

Naomi Oreskes
Professor of the History of Science
Affiliated Professor of Earth and Planetary Sciences
Harvard University
Cambridge, MA 02138

Testimony for the U.S. Select Committee on Climate Change
October 23, 2019

I. Introduction

Thank you very much for the opportunity to speak with you today. My testimony is based on 15 years of research, on the history of climate science, and on the history of attempts to undermine, distract attention from, and confuse the American people about that science.

I have been accused of being “an activist,” and were that the case I would defend my right as a citizen to be one. When citizens are inactive, democracy fails. But I speak here not as an activist—I represent no group, no political party, no NGO. I would prefer that I were at home, working on my next book (and so would my editor and my agent). But like the diverse Americans who have already appeared before this committee—scholars and scientists, athletes and business leaders—I have come to understand that we must all become active to stop further dangerous climate change before the opportunity to do so is lost.¹ And if we are to have any chance of that, we must come to grips with the forces that have contributed to our inaction.

II. The Science

Last week I had the opportunity to testify to the House Committee on Oversight and Reform, Subcommittee, Subcommittee on Civil Rights and Civil Liberties. The topic of the hearing was the oil industry’s efforts to suppress the truth about climate change, and the disproportionate impact that the impacts of climate change are already having, and will continue to have, on low income communities and people of color. Climate change affects all Americans, but it affects low-income Americans and people of color disproportionately, insofar as these American citizens typically lack the political power and financial resources needed to protect themselves from the worst effects of climate change. They are also more likely to live in vulnerable locations such as flood plains, or in poorly built homes that cannot withstand the effects of extreme weather events.

In that testimony--submitted as an appendix to my testimony today (Appendix 0)--I recounted how scientists have been seriously investigating the subject of man-made climate change since the late 1950s, and political leaders have been discussing it for nearly as long. I recounted the discussion in Congressional hearings leading up to the 1970s Clean Air Act, which helps to explain why the Act explicitly states that “All language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather...and climate...”² The discussion of CO₂ and climate in Congressional hearings also explains why, as the Clean Air Act was finalized in December 1970, Jennings Randolph, Republican Senator of West Virginia—and chair of the Senate Public Works Committee, which drafted the Act—advocated for worldwide pollution monitoring, which would aid efforts to understand the global increase in CO₂ as its unfolding effects on “weather and climate.”³

Between 1970 and 1992, human-caused climate change went from being a prediction to a fact. And so it was in no way premature when, in 1992, President George H. W. Bush, signed the United

Nations Framework Convention on Climate Change (UNFCCC), which committed its nearly 200 signatories to global action to prevent “dangerous anthropogenic interference” with the climate system. In signing this convention, President Bush promised to translate the promises made in Rio “into concrete action to protect the planet.”⁴

But that did not happen. We did not take concrete action to protect the planet—to protect ourselves. Why not? A major reason is the systematic, organized campaign by the fossil fuel industry and its allies to sow doubt about the science and prevent meaningful action.

III. The Disinformation

Last week’s hearings focused particularly on the role of ExxonMobil. This focuses stems from the documented discrepancies between what ExxonMobil has said in public about climate change and what they said in private. Investigations by journalists, statements by former ExxonMobil employees, and my own peer-reviewed analysis of ExxonMobil climate documents demonstrate that the company was aware of progress in climate science as early the 1970s, and until the early 1980s contributed substantively to that science. However, in the late 1980s to early 1990s, ExxonMobil changed course. Rather than act upon the emerging scientific consensus about the threat of anthropogenic global warming, and alter its business model accordingly, it made the fateful decision to turn to denial and disinformation.

In our 2017 analysis of ExxonMobil’s 40-year history of climate change communications, my post-doctoral research fellow, Dr. Geoffrey Supran, and I analyzed ExxonMobil’s outreach to the general public through paid advertising in leading newspapers. From 1989 to 2004, ExxonMobil published a series of “advertorials” in *The New York Times* and other leading newspapers. These were paid advertisements, but were formatted to look like editorials, and which were not labelled as the advertisements that they in fact were.

We documented two things:

First, that many of their advertorials were misleading. They misrepresented the state of the science and exaggerated the degree of uncertainty. In one case, the misrepresentation was so egregious that the scientist whose work was being cited called the use of his data “very misleading,” and stated that what ExxonMobil had done was “something no responsible scientist would do.”⁵

Second, that there was a systematic discrepancy between what the advertorials—designed to influence public opinion—said about climate change and what the company and its scientists said either in private, or in communications that were intended for restricted scientific or industrial audiences. Approximately 80% of peer-reviewed papers and internal documents acknowledged that climate change was real and human-caused, but 81% of the advertorials expressed doubt.

However, fossil fuel disinformation goes well beyond ExxonMobil’s advertorials. For more than thirty years, the fossil fuel industry and its allies have denied the truth about anthropogenic global warming. They have systematically misled the American people, and contributed to delay in acting on the issue by discounting and disparaging climate science, mispresenting scientific findings, and attempting to discredit climate scientists. These activities are documented in my recent co-authored report, *How Americans Were Deliberately Misled about Climate Change*, submitted as an appendix to my testimony, along with supporting materials (Appendices 1-18).

A key aspect of this disinformation campaign was the mobilization of “third-party allies”: organizations and groups with whom the industry collaborated on messaging, who they funded extensively and in some cases were responsible for creating.

In the 1990s these included the Global Climate Coalition, the Cooler Heads Coalition, Informed Citizens for the Environment, and the Greening Earth Society. Like ExxonMobil, these groups promoted a public message of denial and doubt: that we weren’t really sure if climate change was happening, that the science wasn’t settled, that we could readily adapt to any changes that did occur, and that addressing climate change would wreck the American economy. Two of these groups—the so-called *Informed Citizens for the Environment* and the *Greening Earth Society*—were created and funded by a coal industry trade association, the Western Fuels Association, representing Powder River basin coal producers.⁶

Similar messaging was pursued by a network of think tanks promoting free market solutions to social problems, many with ties to the fossil fuel industry. These included, but were not limited to, the George C. Marshall Institute, the Cato Institute, the Competitive Institute, the American Enterprise Institute and the Heartland Institute. Often their politically motivated contrarian claims were presented in formats designed to make them look like the scientific reports that they were in fact rejecting. In 2009, the Cato Institute issued a report that precisely mimicked the format, layout, and structure of the U.S. National Climate Impact Assessment, but which presented claims deeply at odds with that report’s science (Appendix 15).⁷ In 2017, the Heartland Institute sent a booklet to over 200,000 school teachers, repeating the oft-cited contrarian claims that climate science is still highly unsettled, and that even if climate change is occurring it “would probably not be harmful.” The director of the National Center for Science Education has said of this booklet, “It’s not science, but it’s dressed up to look like science. It’s clearly intended to confuse teachers.”⁸ The National Science Teachers Association has called it “propaganda,” advising that teachers place their copies in the recycling bin.⁹

A third way the industry has promoted disinformation is through their trade associations. In the early 1990s, the Western Fuels Association ran a media campaign across the country designed to undermine public support for climate action by promoting the message that it would be wasteful to spend money solving a problem that perhaps did not actually exist (Appendix 16). These trade associations include the American Legislative Exchange Council (ALEC), the American Petroleum Institute (API), the U.S. Chamber of Commerce, the National Black Chamber of Commerce (NBCC), and the National Association of Manufacturers (NAM).

A fourth way the fossil fuel industry has undermined public understanding is through personal attacks on scientists. One of the earliest documented was the attack on climate scientist Benjamin Santer, the scientist at the Lawrence Livermore National Laboratory who showed that the observed increase in global temperatures could not be attributed to increased solar radiation. He served as the lead author in the Second Assessment Report of the IPCC, responsible for the 1995 conclusion that “the balance of evidence suggests a discernible human impact on the climate system.”¹⁰ Santer became the target of a vicious, and arguably defamatory, attack by physicists from the George C. Marshall Institute and the Global Climate Coalition, who accused him of fraud.¹¹ Other climate scientists, including Michael Mann, Jonathan Overpeck, Malcolm Hughes, Ray Bradley, Katharine Hayhoe, and, I should note, myself, have been subject to harassment, investigation, hacked email, and politically motivated freedom-of-information attacks.¹²

Sadly, some of these attacks have emanated from the U.S. Congress, led by Texas Representative Joe Barton and Oklahoma Senator James Inhofe. Texas and Oklahoma are of course, oil and gas states,

and both these men have received extensive campaign contributions from the fossil fuel industry.¹³ Groups that continue to attack and harass scientists include the Competitive Enterprise Institute, the American Traditions Institute, and the Energy and Environment Legal Institute.¹⁴ At present, the Energy and Environment Legal Institute home page features a link to the Amazon page for a new book by Steve Milloy, who is well-known for his work in the 1990s on behalf of the tobacco industry. Among other things, Milloy ran an organization known as TASSC—the Advancement of Sound Science Coalition—a front organization created by Philip Morris tobacco to attack the EPA on the issue of second-hand smoke.¹⁵

IV. Third Party Allies Continue to Make Inaccurate Claims, Offer Partial Truths, and Promote Misleading Narratives

The role of third-party allies was on full display in last week’s house hearings, where Republican members invited as their sole witness the founder and President of Energy45, a group whose purpose, in their own words, is to “support the Trump energy agenda.”

Energy45 is part of a group known as the CO₂ Coalition. This illustrates a strategy that I call “zombie denialism,” in which old players and arguments reappear in new forms.

Throughout the 1990s and early 2000s, a leader in climate change disinformation was the George C. Marshall Institute. Its director, William O’Keefe, was the long-time Executive Vice President and CEO of the American Petroleum Institute (1974-1999). The Marshall Institute closed in 2015, only to remerge a few years later as the CO₂ Coalition.

The representative of Energy45 was Mandy Gunasekera, a political operative who formerly worked in Trump administration and as counsel to Oklahoma Senator James Inhofe. (She was, evidently, the staffer who passed the Senator his infamous snowball on the Senate floor.) Under questioning, she acknowledged that her organization is funded by the Mercer Family, who are well known for supporting groups that deny the scientific consensus on climate change, and by Koch Industries.¹⁶

Although we were all under oath—promising to tell the *whole* truth—Ms. Gunasekera testified to several half-truths and made misleading claims. Some of her claims were demonstrably untrue.

These included:

- 1) *The misleading claim that climate change will be “mild and manageable.”* There is no scientific evidence to support this claim. On the contrary, literally hundreds of scientific reports over the past few decades, including the U.S. National Climate Impact Assessments, have affirmed that the impacts of warming above 2° C will lead to serious, perhaps catastrophic, effects on “health, livelihoods, food security, water supply, human security, and economic growth.”¹⁷ The IPCC has recently noted that avoiding the worst impacts of climate change will “require rapid and far-reaching transitions in energy, ... infrastructure...and industrial systems...These systems transitions ... imply deep emissions reductions in all sectors, a wide portfolio of mitigation options and a significant upscaling of investments in those options.”¹⁸

One could argue that, as projections, these statements cannot be proven, but recent events surrounding Hurricanes Sandy, Michael, Harvey and Maria, as well as the devastating wildfires at Paradise California, have shown that the impacts of climate change are already becoming unmanageable. Moreover, a just-issued report from the Army War College states

that “the Department of Defense (DoD) is precariously unprepared for the national security implications of climate change-induced global security challenges.”¹⁹ If the Pentagon is not prepared to manage climate change, it is hard to imagine who is.

- 2) *A misleading narrative about global prosperity being driven by fossil fuels.* No one denies that fossil fuels drove the Industrial Revolution, and in doing so contributed substantively to the rise in living standards of hundreds of millions of people in Europe, North America, and parts of Asia. But this is at best a half-truth, because what is at stake here is not the past but the present and the future, because disruptive climate change threatens both the prosperity that we have already achieved and future economic growth. As Nicholas Stern, the former Chief Economist of the World Bank and one of the world’s foremost experts on the economics of climate change, has said: “high carbon growth self-destructs.”²⁰
- 3) *A misleading and arguably false narrative about “cheap energy.”* Fossil fuels are not cheap. When their external costs are considered, they are in fact very expensive. The International Monetary Fund estimates the costs to consumers—above and beyond what we pay at the pump or in our electricity bills—at over \$5 trillion dollars per year. *Trillion.* This is in effect a massive subsidy to the oil and gas industry. Among other things, these subsidies “damage the environment, caus[e]...premature deaths through local air pollution, [and] exacerbat[e] congestion and other adverse side effects of vehicle use...”²¹
- 4) *A misleading narrative about “energy poverty.”* This narrative, which has been heavily promoted by ExxonMobil, insists that fossil fuels are the solution to the energy needs of the world’s poor.²² The idea that ExxonMobil is suddenly concerned about the plight of the global poor is *prima facie*—and I might add literally—incredible, for if they were concerned, they would not be downplaying the threat of climate change. As Pope Francis, Mary Robinson, Ban Ki-Moon and others advocates for poverty reduction and global justice have repeatedly emphasized—and as we heard in last week’s House hearings—climate change will hurt the poor above all. A fossil fuel company that cared about the poor would not be pursuing a business model that commits to further oil and gas exploration and development, and through it, to further disruptive climate change.²³ The cynicism behind this argument is simply astonishing.

Moreover, while it is true that people need affordable energy, it is not true that they need *fossil fuels*.²⁴ More than a billion people world-wide lack access or reliable access to electricity, but many of these also lack access to an electricity grid. Fossil fuels are of little use for them. For communities without access to an electricity grid, distributed solar and wind are the only solutions that can be rapidly and affordably implemented. They also do not rely on government officials who may be corrupt, corruption that is often linked to oil and gas development.²⁵

- 5) *Misleading assertions about the cost of renewable energy.* The cheap fossil fuel narrative is coupled to misleading assertions about the allegedly high cost of renewable energy. According to Bloomberg News, in two-thirds of the world, solar is the cheapest form of newly installed electricity generation. It is cheaper than nuclear, cheaper than gas, and cheaper than coal.²⁶ Improvements in energy storage are needed to maximize renewable penetration, particularly in developed countries, but improvements are happening quickly. Between 2010 and 2017,

The price of battery storage decreased 79%, and most experts believe that with the right incentives, appropriate regulatory reform, and continued support of R & D in industry government, and academia, the storage problem can and will be solved.

- 6) *The false claim that the U.S. under President Trump has cut greenhouse gas emissions.* Both Ms. Gunasekara and Republican members repeatedly claimed not only that emissions had fallen, but that the United States under President Trump had done *more* to reduce emissions than any other country. This is untrue. One environmental reporter, who has described herself as “accustomed to hearing a lot of misinformation” about climate change, characterized this statement as “brazenly false.”²⁷ In fact, U.S. greenhouse gas emissions spiked in 2018, seeing a 3.1% *increase* over 2017.²⁸
- 7) *The claim that carbon pricing increases the cost of energy.* This is also false. Carbon pricing increases the cost of *carbon-based* energy, and deliberately so. The purpose is to make the price we pay reflect the true cost, and therefore correct a market failure. Moreover, to the extent that a carbon pricing system stimulates investment and innovation in the renewable sector, in efficiency, and in storage, it is like to reduce the cost of energy in the long run, as indeed emissions trading did in the case of acid rain.²⁹

In our 2010 book, *Merchants of Doubt*, Erik M. Conway and I showed that the strategies and tactics used by the fossil fuel industry to deny the harms of fossil fuel use were in many cases the same as those used by the tobacco industry to deny the harms of tobacco use. We further showed that this was no coincidence, because many of the same individuals, PR firms, advertising agencies, and institutions were involved in both (Appendix 18).

The tobacco industry was prosecuted by the U.S. Department of Justice under the RICO statutes in part because of the ways in which individual companies coordinated with each other, and with third party allies, to present false information to consumers. Through Congressional hearings and legal discovery, it was made clear that the industry had funded a wide range of activities intended to mislead the American people. I believe that something similar has occurred with respect to the harms of fossil fuels.

This raises a crucial question about the fossil fuel industries activities: who has funded the activities of the trade organizations and other third-party allies who deny the facts about climate change? In some cases, we know the answer: in 2006, The Royal Society of the United Kingdom documented ExxonMobil funding of 39 organizations that promoted “inaccurate and misleading” views of climate science.³⁰ The Society was able to identify \$2.9 million spent in this manner in the year 2005. But that was just one year, and it is unlikely that this is the whole story.

Nearly all these third-party allies are incorporated as 501(c)(3)s, which means they should be non-profit and nonpartisan.³¹ Often they claim to be involved in education. But they are clearly involved in supporting a *for-profit* activity—the oil and gas industry—and they have done many things to support a partisan political agenda. Energy45 by its own admission exists to support the “Trump Energy Agenda” (Appendix 19). And these organizations do not inform—they misinform. I am not a lawyer, but as an educator I can say with confidence that the activities of these organizations are *not* educational.

I close by returning to the Heartland Institute, who of all these groups have most explicitly targeted school teachers and school children. Their materials do not inform and educate; they misinform and dis-educate. As the Executive Director of the National Center for Education has put it, their work is not intended to help teachers, but to confuse them.³²

Yet, as much as we know about the activities of Heartland and other third-party allies of the fossil fuel industry, because of loopholes in our laws we still lack basic information about who has funded and sustained them. Much of this is funded by “dark money.” I believe that it is time for Congress to investigate this network, as Congress and the Department of Justice investigated the tobacco industry and its networks. Why, for example, is the National Black Chamber of Commerce opposing solar power in Florida?³³

I would like to see Congress subpoena the CEOs of leading fossil fuel corporations and their allies, and question them under oath, as Congress did for tobacco.

I believe the American people have the right to know who has been sustaining this massive effort to mislead us about climate change, one of the most important issues of our time, one that affects our basic constitutional rights to life, liberty and property.

I suggest that the U.S. Congress use its legal authority to try to find out.

Thank you for your time.

Acknowledgements and Financial Disclosure

I acknowledge the assistance of my graduate students, Colleen Lanier-Christensen, Hannah Conway, and Ashton MacFarlane, and my post-doctoral associate, Dr. Geoffrey Supran. The research upon which this testimony relies was funded in part by the U.S. National Science Foundation, the American Philosophical Society, the Wallace Global Threats Fund, the Grantham Foundation, and Harvard University. Geoffrey Supran’s work on ExxonMobil communications was funded by Harvard University and by the Rockefeller Family Fund philanthropy. The preparation of this statement was done by me, on personal time, with the assistance of Ms. Lanier-Christensen. None of the people involved in helping me to prepare this testimony received financial or other compensation, other than gratitude.

It is possible that sales of my new book, *Why Trust Science?*, may increase as a result of publicity related to this testimony. That project was funded by the Tanner Foundation, by way of my Tanner Lectures on Human Values at Princeton University. The Tanner Foundation played no role in my choice of topic, no role in the design of the study or methodology used, and no role in reviewing the study prior to publication.

I declare no conflicts of interest.

¹ The 2018 IPCC Special [Report](#) on Global Warming of 1.5° C concluded we have 12 years left (now 11) to achieve radical reductions in greenhouse gas emissions. The exact language includes these two passages:

In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO₂ emissions decline by about 45% from 2010 levels by 2030 (40–60% interquartile range), reaching net zero around 2050 (2045–2055 interquartile range). [C1]

Pathways limiting global warming to 1.5°C with no or limited overshoot would require rapid and far-reaching transitions in energy, land, urban and infrastructure (including transport and buildings), and industrial systems (*high confidence*). These systems transitions are unprecedented in terms of scale, but not necessarily in terms of speed, and imply deep emissions reductions in all sectors, a wide portfolio of mitigation options and a significant upscaling of investments in those options. [C2]

² 42 U.S.C. 7602(h).

³ Randolph, Jennings. “A Worldwide Commitment.” *Journal of the Air Pollution Control Association* 21, no. 2 (February 1971): 58.

⁴ <https://www.nytimes.com/1992/06/13/world/the-earth-summit-excerpts-from-speech-by-bush-on-action-plan.html>

⁵ Supran and Oreskes, 2017 Assessing ExxonMobil’s climate change communications (1977–2014), *Environmental Research Letters*, 12, <https://iopscience.iop.org/article/10.1088/1748-9326/aa815f>, on p 9.

⁶ http://climate.envsci.rutgers.edu/pdf/UCSexxon_report.pdf

⁷ <https://www.globalchange.gov/browse/reports/global-climate-change-impacts-united-states>

⁸ <https://www.pbs.org/wgbh/frontline/article/climate-change-skeptic-group-seeks-to-influence-200000-teachers/>

⁹ <https://www.nsta.org/climate/hearland.aspx>

¹⁰ <https://www.csldf.org/2017/12/26/perspectives-scientists-become-targets-ben-santer/>
<https://beta.prx.org/stories/95363>

¹¹ The Chair of the Global Climate Coalition was William O’Keefe, Executive Vice President and CEO of the American Petroleum Institute, 1974-1999. From 2001-2005, he was a paid lobbyist for ExxonMobil. When asked once, what advice would he give Greenpeace, he replied, “They couldn’t afford me.”

<https://www.desmogblog.com/william-o-keefe>
<https://web.archive.org/web/20150815211135/http://marshall.org/board-members/>
<https://exxonsecrets.org/html/personfactsheet.php?id=289>
<https://www.youtube.com/watch?v=hqiCLuOtXts>

¹² <https://www.csldf.org/issues/scientists-stories/>

¹³ <https://www.opensecrets.org/members-of-congress/summary?cid=N00005656>
<https://www.opensecrets.org/members-of-congress/summary?cid=N00005582&cycle=2020&type=C>

¹⁴ <https://celegal.org/>

¹⁵ Oreskes, Naomi and Erik M. Conway, 2020. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. (New York: Bloomsbury Press), 2nd edition, expected publication 2020.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1446868/>

¹⁶ On the Mercers, see
https://www.washingtonpost.com/politics/the-mercers-trump-mega-donors-back-group-that-casts-doubt-on-climate-science/2017/03/26/dc1fde86-109b-11e7-9b0d-d27c98455440_story.html

On the Koch networks, see Jane Mayer, 2017 *Dark Money*, Anchor Press, and Nancy MacLean, 2018, *Democracy in Chains*, Penguin Books.

¹⁷ https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Headline-statements.pdf

¹⁸ https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Headline-statements.pdf

¹⁹ https://climateandsecurity.files.wordpress.com/2019/07/implications-of-climate-change-for-us-army_army-war-college_2019.pdf

²⁰ Nicholas Stern, Lecture at Harvard University, October 15, 2019, see also Nicholas Stern, 2015. *Why Are We Waiting?* MIT Press.

²¹ <https://www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf> see also <https://www.pri.org/stories/2015-06-07/imf-true-cost-fossil-fuels-53-trillion-year>

²² https://corporate.exxonmobil.com/en/News/Newsroom/Speeches/2015/0603_The-Global-Energy-Outlook-and-Industry-Outreach

²³ http://w2.vatican.va/content/dam/francesco/pdf/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si_en.pdf

²⁴ <https://www.ica.org/statistics/electricity/>

²⁵ <https://www.cnbc.com/2019/03/01/shell-to-be-prosecuted-with-criminal-charges-over-nigerian-oil-deal.html>

²⁶ <https://www.bloomberg.com/news/features/2019-09-19/solar-and-wind-power-so-cheap-they-re-outgrowing-subsidies>

<https://www.bloomberg.com/graphics/2019-can-renewable-energy-power-the-world/>

see also

<https://about.bnef.com/blog/global-wind-solar-costs-fall-even-faster-coal-fades-even-china-india/>

²⁷ <https://thebulletin.org/2019/10/declining-us-greenhouse-gas-emissions-a-republican-fairy-tale/>

²⁸ https://www.washingtonpost.com/national/health-science/us-greenhouse-gas-emissions-spiked-in-2018--and-it-couldnt-happen-at-a-worse-time/2019/01/07/68cff792-12d6-11e9-803c-4ef28312c8b9_story.html. Global emissions reached a record high in 2018, led by China and the United States.

<https://www.eia.gov/todayinenergy/detail.php?id=36953> Emissions fell slightly in 2017, but rose sharply in 2018. Moreover, these statistics refer only to CO₂; there has also been a large rise in methane emissions, which are worse in terms of their warming potential. <https://eos.org/research-spotlights/u-s-methane-emissions-on-the-rise>

²⁹ Oreskes and Conway, 2010, *Merchants of Doubt*.

³⁰ <https://royalsociety.org/topics-policy/publications/2006/royal-society-exxonmobil/>
https://royalsociety.org/-/media/Royal_Society_Content/policy/publications/2006/8257.pdf

³¹ <https://www.501c3.org/frequently-asked-questions/does-nonprofit-501c3-and-tax-exempt-all-mean-the-same-thing/>

³² <https://www.pbs.org/wgbh/frontline/article/climate-change-skeptic-group-seeks-to-influence-200000-teachers/>

³³ <https://www.energyandpolicy.org/category/front-groups/national-black-chamber-of-commerce/>