

ABSTRACT

The Fossil Fuel Industry's Marketing Practices: Shaping Policy and Public Understanding

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Beginning in the mid-twentieth century, scientific research and major ecological events highlighted the necessity for innovative environmental policy to protect human health and the environment. Growing research in this field established the process known as the greenhouse effect, which leads to marked climatic change. More frequent observations indicating the anthropogenic nature of climate change led to considerations of policies and regulations that address fossil fuel combustion due to its relationship to atmospheric greenhouse gas concentrations. Since the identification of this relationship, the fossil fuel industry has led efforts to spread doubt and uncertainty in climate science. Among these efforts are widespread “greenwashing” campaigns. More recently, these disinformation campaigns have shifted to those of “climate delay,” or efforts that aim to downplay the urgency to address anthropogenic climate change. Such campaigns have a known impact on consumers and may be subject to regulation by the Federal Trade Commission for their unfair and deceptive nature. The breadth of these efforts reveals the extensive influence of the fossil fuel industry on political institutions, the economy, and most importantly, the public.

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AND PUBLIC UNDERSTANDING

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CHAPTER ONE

Introduction

The Origins of Environmental Policy

If there is one thing that human history consistently demonstrates, it is the distinct ability of societies to innovate. From the invention of the wheel to space travel, the bounds of human technological development seem ever shrinking. However, this development comes with a cost, as can be evidenced by humanity's impact on the natural world. Before the establishment of the Environmental Protection Agency in 1970, poor air and water quality, as well as general environmental degradation, was widespread. For example, events like the Los Angeles smog attack of 1943¹ or the Cuyahoga River fire of 1969² were emblematic of the environmental concerns that were present throughout the nation at the time. The environmental quality issues were so severe in some places that they had lethal consequences:

In 1963, smog had killed 400 New Yorkers, and Lake Erie's oxygen content had become so depleted that the center of the lake sustained precious little life. An oil spill off the California coast in 1969 coated 400 square miles with slime and killed hundreds of birds.³

¹ "50 Years of Progress."

² "The Burning River That Sparked a Revolution."

³ "Here's Why the Environmental Protection Agency Was Created."

The public outcry resulting from these events necessitated government action. In response, Republican President Richard Nixon established the Environmental Protection Agency (EPA) in 1970.⁴

At its genesis, environmental policy garnered bipartisan support. In his 1970 State of the Union Address, President Nixon expressed this sentiment when he stated, “[r]estoring nature to its natural state is a cause beyond party and beyond factions. It has become a common cause of all the people of this country.”⁵ Soon after his State of the Union Address, President Nixon established the EPA to have a single agency under which all environmental concerns could be consolidated and addressed after finding that the government’s current approach to environmental policy was “piecemeal.”⁶

Shortly after the establishment of the agency, the Clean Air Act pushed the EPA into the policy realm. At its origin, the intention of the Clean Air Act was to regulate air pollution through the development of National Ambient Air Quality Standards (NAAQS). The six regulated “criteria pollutants” under this iteration of the act included “sulfur dioxide, nitrogen dioxide, particulate matter, carbon monoxide, ozone, and lead.”⁷ It should be noted that excluded from this original list of regulated pollutants were greenhouse gases such as carbon dioxide or methane. Due to this reality, this is an

⁴ Ibid.

⁵ “Annual Message to the Congress on the State of the Union. | The American Presidency Project.”

⁶ “Special Message to the Congress About Reorganization Plans To Establish the Environmental Protection Agency and the National Oceanic and Atmospheric Administration | The American Presidency Project.”

⁷ US EPA, “Evolution of the Clean Air Act.”

example of an environmental policy that, at its origin, did not compromise industry interests.

However, regulations that threaten industry interests are not beyond the scope of the U.S. government. In fact, the United States' involvement in international environmental policy efforts found success in regulating major lucrative industries the 1970s. Both domestically and internationally, enhanced research of degradative compounds in the environment provided a scientific basis upon which policies could be implemented. For example, chlorofluorocarbons, or CFCs, are a group of compounds that are widely used in refrigerants, air conditioning, and aerosolized products. In 1972, after hearing a lecture discussing the findings of British scientist James Lovelock that "all of the CFC-11 ever manufactured was still present in the atmosphere," chemistry professor at the University of California, Irvine, F. Sherwood Rowland decided to research the effects of CFCs on the atmosphere.⁸ Rowland and his colleagues discovered that CFCs are extremely destructive to the ozone layer, and found that "If CFC production continued...ozone loss would be even greater," than what was already being observed. This posed a major public health risk because the ozone layer filters out UV radiation, which is a major cause of skin cancer. Additionally, exposure to UV radiation has been linked to cataracts, plant development, phytoplankton productivity, the inhibition of biogeochemical cycles, and more.⁹

After the reports of these scientists were confirmed by the National Academies of Science and a series of Congressional Hearings, it became clear that international action

⁸ "Chlorofluorocarbons and Ozone Depletion."

⁹ US EPA, "Health and Environmental Effects of Ozone Layer Depletion."

was required to address this mounting issue.¹⁰ However, evidence of industry influencing environmental policy was indeed present during these conversations because major chemical companies felt “that the data on CFCs and stratospheric ozone were inconclusive and didn’t warrant drastic action.”¹¹ While there was relative pushback from the chemical industries about the science suggesting their products were destructive, there was not a notable, concerted effort at spreading mistrust in the scientists coming forward. After more indisputable evidence about the destructive nature of CFCs in the atmosphere surfaced, in addition to the clear and present danger posed by the ever-growing Antarctic Ozone Hole, in 1987, fifty-six nations came together under the Montreal Protocol and ratified a treaty that initiated the regulation and eventual global phaseout of CFC products.¹²

The success of the Montreal Protocol was groundbreaking not just for the field of environmental policy, but also for international cooperation in general as it “is the first treaty to achieve universal ratification by all countries in the world.”¹³ The Protocol represents a unique international collaboration because it was unanimously ratified by the U.S. Senate, received and continues to receive bipartisan support, and eventually “received support from the vast majority of U.S. industry as well as environmental advocates.”¹⁴ In the context of U.S. environmental policy, the Montreal Protocol

¹⁰ “Chlorofluorocarbons and Ozone Depletion.”

¹¹ “Chlorofluorocarbons and Ozone Depletion.”

¹² “Chlorofluorocarbons and Ozone Depletion.”

¹³ “The Montreal Protocol on Substances That Deplete the Ozone Layer.”

¹⁴ Ibid.

represents an interesting development because of this widespread support. It reflects the fact that when the U.S. identifies an industry, such as CFC production, it can unite behind its phase-out for the sake of environmental repair. The cost of a depleted ozone layer outweighed the cost of the loss of the CFC industry. However, the Protocol is unique because it was the first and last of its kind. Since its ratification, environmental policy has yet to see another international effort quite as successful and has yet to see another with the same level of bipartisan congressional support on a domestic level. This effort represents an interesting interaction between industry, global politics, and the environmental movement for its ability to prioritize global and environmental health over industry and profit.

Moreover, the Montreal Protocol demonstrates that it is possible for nations to take action to protect the earth against long-term issues. Environmental issues like the Cuyahoga River fire or the Los Angeles smog attack were dire events that called for immediate action. However, due to the unseen nature of phenomena such as the greenhouse effect, it is more difficult to develop and implement policies that address concerns relating to climate change. One effort to do so is the 2015 Paris Agreement.

In contrast to the Montreal Protocol, the Paris Agreement is an example of an international environmental policy effort that faced political issues at a domestic level. Where the Montreal Protocol found bipartisan support, the Paris Agreement found strife and political division during the election cycle as well as under the Trump Administration. Each year, member nations from all over the globe come together at the Conference of the Parties (COP) to review global measures to mitigate the impacts of the climate crisis. The COP is hosted by the United Nations Framework Convention on

Climate Change (UNFCCC) and as it stands right now, it represents one of the only international governing bodies that aims to address global climate change.¹⁵

During COP 21 in 2015, UNFCCC nations met and collaborated to develop the Paris Agreement. The Accord was originally ratified by 196 nations and garnered domestic support in the United States under the Obama Administration. The Agreement operates as a legally binding international treaty that hopes to mitigate the negative effects of climate change by holding nations accountable for their carbon emissions. If successful, the collective actions of the various countries involved will “limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.”¹⁶ The Accord operates through the submission of Nationally Determined Contributions, or NDCs, by all participating nations every five years. In accordance with the technology available to each country, nations must disclose in the NDCs how they plan to adapt their current infrastructure or the specific actions they will take “to reduce greenhouse gas emissions...[and] to build resilience to adapt to the impacts of rising temperatures.”¹⁷

Countries are also asked to submit non-mandatory long-term low greenhouse gas emission development strategies (LT-LEDS).¹⁸ While the actions outlined in these reports are not required as is the case with NDCs, the LT-LEDS offer the nations the valuable opportunity to consider their country’s future trajectory in addressing the

¹⁵ Denchak, “Paris Climate Agreement.”

¹⁶ “The Paris Agreement | UNFCCC.”

¹⁷ Ibid.

¹⁸ Ibid.

climate crisis. It is important to note that part of the Paris Agreement requires that developed nations makes contributions to the Green Climate Fund, a fund that “allocates its resources to low-emission and climate-resilient projects and programmes in developing countries.”¹⁹ This fund was established by the UNFCCC in 2010, and is one example of an international financial effort to address climate change.

While the Paris Agreement’s stipulation that countries like the United States should contribute to the Green Climate Fund is in recognition of the disproportionate impact of climate change on developing countries, this aspect of the Accord was a major source of the political resistance against the Paris Agreement in the United States. During his election campaign, President Donald Trump repeatedly vocalized his intention to pull out of the Paris Agreement if elected President.²⁰ During his campaign, Trump emphasized that he felt the Paris Agreement was “bad for U.S. business” and criticized how he felt it gave “foreign bureaucrats control over how much energy we use.”²¹ As a result, the energy sector and its interests were officially brought into the conversation, as were the concerns of an energy-dependent public. When elected President, Trump removed the United States from the Paris Agreement. It should be noted that the United States’ exit did not ever go into effect because President Biden quickly rejoined when elected. With that said, the Paris Agreement is only effective if participating nations implement actionable policies that reflect the goals of the Accord, which did not occur throughout the duration of the Trump Administration.

¹⁹ Environment, “Green Climate Fund.”

²⁰ “Donald Trump Would ‘cancel’ Paris Climate Deal.”

²¹ Ibid.

In his official statement about the United States' withdrawal from the Paris Accords on June 1st, 2017, President Trump said that he felt the Agreement imposed “draconian financial and economic burdens...on our country.”²² One such burden was the United States' expected continued contribution to the Green Climate Fund. Another fear that President Trump felt about the requirements of the Paris Agreement was that compliance with the nation's NDCs and subsequent energy restrictions “could cost America as much as 2.7 million lost jobs by 2025 according to the National Economic Research Associates.”²³ President Trump is known for his prioritization of American jobs, so any threat to this aspect of his platform was discouraged during his Presidency.

Something to be noted about the Paris Agreement is that some CEOs of major fossil fuels industries urged Trump to remain in the Paris Agreement.²⁴ Whether this was simply in the interest of public image, or if they had a genuine interest in staying in the Agreement is unclear. However, one logistical reason the fossil fuel companies are highlighting is that they would prefer that governments are consistent with policy. Given the international nature of the fossil fuel industry, it complicates business practices for the U.S. to have distinct policy. As the former CEO of Shell, Ben van Beurden states, “If we have a very clear understanding that governments, successive governments, will continue to act consistently with a certain policy set that we believe in, I have no issue with it.”²⁵

²² “Donald Trump Would ‘cancel’ Paris Climate Deal.”

²³ “Statement by President Trump on the Paris Climate Accord – The White House.”

²⁴ Raphelson, “Energy Companies Urge Trump To Remain In Paris Climate Agreement.”

²⁵ Raphelson.

The tension between financial motivations and environmental policy was particularly apparent under the Trump Administration, as is exemplified by the Paris Agreement. However, this interesting stance on behalf of the fossil fuel industry presents an important consideration. While these major corporations will likely experience significant financial loss from environmental policies, some have expressed that they would rather have consistency in the standards they are held to internationally. This sentiment is not particularly novel to the fossil fuel industry. For example, a recent episode on *The New York Times* podcast, *The Daily*, about social media noted,

From a tech industry standpoint, they don't want a patchwork of laws where in some states, it's one thing, and in other states, it's something else. Industries often want a national law to standardize everything.²⁶

It should be noted that the fossil fuel industry's desire to be included in the Paris Agreement is not necessarily evidence of their environmental consciousness as much as it is of their desire for financial consistency. Nonetheless, many companies have used this stance as an endorsement of their sustainability. Accordingly, there is evidence that suggests fossil fuel industries are prone to "greenwashing," or presenting themselves as environmentally conscious when in fact they are major polluters.

Overall, environmental policy in the United States has undergone an evolution from being defined by policies enacted under a consolidated agency in response to clear and obvious environmental degradation to international interactions as an effort to address global climate change. The American government's support for CFC regulation under the Montreal Protocol was an example of officials choosing to regulate a once-lucrative industry for the sake of public health even though the problems associated with

²⁶ Barbaro et al., "A Sweeping Plan to Protect Kids From Social Media."

CFC were not as blatantly visible as events like the Cuyahoga River fire. However, modern-day initiatives to fight against the often-invisible phenomenon associated with anthropogenic climate change have not proven to be quite as successful on an international scale. The Paris Agreement offers evidence that one boundary preventing durable climate policy is the partisan nature of the issue. Part of this partisan divide comes from the perceived threat to the fossil fuel industry and the potential job loss associated with regulation.

Throughout this evolution, the common thread connecting environmental policy events at each stage is the public. Environmental policy has progressed when the public demanded it to do so. It was public outcry that first necessitated the government action to establish the Environmental Protection Agency. It was the evident threat to public health being communicated by the scientific community that pushed governments to compromise the chemical industry's interests for the sake of public well-being. If the continued reliance on fossil fuels similarly poses a threat to public health, it begs the question: why is there so much reluctance in regulating the fossil fuel industry? One answer to this question lies in the past and present efforts of the fossil fuel industry to influence the public.

CHAPTER TWO

Sources of Influence: Marketing and Campaign Financing

Misleading Advertising and Greenwashing

A major determinant of the success of environmental policy initiatives is public support. After all, it is the public who votes on representatives in the government who will have the power to enact change. Therefore, it is valuable to look to major corporations in the fossil fuel industry to consider the influence they have on the public's belief in climate science and subsequent support for climate policy. There is significant evidence of strategic efforts on behalf of fossil fuel industries to establish and encourage public mistrust in climate science.

Currently, a series of court cases are being argued throughout the States that hope to hold major fossil fuel corporations accountable for misinformation campaigns and greenwashing, which is “the act or practice of making a product, policy, activity, etc. appear to be more environmentally friendly or less environmentally damaging than it really is.”²⁷ In a move that is indicative of the correlation between environmental policy and New Federalism, or the granting of expanded responsibilities to state governments, these state and city governments are advocating for compensation and accountability from the fossil fuel industry. Whether it is for better or for worse is not decided, but the realm of environmental policy historically shifts responsibility away from the Federal

²⁷ “Greenwashing Definition & Meaning - Merriam-Webster.”

government and towards state governments.²⁸ Accordingly, nearly two dozen states, cities, and counties are using this responsibility to try and enact change that addresses the mounting climate crisis.

Climate Litigation

One major pending court case that highlights misleading advertising on behalf of ExxonMobil is the *State of Connecticut v. Exxon Mobil Corporation*.²⁹ The Complaint of this case expresses concern for the risks posed by climate change and argues that based on their knowledge of global warming and the fossil fuel industry's contribution to it, "ExxonMobil had the opportunity to responsibly contribute to public understanding of climate change and its potentially catastrophic consequences."^{30 31} However, instead of using their platform to raise awareness of the issue, nearly every Thursday from 1972-2001, ExxonMobil published advertorials in *The New York Times* that encouraged doubt in climate science. Examples of these advertorials can be seen in Figures 1 through 4 below. As is demonstrated by these advertorial titles alone, the corporations worked to publish advertisements that associated climate science with lies, fear-mongering, and general scientific uncertainty.

²⁸ Lester, "New Federalism and Environmental Policy."

²⁹ Tong, *State of Connecticut v. Exxon Mobil Corporation*; Complaint.

³⁰ Tong. p.1

³¹ Tong. p.5

Lies they tell our children

"I don't have a future."

With tears streaming down her face, a 13-year-old girl made this bleak assessment to her father. To back up her pessimism, she had brought home from school a mimeographed sheet listing the horrors that awaited her generation in the next 25 years: Worldwide famine, overpopulation, air pollution so bad that everyone would wear a gas mask, befouled rivers and streams that would mandate cleansing tablets in drinking water... a greenhouse effect that would melt the polar ice caps and devastate U.S. coastal cities... a cancer epidemic brought on by damage to the ozone layer.

Moved by the girl's misery, her father, Herbert I. London of the Hudson Institute and New York University, wrote a book, *Why Are They Lying to Our Children?* The book documents how some of the myths of the 1960s and 1970s—and some much older than that—are being perpetuated and taught as gospel truth in some of our schools. And the book raises a question in our minds: Will the next generation have any better understanding of science and technology—both their merits and their problems—than our own?

Professor London's book is not a plea for unbridled technology. But it is a plea for balance. And school textbooks, he believes, are notoriously unbalanced. In dealing with environmental questions, for example, no textbook the professor could find made any mention of the following facts:

■ Total automobile emissions of hydrocarbons, carbon monoxide, and nitrogen oxide

in the U.S. are less than half what they were from 1957 to 1967.

■ The amount of unhealthy sulfur dioxide in the air has been steadily declining since 1970.

■ The bacteria level in the Hudson River declined by more than 30 percent between 1966 and 1980.

Textbooks, Professor London finds, mythologize nature as eternally benign until disturbed by man. It's a rare schoolbook that talks about volcanoes belching radiation into the air, floods that overwhelm river towns, and tornadoes that lift people into oblivion.

Moreover, textbooks hardly mention the promise of a bright future already on the horizon—when average life expectancy may approach 90 years, when products derived from recombinant DNA research will eliminate most viral diseases, when we will enjoy greater leisure, and materials—especially plastics—will be better, stronger, and safer.

Professor London's conclusion—with which we heartily agree—is that we should help our children think for themselves and reach balanced conclusions. Let's look at their textbooks, not to censor them but to raise questions. Let's give them different points of view and help discuss them. That way we can educate a new generation of citizens who aren't scared by science, and who won't be swayed by old mythologies.

Our youngsters do have a future. We, and the schools, should help them look forward to it with hope, even as they prepare to deal with its problems.



Figure 1- New York Times, 1984³²

³² Supran and Oreskes, "The Forgotten Oil Ads That Told Us Climate Change Was Nothing."

Apocalypse no

For the first half of 1992, America was inundated by the media with dire predictions of global warming catastrophes, all of which seemed to be aimed at heating up the rhetoric from the Earth Summit in Rio de Janeiro last June.

Unfortunately, the media hype proclaiming that the sky was falling did not properly portray the consensus of the scientific community. After the Earth Summit, there was a noticeable lack of evidence of the sky actually falling and subsequent colder than normal temperatures across the country cooled the warming hysteria as well.

Everybody, of course, remembers the Earth Summit and the tons of paper used up in reporting on it—paper now buried in landfills around the world. But few people ever heard of a major document issued at the same time and called the "Heidelberg Appeal." The reason? It just didn't make "news."

Perhaps that is because the Appeal urged Summit attendees to avoid making important environmental decisions based on "pseudoscientific arguments or false and non-relevant data."

The Heidelberg Appeal was issued initially by some 264 scientists from around the world, including 52 Nobel Prize winners. Today, the Appeal carries the signatures of more than 2,300 scientists—65 of them Nobel Prize winners—from 79 countries. If nothing else, its message is illustrative of what's wrong with so much of the global warming rhetoric. The lack of solid scientific data.

Scientists can agree on certain facts pertaining to global warming. First, the greenhouse effect is a natural phenomenon; it accounts for the moderate temperature that makes our planet habitable. Second, the concentration of greenhouse gases (mainly carbon dioxide) has increased and there has been a slight increase in global temperatures over the past century. Finally, if present trends continue, carbon dioxide levels will double over the next 50 to 100 years.

Controversy arises when trying to link past changes in temperatures to increased concen-

trations of greenhouse gases. And it arises again when climate prediction models are used to conclude Earth's temperature will climb drastically in the next century and—based on such models—to propose policy decisions that could drastically affect the economy.

According to Arizona State University climatologist Dr. Robert C. Balling in his book, *The Heated Debate* (San Francisco: Pacific Research Institute for Public Policy, 1992), until knowledge of the interplay between oceans and the atmosphere improves, "model predictions must be treated with considerable caution." Moreover, models don't simulate the complexity of clouds, nor do they deal adequately with sea ice, snow or changes in intensity of the sun's energy.

And they don't stand up to reality testing. Comparing actual temperatures over the last 100 years against model calculations, the models predicted temperature increases higher than those that actually occurred. Moreover, most of the earth's temperature increase over the last century occurred before 1940. Yet, the real build-up in man-made CO₂ didn't occur until after 1940. Temperatures actually fell between 1940 and 1970.

Sifting through such data, Dr. Balling has concluded, "there is a large amount of empirical evidence suggesting that the apocalyptic vision is in error and that the highly touted greenhouse disaster is most improbable."

Other scientists have an even more interesting viewpoint. Notes atmospheric physicist S. Fred Singer, president of the Washington, D.C.-based Science & Environmental Policy Project, "the net impact [of a modest warming] may well be beneficial."

All of which would seem to suggest that the jury's still out on whether drastic steps to curb CO₂ emissions are needed. It would seem that the phenomenon—and its impact on the economy—are important enough to warrant considerably more research before proposing actions we may later regret.

Perhaps the sky isn't falling, after all.

More
on
Fred
Singer
later...

Mobil

Figure 2- New York Times, 1993³³

³³ Supran and Oreskes.

Science: what we know and don't know



As the debate over climate change heats up, science is being upstaged by the call for solutions. At stake is a complex issue with many questions. Some things we know for certain. Others are far from certain.

First, we know greenhouse gases account for less than one percent of Earth's atmosphere. The ability of these gases to trap heat and warm Earth is an important part of the climate system because it makes our planet habitable. Greenhouse gases consist largely of water vapor, with smaller amounts of carbon dioxide (CO₂), methane and nitrous oxide and traces of chlorofluorocarbons (CFCs).

The focus of concern is CO₂. While most of the CO₂ emitted by far is the result of natural phenomena—namely respiration and decomposition, most attention has centered on the three to four percent related to human activities—burning of fossil fuels, deforestation. The amount of carbon dioxide in the atmosphere has risen in the last 100 years, leading scientists to conclude that the increase is a result of man-made activities.

Although the linkage between the greenhouse gases and global warming is one factor, other variables could be much more important in the climate system than emissions produced by man.

The UN-sponsored Intergovernmental Panel on Climate Change (IPCC) thought it had found the magic bullet when it concluded that the one-degree Fahrenheit rise in global temperatures over

the past century may bear a "fingerprint" of human activity. The fingerprint soon blurred when an IPCC lead author conceded to the "uncertainty inherent in computer climate modeling."

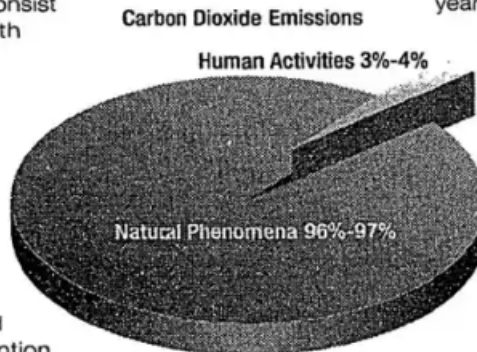
Nonetheless, nations at Kyoto are being asked to embrace proposals that could have potentially huge impacts on economies and lifestyles. Nations are being urged to cut emissions without knowing either the severity of the problem—that is, will Earth's temperature

increase over the next 50–100 years?—or the efficacy of the solution—will cutting CO₂ emissions reduce the problem?

Within a decade, science is likely to provide more answers on what factors affect global warming, thereby improving our decision-making. We just don't have this information today.

Answers to questions on climate change will require more reliable measurements of temperature at many places on Earth, better understanding of clouds and ocean currents along with greater computer power.

This process shouldn't be short-circuited to satisfy an artificial deadline, like the conference in Kyoto. Whatever effect increased concentrations of man-made gases may have, it will develop slowly over decades. Thus, there is time for scientists to refine their understanding of the climate system, while governments, industry and the public work to find practical means to control greenhouse gases, if such measures are called for. Adopting quick-fix measures at this point could pose grave economic risks for the world.



Mobil The energy
to make a difference.

Figure 3- New York Times, 1997

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 these still-unanswered questions:

(1) Has human activity already begun to change temperature and the climate, and (2) How significant will future change be?

The NRC report confirms that Earth's surface temperature has risen by about 1 degree Fahrenheit over the past 150 years. Some use this result to claim that humans are causing global warming, and they point to storms or floods to say that dangerous impacts are already under way. 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 current scientific evidence show that Europe and North America experienced a *medieval warm period* one thousand years ago, followed centuries later by a *little ice age*. The geological record shows even larger changes throughout Earth's history. Against this backdrop of large, poorly understood natural variability, it is impossible for scientists to attribute the recent small surface temperature increase to human causes.

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.

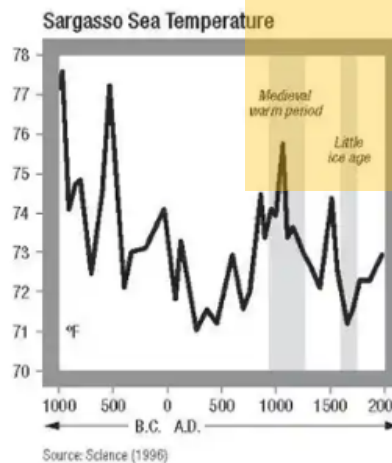
In fact, many academic studies and field experiments have demonstrated that increased levels of carbon dioxide can promote crop and forest growth.

So, while some argue that the science debate is settled and governments should focus only on near-term policies—that is empty rhetoric. Inevitably, 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, companies and governments should take responsible actions now to address the issue.

One essential step is to encourage development of lower-emission technologies to meet our future needs for energy. We'll next look at the promise of technology and what is being done today.



ExxonMobil™

Figure 4- New York Times, 2000

As is evident in these advertorials, the Mobil corporation, and eventually the ExxonMobil corporation, publicly approached climate science with a tone of doubt and denial. This tactic continued over a span of twenty-nine years. When these advertorials first started to be printed in 1972, the *New York Times* was a highly respected entity as it had just won a Pulitzer Prize due to its groundbreaking release of the “Pentagon Papers.” The *Times* continued to gain widespread respect, and their exceptional journalism culminated in over one hundred and twenty Pulitzer Prizes by the early 2000s. In the late 1970s, the paper went national, and began to be transmitted by satellite to local newspapers around the United States. The *Times* went on to further its reach and broaden its audience once again when it moved online in 1995.³⁴ Throughout this entire time period, these advertorials held a weekly residence among the *Times*’ widely circulated pages. Coming from a Pulitzer Prize-winning and nationally respected entity, it is fair to assert that the placement of these advertorials in the *Times* gave them a certain degree of ethos that was no doubt influential.

It is hard to say definitively how many individuals these advertorials reached. However, one major turning point in the public’s understanding and awareness of the mounting climate crisis was the testimony of NASA scientist Dr. James Hansen before Congress in 1988. News of this testimony traveled throughout the nation, and its impact was far-reaching. In his landmark testimony, Hansen informed Congress—and the public—that he “was 99 percent certain that the warming trend was not a natural variation but was caused by a buildup of carbon dioxide and other artificial gases in the

³⁴ “The New York Times | History & Facts | Britannica.”

atmosphere.”³⁵ ³⁶ Shockingly, less than six weeks after Dr. Hansen testified in front of Congress, an Exxon spokesperson named Joseph M. Carlson sent out “an internal draft memorandum acknowledging the scientific consensus that atmospheric CO₂ concentrations were increasing...and that the ‘principal greenhouse gases are by-products of fossil fuel combustion.’”³⁷ Despite this acknowledgement, the memorandum maintained that Exxon’s public position would be to “emphasize the uncertainty in scientific conclusions regarding the enhanced Greenhouse effect.”³⁸ These statements can be seen in the following portions of the memorandum.

³⁵ “Hansen Senate Testimony, June 23, 1988.”

³⁶ Shabecoff and Times, “Global Warming Has Begun, Expert Tells Senate.”

³⁷ Tong, State of Connecticut v. Exxon Mobil Corporation; Complaint. p.18

³⁸ Tong. p.19

THE GREENHOUSE EFFECT

ISSUE

THE GREENHOUSE EFFECT REFERS TO ATMOSPHERIC GASES WHICH RETAIN REFLECTED SOLAR RADIATION, WHICH IS ESSENTIAL TO THE SUPPORT OF LIFE ON EARTH. CURRENT CONCERN IS ASSOCIATED WITH THE "ENHANCED" GREENHOUSE EFFECT, OR THE POSSIBLE INCREASE IN GLOBAL SURFACE TEMPERATURES DUE TO AN INCREASED RATE OF BUILD-UP OF GREENHOUSE GASES.

BACKGROUND

THE GREENHOUSE EFFECT MAY BE ONE OF THE MOST SIGNIFICANT ENVIRONMENTAL ISSUES FOR THE 1990s.

GASES THAT FAVOR ABSORPTION OF INFRARED (IR) RADIATION: CARBON DIOXIDE, WATER VAPOR, METHANE, NITROUS OXIDE, CHLORO-FLUOROCARBONS, AND HALOGENS.

The University of Texas at Austin
The Center for Global Change Science

THE PRINCIPAL GREENHOUSE GASES ARE BY-PRODUCTS OF FOSSIL FUEL COMBUSTION.

Figure 5- The Carlson Memorandum, 1988³⁹

³⁹ Climate Files, "1988 Exxon Memo on the Greenhouse Effect."

EXXON RESEARCH

O IN THE LAST FIVE YEARS EXXON HAS SUPPORTED BOTH IN-HOUSE AND THEORETICAL STUDIES AND OUTSIDE RESEARCH PROGRAMS AT KEY INSTITUTIONS.

- LAMONT DOHERTY GEOLOGICAL OBSERVATORY

The University of Texas at Austin

- COLUMBIA UNIVERSITY CLIMATE CENTER (TOTAL FUNDS FOR BOTH ABOUT \$.6 MILLION)

O EXXON SCIENTISTS ARE INTERACTING WITH KEY GOVERNMENT AGENCIES INCLUDING THE UNITED NATIONS' ENVIRONMENTAL PROGRAM, IPECA, OECD, DOE, AND U.S. EPA.

O EXXON IS PROVIDING LEADERSHIP THROUGH API IN DEVELOPING THE PETROLEUM INDUSTRY POSITION.

EXXON POSITION

O EMPHASIZE THE UNCERTAINTY IN SCIENTIFIC CONCLUSIONS REGARDING THE POTENTIAL ENHANCED GREENHOUSE EFFECT.

O URGE A BALANCED SCIENTIFIC APPROACH.

Figure 6- The Carlson Memorandum, 1988⁴⁰

⁴⁰ Climate Files.

These advertorials and the Carlson Memorandum are just a few examples of the abundance of comprehensive evidence brought up in the *State of Connecticut v. Exxon Mobil Corporation*.⁴¹ The evidence highlights the clear efforts on behalf of Exxon Mobil to emphasize the sentiment that there is deep uncertainty in the otherwise reputable findings of climate scientists regarding the correlation between fossil fuel combustion and climate change. It is important to note that these cases are not just addressing misinformation campaigns and efforts to deceive the public about the realities of the climate crisis. Rather, these climate cases are also occupied with chronic greenwashing, or the practice of portraying a company's initiatives or practices as more environmentally friendly than they are in reality.

The *State of Connecticut v. Exxon Mobil Corporation* offers up examples of the greenwashing practices of ExxonMobil such as their marketing campaigns entitled "Protect Tomorrow. Today," "Energy Solutions," and "The Future of Energy" suggesting that they are investing in alternative energy.⁴² ExxonMobil's current overall stance on sustainability is explicitly communicated on their website, which emphasizes their commitment to environmental protection (Figure 7). It should be noted, however, that ExxonMobil spends less than 1% of its annual revenue on alternative energy research and continues to devote resources to "expanding exploration of potential new oil and gas reserves."⁴³ Contrary to what is known about fossil fuel combustion, they also purport that some of its fuel-based products can help reduce greenhouse gas emissions "and

⁴¹ Tong, *State of Connecticut v. Exxon Mobil Corporation*; Complaint.

⁴² Tong. p.32

⁴³ Tong.

improve fuel economy.’’⁴⁴ When compared to the idyllic image of sunbeams shining through a green tree that ExxonMobil currently presents on its sustainability page emphasizing environmental protection, the realities of their business practices seem decidedly contradictory.

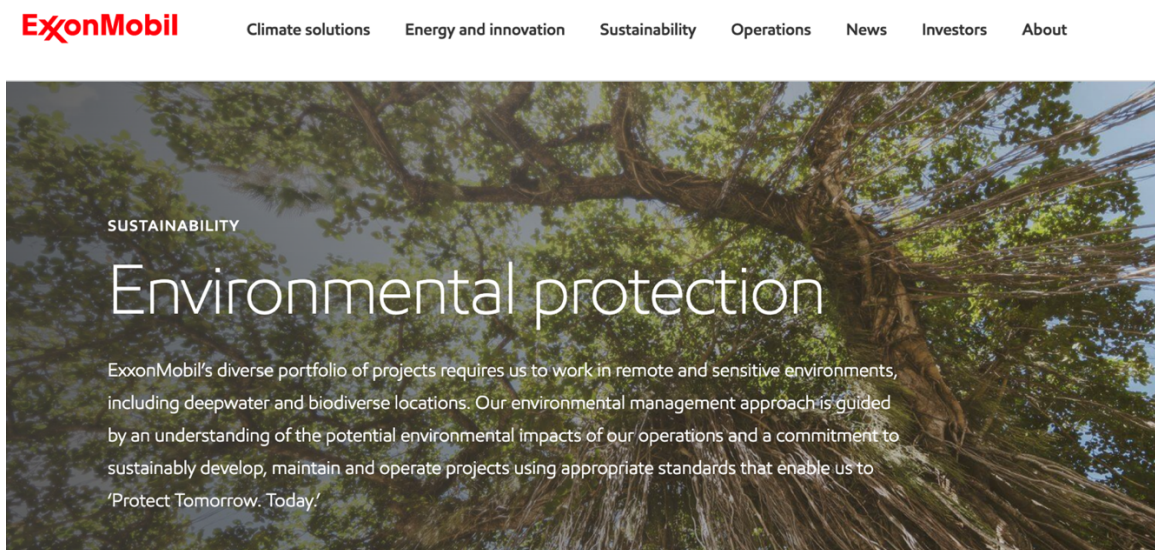


Figure 7- Exxon Mobil's Sustainability Statement, 2022⁴⁵

However, two cases that offer the most comprehensive depiction of greenwashing on behalf of fossil fuel corporations are *City of Annapolis v. B.P. et.al.* as well as *District of Columbia v. ExxonMobil Corporation et.al.*⁴⁶ These cases highlight the greenwashing practices of many corporations including, but not limited to, Exxon, Shell, B.P., Chevron, Marathon, ConocoPhillips, and the American Petroleum Institute (API). Out of the nearly two dozen climate cases being fought throughout the States, nearly all address the fossil

⁴⁴ Tong. p.33

⁴⁵ “Environmental Protection.”

⁴⁶ Lyes, *City of Annapolis v. BP et.al.*; Complaint; Zavareei, *District of Columbia v. Exxon Mobil Corporation et.al.*; Complaint.

fuel industry's involvement in the creation, funding, and facilitation of the Global Climate Coalition. The self-declared purpose of this organization made up of business trade associations and private companies was "to coordinate business participation in the scientific and policy debate on the global climate change issue."⁴⁷ The coalition, backed by funds provided by the fossil fuel industry, "implemented public advertising and outreach campaigns to discredit climate science and cast doubt on the dangerous consequences of climate change."⁴⁸ One could argue that the name alone of the Global Climate Coalition (GCC) is an example of greenwashing, because a climate coalition that fights the general consensus about climate science seems antithetical.

However, these cases offer other tangible examples of these companies' greenwashing practices as facilitated via the GCC. For example, during the U.N. Framework Convention on Climate Change at the Rio "Earth Summit" in 1992, the Global Climate Coalition "spent millions on misleading marketing," one of which was a video entitled "The Greening of Planet Earth." Not only did this video proposit that climate change would be a non-issue in the future, but it even went so far as to say, "that more atmospheric carbon dioxide would actually be beneficial for the world."⁴⁹ According to *District of Columbia v. ExxonMobil Corp.et.al.*, "Defendants knew and approved of the dissemination of this false and misleading video."⁵⁰ This is just one of

⁴⁷ Tong, *State of Connecticut v. Exxon Mobil Corporation*; Complaint. p. 22

⁴⁸ Zavareei, *District of Columbia v. Exxon Mobil Corporation et.al.*; Complaint. p.33

⁴⁹ Zavareei.

⁵⁰ Zavareei. p.33

many examples of the types of marketing campaigns that were being published by the Global Climate Coalition.

In addition to the fossil fuel industry's funding of the misleading efforts of the GCC, *District of Columbia v. ExxonMobil Corp. et.al.* also explores ExxonMobil and the American Petroleum Institute's (API) involvement with Fred Seitz and Fred Singer. Interestingly, Fred Singer was mentioned in the "Apocalypse No" advertorial cited in Figure 2. In the 1990s, ExxonMobil and the API "funded and promoted the work of Fred Seitz, Fred Singer, and Signer's Science and Environmental Policy Project (SEPP)."⁵¹ Neither individual was a climate scientist, and both had been hired by tobacco companies in the past to "create doubt in the public mind by questioning mainstream scientific conclusions."⁵² The pair helped to organize and distribute a petition that claimed to find "no convincing scientific evidence that human release of...greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth's atmosphere."⁵³ It was allegedly signed by 17,000 scientists but was in reality filled with the names of celebrities, fake people, and even the deceased.⁵⁴ This is a notable example of how these companies were using their resources to support scientists who were willing to discredit and question the work of other scientists to spread doubt.

Successful as these efforts may have been at the time, as more alarms were sounded around the world about the irrefutable evidence of climate change, these fossil

⁵¹ Zavareei.

⁵² Zavareei.

⁵³ Zavareei. p.36-37

⁵⁴ Zavareei. p.36-37

fuel companies realized that as public concern was raised, they needed to portray themselves as ‘eco-friendly’ in order to garner support for their products. By greenwashing themselves, these companies can appeal to the moral inclinations of the public as environmental stewardship became a more prominent priority.

Both *City of Annapolis v. B.P. et.al.* as well as *District of Columbia v. ExxonMobil et.al.* offer a slew of examples of greenwashing and direct misrepresentation across many different corporations. For example, Shell Oil’s “Make the Future” campaign has published advertisements such as “The Making of Sustainable Mobility” or “The Mobility Quandary” in the *Washington Post* and *New York Times* that emphasize Shell’s investments in alternative energy sources like “liquefied natural gas, natural gas, hydrogen fuel cells, and biofuel.”⁵⁵ In reality, the company’s investments in alternative energy research are “substantially smaller than its advertisements lead consumers to believe,” with only 1.2% of Shell’s capital spending from 2010-2018 in low-carbon energy sources.⁵⁶ Furthermore, Shell’s “In for the Long Haul” advertisement states that expanding liquefied natural gas (LNG) would “help prevent climate change from advancing,” but LNG is a fossil fuel that produces significant GHG emissions.⁵⁷ Shell also characterizes LNG as a renewable source when it is in fact not.⁵⁸ Shell’s efforts to portray themselves as a leader in alternative energy, and in addressing environmental issues, can certainly appeal to the moral concerns of the environmentally conscious and

⁵⁵ Zavareei. p.36-37

⁵⁶ Zavareei. p.53

⁵⁷ Zavareei. p.55

⁵⁸ “Liquefied Natural Gas 101.”

can therefore attract their business. In reality, Shell is a company that relies on the continued expansion of fossil fuels and their combustion.

City of Annapolis v. B.P. et. al. chronicles the over a decade-long history of B.P.’s greenwashing practices. In 2006, B.P. placed ads in the *New York Times* and the *New Yorker* that promoted the company’s “\$25 million investment in a BP Solar plant in Frederick, Maryland.”⁵⁹ This was used to demonstrate BP’s commitment to sustainability, but in reality, the plant found little success and closed four years later. B.P.’s “Beyond Petroleum” campaign ran from 2000-2008, and it portrayed the company as “heavily engaged in low-carbon energy sources...moving ‘beyond’ petroleum and other fossil fuels.”⁶⁰ During this time under this campaign, the company even changed its logo to a sunburst, “evoking the renewable resources of the sun.”⁶¹ In reality, “BP invested a small percentage of its total capital expenditure during this period on alternative energy research.”⁶²

More recently in 2019, the “Possibilities Everywhere” advertisements were on billboards in DC airports, on *Twitter*, *CNN*, in *Politico*, and in *The Economist*. The advertisements portrayed B.P. as environmentally friendly. In one case, the advertisement states, “at BP we’re working to make energy that’s cleaner and better.”⁶³ The campaign portrays B.P. as heavily involved in wind energy, solar energy, electric vehicles, and

⁵⁹ Lyes, *City of Annapolis v. BP et.al.*; Complaint.

⁶⁰ Lyes.

⁶¹ Lyes.

⁶² Lyes.

⁶³ Zavareei, *District of Columbia v. Exxon Mobil Corporation et.al.*; Complaint.

other non-fossil energies. In reality, B.P.'s involvement in alternative energy, like wind, is dwarfed by other companies. "BP owns only approximately 1 gigawatt of wind capacity," and companies like GE own 39 gigawatts.⁶⁴ Despite this reality, BP's "Blade runners" advertisement claims that BP is "one of the major wind energy businesses in the US."⁶⁵

City of Annapolis v. B.P. et.al. also details Chevron's long history of greenwashing beginning in 2007. The company's "Will You Join Us" and 2008 "I Will" campaigns that were posted online and in District of Columbia Metro stations and buses, "portrayed minor changes in consumer choices (e.g., changing light bulbs) as sufficient to address environmental problems such as climate change."⁶⁶ Another example of this is an advertisement of a woman pledging, "I will leave the car at home more" (Figure 8). Not only did this advertisement campaign fall flat for its arguably 'drop in the bucket' commitments that will do little to combat the massive emissions being contributed by Chevron's business practices, but it also was met with major criticism and instigated a counter campaign from a grassroots activist group called InHumane Energy (Figures 9 & 10).

⁶⁴ Lyes, *City of Annapolis v. BP et.al.*; Complaint.

⁶⁵ Lyes, p.122-124

⁶⁶ Lyes.

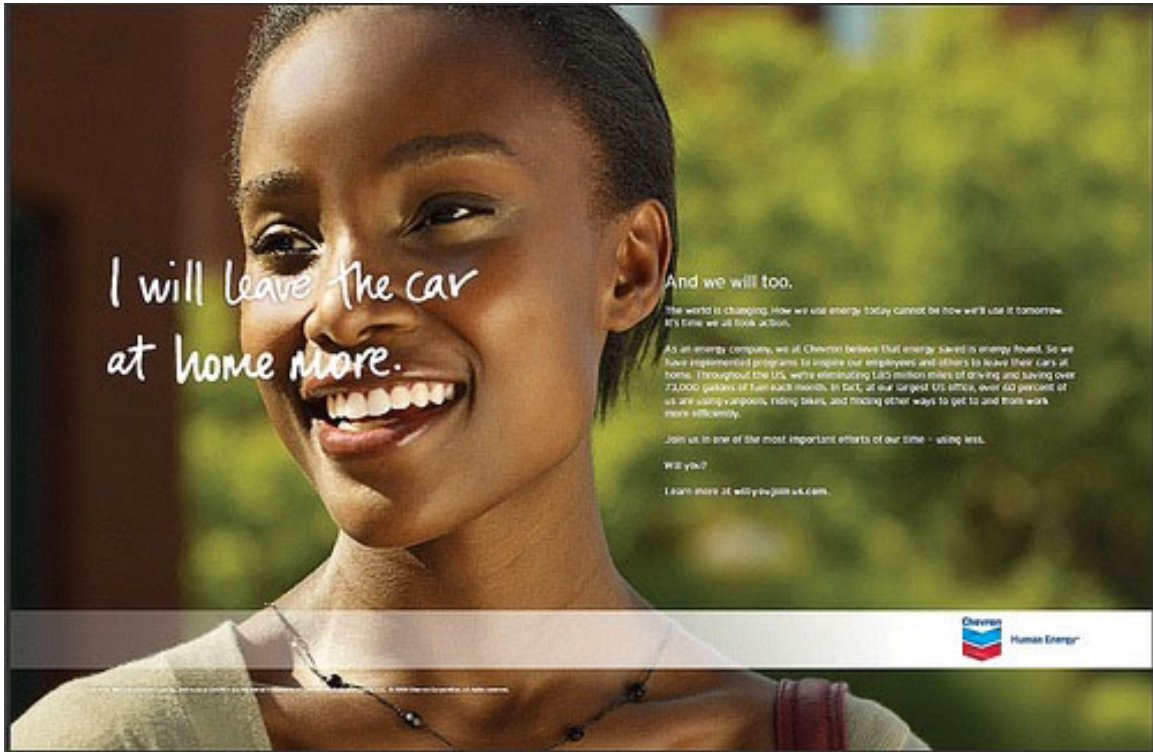


Figure 8- Chevron's "Will You Join Us" campaign⁶⁷

⁶⁷ "Chevron | Mark Robert Wills."



Figure 9- Chevron Counter Campaign⁶⁸

⁶⁸ "Chevron's Greenwashing Ad Campaign."

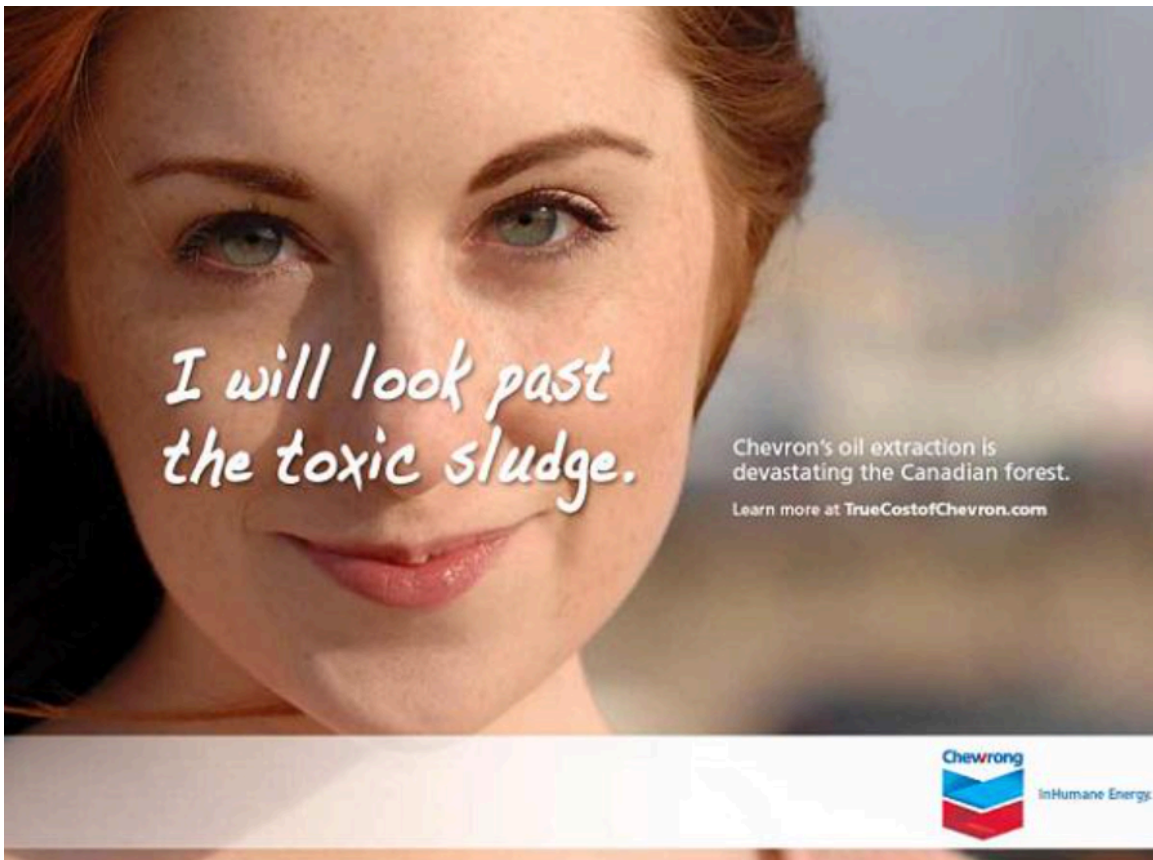


Figure 10- Chevron Counter Campaign⁶⁹

These counter campaigns highlight the contrast between the pledges Chevron is making to become a more sustainable entity and the impact they have had and continue to have on the environment. These ads call out Chevron's impact on communities and the health effects of the company's practices as well as its causing widespread environmental degradation.

Furthermore, Chevron's "We Agree" campaign launched in 2010 features (in one iteration) a young girl standing next to the statement "It's time oil companies get behind

⁶⁹ "Chevron's Greenwashing Ad Campaign."

the development of renewable energy. We agree.”⁷⁰ In this campaign, Chevron portrayed itself as a leader in renewable energy development when in reality, “only 0.2% of Chevron’s capital spending from 2010 to 2018 was in low-carbon energy sources.”⁷¹ In 2019, Chevron ran an advertisement on Facebook targeted towards Maryland consumers that highlighted the company’s exploration into renewable energy sources and about how the company is “innovating its operations in the Permian basin.”⁷² Again, both campaigns ‘greenwash’ Chevron as an entity into seeming like it is a national, if not global, leader in addressing the climate crisis. In reality, they remain committed to continued fossil fuel exploration, extraction, and combustion.

As a whole, these campaign examples are par for the course when it comes to the fossil fuel industry’s recent advertorial habits. For example, contrary to what is suggested by their advertisements,

Exxon is projected to increase oil production by more than 35% between 2018 and 2030—a sharper rise than over the previous 12 years. Shell is forecast to increase output by 38% by 2030, by increasing its crude oil production by more than half and its gas production by over a quarter. BP is projected to increase production of oil and gas by 20% by 2030.⁷³

These plans do not reflect each company’s alleged commitment to the environment and green energy. The misalignment between the corporations’ claims and funding efforts is also illustrated in Figure 11. These court cases are highlighting how the chronic greenwashing occurring on behalf of these companies is compromising the honesty and

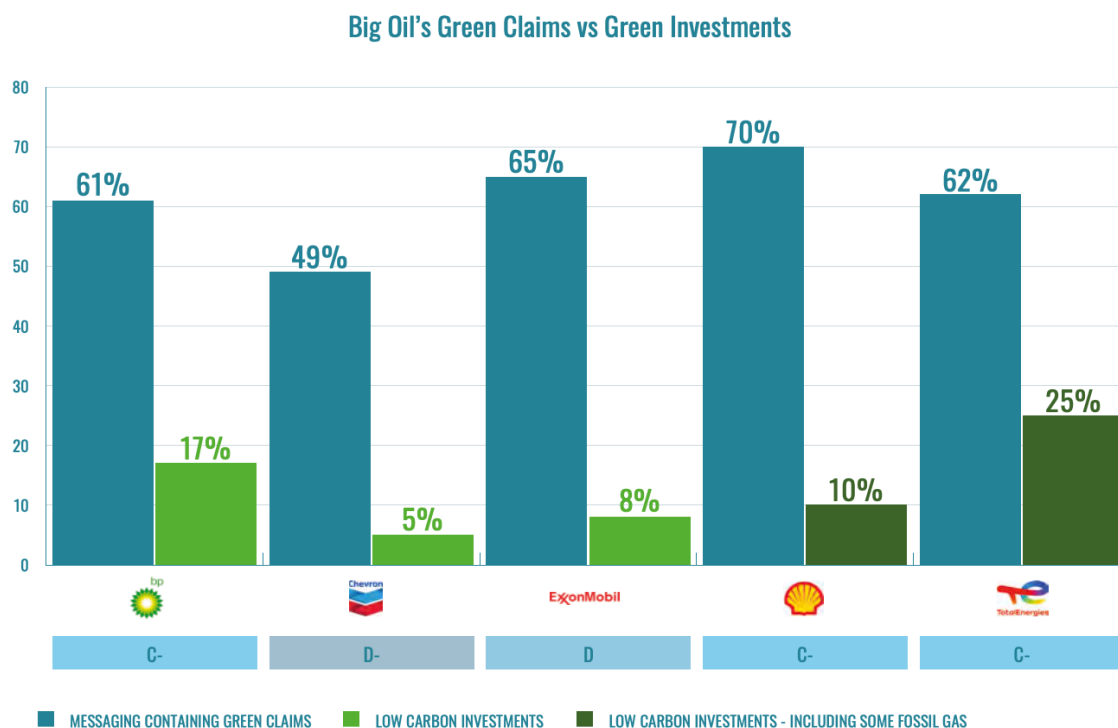
⁷⁰ Lyes, *City of Annapolis v. BP et.al.*; Complaint.

⁷¹ Lyes.

⁷² Lyes, p.125-127

⁷³ Lyes, p.113

transparency of their business practices. Furthermore, it is misleading the public. By exaggerating their commitment to the environment, these greenwashing campaigns are encouraging consumers to give these companies their business. The cases argue that these practices violate consumer protection laws by deceiving the public.



Graph comparing the percentage of Big Oil's 2021 public communications containing positive messages about the company on climate change vs the percentage of projected 'Low Carbon' investments in 2022 CAPEX per company. Each company's LobbyMap Grade is also included, assessing lobbying alignment with the Paris Agreement.

Figure 11⁷⁴

Campaign Financing

It has been established that companies like ExxonMobil not only knew about the correlation between fossil fuel combustion and climate change in the 1970s, but that they

⁷⁴ InfluenceMap, "Big Oil's Real Agenda on Climate Change 2022."

also worked to encourage uncertainty surrounding climate science. These efforts continue through their active greenwashing campaigns. All of this is playing out on a public platform. In addition to these efforts, it is valuable to consider the private actions of the fossil fuel industry that influence environmental policy, such as campaign financing.

ExxonMobil

The figures below demonstrate some interesting trends in ExxonMobil's campaign financing efforts. For example, in the 2022 financial cycle, ExxonMobil's top campaign financing recipient was the Democratic Congressional Campaign Committee. This data is intriguing because it suggests that regardless of political affiliation, ExxonMobil offers financial support to whichever party holds the most power at that point in time. This is a calculated policy move because the company offers contributions to the party that can most successfully influence policy. However, it should be noted that 100% of this financing came from individuals within ExxonMobil, and none directly from the corporation itself. The top contribution from ExxonMobil as an organization went towards the National Republican Senatorial Committee (Figure 12).

There is also an interesting Congressional split when it comes to campaign financing. In the House of Representatives, as of 2022, more contributions were given to Democrats by ExxonMobil on average over Republicans. It should be noted that 2022 is the first year that this holds to be true; every year prior between 1990-2022 demonstrated higher average contributions to Republicans in the House. Staying consistent with this trend, contributions from ExxonMobil have been decidedly higher to Republican Senators than Democratic Senators (Figure 13).

Top Recipients

Cycle: 2022

NOTE: Organizations themselves cannot contribute to candidates and party committees. Figures on this page include contributions and spending by affiliates.

Recipient	Total	From Individuals	From Organization	Type
Democratic Congressional Campaign Cmte	\$190,822	\$190,822	\$0	Political Party
National Republican Senatorial Cmte	\$87,301	\$72,301	\$15,000	Political Party
National Republican Congressional Cmte	\$57,865	\$42,865	\$15,000	Political Party
Democratic Senatorial Campaign Cmte	\$40,026	\$10,026	\$30,000	Political Party
Murkowski, Lisa	\$16,770	\$8,020	\$8,750	Candidate (R-AKS2)
Majority Cmte PAC	\$15,000	\$5,000	\$10,000	LeadPAC
Hunt, Wesley	\$14,300	\$9,300	\$5,000	Candidate (R-TX38)
Malinowski, Tom	\$13,125	\$13,125	\$0	Candidate (D-NJ07)
DNC Services Corp	\$12,945	\$12,945	\$0	Political Party
Cuellar, Henry	\$12,500	\$0	\$12,500	Candidate (D-TX28)

■ Liberal/Democrat
 ■ Conservative/Republican
 ■ No View

[View All Recipients](#)

Figure 12⁷⁵

⁷⁵ “Oil & Gas | OpenSecrets.”

Average Contributions to Members of Congress, 1990-2022



These charts include contributions to members' presidential committees. [View more on Money to Congress.](#)

Figure 13⁷⁶

⁷⁶ “Oil & Gas | OpenSecrets.”

Chevron

Contrasting the recent contribution habits of ExxonMobil, Chevron has been consistent in giving more to Republican entities than Democratic institutions. However, as can be observed in Figure 5, there is a similar Congressional split with Chevron contributions. In the 2022 financial cycle, the average contributions to members of the House of Representatives was nearly equal. In contrast once again, contributions in the Senate have been markedly higher to Republican Senators than to Democratic Senators (with the exception of a Democratic contribution spike in 2008, likely due to the election).

Average Contributions to Members of Congress, 1990-2022



These charts include contributions to members' presidential committees. [View more on Money to Congress.](#)

Figure 14⁷⁷

⁷⁷ “Oil & Gas | OpenSecrets.”

Top Recipients

Cycle: 2022

NOTE: Organizations themselves cannot contribute to candidates and party committees. Figures on this page include contributions and spending by [affiliates](#).

Recipient	Total	From Individuals	From Organization	Type
Senate Leadership Fund	\$3,250,000	\$0	\$3,250,000	Outside Group
Congressional Leadership Fund	\$3,000,200	\$200	\$3,000,000	Outside Group
National Republican Senatorial Cmte	\$112,662	\$112,662	\$0	Political Party
Governing Majority Fund	\$50,000	\$0	\$50,000	Outside Group
Grassley, Chuck	\$25,114	\$5,614	\$19,500	Candidate (R-IA1)
Value in Electing Women PAC	\$25,000	\$0	\$25,000	Carey
Murkowski, Lisa	\$22,856	\$12,856	\$10,000	Candidate (R-AK2)
DNC Services Corp	\$17,085	\$17,085	\$0	Political Party
National Republican Congressional Cmte	\$16,384	\$16,384	\$0	Political Party
McCarthy, Kevin	\$15,800	\$5,800	\$10,000	Candidate (R-CA23)

■ Liberal/Democrat
 ■ Conservative/Republican
 ■ No View

[View All Recipients](#)

Figure 15⁷⁸

The consistency of Chevron’s Republican support tells an interesting story about the partisan nature of the fossil fuel industry. It is possible that Chevron would prioritize Republican entities in their campaign financing because historically speaking, Republican candidates are more likely to support initiatives that are beneficial to the fossil fuel industry. These funding efforts may speak to the relative success of some environmental policies, and perhaps the continued ability of the fossil fuel industry to put forth

⁷⁸ “Oil & Gas | OpenSecrets.”

deceptive marketing campaigns without repercussions. Whatever the case, these fossil fuel giants carry major influencing capabilities as expressed through their advertisement campaigns and financial support of political institutions.

CHAPTER THREE

Current Efforts and Their Impacts on the Consumer

Climate Delay

In author John Green's *The Anthropocene Reviewed*, a collection of essays that review and analyze aspects of the human experience, it is noted that "broad systems and historical forces drive shifts in human understanding."⁷⁹ Whether it is religious authorities, the social elite, the government, or perhaps more contemporarily, large corporations, societies tend to look to the current societal giants for guidance. It can be argued that oil corporations represent a broad system that is dictating human understanding about the climate crisis. However, perhaps it is prudent to recognize the ramifications of the advertising efforts of these fossil fuel companies beyond science denial. Today, these companies "have pivoted to messages that acknowledge the problem but downplay its severity and the urgency for solutions. Instead, companies are overstating the industry's progress toward addressing climate change."⁸⁰ A group of climate and social science experts recently addressed this phenomenon in the Open Access journal, *Global Sustainability*, in an analysis they refer to as "climate delay." This practice enables the fossil fuel industry to remain prosperous while posturing themselves as entities concerned about the climate crisis and in effect, appealing to those who are equally concerned.

⁷⁹ Green, *The Anthropocene Reviewed*. p.24

⁸⁰ Westervelt, "Big Oil's 'Wokewashing' Is the New Climate Science Denialism."

As is shown in the figure below, the analysis breaks climate delay discourse into four subgroups: 1) redirect responsibility; 2) push non-transformative solutions; 3) emphasize the downsides; and 4) surrender. Each tactic represents the industry's more nuanced approach to driving shifts in social understandings about the climate crisis. Rather than emphasizing uncertainty in the science, their advertisements and actions take a multi-faceted sociological approach to influencing the masses. Each strategy delays any real action on climate policy taking place in its own way.

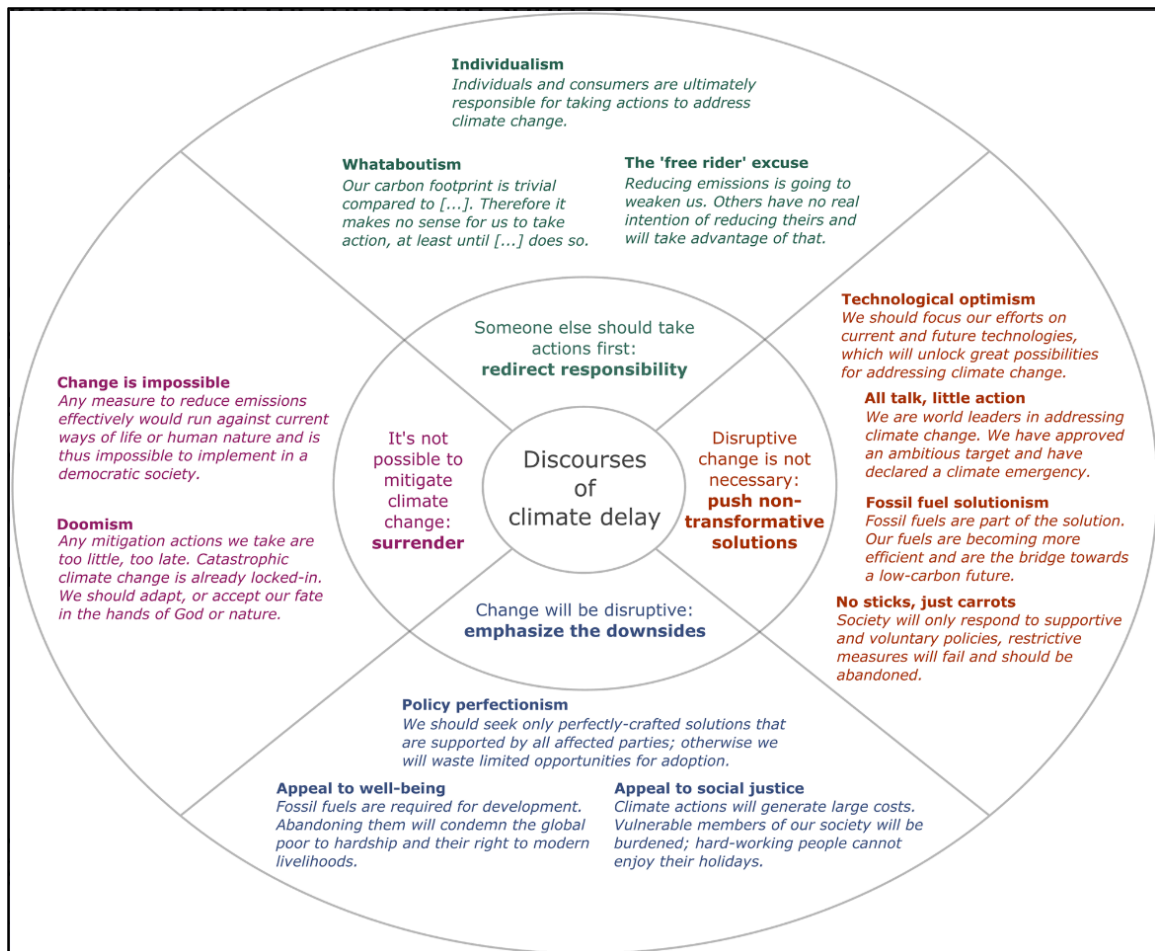


Figure 16: Typology of Climate Delay⁸¹

⁸¹ Lamb et al., "Discourses of Climate Delay."

Examples of these modes of climate delay can be found in the previous examples of advertisements from fossil fuel industries. Recall the following image from Chevron's "Will You Join Us" campaign:

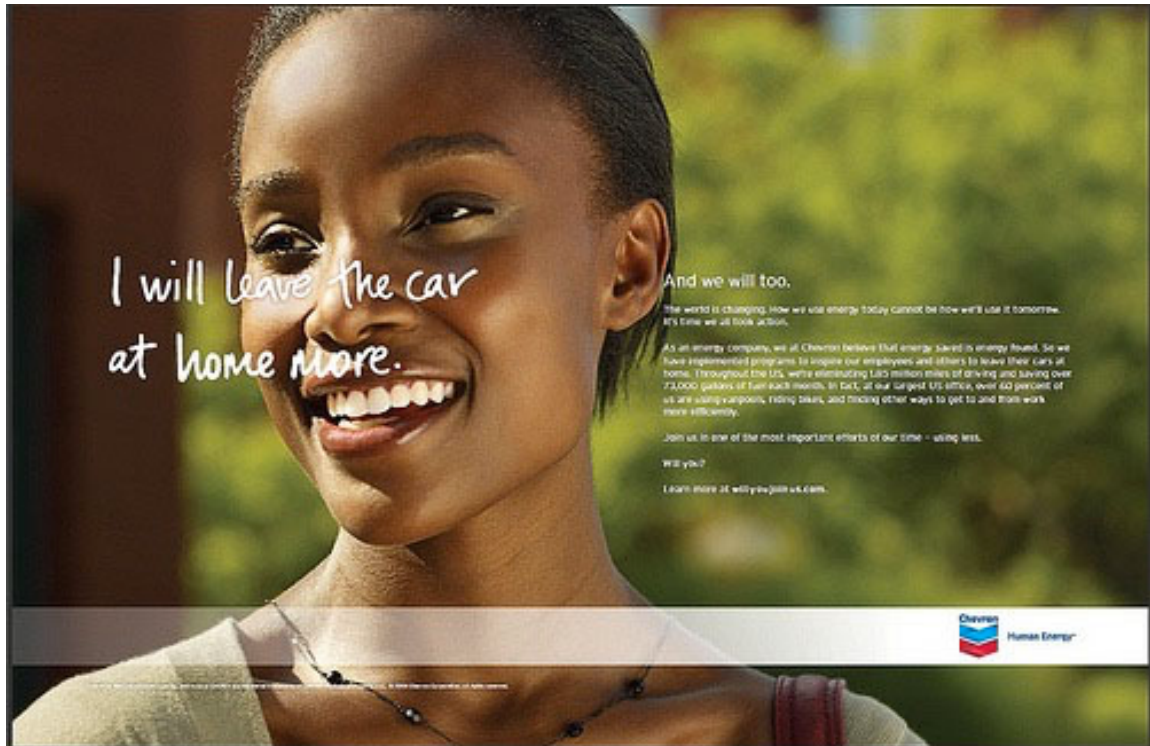


Figure 17: Chevron's "Will You Join Us" campaign⁸²

This advertisement is a perfect example of climate delay method number one, redirect responsibility. In this campaign, Chevron is taking the “individualism” stance and suggesting that ultimately, responsibility lies on the consumer to make changes in their own lifestyle to tackle the climate crisis. This campaign encourages consumers to carpool, elect to walk or ride a bike to work, or switch out their lightbulbs for more efficient options. Instead of acknowledging their company’s sale of fossil fuel and how

⁸² “Chevron | Mark Robert Wills.”

their combustion is directly related to global climate change, Chevron's "Will You Join Us" campaign portrays their company as climate-conscious but shirks responsibility and redirects it to the consumers.

In the realm of climate delay method number two, pushing non-transformative solutions, ExxonMobil's webpage, "Advancing climate solutions" offers countless examples of "technological optimism," "all talk little action," and "fossil fuel solutionism."⁸³ To offer a few examples, ExxonMobil's discussion of hydrogen fuels and carbon capture are definitively emblematic of the climate delay tactic of pushing non-transformative solutions.

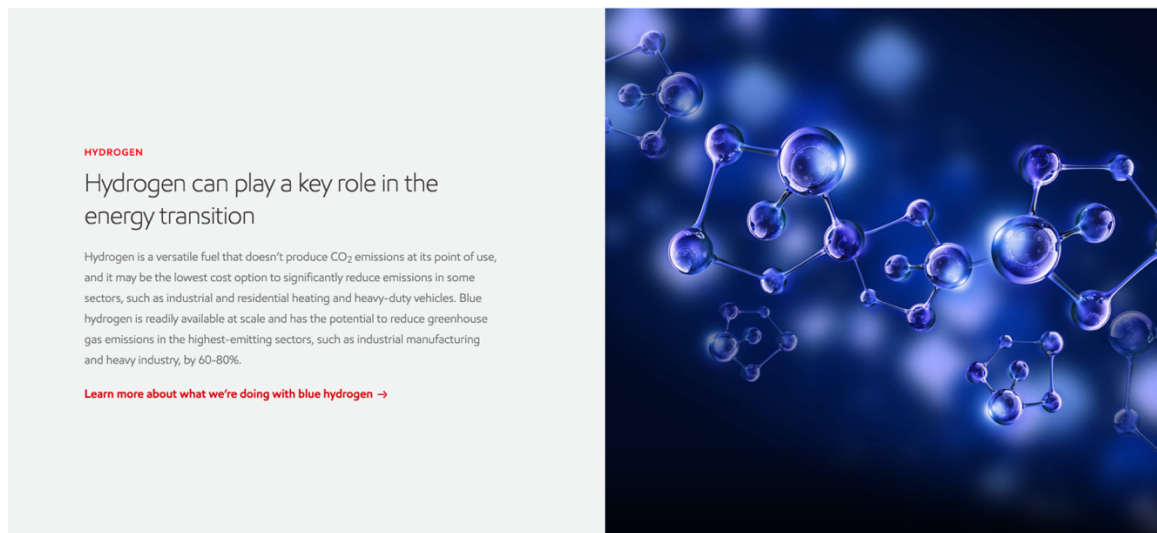


Figure 18: ExxonMobil's "Advancing climate solutions"⁸⁴

⁸³ Lamb et al., "Discourses of Climate Delay."

⁸⁴ "Advancing Climate Solutions."

This advertisement is an example of both fossil fuel solutionism as well as technological optimism because it portrays blue hydrogen as a fuel of the future that will be crucial in facilitating an energy transition. Its description reads,

Hydrogen is a versatile fuel that doesn't produce CO₂ emissions at its points of use, and it may be the lowest cost option to significantly reduce emissions in some sectors, such as industrial and residential heating and heavy-duty vehicles. Blue hydrogen is readily available at scale and has the potential to reduce greenhouse gas emissions in the highest-emitting sectors, such as industrial manufacturing and heavy industry, by 60-80%.⁸⁵

From this short description, consumers are likely influenced to believe that blue hydrogen fuel is a fantastic, sustainable fuel alternative. ExxonMobil prides themselves on being a global leader in blue hydrogen fuel research, and as environmentally conscious because the application of blue hydrogen fuel has the capability to “reduce greenhouse gas emissions in high-emitting sectors...by 60-80%.”

Meanwhile, “Cornell and Stanford University researchers believe [blue hydrogen] may harm the climate more than burning fossil fuel.”⁸⁶ While the process to make blue hydrogen does sequester and store any byproduct carbon dioxide, it uses methane from natural gas, which is “100 times stronger as an atmospheric warming agent than carbon dioxide when first emitted.”⁸⁷ Furthermore, carbon capturing as a concept is only sustainable as long as its storage is ensured to be indefinite, and as long as it is never re-emitted into the atmosphere.⁸⁸ Therefore, it would be quite a stretch to suggest that blue hydrogen fuel is really emission free, and it can be argued that perhaps ExxonMobil is

⁸⁵ “Advancing Climate Solutions.”

⁸⁶ “Touted as Clean, ‘Blue’ Hydrogen May Be Worse than Gas or Coal.”

⁸⁷ Ibid.

⁸⁸ Ibid.

being far too technologically optimistic in its praise of blue hydrogen as the fuel of the future. As a result of their advertisement of this fuel, ExxonMobil appears to be a company that is investing in the fuel of the future, but once again is not taking direct responsibility, nor are they relying on truly transformative solutions.

The following graphics from ExxonMobil's "Advancing climate solutions" website further demonstrate the climate delay tactic of pushing non-transformative solutions.

What is ExxonMobil's climate strategy and role in helping advance the energy transition?

ExxonMobil is positioned to make a difference by:

- Reducing emissions in its operations through avoidance and improving energy efficiencies
- Providing products to help customers reduce their emissions
- Developing and deploying scalable technologies to help decarbonize highest-emitting sectors
- Proactively engaging on climate-related policy



What emission-cutting technologies is ExxonMobil developing?

With a long history of scientific innovation combined with operational expertise, ExxonMobil is focused on decarbonizing a number of energy-intensive sectors including manufacturing, transportation and power generation. Carbon capture and storage is an essential part of the portfolio alongside continued research and advancements in biofuels and hydrogen.



Figure 19 ⁸⁹

These graphics emphasize how the company aims to be a leader in emission-cutting technologies and climate strategies but are not acknowledging their role in climate change as a fossil fuel company. It should be noted that as a company in the fossil fuel

⁸⁹ "Advancing Climate Solutions."

industry, ExxonMobil and its competitors will never be capable of accurately claiming that their practices are sustainable. The purpose of this thesis is not to suggest that they should. Rather, it is to identify ways that these companies may be inaccurately depicting their practices for the sake of appealing to the environmentally conscious.

It can be argued that the first two climate delay tactics of redirecting responsibility and pushing non-transformative solutions are more prominent in contemporary advertising methods. The next method, emphasizing the downsides, is more reflective of fossil fuel industry advertising techniques of the past. For example, ExxonMobil's *New York Times* advertorials (Figures 1-4) are reflective of the "appeal to well-being" aspects of climate delay. With titles like, "Apocalypse no," "Lies they tell our children," and "Unsettled science," these advertorials worked to delay climate action by suggesting that taking action on climate change would be imprudent. These advertorials argue that making policy decisions in light of unsettled science could "drastically affect the economy," and that the continued conversations surrounding climate policy are compromising the ability of children to enjoy the prospect of their futures.⁹⁰ The aim of these marketing practices were to sow concern over environmentally-focused policies, and were therefore early examples of the climate delay movement that has since become more widespread.

Greenwashing's Impact on Consumers

All that said, the deceptive or misleading marketing techniques on behalf of fossil fuel industries would be a moot point if they were not actually influencing consumer

⁹⁰ Supran and Oreskes, "The Forgotten Oil Ads That Told Us Climate Change Was Nothing."

practices. In a recent study conducted by a global consulting firm based out of Australia, The Behavioural Insight Team, participants were put in a variety of situations to gauge their vulnerability to greenwashing practices. In the study, participants were first shown advertisements from fake energy companies that were using classic greenwashing tactics. For example, one advertisement shows a powerful businesswoman walking out of a large office building that says, “Our offices are green.” Another advertisement offers up a carbon footprint calculator and shows a woman with three lightbulbs questioning: “How can you save energy?” The final advertisement is a non-greenwashed example that advertises the company’s creation of thousands of jobs.⁹¹



Figure 20 ⁹²

⁹¹ The Behavioural Insights Team, “Bi-Annual Review 2022 / Sustainability.”

⁹² The Behavioural Insights Team.

The first two ads are examples of greenwashing because while they provide green imagery, the first ad shares nothing about the company's fossil fuel production practices, and the second ad is a mere deflection against sharing information about the company's practices. According to the findings of this study, "the imagery alone was enough to increase perceptions of green credentials" when displayed to consumers.⁹³ One of the most alarming findings of the study was that greenwashing "works especially well on those who say they are concerned about the environment."⁹⁴ This means that consumers who are conscious of their impact on the environment and who hope to make greener choices with their buying practices are more likely to buy products that suggest they are green, regardless of the validity of this claim and therefore may be making environmentally harmful purchases.

However, this study also gave select participants a literacy intervention as well as a "pre-bunking" intervention. The literacy intervention offered participants information about greenwashing and how to identify it, and the pre-bunking intervention asked participants to imagine "they were an energy company and were asked to plan a marketing campaign with a greenwashing goal." Participants who were given this education were "more s[k]eptical about greenwashing companies...[and] rated the green credentials of the fictional companies significantly lower compared to the control group."⁹⁵ What this suggests is that education about greenwashing strategies and how to

⁹³ The Behavioural Insights Team.

⁹⁴ Sengupta, "How Greenwashing Fools Us."

⁹⁵ The Behavioural Insights Team, "Bi-Annual Review 2022 / Sustainability."

recognize them is one of the most valuable defenses against the negative impacts of greenwashed advertisements.

Policy-Based Recourse Against Greenwashing

Currently, according to researcher of Environmental Politics Matto Mildenberger in his book *Carbon Captured: How Business and Labor Control Climate Politics*, climate policy inaction in the United States can be ascribed to “double representation,” or the idea that “carbon polluters [are given] exceptional access to the policymaking process.”⁹⁶ Due to stakeholder involvement in policy development, conflicting interests are seemingly chronically entrenched in climate action. With that said, stakeholders with conflicting interests are involved in political institutions all over the world; so why is it that the United States remains unsuccessful in addressing environmental concerns while other nations have implemented thriving environmental policies?

Perhaps one deficit in our own nation in addressing greenwashing practices is the lack of enforcement the nation has against the advertisements. Governments elsewhere are beginning to implement policies that protect consumers against greenwashing. For example, France requires companies with “carbon neutral” claims to “provide verifiable information to back it up, starting in January 2023.” Additionally, a British government agency is actively investigating “three fashion brands to scrutinize their green claims.”⁹⁷

In the United States, one of the only entities that has the power to implement punishments or sanctions for greenwashing practices is the Federal Trade Commission

⁹⁶ Mildenberger, *Carbon Captured*.

⁹⁷ Sengupta, “How Greenwashing Fools Us.”

(FTC). Under Section Five of the Federal Trade Commission Act, which regulates unfair or deceptive acts or practices, the deceptive marketing of fossil fuels can be regulated. Specifically, this regulation can occur via an anti-greenwashing regulatory mechanism known as the Green Guides which were created in the 1990s through a collaboration between the FTC and the EPA.⁹⁸ Broadly speaking, section five of the Federal Trade Commission Act regulates acts or practices as unfair where they 1) cause or are likely to cause substantial injury to consumers; 2) cannot be reasonably avoided by consumers; and 3) are not outweighed by countervailing benefits to consumers or to competition.

More specifically, the act regulates acts or practices as deception where:

- 1) A representation, omission, or practice misleads or is likely to mislead the consumer.
- 2) A consumer's interpretation of the representation, omission, or practice is considered reasonable under the circumstances.
- 3) The misleading representation, omission, or practice is material.⁹⁹

Further, according to the FTC Green Guides, or the Guides for the Use of Environmental Marketing Claims, section XI specifically advises marketing against "making unqualified renewable energy claims based on energy derived from fossil fuels."¹⁰⁰

With that said, the only fossil fuel-related case to be successfully fought under the statutes of the Green Guides is *FTC v. Volkswagen Group of America, Inc.* for their emissions scandal. In response to the EPA's regulation of Nitrogen oxides (NOx), Volkswagen began to install "defeat devices" in their vehicles, which would alter the

⁹⁸ Lorange, "An Assessment of U.S. Responses to Greenwashing and Proposals to Improve Enforcement."

⁹⁹ "Federal Trade Commission Act- Section 5: Unfair or Deceptive Acts or Practices."

¹⁰⁰ "Federal Trade Commission- Guides for the Use of Environmental Marketing Claims."

registerable levels of NOx being emitted from the cars. Volkswagen USA then proceeded to sell more than half a million defeat device vehicles through one thousand various dealerships. All the while, the company was promoting these vehicles as “Clean Diesel.”¹⁰¹ In what is arguably a prime example of the climate delay marketing practice of pushing non-transformative technological solutions, such promotion offered genuine justification for many consumers to purchase these vehicles. Therefore, the FTC was able to demonstrate that these marketing techniques are in direct violation of the Green Guides and section five of the Federal Trade Commission Act because these marketing practices caused measurable harm.¹⁰²

In a first-of-its-kind complaint, a coalition of NGOs including Greenpeace filed a complaint against Chevron with the FTC on March 16th, 2021 for a commercial that they claim was misleading consumers about Chevron’s commitments in curbing climate change. This complaint marked the very first petition for the FTC to use its Green Guides against the marketing practices of fossil fuel industries.¹⁰³ It has now been over two years since this complaint was filed, and there still has not been a formal decision, or even a formal statement, from the FTC on how they plan to approach this complaint or more broadly, the mounting problems associated with deceptive marketing on behalf of the fossil fuel industries.

¹⁰¹ Federal Trade Commission v. Volkswagen Group of America, Inc.; Complaint for Permanent Injunction and Other Equitable Relief.

¹⁰² Federal Trade Commission v. Volkswagen Group of America, Inc.; Complaint for Permanent Injunction and Other Equitable Relief.

¹⁰³ Hsu, “Ad Agencies Step Away From Oil and Gas in Echo of Cigarette Exodus.”

The key question this poses is whether the marketing practices of other fossil fuel industries and the aforementioned greenwashing practices are likewise enforceable under section five of the Federal Trade Commission Act and its Green Guides. Arguably, the marketing practices of major corporations like BP, Exxon, or Chevron encourage customers to purchase more fossil fuels. The purchase and subsequent use of these fossil fuels have a direct correlation to climate change, as has now been demonstrated definitively by science for decades. One can argue that these marketing practices do indeed lead to consumer practices that lead to material harm. While this harm may be atmospheric, and may become material in the future, the combustion of fossil fuels promises harm, nonetheless. This reality calls to attention some serious ethical considerations.

CHAPTER FOUR

Shifting Marketing Techniques and their Ethical Implications

A New Marketing Frontier

Historically speaking, Big Oil in the United States has been dominated by the “big five” oil companies: “ExxonMobil, ChevronTexaco, ConocoPhillips, BP, and Royal Dutch Shell.”¹⁰⁴ Each of these companies have engaged in extensive advertisement efforts throughout the years to both promote their products as well as to mitigate negative corporate image. For example, following the infamous BP Deepwater Horizon oil spill in 2010, the company spent “\$93.4 million on advertising over four months.”¹⁰⁵ This amount is more than three times the amount spent on advertising during the same period in 2009, and was spent with the dual intention of keeping “Gulf Coast residents informed of issues relating to the oil spill and recovery and to ensure transparency during the recovery process.”¹⁰⁶ It is perfectly understandable that BP would need to increase marketing spending during this time period in the interest of rebuilding public rapport. They are, after all, a business dependent on consumer spending. In the wake of widespread BP boycotts and worldwide protests in response to the spill, BP needed to increase spending to repair its image.¹⁰⁷

¹⁰⁴ Aaronson and Deese, “The Big Five International Oil Companies as Responsible Stakeholders in the Global Economy.”

¹⁰⁵ Allen, “BP Spent \$94M on Ads during Spill.”

¹⁰⁶ Allen.

¹⁰⁷ “Just How Angry Are People at BP?”

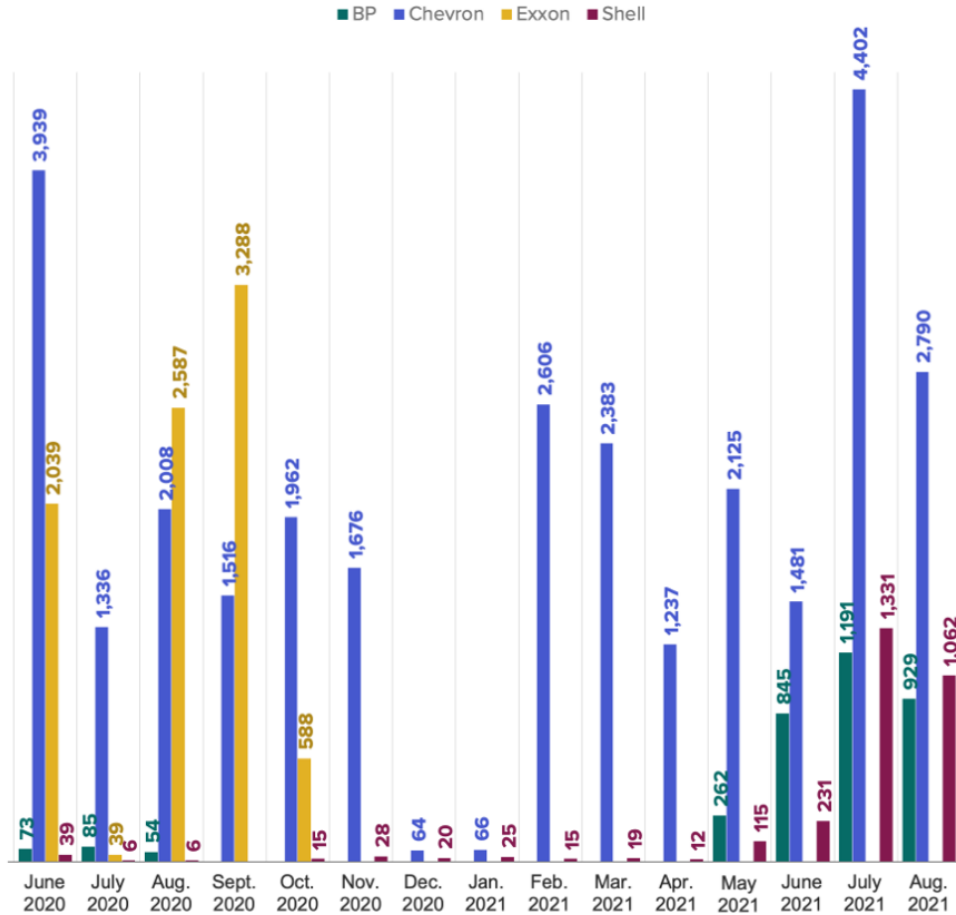
While these advertising efforts are significant in the reflection of fossil fuel marketing efforts broadly, it is the more subtle advertising efforts that are of primary concern to this analysis. Smaller scale, consistent imagery being offered to the general public from fossil fuel industries are arguably fostering undercurrents of climate delay and in some cases, denial. With that said, among the big five big oil companies, not all are operating the same. Some companies are far more aggressive in their marketing than others, and some are more at fault for greenwashing practices than others. One commonality that unites them all, however, is consistent efforts at delaying climate action.

According to data collected by AdImpact, a media tracking firm, and analyzed by Morning Consult, between June 1st, 2020, and August 31st, 2021, “Chevron, BP, Exxon and Shell aired television ads in the U.S. market a total of 44,495 times.”¹⁰⁸ Interestingly, Chevron reigned supreme in their volume of television advertisements. Every month of the year, with the exception of August and September of 2020, Chevron commercials out aired its competitors by a long shot.

¹⁰⁸ Jenkins, “Exclusive Analysis.”

The Year in Big Oil Television Advertising

Most months, Chevron leaves its fossil fuel competition in the dust when it comes to total number of television advertisements run in the United States



MORNING CONSULT

Certain companies aired no television ads at all in certain months.

Source: AdImpact

Figure 21: Morning Consult, 2021

Moreover, as can be seen in the figure below, of Chevron's 29,591 commercial airings in the time period, eighty percent of the advertisements have included sustainability-focused words such as "renewable, environment, clean," and more.¹⁰⁹ This leads to a consideration of Chevron's marketing practices, and their chronic greenwashing. At first glance, it looks as though Chevron, when compared to its competitors, is the chief offender when it comes to misleading marketing. Using sustainability-focused language and imagery most certainly gives rise to perceptions that associate the company as a whole with sustainable initiatives and environmental consciousness.

¹⁰⁹ Jenkins.

Among Major Oil Companies, Chevron Is the Overwhelming Leader in Sustainability-Focused Television Advertising

Per AdImpact, most of Chevron's ad buys in the past 15 months have included these words: sustainable, renewable, environment, clean, carbon, emissions, future, green, solar or wind

The vast majority of **BP's** U.S. advertising airtime (6 ads, 3,439 airings) from June 2020-August 2021 did not include this sustainability-minded language...

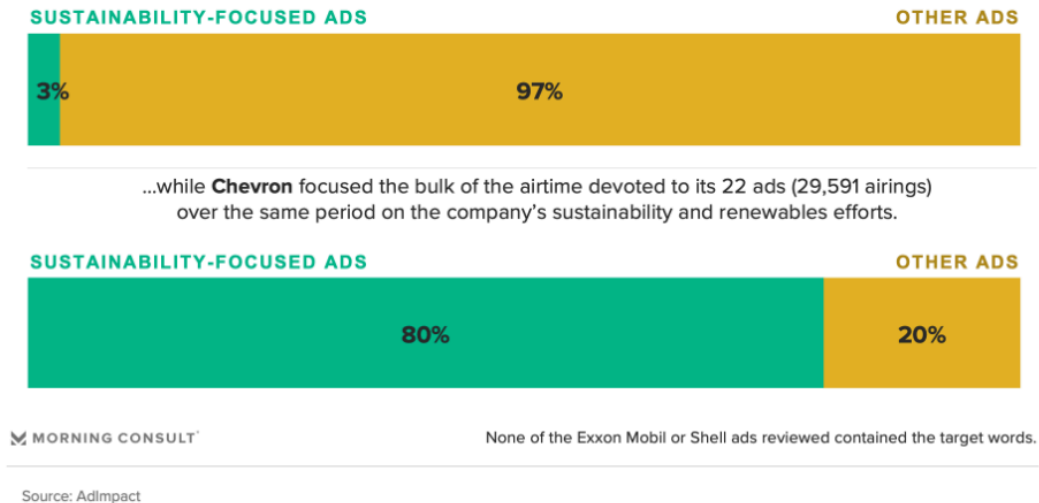


Figure 22: Morning Consult, 2021

Admittedly, these statistical realities and their suggestion that Chevron is the chief offender of greenwashing is surprising. After all, it is ExxonMobil that has been faced with the most consistent criticism through the decades regarding their deceptive and misleading marketing practices. However, the narrative changes dramatically when focused is shifted to marketing carried out on social media platforms. According to research collected by InfluenceMap, the oil and gas sector “spent \$9.6 million on 25,174 ads in the United States.” Collectively, these advertisements were “viewed at least 431 million times” in 2020.¹¹⁰ The transition from reliance on television commercials to

¹¹⁰ InfluenceMap, “Climate Change and Digital Advertising - The Oil & Gas Industry’s Digital Advertising Strategy.”

social media was a genius move on behalf of these industries. Not only does this mode reach a larger audience, but it also targets a younger demographic, as is demonstrated by the figure below.

Demographic Distribution

Looking at how these ads are distributed amongst the US population it is clear more males than females overall are being shown these ads. There were, however, notable differences amongst the categories of messaging. 'Climate Solutions' narratives were the only category of messaging shown to more females than males, while 'Pragmatic Energy Mix' narratives are shown more to older age groups.

Impressions by age and gender demographic

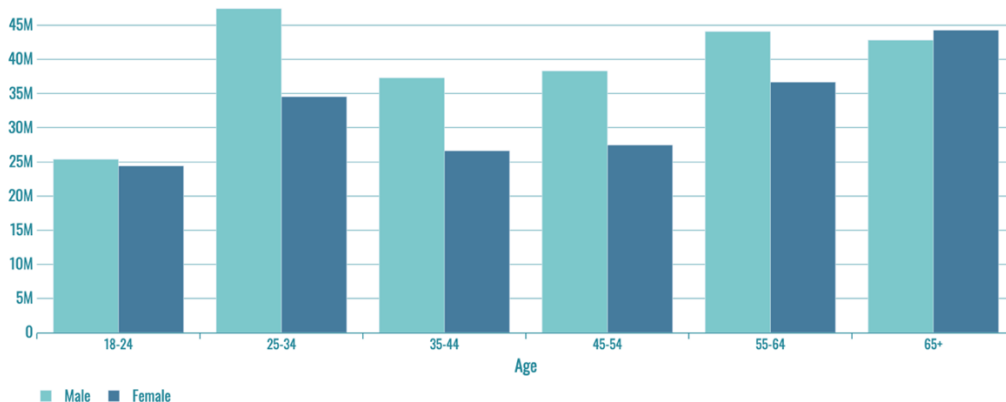


Figure 23: InfluenceMap

This demonstrates the fossil fuel industry's dedication to future growth.

Realistically speaking, the age groups that spend more time watching television than on social media are aging out of positions of power. Future policy decisions, investments, and economic vitality lies in the hands of younger generations. The gender difference in the reach of these social media advertisements is also intriguing. The largest reached demographic, with over forty-five million viewers, was males ages twenty-five to thirty-four. This is significant because while women have made considerable progress in addressing the gender gap in the workforce, as of 2023, women made up roughly 10% of

Fortune 500 CEOs.¹¹¹ Further, according to the Pew Research Center, women make up only about a quarter of the 118th Congress— “the highest percentage in US history.”¹¹² Accordingly, the largest demographic group reached by social media marketing on behalf of fossil fuel industries was those who statistically will be most likely to be in positions of power in the coming years.

While these Facebook ads were funded by a collection of many fossil fuel companies or entities including the American Petroleum Institute, BP, Chevron, and ConocoPhillips, ExxonMobil out funded all of these companies—by a long shot. Of the \$9.6 million spent on Facebook ads by the fossil fuel industries, \$5,040,642 of that sum came from ExxonMobil. That means that over 50% of funding by fossil fuel industry towards Facebook advertisements came from ExxonMobil.¹¹³ This tells an interesting story about the marketing efforts of ExxonMobil. As has been demonstrated throughout the contents of this thesis, the advertising efforts of ExxonMobil have consistently targeted the largest, most influential audiences. From the intellectual readership of *The New York Times* in the late 1990s, to the statistically socially powerful on social media platforms contemporarily, Exxon’s efforts have been ingeniously calculated to reach those who can perpetuate climate delay.

In reflecting on the Facebook advertisements funded by the oil and gas sector, ClimateVoice Founder and the former Director of Sustainability at Facebook Bill Weihl states,

¹¹¹ Hinchliffe, “Women Run More Than 10% of Fortune 500 Companies For the First Time.”

¹¹² Leppert and Desilver, “118th Congress Has a Record Number of Women.”

¹¹³ InfluenceMap, “Climate Change and Digital Advertising - The Oil & Gas Industry’s Digital Advertising Strategy.”

Despite Facebook's public support for climate action, it continues to allow its platform to be used to spread fossil fuel propaganda. Not only is Facebook inadequately enforcing its existing advertising policies, it's clear that these policies are not keeping pace with the critical need for urgent climate action. If Facebook is serious about its climate commitments, it needs to rethink whether it's willing to keep taking the money of fossil fuel companies.¹¹⁴

Fossil Fuel Marketing Practices: A Question of Ethics

Indeed, the marketing practices of the fossil fuel industry not only call into question the priorities of the platforms they are utilizing, but their practices raise ethical questions about their marketing as a whole. For example, Wehl's statement alone brings the following into question: Is greenwashing propaganda? If so, what does this imply about platforms that enable such misinformation to be spread? Do community guidelines expected of Facebook and social media users extend to corporate entities using the platforms for advertisement? Such questions are far too broad to tackle with brevity, but must be acknowledged, nonetheless.

Beyond deception and its associated ethical dilemmas, the advertisement strategies that the oil and gas sector employ give rise to their own ethical questions. It should be recognized that the oil and gas sector in the United States must understandably operate in a way that maximizes profit. Therefore, frequent advertisement is necessary in order to gain visibility and public participation in their companies. One way that companies in the oil and gas sector have chosen to achieve this is through outsourcing their advertisement efforts through hiring Public Relations (PR) firms. Research published in *Climatic Change*, an "Interdisciplinary, International Journal Devoted to the Description, Causes and Implications of Climatic Change," observed the role of PR

¹¹⁴ InfluenceMap.

firms in climate change politics.¹¹⁵ One major finding was that when determining how many observed companies across several sectors did *not* choose to employ a PR firm, the percentages “ranged from 0% for the Gas & Oil Sector to a high of 33% for Renewable Energy Sector.” In other words, out of the seventy-five companies in the oil and gas sector analyzed, one hundred percent employed a PR firm.¹¹⁶ As previously discussed, it is not the use of advertisements that is ethically questionable, but rather their content.

According to the Public Relations Society of America (PRSA), its members are guided by a code of ethics. Within this code are the core values of “advocacy, honesty, expertise, independence, loyalty, and fairness.”¹¹⁷ When put into practice, this code of ethics compels members to remain loyal to their employers while adhering “to the highest standards of accuracy and truth in advancing the interests of those [they] represent and in communicating with the public.”¹¹⁸ This begs the question: what happens when loyalty and honesty are at odds with one another? While these firms must appease their employers and remain loyal to their interests, these efforts could violate other aspects of the PRSA code of ethics in the process. It has been established that many of the statements, advertisements, advertorials, and websites from fossil fuel industries are misrepresentations of reality. From greenwashing to climate delay tactics, it can be argued that what these companies are conveying to the public is not necessarily honest, nor is it fully reflective of the expertise of scientists.

¹¹⁵ Brulle and Werthman, “The Role of Public Relations Firms in Climate Change Politics.”

¹¹⁶ Brulle and Werthman.

¹¹⁷ “PRSA Code of Ethics.”

¹¹⁸ Ibid.

In response to this apparent incongruity, in January of 2022, over four hundred and fifty scientists drafted a letter to PR and advertising agencies. The letter, which is inspired in part by research demonstrating that “public relations firms are clearly major organizational actors in climate politics,” hopes to compel PR and advertising firms to drop their affiliations with the fossil fuel sector.¹¹⁹ The letter accuses misinformation campaigns of being “one of the biggest barriers to the government action science shows is necessary” and encourages the agencies to instead prioritize “uplifting the true climate solutions that are already available and must be rapidly implemented at scale.”¹²⁰ The letter points to scientific evidence as justification for PR and advertising firms to cease campaigning for fossil fuels. However, it should be noted that scientists have been working to use research and scientific evidence to stop fossil fuel companies and their advertising practices for decades to no avail.

Perhaps taking an ethical appeal would be more successful. It has been established that there is a lack of regulatory power in place to enforce violations made on behalf of the oil and gas sector in advertisements. It has also been established that at the heart of advertising and its relative efficacy lies the response and opinions of the public. If the unethical behavior of these fossil fuel companies as well as their PR and advertising firms are exposed, perhaps the public would feel motivated to put pressure on these entities to follow their own code of ethics.

Beyond the PRSA, companies like ExxonMobil publicly announce their intended adherence to an ethics policy. In addition to complying “with all governmental laws,

¹¹⁹ Brulle and Werthman, “The Role of Public Relations Firms in Climate Change Politics.”

¹²⁰ “450+ Scientists’ Letter to Agencies.”

rules, and regulation applicable to its business,” ExxonMobil is committed to choosing “the course of highest integrity.”¹²¹ They go on to assert that “shades of dishonesty simply invite demoralizing and reprehensible judgments.” Lastly, ExxonMobil states, “It is the Corporation’s policy to make full, fair, accurate, timely and understandable disclosure...with the United States Securities Exchange Commission, and in other public communications.”¹²² Like the PRSA, ExxonMobil is explicit in its intention to pursue integrity and honesty in its public communications. Meanwhile, ExxonMobil’s campaigns have pursued climate delay through failing to fully represent the impacts of their practices and has a known history of pushing an “Exxon Position” that is in direct opposition to known scientific consensus. Once again, the contradiction between this code of ethics and the established misleading advertising and marketing from this company is stark to say the least.

Difficult as they may be to enforce or regulate, ethical concerns are not to be trifled with in the realm of business. Not only is unethical business behavior damaging to company morale, it can also influence consumer habits. Research from Western Governors University suggests that “43% of consumers have stopped buying from brands they find unethical and 71% say they carefully consider corporate values when making a purchase.”¹²³ If any Big Oil company is familiar with this reality, it is BP. Following their infamous Deepwater Horizon oil spill, they were subject to mass public criticism and protests. Perhaps what made the event so incendiary was the fact that “since 2000,

¹²¹ “Code of Ethics.”

¹²² Ibid.

¹²³ “Ethical Dilemmas.”

the company ha[d] spent \$200 million on a TV and ad campaign...to promote BP as environmentally protective.”¹²⁴ The 2010 oil spill was in direct contradiction to these claims. This left the company with a major blemish on their public image, and their unethical behavior cost them customer support. In fact, a Facebook campaign called “Boycott BP” urging followers to swear off BP products quickly gained 95,000 followers following the spill.¹²⁵ While it is difficult to quantify the extent of this impact given the often-privately-owned status of gas stations and the lack of data on buying practices, BP will likely continue to be referenced in the same breath as “oil spill” for quite some time.

Beyond consumer actions, unethical business practices can compromise the quality of its staff. Following the Deepwater Horizon spill, the branding consultant for BP expressed that one of her major concerns was in “dealing with regulators and attracting good talent to the company.”¹²⁶ This is reflective of research conducted by LRN, an ethics education company, in which 82% of surveyed Americans “said they would prefer to be paid less and work for a company with ethical business practices than receive higher pay at a company with questionable ethics.” Even when American workers do end up working at a company with questionable ethics, “one in three employed Americans have left a job for ethical reasons.”¹²⁷ Evidently, ethical issues in a company can not only significantly compromise its public image, but also its operational abilities as it can change the quality of workers it attracts.

¹²⁴ Neuman, “As BP Backlash Grows, So Do Calls For Boycott.”

¹²⁵ Neuman.

¹²⁶ Ibid.

¹²⁷ LRN, “LRN Ethics Study: Employee Engagement.”

Unenforceable as they may be, ethics matter. They are a guiding force behind consumer buying behaviors, employee motivations, and a company's general reputation. Publicly acknowledged ethical dilemmas can certainly initiate systemic change. From the civil rights movement, to the regulation of the tobacco industry's advertising practices, the American public has had past success in causing major change after recognizing unethical realities in the United States. Perhaps this is the avenue that will finally bring about change in the marketing practices of the fossil fuel industry. Questioning the industry's ethical behavior by pointing to its dishonesty in not offering a full and accurate depiction of their practices can at least raise social awareness. An informed and concerned society is a powerful force to reckon with.

CONCLUSION

Most individuals who have completed a high-school education in the United States can likely recall being exposed to the iconic political cartoon from 1904 that depicts the Standard Oil Octopus. The intimidating sea creature is shown wrapping its tentacles around emblems of American life such as the Capital building or the White House. The cartoon's original intent was to criticize the monopoly that was J.D. Rockefeller's Standard Oil Inc that necessitated President Taft's use of the Sherman Anti-Trust Act against the company in 1911.¹²⁸

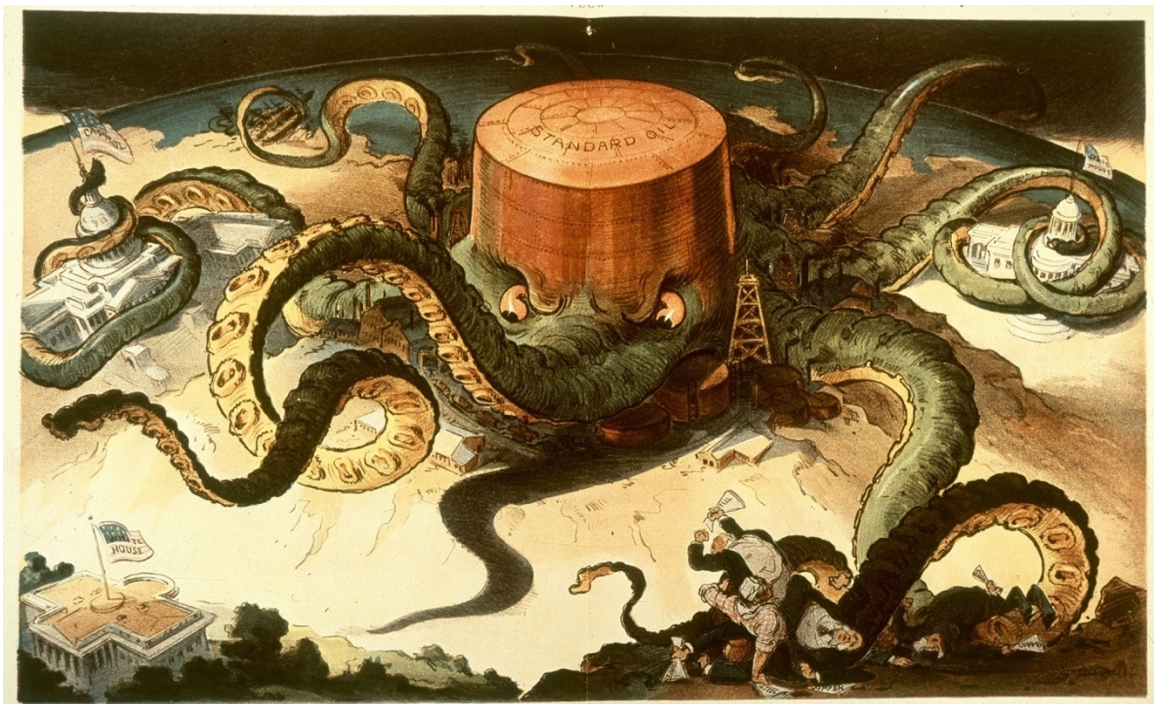


Figure 24: Library of Congress¹²⁹

¹²⁸ "Sherman Anti-Trust Act (1890)."

¹²⁹ "TR Center - Next!"

Viewing the cartoon from a contemporary lens speaks to the reality that since its genesis, the fossil fuel industry has wielded significant power over political institutions and the public alike. It can be argued that while the circumstances of the oil industry have changed radically since its first rise to prominence, its strong influence remains. Now, its power has been consolidated into the “Big Five” companies. Accordingly, the old Standard Oil Octopus can be re-imagined into the Big Five Octopus, with its tentacles remaining wrapped around the general public and the government.

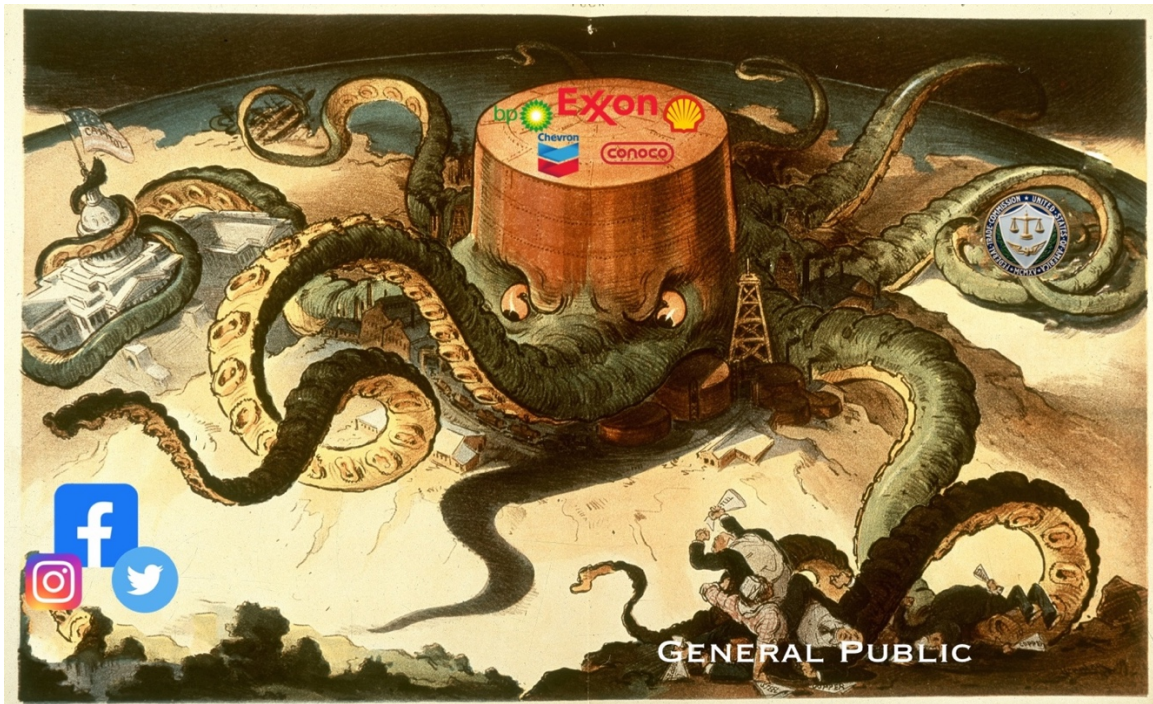


Figure 25: The Modern Standard Oil Octopus

However, two new entities can be added to the depiction: The Federal Trade Commission (FTC) and social media. As has been argued in this thesis, the marketing practices of the fossil fuel industry have been deceptive and therefore could be placed under the regulation of the FTC’s Green Guides or unfair and deceptive marketing policies. Curiously, despite their greenwashing and misleading practices, the FTC has

refrained from regulating the industry for decades. Further, the new Big Five Octopus can be seen reaching for social media because this is the newest target of the industry's influence. The marketing opportunities available over social media is an undeniably opportune frontier.

Rachel Carson's *Silent Spring* is not only a formative aspect of the environmental movement, but also offers applicable wisdom to the contents of this thesis. The second chapter of the book, "The Obligation to Endure," ends with the following passage:

[This] is also an era dominated by industry, in which the right to make a dollar at whatever cost is seldom challenged. When the public protests, confronted with some obvious evidence of damaging results...it is fed little tranquilizing pills of half-truth. We urgently need an end to these false assurances, to the sugar coating of unpalatable facts. It is the public that is being asked to assume the risks...The public must decide whether it wishes to continue on the present road, and it can do so only when in full possession of the facts. In the words of Jean Rostand, "The obligation to endure gives us the right to know."¹³⁰

Under the present reality in which the combustion of fossil fuels poses a risk to the health of the atmosphere and therefore the general public, the fossil fuel industries have responded in the exact way Rachel Carson predicted. Their advertisements and marketing strategies have proliferated sugar-coated half-truths and assurances that their practices do not warrant concern. Meanwhile, the public has been asked to assume the risks posed by the continued reliance on these industries.

Silent Spring is often mentioned in the same breath as Upton Sinclair's *The Jungle*. Both texts chronicle times when industry interests have reigned supreme and been allowed to operate with reckless abandon while sacrificing public health. These texts offer just two examples of an endemic problem; one that can arguably be seen

¹³⁰ Carson, *Silent Spring*.

actively playing out with the fossil fuel industry. However, as Rachel Carson argues, because it is the public that assumes such risk, it is also the public that bears the burden of advocacy. If there is anything this thesis demonstrates it is that governmental and legal avenues in addressing the implications posed by deceptive marketing from the fossil fuel industry are convoluted to say the least. Therefore, the general public is tasked with bringing about change through pressuring these industries. However, the public can do so only “when in full possession of the facts.” Accordingly, it deserves the right to education about deceptive marketing practices, methods to identify greenwashing, and climate change in general.

It should be emphasized that such education should not aim to abolish the fossil fuel industry. Rather, it should acknowledge the world’s dependence on fossil fuel products as well as the economic stimulation the industry provides. With this in mind, consumers can use their education to be mindful of their own consumptive practices. Additionally, education about the problems associated with misleading and greenwashed marketing should be extended to fossil fuel industries in order to encourage accountability. In essence, the summation of this thesis lies in the call for accountability.

At the National Environmental Justice Conference on March 7th, 2023, the current CEO of Shell Oil, Gretchen Watkins, noted, “when it comes to the energy transition, I can humbly say that Shell does not have all the answers.” This perspective is refreshing in that it simultaneously acknowledges both that the fossil fuel industry should share a role in the energy transition while highlighting it does not internally contain all the information about how to do so. The fossil fuel industry should be held accountable for

their role in greenhouse gas emissions, and one way to for the industry to hold itself accountable is through the use of their influence for progress.

The hope of this thesis is not necessarily to criticize the extent of the fossil fuel industry's influence, but rather its nature. If the industry's influence over government, society, and the economy is used to play an active, productive role in the energy transition while pursuing transparency and accountability, the state of the mounting issue that is climate change would be radically transformed. Idealistic as this shift may seem, there are already glimmers of hope that the influence of the fossil fuel industry can be used to make change. On March 6th, 2023, COP28 President and oil executive Sultan al-Jaber spoke to other oil executives during the CERAWeek 2023 energy conference in Houston, Texas. Jaber urged the executives to join the fight against climate change and noted that "energy leaders in this room have the knowledge, experience, expertise and the resources needed to address the dual challenge of driving sustainable progress while holding back emissions."¹³¹ Jaber went on to say that "the industry must take responsibility and lead the way...progress is made through partnership not polari[z]ation."¹³² This sort of dialogue marks an encouraging shift towards positive influence, if actually acted upon.

Environmental policy as a field is built on partnerships between the public, the government, and industry. For too long these partnerships have been diminished for the sake of industry interests. In the past few decades, the American public has slowly but surely become aware of the mounting crisis that is climate change. According to the Pew

¹³¹ Rodriguez, "Energy Industry Grapples with Climate Fight in Houston Summit."

¹³² Rodriguez.

Research Center, as of 2020, 65% of adults in the United States feel the federal government is doing too little to reduce the effects of climate change, and 79% of U.S. adults think the nation should prioritize developing alternative energy sources.¹³³ Instead of deemphasizing their role in climate change and delaying productive climate action, the fossil fuel industry should reflect on these statistical realities and act accordingly. As Sultan al-Jaber highlighted, the oil and gas industries have the power to enact real change if they choose to do so.

The voice of the public is sounding. It is time to start listening. It is time to rely on the valuable partnerships that founded environmental policy. Most of all, it is time that fossil fuel industry uses its vast influence for good.

¹³³ Nadeem, “Two-Thirds of Americans Think Government Should Do More on Climate.”

BIBLIOGRAPHY

- “50 Years of Progress.” Accessed August 22, 2022.
<https://www.aqmd.gov/home/research/publications/50-years-of-progress>.
- “1988 Exxon Memo on the Greenhouse Effect.” *Climate Files* (blog), August 3, 1988.
<https://www.climatefiles.com/exxonmobil/566/>.
- Aaronson, Susan Ariel, and David Deese. “The Big Five International Oil Companies as Responsible Stakeholders in the Global Economy.” *St Antony’s International Review* 5, no. 1 (2009): 27–54.
- Allen, Jonathan. “BP Spent \$94M on Ads during Spill.” POLITICO, September 1, 2010.
<https://www.politico.com/story/2010/09/bp-spent-94m-on-ads-during-spill-041670>.
- American Chemical Society. “Chlorofluorocarbons and Ozone Depletion.” Accessed October 7, 2022.
<https://www.acs.org/content/acs/en/education/whatischemistry/landmarks/cfcs-ozone.html>.
- “Annual Message to the Congress on the State of the Union. | The American Presidency Project.” Accessed October 8, 2022.
<https://www.presidency.ucsb.edu/documents/annual-message-the-congress-the-state-the-union-2>.
- Barbaro, Michael, Nina Feldman, Mooj Zadie, Michael Simon Johnson, Stella Tan, Marc Georges, Devon Taylor, Rowan Niemisto, Marion Lozano, and Chris Wood. “A Sweeping Plan to Protect Kids From Social Media.” *The New York Times*, March 27, 2023, sec. Podcasts. <https://www.nytimes.com/2023/03/27/podcasts/the-daily/social-media-instagram-tiktok-utah-ban.html>.
- BBC News*. “Donald Trump Would ‘cancel’ Paris Climate Deal.” May 27, 2016, sec. US Election 2016. <https://www.bbc.com/news/election-us-2016-36401174>.
- BBC News*. “Just How Angry Are People at BP?” June 4, 2010, sec. US & Canada. <https://www.bbc.com/news/10233882>.
- Brulle, Robert J., and Carter Werthman. “The Role of Public Relations Firms in Climate Change Politics.” *Climatic Change* 169, no. 1 (November 30, 2021): 8.
<https://doi.org/10.1007/s10584-021-03244-4>.
- Carson, Rachel. *Silent Spring*. 40th anniversary ed., 1st Mariner Books ed. Boston: Houghton Mifflin, 2002.

- “Chevron | Mark Robert Wills.” Accessed November 7, 2022.
<https://markrobertwills.com/chevron/>.
- Clean Creatives. “450+ Scientists’ Letter to Agencies: Drop Fossil Fuel Clients.”
 Accessed February 10, 2023. <https://cleancreatives.org/scientists>.
- Cornell Chronicle. “Touted as Clean, ‘Blue’ Hydrogen May Be Worse than Gas or Coal.”
 Accessed January 26, 2023. <https://news.cornell.edu/stories/2021/08/touted-clean-blue-hydrogen-may-be-worse-gas-or-coal>.
- Environment, U. N. “Green Climate Fund.” UNEP - UN Environment Programme,
 November 10, 2017. <http://www.unep.org/about-un-environment/funding-and-partnerships/green-climate-fund>.
- ExxonMobil. “Advancing Climate Solutions.” Accessed January 26, 2023.
<https://corporate.exxonmobil.com:443/climate-solutions/advancing-climate-solutions>.
- ExxonMobil. “Code of Ethics.” Accessed February 17, 2023.
<https://corporate.exxonmobil.com:443/about-us/who-we-are/corporate-governance/code-of-ethics>.
- ExxonMobil. “Environmental Protection.” Accessed November 7, 2022.
<https://corporate.exxonmobil.com:443/sustainability/environmental-protection>.
- February 19, and 2021 Melissa Denchak. “Paris Climate Agreement: Everything You
 Need to Know.” NRDC. Accessed October 7, 2022.
<https://www.nrdc.org/stories/paris-climate-agreement-everything-you-need-know>.
- “Federal Trade Commission Act- Section 5: Unfair or Deceptive Acts or Practices,” n.d.
- “Federal Trade Commission- Guides for the Use of Environmental Marketing Claims.”
 Federal Trade Commission, October 11, 2012.
- Federal Trade Commission v. Volkswagen Group of America, Inc.; Complaint for
 Permanent Injunction and Other Equitable Relief (n.d.).
- Green, John. *The Anthropocene Reviewed: Essays on a Human-Centered Planet*. New
 York, New York: Dutton, an imprint of Penguin Random House LLC, 2021.
- “Greenwashing Definition & Meaning - Merriam-Webster.” Accessed March 31, 2023.
<https://www.merriam-webster.com/dictionary/greenwashing>.
- “Hansen Senate Testimony, June 23, 1988.” Accessed September 30, 2022.
https://www.sealevel.info/1988_Hansen_Senate_Testimony.html.

- Hinchliffe, Emma. “Women Run More Than 10% of Fortune 500 Companies For the First Time.” SHRM, January 30, 2023. <https://www.shrm.org/executive/resources/articles/pages/women-run-ten-percent-fortune-500.aspx>.
- Hsu, Tiffany. “Ad Agencies Step Away From Oil and Gas in Echo of Cigarette Exodus.” *The New York Times*, March 25, 2021, sec. Business. <https://www.nytimes.com/2021/03/25/business/media/climate-ad-agencies-fossil-fuels.html>.
- InfluenceMap. “Big Oil’s Real Agenda on Climate Change 2022.” Accessed November 16, 2022. <https://influencemap.org/report/Big-Oil-s-Agenda-on-Climate-Change-2022-19585>.
- InfluenceMap. “Climate Change and Digital Advertising - The Oil & Gas Industry’s Digital Advertising Strategy.” Accessed February 3, 2023. <https://influencemap.org/report/Climate-Change-and-Digital-Advertising-a40c8116160668aa2d865da2f5abe91b>.
- Jenkins, Lisa Martine. “Exclusive Analysis: In U.S. TV Ads, Chevron Motors Past Its Big Oil Competition in Boasting of Sustainability Accolades.” *Morning Consult* (blog), October 7, 2021. <https://morningconsult.com/2021/10/07/oil-gas-companies-us-tv-advertising-analysis/>.
- Lamb, William F., Giulio Mattioli, Sebastian Levi, J. Timmons Roberts, Stuart Capstick, Felix Creutzig, Jan C. Minx, Finn Müller-Hansen, Trevor Culhane, and Julia K. Steinberger. “Discourses of Climate Delay.” *Global Sustainability* 3 (ed 2020): e17. <https://doi.org/10.1017/sus.2020.13>.
- Leppert, Rebecca, and Drew Desilver. “118th Congress Has a Record Number of Women.” *Pew Research Center* (blog). Accessed April 18, 2023. <https://www.pewresearch.org/fact-tank/2023/01/03/118th-congress-has-a-record-number-of-women/>.
- Lester, James P. “New Federalism and Environmental Policy.” *Publius* 16, no. 1 (1986): 149–65.
- “Liquefied Natural Gas 101,” January 4, 2022. <https://www.nrdc.org/stories/liquefied-natural-gas-101>.
- Lorance, Ashley. “An Assessment of U.S. Responses to Greenwashing and Proposals to Improve Enforcement,” n.d., 27.
- LRN. “LRN Ethics Study: Employee Engagement,” June 2006. https://assets.hcca-info.org/Portals/0/PDFs/Resources/library/EmployeeEngagement_LRN.pdf.

- Lyes, D. Michael. *City of Annapolis v. BP et.al.*; Complaint (Circuit Court for Anne Arundel County, Maryland February 2, 2021).
- Matador Network. “Chevron’s Greenwashing Ad Campaign.” Accessed November 7, 2022. <https://matadornetwork.com/change/chevrons-greenwashing-ad-campaign/>.
- Mildenberger, Matto. *Carbon Captured: How Business and Labor Control Climate Politics*. MIT Press, 2020.
- Nadeem, Reem. “Two-Thirds of Americans Think Government Should Do More on Climate.” *Pew Research Center Science & Society* (blog), June 23, 2020. <https://www.pewresearch.org/science/2020/06/23/two-thirds-of-americans-think-government-should-do-more-on-climate/>.
- National Archives. “Sherman Anti-Trust Act (1890),” September 9, 2021. <https://www.archives.gov/milestone-documents/sherman-anti-trust-act>.
- Neuman, Scott. “As BP Backlash Grows, So Do Calls For Boycott.” *NPR*, May 25, 2010. <https://www.npr.org/2010/05/25/127110643/as-bp-backlash-grows-so-do-calls-for-boycott>.
- “Oil & Gas | OpenSecrets.” Accessed August 22, 2022. <https://www.opensecrets.org/industries/indus.php?ind=E01>.
- “PRSA Code of Ethics.” Accessed February 17, 2023. <https://www.prsa.org/about/ethics/prsa-code-of-ethics>.
- Raphelson, Samantha. “Energy Companies Urge Trump To Remain In Paris Climate Agreement.” *NPR*, May 18, 2017, sec. Environment. <https://www.npr.org/2017/05/18/528998592/energy-companies-urge-trump-to-remain-in-paris-climate-agreement>.
- Rodriguez, Sebastian. “Energy Industry Grapples with Climate Fight in Houston Summit.” *Climate Home News*, March 7, 2023. <https://climatechangenews.com/2023/03/07/al-jaber-urges-big-oil-to-join-fight-against-climate-change-houston-we-have-a-problem-energy-industry-grapples-with-climate-fight/>.
- Sengupta, Somini. “How Greenwashing Fools Us.” *The New York Times*, August 23, 2022, sec. Climate. <https://www.nytimes.com/2022/08/23/climate/climate-greenwashing.html>.
- Shabecoff, Philip, and Special To the New York Times. “Global Warming Has Begun, Expert Tells Senate.” *The New York Times*, June 24, 1988, sec. U.S. <https://www.nytimes.com/1988/06/24/us/global-warming-has-begun-expert-tells-senate.html>.

- “Special Message to the Congress About Reorganization Plans To Establish the Environmental Protection Agency and the National Oceanic and Atmospheric Administration | The American Presidency Project.” Accessed March 21, 2023. <https://www.presidency.ucsb.edu/documents/special-message-the-congress-about-reorganization-plans-establish-the-environmental>.
- “Statement by President Trump on the Paris Climate Accord – The White House.” Accessed October 7, 2022. <https://trumpwhitehouse.archives.gov/briefings-statements/statement-president-trump-paris-climate-accord/>.
- Supran, Geoffrey, and Naomi Oreskes. “The Forgotten Oil Ads That Told Us Climate Change Was Nothing.” *The Guardian*, November 18, 2021, sec. Environment. <https://www.theguardian.com/environment/2021/nov/18/the-forgotten-oil-ads-that-told-us-climate-change-was-nothing>.
- The Behavioural Insights Team. “Bi-Annual Review 2022 / Sustainability.” The Behavioural Insights Team, n.d.
- “The New York Times | History & Facts | Britannica.” Accessed November 7, 2022. <https://www.britannica.com/topic/The-New-York-Times>.
- “The Paris Agreement | UNFCCC.” Accessed September 30, 2022. <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>.
- Time. “Here’s Why the Environmental Protection Agency Was Created.” Accessed September 29, 2022. <https://time.com/4696104/environmental-protection-agency-1970-history/>.
- Time. “The Burning River That Sparked a Revolution.” Accessed September 29, 2022. <https://time.com/3921976/cuyahoga-fire/>.
- Tong, William. *State of Connecticut v. Exxon Mobil Corporation; Complaint* (Superior Court September 14, 2020).
- “TR Center - Next!” Accessed February 26, 2023. <https://www.theodorerooseveltcenter.org/Research/Digital-Library/Record?libID=o277854>.
- United States Department of State. “The Montreal Protocol on Substances That Deplete the Ozone Layer.” Accessed September 30, 2022. <https://www.state.gov/key-topics-office-of-environmental-quality-and-transboundary-issues/the-montreal-protocol-on-substances-that-deplete-the-ozone-layer/>.
- US EPA, OAR. “Evolution of the Clean Air Act.” Overviews and Factsheets, May 29, 2015. <https://www.epa.gov/clean-air-act-overview/evolution-clean-air-act>.

US EPA. “Health and Environmental Effects of Ozone Layer Depletion.” Reports and Assessments, July 17, 2015. <https://www.epa.gov/ozone-layer-protection/health-and-environmental-effects-ozone-layer-depletion>.

Western Governors University. “Ethical Dilemmas: How Scandals Damage Companies.” Accessed February 17, 2023. <https://www.wgu.edu/blog/ethical-dilemmas-how-scandals-damage-companies1909.html>.

Westervelt, Amy. “Big Oil’s ‘Wokewashing’ Is the New Climate Science Denialism.” *The Guardian*, September 9, 2021, sec. Environment. <https://www.theguardian.com/environment/2021/sep/09/big-oil-delay-tactics-new-climate-science-denial>.

Zavareei, Hassan A. *District of Columbia v. Exxon Mobil Corporation et.al.; Complaint* (Superior Court of the District of Columbia June 25, 2020).