require Exxon to conduct an assessment of how its business would fare in the event governments take various actions to limit global warming. Government attempts to tax or put a price on carbon, for example, could affect the viability of some of Exxon's long-term investment plans, said Edward Mason, head of responsible investing for the Church of England, which has a portfolio of about £10 billion (\$14.44 billion).

The resolution is evidence of a growing trend in Europe crossing the Atlantic. Large European investment companies have become increasingly vocal about climate change business risks in the last year. Governments agreed to limit carbon emissions following U.N. talks in Paris, and Mark Carney, governor of the Bank of England, warned investors must start taking carbon emissions policy risks into account.

“A lot of this is about capital allocation,” Mr. Mason said. “To say [no policy changes are] going to happen is an absurdly risky bet.”

“The company should look at the possibility of governments around the world imposing a ‘carbon tax’,” said Patrick Doherty, director of corporate governance at the New York pension fund. “It will help inform investors in helping us to determine where we should put our money.”

A spokesman for Exxon said the company wouldn’t comment on the shareholder resolution but that it would be considered by the board. The company already attaches a carbon price to its emissions as part of its financial modeling.

The New York State Common Retirement Fund is the third largest U.S. public pension plan and manages assets worth \$184.5 billion. Exxon is its second biggest single investment.

Together, the Church, New York State and several other co-filers of the resolution own shares worth over \$1 billion. The company is worth about \$329 billion in total. Similar



resolutions targeting [BP PLC](#) and [Royal Dutch Shell](#), which were filed by the Church, were endorsed by their boards and passed last year.

Mr. Mason said he believes the Church has a duty to push company management to spend more time considering risks associated with climate change. The Church excludes investment in some sectors, such as gambling, thermal coal and pornography, but for oil producers it takes an activist approach instead.

“It’s about stewardship of creation, the planet and life,” he said.

# Exxon Digs In Against Shareholder Pressure to Address Climate Change

The latest resolution the oil giant opposes calls for an accounting of how its business will be affected by global climate action.

BY DAVID HASEMYER

FEB 25, 2016

ExxonMobil has challenged a shareholder resolution that calls for the company to show how its business will be affected by the global commitment to dramatically slow global warming.

The resolution—filed by the New York State comptroller's office and four co-filers—also seeks an explanation of how Exxon will address those impacts. Exxon notified the Securities and Exchange Commission that it wants to block a vote on the proposal at its annual meeting in May. The fossil fuel giant argued that it's unlikely that strict emissions restrictions will be imposed to meet the goal of holding global warming to less than 2 degrees Celsius that world governments agreed to in last year's [Paris climate accord](#).

By challenging the resolution, Exxon positioned itself as an outlier in the oil industry's growing acceptance of the consequences of burning fossil fuels and the urgency to halt global warming, some industry analysts said. The SEC recently denied a request by AES Corp., a generating company in Virginia, to block a similar shareholder resolution.

"It's a little bit like a toddler putting their fingers in their ears and saying if I can't hear you then what you're saying isn't true," said Shanna Cleveland, manager of the Carbon

Asset Risk Initiative at the nonprofit sustainability advocacy group **Ceres**. Exxon's position signals that while nearly 200 countries around the world agreed to the Paris accord, Exxon remains on the sidelines, she said.

Exxon investors have filed a **series of shareholder resolutions** seeking to reform the company's climate change policies, including appointing someone to the board who is in tune with climate issues and for the company to take moral responsibility for climate change. The company is **challenging other climate-related resolutions**, including the moral responsibility proposal.

Stockholders have been **urging Exxon to confront the threat of climate change for decades**. They have fought to have the company invest in renewable energy, cut harmful emissions and perform carbon risk assessments. Yet the company has regularly rejected shareholders' requests and dismissed their concerns.

The New York comptroller's resolution was filed in concert with the Church of England's investment fund, the Vermont State Employees' Retirement System, the University of California Retirement Plan and the Brainerd Foundation.

"ExxonMobil risks becoming an outlier among its peers who have publicly supported reining in climate change," New York State Comptroller Thomas P. DiNapoli said in a statement after Exxon challenged the proposal. "As investors, we need to know how ExxonMobil's bottom line will be impacted by the global effort to reduce emissions and what the company plans to do about it."

Exxon declined to comment, saying its position is clear in **SEC filings**. The SEC did not respond to a call for comment.

In its SEC filing, Exxon argued that the resolution was vague and demanded facts and figures that would be hard to derive. The SEC will most likely issue its ruling before Exxon sends proxy materials to shareholders later this spring.

In a letter to the SEC, the shareholders argue that the Paris agreement is an urgent call for action that will affect regulatory policy, technological progress, consumer demand for energy—and ultimately the way Exxon conducts business.

"As the profound implications of a warming world resonate with global policymakers, and a credible path to action has been initiated, the need for companies to provide reliable information on the financial risks and opportunities associated with climate change has only been underscored," **the shareholders' letter said**. "Investors require clear, transparent, and comparable information about climate change impacts to make informed assessments about their use of capital."

In its **resolution**, the group said the assessment "should analyze the impacts on ExxonMobil's oil and gas reserves and resources under a scenario in which reduction in demand results from carbon restrictions and related rules or commitments adopted by governments consistent with the globally agreed upon 2-degree target."

Exxon told the SEC that the 2-degree goal renders the resolution vague and indefinite.

"The meaning and implications of the term are not explained and would be understood only by persons with significant scientific knowledge gained outside the text of the Proposal and supporting statement," according to Exxon's letter to the SEC.

In AES's bid to block a similar resolution, the SEC rejected the company's argument that the proposal was too vague.

"We note that the proposal focuses on the significant policy issue of climate change," the **SEC said in a letter to AES**. "Accordingly, we do not believe that AES may omit the proposal from its proxy materials."

Other fossil fuel companies, including Shell and BP, have agreed to publicly describe how they will be affected by lower greenhouse gas emissions. Exxon declined to join ten major oil and gas companies last year in support of policies consistent with a 2-degree goal.

"The issue of living in a 2-degree world isn't going away," said Tim Smith, senior vice president of Boston-based **Walden Asset Management**, which promotes environmental, social and corporate responsibility on behalf of investors.

"The company is facing a huge amount of reputational risk in terms of climate," Smith said. "By going to the SEC to try to prevent their investors from having a debate and a vote on the 2-degree world, they are continuing to dig a hole that harms their image and positions them as outcasts in the discussion of global warming."

# ***S.E.C. Orders Exxon Mobil***

## ***Shareholder Vote on Climate Data***

By LIAM STACK MARCH 23, 2016

The [Securities and Exchange Commission](#) has told [Exxon Mobil](#) it must include a resolution on its annual shareholder proxy that, if approved, would force the company to outline for investors how its profitability may be affected by [climate change](#) and the legislation that aims to combat it.

The decision was a defeat for the energy giant, which had fought against it. The proposal was introduced in December, after the Paris accord on climate change, by a coalition of investors led by New York State's comptroller, Thomas P. DiNapoli, who is the trustee of New York State Common Retirement Fund, and the Church of England.

Alan T. Jeffers, a spokesman for Exxon Mobil, the world's largest publicly traded oil producer, said on Wednesday that it would "provide the board's position on the shareholder resolutions in our proxy document."

It is not obvious that Exxon's shareholders will embrace such an idea. Last year, they soundly [rejected a proposal](#) to add to the board an independent director with expertise in climate change.

Exxon Mobil had told regulators that the proposal was too vague and that the carbon disclosures the company already provided were adequate. But those arguments were rejected by the S.E.C. in a letter it sent to the company on Tuesday.

“Based on the information you have presented, it does not appear that Exxon Mobil’s public disclosures compare favorably with the guidelines of the proposal,” wrote Justin A. Kisner, an attorney-adviser at the commission.

Late Wednesday, The Houston Chronicle reported that [Chevron had received](#) a similar notice from the S.E.C.

The coalition that introduced the Exxon proposal represents over \$1 billion in Exxon shares, according to a statement released in July by Mr. DiNapoli’s office. Other members of the group include the Vermont State Employees’ Retirement System, the University of California Retirement Plan and the Brainerd Foundation.

The group’s leaders greeted the S.E.C. decision as a victory for investors concerned with the possible impact of climate change on their portfolios.

“The Securities and Exchange Commission’s determination upholds shareholders’ rights to ask for vital information,” Mr. DiNapoli said in a statement. “Investors need to know if Exxon Mobil is taking necessary steps to prepare for a lower-carbon future.”

Edward Mason, head of responsible investment for the Church of England, said that the decision was an important step toward allowing shareholders to confirm that the company is “positioning itself for the transition to a low-carbon economy.”

Awareness of climate change is putting increasing pressure on Exxon. The company is said to be [under investigation](#) by New York State, which is trying to determine whether it lied to the public about the risks of climate change.

On Wednesday, the Rockefeller Family Fund — a small endowment established in 1967 by grandchildren of John D. Rockefeller Sr., co-founder of Standard Oil, a precursor to Exxon — said [it would divest](#) its slender holdings in fossil fuels as “quickly as possible,” singling out what it called the “morally reprehensible conduct” of Exxon.



# CalPERS calls on Exxon and Chevron to disclose financial risks of climate change

As of June 30, CalPERS owned 12.7 million Exxon Mobil shares valued at more than \$1 billion and 8.3 million Chevron shares valued at more than \$800 million. Above, CalPERS offices in Sacramento.

[Asaf Shalev](#)

The [California Public Employees' Retirement System](#) is joining a growing number of investors calling on Exxon Mobil Corp. and others to disclose the financial risks of climate change and climate change policies.

Shareholders of Exxon Mobil, [Chevron Corp.](#) and seven other energy companies will soon gather for annual meetings where votes will be cast on climate risk disclosure. The proposals ask the companies to evaluate and

disclose the potential financial fallout of recent international commitments to hold the planet's rise in average temperatures below 2 degrees Celsius.

This limit was set at last year's climate summit in Paris, where almost 200 nations committed to slowing warming of the Earth's atmosphere.

CalPERS and 31 investors, including New York City's pension funds and BNP Paribas Investment Partners, want to know how much of the companies' petroleum reserves must stay in the ground to meet greenhouse gas emission limits.

"The world is a different place, and you can't manage what you can't measure," said Anne Simpson, a CalPERS investment director.

Since 1990, Exxon Mobil's executives have repeatedly opposed similar campaigns by activist shareholders. But with heightened interest following the Paris agreement, this year's vote could reveal a shift in investors' mood, analysts said.

"This is part of a broader call by investors for disclosure on how companies are going to adapt to a 2-degree future," said Shanna Cleveland, a senior manager at Ceres, a nonprofit working with business people on climate issues.

"CalPERS has really stepped in to play a leadership role ... working to get the message out to other major shareholders."

The response from Exxon Mobil directors to the shareholder proposals will be included in the proxy statement distributed Wednesday, said Alan Jeffers, a spokesman for the Irving, Texas, company.

"Addressing climate change, providing economic opportunity and lifting billions out of poverty are complex and interrelated issues requiring complex solutions," Jeffers said. "There is a consensus that comprehensive strategies are needed to respond to these risks."

Chevron's board recommended that shareholders vote against the proposal, arguing in the proxy statement that "setting unilateral, long-term [greenhouse gas] emissions targets tied to global emissions reduction trajectories is not prudent" because it would put the San Ramon, Calif., company at a competitive disadvantage.

As of June 30, CalPERS owned 12.7 million Exxon Mobil shares valued at more than \$1 billion and 8.3 million Chevron shares valued at more than \$800 million.

Exxon Mobil and Chevron have long maintained that global economic growth in the coming decades will exhaust their existing oil and gas reserves. The companies' share price depends, in part, on the potential future earnings from those fossil fuel reserves.

## Church of England takes on energy giant ExxonMobil



**Mark Woods** 13 April 2016

The Church Commissioners have won widespread support for a move to put pressure on energy giant ExxonMobil to disclose the impact of climate change policy on its business.

The Church Commissioners manage a fund of around £6.7 billion, whose revenues are used to support the Church of England. The Commissioners co-filed a shareholder motion with the New York State Comptroller Thomas DiNapoli. It asks Exxon to disclose the effect on its business if measures to restrict global warming to two degrees are successful.

More than 30 institutional investors have so far said they will vote for the motion.

Exxon's competitors Shell and BP have already agreed to disclose how much they will be impacted by efforts to lower greenhouse gas emissions. They were targeted by similar shareholder proposals co-filed in 2015 by the Church Commissioners and other

investors. Exxon had attempted to have the resolution struck down by the Securities and Exchange Commission but its request was denied last month.

Church Commissioners spokesman Edward Mason said: "We are delighted with the scale of support this resolution has received so far. The resolution is part of a much wider trend following the Paris Agreement for investors to ask companies to improve disclosure on how they are positioned for the risks and opportunities posed by climate change."

Exxon has funded groups spreading information denying human-induced climate change and lobbying politicians against climate change legislation. While it pledged to cease doing so in 2007, a [Guardian](#) report last July claimed it was continuing the practice.

It has [a long history](#) of rejecting shareholder motions on climate change and of rejecting the scientific consensus.

When Exxon challenged the most recent shareholder motion, DiNapoli said:

"ExxonMobil risks becoming an outlier among its peers who have publicly supported reining in climate change.

"As investors, we need to know how ExxonMobil's bottom line will be impacted by the global effort to reduce emissions and what the company plans to do about it."

Exxon is also under under pressure from a coalition of 17 US attorneys general, Attorneys General United for Clean Power (AGUCP), who have banded together to enforce climate change laws. New York attorney general Eric Schneiderman announced at a press conference on March 29 that the coalition was working to find "creative ways to enforce laws being flouted by the fossil fuel industry and their allies in their

shortsighted efforts to put profits above the interests of the American people and the integrity of our financial markets".

Schneiderman referred to a "relentless assault from well-funded, highly aggressive and morally vacant forces that are trying to block every step by the federal government to take meaningful action" to fight climate change.

The initiative by the attorneys general was criticised by some religious conservatives, however.

Jeffrey Riley, professor of ethics at New Orleans Baptist Theological Seminary, told Baptist Press: "Few deny that the climate is changing – it always has. The debate is on the cause. In spite of the public rhetoric that declares scientific consensus, the debate is still out. Public and political rhetoric on this issue is neither truth nor an argument for truth. Christians who hold that we are stewards of the earth ought to be interested in truth, and for that reason should not support any action that stifles legitimate scientific and economic debate."

# Norway wealth fund turns up climate heat on Exxon and Chevron

By Alister Doyle and Gwladys Fouche | OSLO

Norway's \$872-billion sovereign wealth fund, the world's largest, said it would press U.S. oil majors ExxonMobil and Chevron to do more to report on the risks of climate change.

The fund said on Tuesday it would vote in favor of shareholder proposals, opposed by both companies' boards, which would require them to report more fully about the risks and opportunities of a changing climate.

Royal Dutch Shell and BP adopted similar policies last year, following shareholder pressure, it said. Exxon and Chevron both say they are already doing enough to report on climate risks.

"We want them to be open about their climate strategy and their dialogue with regulators," the fund's chief executive Yngve Slyngstad told reporters.

Firms should be clear about risks, both from the impacts of climate change such as floods and storms, as well as from government policies to curb carbon emissions, he said.

The fund, itself built from Norway's oil and gas wealth, was making similar demands of oil firms worldwide and would keep going even if the resolutions were defeated at Exxon's and Chevron's annual general meetings, both on May 25.

"We will then come back next year and the year after," he said. Norges Bank Investment Management (NBIM), which manages the fund, was the seventh-largest shareholder of both firms at the end of 2015, Thomson Reuters Eikon data shows.

Slyngstad said the fund, which owns about 1 percent of listed equities worldwide, had 4,000 meetings with major companies a year to discuss its investments.

He said many companies were planning to cut their greenhouse gas emissions by 40 percent in coming years to help achieve goals set at a 195-nation Paris summit on climate change in December that include phasing out emissions by 2100.

Companies "have to explain if they don't intend to reduce their emissions to that extent," he said.

The fund said last week that it may exclude another 40 companies for using coal in their operations after divesting from 52 since Norway's parliament last year told it to sell out of firms that get more than 30 percent of their turnover or activity from coal.

Slyngstad said it was hard to set firm rules, saying a power company generating 30 percent of its electricity from coal and 70 percent from wind might stay in the portfolio ahead of a firm using 30 percent coal and the rest fossil fuels.

"The fund is like a supertanker, It takes some time to turn it."

At the end of 2015, NBIM said it held a 0.78 percent stake in Exxon, valued at \$2.54 billion, while its 0.85 percent holding in Chevron was worth \$1.45 billion.



# Academics back Exxon and Chevron climate openness vote

Leading university figures call on large investors to support disclosure of climate risks

MAY 11, 2016

by: [Attracta Mooney](#)

Shareholders in ExxonMobil and Chevron are being urged by more than 1,000 leading academics to vote in favour of resolutions demanding more openness on climate change issues later this month.

Leading figures from some of the world's best universities — including Oxford, Cambridge, Yale and Harvard — have signed a letter to the oil groups' largest investors seeking their backing for new proposals at upcoming annual meetings.

These include resolutions forcing the oil groups to disclose the impact of government policies to limit the global temperature rise to less than 2C. Nearly 200 countries at the [Paris climate talks](#) last year agreed to limit the increase in the global average temperature to “well below” 2C.

BP, Shell and Statoil have already agreed to similar disclosures, following pressure from their shareholders.

Other resolutions at the Exxon and Chevron meetings call on the oil groups to set greenhouse gas reduction goals and reveal their lobbying activities on [climate change](#) policies.

Both US companies have called on their shareholders to vote against the resolutions. But on Thursday the academics plan to send a letter to Exxon and Chevron's 20 largest investors — including Vanguard, BlackRock and the Norwegian oil fund, the biggest sovereign wealth fund in the world — calling for their support.

“This is a chance to change the trajectory of two of the largest fossil fuel companies in the world,” said Lily Tomson from Positive Investment, the

international coalition of students, academics and university staff that is behind the letter to Exxon and Chevron shareholders. It claims this is the first time so many academics have come together to push investors to focus on climate change.

Academics who have signed the letter in a personal capacity include Lord Martin Rees of the University of Cambridge, Professor Bob Eccles from the Harvard Business School and Dr Gernot Wagner of the Harvard University Center for the Environment.

Their intervention comes as US companies face a **record number** of shareholder votes on climate change issues at annual meetings this year.

Helen Wildsmith, stewardship director for climate change at CCLA Investment Management, which manages £6bn on behalf of charities, religious organisations and the public sector, said: “The fact that 1,000 professors have backed this campaign will be noticed by asset managers and asset owners globally.”

Amundi, Europe’s largest asset manager, BNP Paribas Investment Partners, the French fund house, and Calpers, the US’s largest public pension fund, have already indicated they will back the resolution for greater disclosure around the impact of climate change at Exxon and Chevron.

Vanguard declined to comment on whether it would vote in favour of the resolution. BlackRock said it does not publicly disclose how it votes in advance.

Norway’s Government Pension Fund, with \$877bn under management, is supporting the resolution for disclosure of the impact of climate change at Exxon, taking the total assets managed by the resolution’s supporters to more than \$8tn.

ISS and Glass Lewis, two of world’s two leading proxy advisers, which advise institutional investors on how to vote at AGMs, are also backing the resolution at Exxon.

# Justice Department Refers Exxon Investigation Request to FBI

BY DAVID HASEMYER, INSIDECLIMATE NEWS

MAR 2, 2016

The U.S. Justice Department has forwarded a request from two congressmen seeking a federal probe of ExxonMobil to the FBI's criminal division.

U.S. Representatives Ted Lieu and Mark DeSaulnier sought the probe last year to determine whether the oil giant violated federal laws by "failing to disclose truthful information" about climate change.

In response, the Justice Department deferred to the FBI, saying it is that agency's responsibility to conduct an initial assessment of facts that prompted the congressmen's request. Such action is considered standard procedure, according to former federal prosecutors who say the response appears ambiguous as to what action may be taken by the FBI.

"As a courtesy, we have forwarded your correspondence to the Federal Bureau of Investigation (FBI)," said [a letter to the congressmen](#) from Peter J. Kadzik, an assistant U.S. attorney general.

"The FBI is the investigative arm of the Department, upon which we rely to conduct the initial fact finding in federal cases. The FBI will determine whether an investigation is warranted."

The Justice Department's referral letter to the FBI, however, has not been released, so it is not known if it contained any specific instructions.

The referral was made to the assistant director of the FBI's Criminal Investigative Division.

The FBI and Justice Department did not respond to requests for comment.

DeSaulnier said he would have preferred a more aggressive response, though the DOJ's position did not surprise him.

"I would very much like the attorney general to get involved and I think it's inevitable that will happen because of the growing recognition of how the public was misled," he said in an interview with InsideClimate News.

Even if the FBI invests minimum effort in a due diligence inquiry, DeSaulnier said he thinks the facts will prompt a deeper investigation.

"I will continue to make the argument there is too much compelling evidence not to hold companies accountable," he said.

Lieu said he believes the letter is a signal from DOJ to the FBI to begin a preliminary investigation.

"They [DOJ] could have just said 'thank you' or declined to get involved," Lieu said. "It makes sense in a case this complex that you would want the investigative arm of the Justice Department involved."

The congressman said he believes there is enough on the public record for the FBI to conclude a full-blown investigation is justified.

"There is substantial evidence to support a full investigation and prosecution," he said.

Even if the FBI does not investigate thoroughly, DeSaulnier said more heat is being applied to Exxon and the industry, with an investigation underway in New York and probes being considered in other states, including California and Maryland.

"There is going to be a moment of judgment both politically and legally," he said. "I think a moment of judgment will be quite critical of the fossil fuel industry in terms of obfuscating the scientific facts and for not adhering to their moral and legal responsibility to the public."

Exxon declined to answer questions about the Justice Department's letter.

John Marti, a former federal prosecutor in the U.S. Attorney's Office for the District of Minnesota, called the Justice Department's response a "punt."

"The department appears to be reluctant to engage in this matter," Marti said. "They are being careful to remain neutral."

Yet at the same time, he said, the letter puts the FBI in the position of seemingly requiring at least a rudimentary review of the issues raised by the congressmen. That review could consist of nothing more than reading the news stories detailing Exxon's climate research and its history of sowing doubt about the science to performing a detailed inquiry, he said.

He said he would expect the FBI to proceed cautiously.

"They are not going to be excited over what they may perceive as a dispute over public policy as opposed to violations of federal criminal laws," Marti said.

Lieu and DeSaulnier, both Democratic members of the House Oversight and Government Reform Committee, said in their [letter to Attorney General Loretta Lynch](#) requesting an investigation that they were "alarmed" by the possibility that Exxon withheld vital climate change information and tried to discredit the science confirming global warming.

The congressmen made their request for a federal probe following disclosures in an [InsideClimate News series](#) that Exxon scientists were warning of potentially catastrophic effects of a buildup of atmospheric carbon dioxide from fossil fuels as early as 1977. The letter also cited a [story published later by the Los Angeles Times](#) addressing Exxon's research into melting Arctic ice.

The request by Lieu and DeSaulnier is one of a number of investigation requests to the attorney general, including appeals by both Democratic presidential candidates.

In addition, a coalition of nearly 50 environmental, civil rights and indigenous people's groups [have urged Lynch to open a federal investigation](#) into whether ExxonMobil purposefully misled the American people on climate change.

Lieu and three colleagues also [called on the U.S. Securities and Exchange Commission](#) to look into Exxon's past federal filings to determine if the company

violated securities laws by failing to adequately disclose material risks to its business posed by climate change.

Mary Jo White, chair of the SEC, told Lieu in a letter she could not comment on the issues he and the other representatives raised or acknowledge the existence or non-existence of any investigation.

"But I want to assure you that the Commission's staff will consider carefully the information included in your correspondence in connection with our statutory and regulatory responsibilities," according to [White's letter to Lieu](#).

Exxon is the subject of an [investigation by the New York Attorney General Eric Schneiderman](#). Investigators for Schneiderman served a subpoena on Exxon last year to turn over documents related to its research into the causes and effects of climate change.

Sharon Eubanks, a former U.S. Department of Justice attorney who won a racketeering case against the tobacco industry in 2006, said deferring to the FBI is customary in cases like this, though federal prosecutors generally give more direction.

"It would have been much more powerful had the Justice Department said it was asking for an investigation," she said.

The language gives the FBI tremendous discretion, Eubanks said.

"This could mean it will go into a black hole or it could mean the FBI will be taking some action that could lead to a referral back to the Justice Department," she said.

Eubanks said the request puts the two agencies in a delicate position given the high-profile nature of the request and implications of digging into the issues raised by the congressmen.

"It's a hot potato; you take it, no you take it," she said.

**Emma Foehringer Merchant**

8 months ago

## **Reminder: ExxonMobil still sponsors the world's largest association of earth scientists.**

Today, over 100 geoscientists sent an [open letter](#) to the American Geophysical Union asking it to cut its ties with the oil and gas giant. “By allowing Exxon to appropriate AGU’s institutional social license to help legitimize the company’s climate misinformation, AGU is undermining its stated values as well as the work of many of its own members,” the letter reads.

The AGU’s [partnership policy](#) says the group will not accept funds from entities that “promote and/or disseminate misinformation of science, or that fund organizations that publicly promote misinformation of science.” Last year, it was revealed that ExxonMobil scientists were [aware of the connection](#) between warming and fossil fuels decades ago. The company’s subsequent [cover-up](#) has been [compared to Big Tobacco](#) denying the link between cigarettes and cancer.

Last year, AGU considered severing ties to ExxonMobil, but ultimately decided against it. In a [statement](#) today, the organization said it would again assess the sponsorship at a board meeting in April.

# ***Columbia Disputes Exxon Mobil on Climate Risk Articles***

By RAVI SOMAIYA DEC. 1, 2015



Emissions from an Exxon Mobil refinery south of Los Angeles. The oil company says articles produced by students were inaccurate. Credit Monica Almeida/The New York Times



The dean of Columbia's Graduate School of Journalism published a letter on Tuesday strongly disputing accusations by [Exxon Mobil](#) that journalists from the school had produced inaccurate and misleading articles about the company's knowledge of the risks of [climate change](#).

The school had collaborated with The Los Angeles Times and foundations including the [Rockefeller Brothers Fund](#) on two articles published in October that examined "the gap between [Exxon Mobil](#)'s public position and its internal planning on the issue of [climate change](#)." The articles had helped add momentum to an [investigation](#) by the New York attorney general into the matter. And in the days and weeks following publication, the company was subject to criticism from politicians like John Kerry and Hillary Clinton.

Late last month, the company wrote a detailed, six-page letter to Columbia's president, Lee C. Bollinger, calling the two lengthy investigative reports "inaccurate and deliberately misleading."

In his response, Steve Coll, the dean of the journalism school, said that he had carefully examined the detailed allegations made by Exxon Mobil.

"Your letter disputes the substance of the two articles in a number of respects, but consists largely of attacks on the project's journalists," Mr. Coll wrote. "I have concluded that your allegations are unsupported by evidence."

Underlying the exchange of letters are complex connections among the people, institutions and companies involved in the pair of articles. The dispute also highlights the possibility that some of the new ways that expensive

accountability reporting is being funded can, in terms of perception at least, be called into question.

Exxon Mobil contended in its letter, written by Kenneth P. Cohen, a vice president for public and governmental affairs, that some of the foundations that supported the reporting of the articles, including the Rockefeller Brothers Fund, had “a stated position and bias against the [oil](#) and gas industry.”

The letter also accuses one of the journalists, Susanne Rust, of ignoring information favorable to the company or not giving it proper emphasis, of misrepresenting certain materials and of not giving the company access to documents she cited or adequate time to provide a substantive response. It also accused another reporter of misrepresenting herself in interviews.

The articles themselves, Mr. Cohen wrote, “bear no resemblance to the source materials” they cite. And in the final paragraph of his letter, he refers to the “numerous and productive relationships” that Exxon Mobil has with Columbia. (In 2014, according to Exxon Mobil’s own figures, the company donated nearly \$220,000 to [Columbia University](#).) Some read that as a subtle hint that Exxon Mobil might review its relationship with the university. The company said on Tuesday that there was no threat intended.

In his response, Mr. Coll said he had been troubled to discover that Mr. Cohen had “made serious allegations of professional misconduct” even though “you or your media relations colleagues possess email records showing that your allegations are false.” He went on to rebut many of the detailed points in Exxon Mobil’s letter, writing that Ms. Rust gave the company plenty of time to respond

to her questions and that the reporters had clearly identified themselves as journalists.

The article was indeed funded, in part, by the Rockefeller Brothers Fund, Mr. Coll wrote, but that fact was disclosed and the fund had no impact on the articles that were ultimately published. Though the accusations are presented as factual errors, he wrote, “in fact what you dispute is the emphasis of the articles. You have dressed up this rather commonplace criticism of investigative reporting in academic clothing.”

“What your letter advocates really is that the factual information accurately reported in the article, and unchallenged by you, be interpreted differently,” Mr. Coll wrote.

Alan T. Jeffers, a spokesman for Exxon Mobil, said on Tuesday that the company felt the articles still fundamentally misrepresented the source documents. When it has tried to engage with The Los Angeles Times it has consistently been referred to Columbia, he said, and the company has asked for an opportunity to meet with university representatives to discuss what possible actions remain available, he said.

The Los Angeles Times said that its editors had “carefully reviewed Exxon Mobil’s complaints and concluded that the articles we published in collaboration with Susanne Rust and her team at [Columbia University](#) Graduate School of Journalism were accurate, fair and balanced. We will continue working with the Columbia reporting team to publish journalism on this very important subject.”