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IN THE CIRCUIT COURT OF THE STATE OF OREGON  
FOR THE COUNTY OF MULTNOMAH

COUNTY OF MULTNOMAH,

Plaintiff,

v.

EXXON MOBIL CORP., SHELL PLC,  
F.K.A. ROYAL DUTCH SHELL PLC,  
SHELL U.S.A., INC., EQUILON  
ENTERPRISES LLC DBA SHELL OIL  
PRODUCTS US, BP PLC, BP AMERICA,  
INC., BP PRODUCTS NORTH AMERICA,  
INC., CHEVRON CORP., CHEVRON  
U.S.A., INC., CONOCOPHILLIPS,  
MOTIVA ENTERPRISES, LLC,  
OCCIDENTAL PETROLEUM F.K.A.  
ANADARKO PETROLEUM CORP.,  
SPACE AGE FUEL, INC., VALERO  
ENERGY CORP., TOTALENERGIES  
MARKETING USA F.K.A. TOTAL  
SPECIALTIES USA, INC., MARATHON  
OIL COMPANY, MARATHON OIL CORP.,  
MARATHON PETROLEUM CORP., KOCH  
INDUSTRIES, INC., AMERICAN  
PETROLEUM INSTITUTE, WESTERN  
STATES PETROLEUM ASSOCIATION,  
MCKINSEY & COMPANY, INC.,  
MCKINSEY HOLDINGS, INC., NW  
NATURAL F.K.A. NORTHWEST  
NATURAL GAS COMPANY, OREGON  
INSTITUTE OF SCIENCE AND MEDICINE  
and DOES 1-250 INCLUSIVE,

Defendants.

Case No. 23CV25164

**DECLARATION OF  
BENJAMIN A. FRANTA, PH.D., J.D.-P.H.D.**

Hon. Benjamin Souede

1 I, Benjamin A. Franta., hereby declare under penalty of perjury the following:

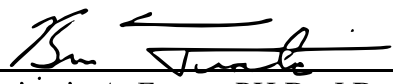
2 1. I am over the age of 21 and am competent to be a witness in this action.

3 2. My name is Benjamin A. Franta, PH.D., J.D.-PH.D. I am an historian of science,  
4 a physicist and a lawyer. I am currently employed as an Associate Professor of Climate  
5 Litigation at the University of Oxford in Oxford, United Kingdom. I am also Associate Faculty  
6 at the Oxford Faculty of Law, an Academic Affiliate at the Oxford Bonavero Institute of Human  
7 Rights, a Fellow at the Oxford Martin Programme on Net Zero Regulation and Policy, a Senior  
8 Research Fellow at the Institute for New Economic Thinking at the Oxford Martin School, a  
9 Senior Associate at Oxford Net Zero, a Fellow of Keble College, Oxford, and an Associate  
10 Member of Nuffield College, Oxford. I have not been convicted of a felony. I have specific  
11 knowledge and experience that qualifies me to provide expert opinions in this matter.  
12

13 3. I have prepared the following report, "Defendants' Historical and Ongoing  
14 Misrepresentations Regarding Climate Change and Their Effects on Multnomah County," for  
15 use in this above captioned matter. A true and correct copy of my June 27, 2025 report which  
16 includes my opinions is attached hereto as Exhibit 1.

17 4. I hereby adopt and incorporate my report into this declaration as though it was set  
18 forth in full herein. My professional services have been performed using the degree of care and  
19 skill ordinarily exercised. All opinions in this report are my opinions to a reasonable degree of  
20 scientific certainty.  
21

22 **I hereby declare that the above statement is true to the best of my knowledge and**  
23 **belief, and that I understand it is made for use as evidence in court and is subject to penalty**  
24 **for perjury.**

25   
26 Benjamin A. Franta, PH.D., J.D.-PH.D.



**DEFENDANTS' HISTORICAL AND ONGOING MISREPRESENTATIONS  
REGARDING CLIMATE CHANGE AND THEIR EFFECTS ON MULTNOMAH  
COUNTY**

**BENJAMIN A. FRANTA, PH.D., J.D.-PH.D.**

**Background and Area of Expertise**

I am an historian of science, a physicist, and a lawyer, having obtained my Ph.D. in history (history of science specialty) from Stanford University in 2022, a separate Ph.D. in applied physics from Harvard University in 2016, and J.D. from Stanford Law School and admission to the State Bar of California in 2021. I am currently an Associate Professor of Climate Litigation at the University of Oxford in Oxford, United Kingdom, where I lead a multidisciplinary research group conducting scientific, investigative, and legal research relevant to legal actions addressing climate change. I also teach courses at the University of Oxford on evidence and laws relevant to climate-related lawsuits in the U.S. and other jurisdictions and have given guest lectures and seminars at numerous universities, including Stanford University, New York University School of Law, and the University of Exeter, United Kingdom, as well as at numerous national and international conferences and meetings. My professional resume is presented as Appendix A of this report.

In addition to my primary academic appointment as Associate Professor at the University of Oxford, I am also Associate Faculty at the Oxford Faculty of Law, an Academic Affiliate at the Oxford Bonavero Institute of Human Rights, a Fellow at the Oxford Martin Programme on Net Zero Regulation and Policy, a Senior Research Fellow at the Institute for New Economic Thinking at the Oxford Martin School, a Senior Associate at Oxford Net Zero, a Fellow of Keble College, Oxford, and an Associate Member of Nuffield College, Oxford. I also sit on the Advisory Board of the Centre on Law & Social Transformation in Bergen, Norway, and am a member of the International Expert Group at the British Institute of International and Comparative Law.

My primary fields of research and study as they relate to this report include the histories of climate change science, fossil fuel producers' knowledge of that science and responses to it, and climate change denial, deception, and disinformation. I have authored or co-authored numerous scholarly, peer-reviewed studies on these topics in academic journals including *Nature Climate Change*, *Global Environmental Change*, and *Environmental Politics*. My Ph.D. dissertation in the field of history at Stanford University, completed in 2022, was one of the first comprehensive histories of fossil fuel producers' historical knowledge of climate science and public-facing responses to the issue from the 1950s to the present. My research has received wide coverage in popular media, been cited in the U.S. Congressional Record, and been featured on National Public Radio (*Here & Now*, 2021) and major film and television documentaries including *Black Gold* (Paramount, 2022) and *The Power of Big Oil* (PBS Frontline, 2022).

I make the statements in this report as an expert historian of climate science, fossil fuel producers' knowledge of that science and responses to it, and climate change denial, deception, and disinformation. I make the representations below with a reasonable degree of scientific

certainty and have personal knowledge of these facts and the historical documentation and scholarly literature describing them.

### **Task and Approach**

I was asked by Plaintiff to provide an overview of Defendants' knowledge, misrepresentations, and deceitful promotions related to climate change and their effects on the public, including foreseeable or reasonable effects on the Plaintiff.<sup>1</sup> Specifically, I was asked to address the following questions:

1. When and how did Defendants become aware of climate change? What did they understand about it over time? How did they share their knowledge with or conceal their knowledge from the public?
2. What are Defendants' histories of public representations relating to climate change? What are their histories of misrepresentations and false or misleading promotions? In what ways did Defendants communicate directly to the public, and in what ways did they do so indirectly through front groups, trade associations, or third parties? What are Defendants' ongoing misrepresentations and misleading promotions relating to climate change, including greenwashing? What effects do such representations have on the public? What have been the effects of Defendants' representations on the public's understanding of and preparedness for climate change and on the severity of climate change and its harmful impacts?
3. What have been the foreseeable or reasonable effects of Defendants' misrepresentations on the Plaintiff in this case? In particular, have Defendants' misrepresentations foreseeably or reasonably resulted in the Plaintiff being less prepared for the impacts of global warming (including but not limited to worsened droughts, wildfires, and heatwaves, including the 2021 Pacific Northwest heatwave) than Plaintiff would be in the absence of Defendants' misrepresentations? Would the Plaintiff have experienced the 2021 Pacific Northwest heatwave and other climate change impacts, including worsened

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<sup>1</sup> When I refer to Defendants, I refer collectively to the Defendant companies as named in the County's Second Amended Complaint: EXXON MOBIL CORP., SHELL PLC, F.K.A. ROYAL DUTCH SHELL PLC, SHELL U.S.A., INC., EQUILON ENTERPRISES LLC DBA SHELL OIL PRODUCTS US, BP PLC, BP AMERICA, INC., BP PRODUCTS NORTH AMERICA, INC., CHEVRON CORP., CHEVRON U.S.A., INC., CONOCOPHILLIPS, MOTIVA ENTERPRISES, LLC, OCCIDENTAL PETROLEUM F.K.A. ANADARKO PETROLEUM CORP., SPACE AGE FUEL, INC., VALERO ENERGY CORP., TOTALENERGIES MARKETING USA F.K.A. TOTAL SPECIALTIES USA, INC., MARATHON OIL COMPANY, MARATHON OIL CORP., MARATHON PETROLEUM CORP., KOCH INDUSTRIES, INC., AMERICAN PETROLEUM INSTITUTE, WESTERN STATES PETROLEUM ASSOCIATION, MCKINSEY & COMPANY, INC., MCKINSEY HOLDINGS, INC., NW NATURAL F.K.A. NORTHWEST NATURAL GAS COMPANY, OREGON INSTITUTE OF SCIENCE AND MEDICINE (County of Multnomah v. Exxon Mobil Corp., 23CV25164, (D. Or. 2024), Second Amended Complaint), [https://climatecasechart.com/wp-content/uploads/case-documents/2024/20241007\\_docket-23CV25164-\\_complaint.pdf](https://climatecasechart.com/wp-content/uploads/case-documents/2024/20241007_docket-23CV25164-_complaint.pdf)

droughts and wildfires, when and as the Plaintiff did but for the conduct of the Defendants?

In addressing these questions, I base my findings and conclusions on scholarly work in the fields of history and agnotology (the study of the deliberate, culturally induced creation of and maintenance of ignorance or doubt), as well as primary historical documents created by or related to Defendants. As an expert in the histories of climate science and climate disinformation, I have made use of information and knowledge that I have acquired through research and analysis in this area throughout my professional career.

### Summary

Fossil fuel companies, including Defendants, held awareness of important facts about climate change by the 1950s, including that the continued production and use of fossil fuels would cause a buildup of atmospheric greenhouse gases, that such a buildup would foreseeably cause global warming, and that such global warming would foreseeably cause harmful and even catastrophic effects across the U.S. and around the world.<sup>2</sup> By the late 1970s and throughout the 1980s, Exxon (now ExxonMobil), the American Petroleum Institute (API, itself comprising many Defendants and other fossil fuel companies), Shell, and potentially others in the industry conducted internal, in-depth analyses of climate science, finding that to avert catastrophic climate change, immediate action to transition away from fossil fuels to other sources of energy was needed.<sup>3</sup> Rather than warn the public about the foreseeably catastrophic effects of their products, fossil fuel companies concealed their knowledge, cast doubt on climate science, and falsely promoted as safe the continued use and expansion of fossil fuels for decades to come.<sup>4</sup>

By the late 1980s, as public pressure to reduce fossil fuel use to avert severe climate change grew, fossil fuel companies coordinated amongst themselves, and with various front groups and third party allies, to convince the public to keep the fossil fuel train hurtling forward using at least three deceptive narratives: 1) that climate change was unproved, might not occur,

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<sup>2</sup> Franta, B. Early oil industry knowledge of CO<sub>2</sub> and global warming. *Nature Clim Change* **8**, 1024–1025 (2018). <https://doi.org/10.1038/s41558-018-0349-9>; Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, chs. 1-3

<sup>3</sup> G. Supran *et al.*, Assessing ExxonMobil's global warming projections, *Science* **379**, eabk0063 (2023), DOI:[10.1126/science.abk0063](https://doi.org/10.1126/science.abk0063); Benjamin Franta, 2021, Early Oil Industry Disinformation on Global Warming, *Environmental Politics* vol. 30, pp. 663-668, <https://www.tandfonline.com/doi/full/10.1080/09644016.2020.1863703>; Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>; Benjamin Franta, 2025 (in press), How the Most Important Fact of Global Warming Has Been Obscured, *Ignorance Unmasked: Essays in the New Science of Agnotology*, ed. Robert N. Proctor and Londa Schiebinger (Stanford University Press, Stanford, California)

<sup>4</sup> Benjamin Franta, 2021, Early Oil Industry Disinformation on Global Warming, *Environmental Politics* vol. 30, pp. 663-668, <https://www.tandfonline.com/doi/full/10.1080/09644016.2020.1863703>

and was not proved to be caused by fossil fuels (using the delay dictum of “we need more research” infamously used by tobacco companies in the 20<sup>th</sup> century);<sup>5</sup> 2) that the impacts of climate change, including its human health and economic effects, if they occurred at all, would be far off in the future and negligible to mild, and that the costs of controlling fossil fuels would be prohibitive, so that preventing climate change would not be worthwhile;<sup>6</sup> and 3) that severe climate change could be prevented without replacing fossil fuels (for instance, by using fossil gas, planting trees, or improving energy use efficiency).<sup>7</sup> These false and misleading narratives formed the pillars of a pervasive, decades-long disinformation campaign broadcast by Defendants (both directly and through front groups and third parties) to consumers, workers, families, business leaders, educators, scientists, policymakers, and more (in other words, to essentially everyone).<sup>8</sup> No one was spared or excluded from the deception, and Defendants used numerous channels to spread their messages, including traditional advertising (print, broadcast, digital), penetration of school curriculums and university programs, the recruitment of (often paid) scientific and economic “experts” to serve as credible third-party spokespeople, various front groups, third party organizations, trade associations, and astroturf (fake grassroots) groups, and more. Defendants’ disinformation campaigns were (and remain) extensive and sophisticated – informed by veteran public relations firms and other strategic communications professionals – and are only now beginning to be better understood by scholars, investigative journalists, and other researchers.<sup>9</sup> The ongoing, damaging effects of these campaigns, including those carried out decades ago, are now reflected in many of the very same catastrophic climate change impacts long ago foreseen by Defendants. As a result of Defendants’ long-running interference with the

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<sup>5</sup> Geoffrey Supran and Naomi Oreskes, 2020, Addendum to 'Assessing ExxonMobil's climate change communications (1977–2014)' Supran and Oreskes (2017 *Environ. Res. Lett.* [12 084019](https://iopscience.iop.org/article/10.1088/1748-9326/ab89d5)), *Environ. Res. Lett.* **15** 119401, <https://iopscience.iop.org/article/10.1088/1748-9326/ab89d5>; see Peter Galison and Robert Proctor, 2020, How Industry Weaponizes Science and Sows Doubt to Serve Their Agenda (in: *Science and the Production of Ignorance: When the Quest for Knowledge Is Thwarted*, ed. Janet A. Kourany and Martin Carrier) (The MIT Press), <https://thereader.mitpress.mit.edu/industry-weaponizing-science-agenda/>

<sup>6</sup> Benjamin Franta, 2021, Weaponizing Economics: Big Oil, Economic Consultants, and Climate Policy Delay, *Environmental Politics* 31(4), <https://www.tandfonline.com/doi/full/10.1080/09644016.2021.1947636>

<sup>7</sup> Benjamin Franta, 2025 (in press), How the Most Important Fact of Global Warming Has Been Obscured, *Ignorance Unmasked: Essays in the New Science of Agnotology*, ed. Robert N. Proctor and Londa Schiebinger (Stanford University Press, Stanford, California); Christophe Bonneuil, Pierre-Louis Choquet, Benjamin Franta, 2021, Early Warnings and Emerging Accountability: Total’s Responses to Global Warming, 1971–2021, *Global Environmental Change* vol. 71, 102386, <https://doi.org/10.1016/j.gloenvcha.2021.102386>

<sup>8</sup> Robert J. Brulle, 2022, Advocating Inaction: A Historical Analysis of the Global Climate Coalition, *Environmental Politics*, <https://www.tandfonline.com/doi/full/10.1080/09644016.2022.2058815>; Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950–2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>

<sup>9</sup> *Id.*; Robert J. Brulle, 2019, Networks of Opposition: A Structural Analysis of U.S. Climate Change Countermovement Coalitions 1989–2015, *Sociological Inquiry* vol. 91, 3, <https://onlinelibrary.wiley.com/doi/10.1111/soin.12333>

public's understanding of fossil fuels and climate change, global warming and its damaging impacts are worse than they would be otherwise and society is less prepared for them, causing increased damage and harm to individuals, families, communities, cities, businesses, infrastructure, and entire economies.<sup>10</sup>

In the late 1990s, Defendants shifted the tone of – but did not cease – their deception campaign. As the science of climate change became increasingly difficult to challenge (and as tobacco companies faced legal liability for their own history of deceit), fossil fuel companies shifted their deceptive messaging away from challenging the existence of climate change and toward claiming that the fossil fuel companies themselves would solve it.<sup>11</sup> The industry's rhetorical postures both before and after this shift communicated to the public *not to worry* about fossil fuels or climate change by stating, first, not to worry *because climate change was not proved to exist*, and then, not to worry *because climate change was being fixed*. Much like the tobacco industry's "Frank Statement to Cigarette Smokers" in 1954 (in which the industry portrayed itself as a responsible coalition of tobacco companies taking public health concerns seriously and pledging to address them through research),<sup>12</sup> Defendants' rhetorical posture offered *false reassurances* to the public, which reduced public concern and reinforced the fossil-fuel-dominant (and extremely harmful, as Defendants understood) status quo.

Defendants' false and misleading claims to be solving the problem of global warming (claims which accelerated in the late 1990s and which continue today) represent a continuation of Defendants' misleading promotions since the late 1980s of various false and inadequate solutions to climate change, which distracted the public's attention away from the urgent need to replace fossil fuels with other energy sources. False or inadequate "solutions" to global warming promoted by the industry (including Defendants) since the 1980s include the expanded use of fossil gas (even though the climate damage caused by fossil gas is similar to that caused by other fossil fuels),<sup>13</sup> carbon capture (which has failed for decades to be economically or technologically viable),<sup>14</sup> biofuels (which typically contain mostly fossil fuel and may not be

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<sup>10</sup> See Callahan, C.W., Mankin, J.S. Carbon majors and the scientific case for climate liability. *Nature* **640**, 893–901 (2025), <https://doi.org/10.1038/s41586-025-08751-3>

<sup>11</sup> Giuliana Gentile, Joyeeta Gupta, 2025, Orchestrating the narrative: The role of fossil fuel companies in delaying the energy transition, *Renewable and Sustainable Energy Reviews*, Volume 212, 115359, p. 4, ISSN 1364-0321, <https://doi.org/10.1016/j.rser.2025.115359>

<sup>12</sup> Brandt AM. Inventing conflicts of interest: a history of tobacco industry tactics. *Am J Public Health*. 2012 Jan;102(1):63-71. doi: 10.2105/AJPH.2011.300292. Epub 2011 Nov 28. PMID: 22095331; PMCID: PMC3490543; Proctor, Robert N. *Golden holocaust: origins of the cigarette catastrophe and the case for abolition*. Univ of California Press, 2012.

<sup>13</sup> See Deborah Gordon et al 2023 *Environ. Res. Lett.* 18 084008, DOI 10.1088/1748-9326/ace3db; Sanchez, N., Mays, D.C. Effect of methane leakage on the greenhouse gas footprint of electricity generation. *Climatic Change* **133**, 169–178 (2015), <https://doi.org/10.1007/s10584-015-1471-6>

<sup>14</sup> Bacilieri, A., Black, R. & Way, R. (2023). 'Assessing the relative costs of high-CCS and low-CCS pathways to 1.5 degrees'. Oxford Smith School of Enterprise and the Environment. Working Paper No. 23-08, <https://www.inet.ox.ac.uk/publications/assessing-the-relative-costs-of-high-ccs-and-low-ccs-pathways-to-1-5-degrees>



economically viable at scale),<sup>15</sup> hydrogen (which is almost entirely produced from fossil fuels and which itself may be an indirect greenhouse gas),<sup>16</sup> investing in solar and wind energy (which the industry has failed to do at a meaningful scale),<sup>17</sup> and personal lifestyle changes (which, without replacing fossil fuels, are inadequate – the classic “blame the consumer” trope regularly used by tobacco companies and other sellers of harmful products).<sup>18</sup> Defendants have implemented such “greenwashing” campaigns – falsely portraying their companies as leaders in solving (rather than causing) climate change – especially since the late 1990s and continue to do so today. For example, an analysis by my research group at the University of Oxford has found

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<sup>15</sup> See Transport & Environment, 2022, Billions wasted on biofuels, [https://www.transportenvironment.org/uploads/files/202206\\_Billions\\_wasted\\_on\\_biofuels\\_TE.pdf](https://www.transportenvironment.org/uploads/files/202206_Billions_wasted_on_biofuels_TE.pdf); US Department of Energy, Alternative Fuels Data Center: Biodiesel Blends, <https://afdc.energy.gov/fuels/biodiesel-blends>

<sup>16</sup> Maria Sand et al., 2023, A multi-model assessment of the Global Warming Potential of hydrogen, *Nature Communications Earth & Environment*, <https://www.nature.com/articles/s43247-023-00857-8> (models the global warming effect of hydrogen, finding that it has a global warming potential of around 12 over 100 years (i.e., over 100 years, 1 kg of hydrogen leaked into the atmosphere has the same global warming effect of around 12 kg of CO<sub>2</sub>); Didier Hauglustaine et al., 2022, Climate benefit of a future hydrogen economy, *Nature Communications Earth & Environment*, <https://www.nature.com/articles/s43247-022-00626-z> (finds that hydrogen has a global warming potential of around 13 over a 100 year time horizon and around 40 over a 20 year time horizon, and that hydrogen produced from fossil gas, even with carbon capture, can be worse for the climate than direct use of fossil fuels); Li et al., 2020, Hydrogen Production: State of Technology, *IOP Conference Series: Earth and Environmental Science*, <https://iopscience.iop.org/article/10.1088/1755-1315/544/1/012011/meta> (reports that at least 96% of hydrogen is produced from fossil fuels (50% from steam reforming of fossil gas, 30% from oil reforming and petrochemical refining off-gases, 18% from coal gasification, and only around 4% from electrolysis)); Hydrogen Overview, 2022, International Renewable Energy Agency (IRENA), <https://www.irena.org/Energy-Transition/Technology/Hydrogen> (reports that as of 2021, 99% of hydrogen is produced from fossil fuels and only 1% of hydrogen is produced from renewable energy); Ilissa Ocko and Steven Hamburg, 2022, Climate consequences of hydrogen emissions, *Atmospheric Chemistry and Physics*, <https://acp.copernicus.org/articles/22/9349/2022/> (reviews literature and finds that hydrogen produced from fossil gas, even with carbon capture, can be worse for climate than directly using fossil fuels over a 20 year time horizon)

<sup>17</sup> Li M, Trencher G, Asuka J (2022) The clean energy claims of BP, Chevron, ExxonMobil and Shell: A mismatch between discourse, actions and investments. *PLoS ONE* 17(2): e0263596, <https://doi.org/10.1371/journal.pone.0263596> (finds public statements from Carbon Majors about corporate decarbonization are inconsistent with company investments, which remain predominantly focused on fossil fuels); Sidhi Mittal, 2023, IEA: Oil and gas majors putting less than 3% of investments into renewables, *edie*, <https://www.edie.net/iea-oil-and-gas-majors-putting-less-than-3-of-investments-in-renewables/> (reports International Energy Agency finding that Carbon Majors place less than 3% of their capital investments into renewables)

<sup>18</sup> See Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, ch. 13

over 1700 unique examples of such advertisements from major fossil fuel companies appearing in national and local media platforms across the U.S. since 2006,<sup>19</sup> and other scholars have published peer reviewed results showing such advertisements have measurable effects on public beliefs (a finding corroborated by Defendants' own internal marketing assessments).<sup>20</sup> In short, Defendants continue to deceive the public about their activities, about the necessity of replacing fossil fuels, and about the urgency and severity of climate change, issuing false reassurances that delay effective action to prevent further global warming and reduce the perceived need to prepare for the harmful, damaging, and costly impacts of climate change.

Defendants' decades of deception about fossil fuels and climate change have caused increased harm and damage to Plaintiff and countless others across the nation and world. Many of Defendants' own documents show they understood in the 1980s (and in some cases earlier) the necessity of immediate efforts to transition away from and replace fossil fuels in order to prevent severe, irreversible, and tremendously damaging global warming.<sup>21</sup> Defendants' concealment of their knowledge, deceptive promotion of fossil fuels as safe, deceptive downplaying of the severity, urgency, and certainty of climate change, and false reassurances regarding climate change have robbed society of the opportunity to prevent disaster and have worsened climate change, transforming the issue from what may have been a manageable problem into the costly and critical emergency we see today. Coincident with Defendants' pervasive disinformation campaigns, public opinion polling records show significant reductions in public belief in and concern about climate change.<sup>22</sup> Defendants' downplaying of climate science and the urgency and severity of global warming – and promotion of false reassurances and false solutions to the public – has resulted in less anticipation of and preparedness for the effects of climate change, resulting in greater harm and damage. And Defendants continue to deceive the public about Defendants' own roles in driving climate change and about viable solutions to the crisis.

Important to grasp is that Defendants deceived the public both directly and indirectly through an array of front groups, including trade associations, coalitions, astroturf groups, think

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<sup>19</sup> University of Oxford Smith School of Enterprise & Environment, 10 March 2025, Researchers can explore 1700 fossil fuel ads through the Oxford Carbon and Climate Advertising Library, <https://www.smithschool.ox.ac.uk/news/researchers-can-explore-1700-fossil-fuel-ads-through-oxford-carbon-and-climate-advertising>;

<sup>20</sup> Amazeen, M.A., Sovacool, B.K., Krishna, A. *et al.*, The “Future of Energy”? Building resilience to ExxonMobil’s disinformation through disclosures and inoculation. *npj Clim. Action* 4, 19 (2025), <https://doi.org/10.1038/s44168-025-00209-6>; Ronald Friedman and Dylan Campbell, 2023, An Experimental Study of the Impact of Greenwashing on Attitudes toward Fossil Fuel Corporations’ Sustainability Initiatives, *Environmental Communication*, <https://www.tandfonline.com/doi/full/10.1080/17524032.2023.2215959>

<sup>21</sup> Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>; Benjamin Franta, 2025 (in press), How the Most Important Fact of Global Warming Has Been Obscured, *Ignorance Unmasked: Essays in the New Science of Agnotology*, ed. Robert N. Proctor and Londa Schiebinger (Stanford University Press, Stanford, California)

<sup>22</sup> Matthew C. Nisbet & Teresa Myers, *Twenty Years of Public Opinion About Global Warming*, PUB. OP. QTRLY Vol. 71, No. 3 444 (2007), <https://www.jstor.org/stable/4500386>

tanks, and third parties. Some companies, such as ExxonMobil, played an overt role in directly promoting disinformation,<sup>23</sup> while other companies played a more covert role through membership in and support of these front groups, which acted as coordination hubs for Defendants' conspiracy to deceive the public. In this way, Defendants often concealed their own deceptive conduct from the public. Below is a (non-exhaustive) list of such front groups and Defendants who were (or are) known members of each (note that many of the groups listed below do not make lists of their members and funders public, indicating the importance of discovery in this case):<sup>24</sup>

- **American Petroleum Institute (API) (industry association)**
  - Relevant years active: 1950s—present
  - Description: Major trade association for oil and gas industry; held and concealed early knowledge of global warming since the 1950s (and especially since the 1970s); prominent actor in organizing and promoting disinformation efforts regarding fossil fuels and climate change
  - Known Defendant members:
    - Current members:<sup>25</sup>
      - ExxonMobil Corp.
      - Shell PLC
      - Shell USA
      - Equilon Enterprises LLC (part of Shell)
      - BP PLC
      - BP America
      - BP Products North America
      - Chevron Corp.
      - Chevron USA Inc.
      - ConocoPhillips
      - Occidental Petroleum (formerly Anadarko Petroleum)
      - Marathon Petroleum Corp.
      - Motiva Enterprises LLC
    - Previous members (may also include current membership):<sup>26</sup>

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<sup>23</sup> Geoffrey Supran and Naomi Oreskes, 2020, Addendum to 'Assessing ExxonMobil's climate change communications (1977–2014)' Supran and Oreskes (2017 *Environ. Res. Lett.* [12 084019](https://iopscience.iop.org/article/10.1088/1748-9326/ab89d5)), *Environ. Res. Lett.* **15** 119401, <https://iopscience.iop.org/article/10.1088/1748-9326/ab89d5>

<sup>24</sup> Membership of the Global Climate Coalition, Alliance for Climate Strategies, Alliance for Energy & Economic Growth, Coalition for American Jobs, Coalition for Affordable and Reliable Energy, Cooler Heads Coalition, Coalition for Vehicle Choice, and Partnership for a Better Energy Future from supplementary data for Robert J. Brulle, 2019, Networks of Opposition: A Structural Analysis of U.S. Climate Change Countermovement Coalitions 1989–2015, *Sociological Inquiry* vol. 91, 3, <https://onlinelibrary.wiley.com/doi/10.1111/soin.12333> (supplementary data provided by R. Brulle)

<sup>25</sup> American Petroleum Institute, Members, <https://www.api.org/membership/members>

<sup>26</sup> American Petroleum Institute Administrative Company Memberships, 1968, Plaintiff's Exhibit API-18



- BP (North America) Ltd.
  - Continental Oil Company (later Conoco, ConocoPhillips, now part of Phillips 66)
  - Marathon Oil Company
  - Mobil Oil Corporation (now ExxonMobil)
  - Phillips Petroleum Company
  - Shell Oil Company<sup>27</sup>
  - Standard Oil Company (New Jersey) (now ExxonMobil)
  - Texaco, Inc. (now Chevron)
  - Motiva Enterprises LLC<sup>28</sup>
- **International Petroleum Industry Environmental Conservation Association (industry association)**
    - Relevant years active: 1974—present
    - Description: Coordinated international efforts among Defendants in 1980s and 1990s to dispute climate science and prevent transition away from fossil fuels<sup>29</sup>
    - Known Defendant members:<sup>30</sup>
      - ExxonMobil
      - Royal Dutch Shell (including Equilon Enterprises LLC)
      - BP
      - Chevron
      - ConocoPhillips
      - Aramco (including Motiva Enterprises, LLC)
      - Oxy (including Occidental Petroleum and Anadarko Petroleum Corp.)
      - TotalEnergies
      - Marathon Oil
- **Global Climate Coalition (industry coalition)**
    - Relevant years active: 1989—2002
    - Description: Monitored and challenged climate science, routinely denied or cast doubt on the link between fossil fuels and global warming, promoted false and

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<sup>27</sup> Shell plc Climate and Energy Transition Lobbying Report 2023, [https://www.shell.com/sustainability/reporting-centre/reporting-centre-archive/\\_jcr\\_content/root/main/section\\_2106585602/tabs/tab/text\\_1351547253/links/item0.stream/1742907002141/265be738035f3b57f002891e4da4832105bb2a7f/shell-climate-and-energy-transition-lobbying-report-2023.pdf](https://www.shell.com/sustainability/reporting-centre/reporting-centre-archive/_jcr_content/root/main/section_2106585602/tabs/tab/text_1351547253/links/item0.stream/1742907002141/265be738035f3b57f002891e4da4832105bb2a7f/shell-climate-and-energy-transition-lobbying-report-2023.pdf)

<sup>28</sup> American Petroleum Institute, Members (archived version of May 23, 2018), <https://web.archive.org/web/20180523181511/http://www.api.org/membership/members>

<sup>29</sup> Christophe Bonneuil, Pierre-Louis Choquet, and Benjamin Franta, 2021, Early Warnings and Emerging Accountability: Total's Responses to Global Warming, 1971--2021, *Global Environmental Change* vol. 71, 102386, <https://www.sciencedirect.com/science/article/pii/S0959378021001655>

<sup>30</sup> International Petroleum Industry Environmental Conservation Association (IPIECA), Membership, <https://www.ipieca.org/membership>

misleading information about climate change, impeded efforts to transition away from fossil fuels<sup>31</sup>

- Known Defendant members:<sup>32</sup>
  - Exxon (including Exxon Research & Engineering Company and Exxon Biomedical Sciences, Inc.) (now ExxonMobil)
  - Mobil Corporation (now ExxonMobil)
  - Shell Oil Company
  - BP America, Inc. (subsidiary of BP)
  - Chevron
  - Texaco, Inc. (now Chevron)
  - UNOCAL Corporation (now Chevron)
  - Phillips Petroleum Company (now ConocoPhillips)
  - American Petroleum Institute (see above)

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<sup>31</sup> Robert J. Brulle, 2022, Advocating Inaction: A Historical Analysis of the Global Climate Coalition, *Environmental Politics*,

<https://www.tandfonline.com/doi/full/10.1080/09644016.2022.2058815>

<sup>32</sup> Membership data from Robert Brulle, Professor of Sociology and Environmental Science at Drexel University (supporting data for Robert J. Brulle, 2019, Networks of Opposition: A Structural Analysis of U.S. Climate Change Countermovement Coalitions 1989–2015, *Sociological Inquiry* vol. 91, 3, <https://onlinelibrary.wiley.com/doi/10.1111/soin.12333>; Global Climate Coalition Membership. 1989 November 16. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/nlfl0228>; Global Climate Coalition; GCC; Cohen, John. [Memorandum from John Cohen Regarding the Global Climate Coalition Information]. 1991 November 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/xqfl0228>; Global Climate Coalition; GCC; Cohen, John. [Memorandum from John Cohen Regarding the Global Climate Coalition Information]. 1991 November 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/xqfl0228>; GCC; Global Climate Coalition. Global Climate Coalition Membership. 1993. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/rzfl0228>; Global Climate Coalition; EOP Group Inc, The. Progress Report on US Industry Voluntary Actions to Curb Greenhouse Gas Emissions. 1996 March. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/hsfl0228>; AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc. [Memo from Gregory J Dana to AIAM Technical Committee Regarding Copy of the Minutes of the September 19, 1996 Meeting of Science and Technology Assessment Committee of the GCC]. 1996 September 03. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/znfl0228>; AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc; Mobil Corporation; Bernstein, LS; Shlaes, John; Global Climate Coalition; Intergovernmental Panel on Climate Change; UNEP; WMO; Sundararaman, N. Global Climate Coalition Science and Technology Assessment Committee (STAC) Minutes of the January 16, 1997 Meeting. 1997 February 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/gyfl0228>

- Amoco Corporation (now BP)
- ARCO (also known as Atlantic Richfield Company) (now BP)
- Occidental Chemical Corporation (part of Occidental Petroleum)
- Georgia Pacific Corporation (subsidiary of Koch Industries)
- Fertilizer Institute, members of which include Koch Fertilizer LLC (subsidiary of Koch Industries)<sup>33</sup>
- American Forest and Paper Institute (now American Forest & Paper Association), members of which include Georgia-Pacific (subsidiary of Koch Industries)<sup>34</sup>
- American Gas Association,<sup>35</sup> members of which include NW Natural<sup>36</sup>
- National Association of Manufacturers (served as the 501(c)(6) host of the Global Climate Coalition in 1989—1990),<sup>37</sup> members of which include:<sup>38</sup>
  - Exxon (now ExxonMobil)
  - Shell
  - BP
  - Chevron
  - ConocoPhillips
  - Occidental Petroleum
  - Marathon Petroleum
  - Koch Industries
- Chemical Manufacturers Association (now American Chemistry Council), members of which include:<sup>39</sup>
  - ExxonMobil Chemical Company (subsidiary of ExxonMobil)
  - Shell Chemical LP (subsidiary of Shell)
  - BP Lubricants USA, Inc. (subsidiary of BP)
  - Chevron Oronite Company LLC (subsidiary of Chevron)
  - Chevron Phillips Chemical Company LP (joint venture between Chevron and Phillips Petroleum)

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<sup>33</sup> The Fertilizer Institute, Our Members, <https://www.tfi.org/membership/our-members/>

<sup>34</sup> American Forest & Paper Association, Our Members, <https://www.afandpa.org/our-members>

<sup>35</sup> The American Gas Association does not make its full membership list publicly available, indicating the importance of discovery for this case.

<sup>36</sup> American Gas Association, 2024 Operations Conference, Awards Review, [https://www.aga.org/wp-content/uploads/2024/06/24AwardsReviewFINAL\\_Debbie-Ellis.pdf](https://www.aga.org/wp-content/uploads/2024/06/24AwardsReviewFINAL_Debbie-Ellis.pdf), p. 4

<sup>37</sup> Global Climate Coalition; GCC; Cohen, John. [Memorandum from John Cohen Regarding the Global Climate Coalition Information]. 1991 November 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/xqfl0228>

<sup>38</sup> DeSmog, National Association of Manufacturers (NAM), <https://www.desmog.com/national-association-manufacturers/>; SourceWatch, National Association of Manufacturers, [https://www.sourcewatch.org/index.php/National\\_Association\\_of\\_Manufacturers](https://www.sourcewatch.org/index.php/National_Association_of_Manufacturers)

<sup>39</sup> American Chemistry Council, Membership (archived version of ca. 2016), [https://content.influencemap.org/site/data/000/239/125\\_American-Chemistry-Council-\(ACC\)-and-BP\\_102354\\_2017-01-03\\_09:36.pdf](https://content.influencemap.org/site/data/000/239/125_American-Chemistry-Council-(ACC)-and-BP_102354_2017-01-03_09:36.pdf)

- Occidental Chemical Corporation (subsidiary of Occidental Petroleum)
- Total Petrochemicals & Refining USA, Inc. (subsidiary of TotalEnergies)
- Marathon Petroleum Corporation
- McKinsey & Company
- US Chamber of Commerce, members or funders of which include:<sup>40</sup>
  - ExxonMobil
  - Shell (President Bruce Culpepper was board member in 2018)
  - BP America (Chairman and President John Minge was board member in 2017—2018)
  - Chevron
  - ConocoPhillips (Senior Vice President, Government Affairs Andrew D. Lundquist was board member in 2016—2018)
  - Occidental Petroleum<sup>41</sup>
  - Marathon Petroleum<sup>42</sup>
  - American Petroleum Institute (see above)
- National Petrochemical and Refiners Association (now American Fuel and Petrochemical Manufacturers), members of which include:<sup>43</sup>
  - ExxonMobil
  - Shell
  - BP
  - Chevron
  - ConocoPhillips
  - Occidental Petroleum
  - Valero
  - Total (now TotalEnergies)
  - Marathon

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<sup>40</sup> DeSmog, US Chamber of Commerce, <https://www.desmog.com/us-chamber-commerce/>; Violation Tracker records of US Chamber members identified by Center for Political Accountability and Public Citizen, <https://docs.google.com/spreadsheets/d/1Od11Mr7zziRelK163PoLfQQeI-s9nT766WLFhUxnhGc/edit?gid=1061975009#gid=1061975009>; the U.S. Chamber of Commerce does not typically publicly disclose its members or funders, indicating the importance of discovery in this case.

<sup>41</sup> OCCIDENTAL PETROLEUM CORPORATION, 2022 U.S. Trade Associations with Membership Dues over \$50,000, <https://www.oxy.com/siteassets/documents/investors/2022-trade-associations.pdf>

<sup>42</sup> Violation Tracker records of US Chamber members identified by Center for Political Accountability and Public Citizen, <https://docs.google.com/spreadsheets/d/1Od11Mr7zziRelK163PoLfQQeI-s9nT766WLFhUxnhGc/edit?gid=1061975009#gid=1061975009>

<sup>43</sup> DeSmog, American Fuel & Petrochemical Manufacturers (AFPM), <https://www.desmog.com/american-fuel-petrochemical-manufacturers-afpm/>

- Koch Industries
  - McKinsey & Company
  - Motiva
- Petroleum Marketers Association of America (now Energy Marketers of America), members of which include:<sup>44</sup>
  - Oregon Fuels Association, which includes Space Age Fuels<sup>45</sup>
  - Western Petroleum Marketers Association, which includes Oregon Fuels Association and thereby Space Age Fuels<sup>46</sup>
- Business Roundtable, members of which include:<sup>47</sup>
  - ExxonMobil
  - Chevron
  - ConocoPhillips
  - McKinsey & Company
- **Alliance for Climate Strategies (industry coalition)<sup>48</sup>**
  - Relevant years active: 2000—2007
  - Description: Successor to the Global Climate Coalition, sharing membership and staff; falsely claimed to public that fossil fuel industry was solving climate change through voluntary measures
  - Known Defendant members:
    - American Chemistry Council (see above)
    - American Petroleum Institute (see above)
    - National Petrochemical & Refiners Association (see above)
- **Alliance for Energy & Economic Growth (industry coalition)**
  - Relevant years active: 2001—2010
  - Description: Hosted “climate change dialogues” across the country featuring prominent climate denial organizations, promoted the misleading concept of “clean coal,” and promoted flawed, industry-funded economic analyses which

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<sup>44</sup> Energy Marketers of America, Oregon Fuels Association, <https://www.energymarketersofamerica.org/memberassociations/oregon/>

<sup>45</sup> Chris Huiard of Space Age Fuels is a State Director of the Oregon Fuels Association. Western Petroleum Marketers Association, Oregon Fuels Association, Officers & Directors, <https://www.wpma.com/oregon/officers-and-directors>

<sup>46</sup> Energy Marketers of America, Member Associations, Western Petroleum Marketers Association, <https://www.energymarketersofamerica.org/memberassociations/wpma/>

<sup>47</sup> Business Roundtable, Members, <https://www.businessroundtable.org/about-us/members>

<sup>48</sup> For information about climate countermovement coalitions including Alliance for Climate Strategies, Alliance for Energy & Economic Growth, Center for Energy and Economic Development, Coalition for American Jobs, Coalition for Affordable and Reliable Energy, Cooler Heads Coalition, Coalition for Vehicle Choice, and Partnership for a Better Energy Future, see Climate and Development Lab, Brown University, 2018, Countermovement Coalitions: Climate Denialist Organizational Profiles, <https://www.climatedevlab.brown.edu/post/countermovement-coalitions-climate-denialist-organizational-profiles>

exaggerated the cost of reducing fossil fuel emissions by assuming that renewable energy would not exist by 2030 or later<sup>49</sup>

- Known Defendant members:
  - BP
  - Chevron
  - Shell Oil Company
  - Northwest Natural Gas / NW Natural
  - American Petroleum Institute (see above)
  - American Chemistry Council (see above)
  - US Chamber of Commerce (see above)
  - National Association of Manufacturers (see above)
  - National Petrochemical and Refiners Association (now American Fuel and Petrochemical Manufacturers) (see above)
  - American Gas Association (see above)
  - Business Roundtable (see above)
  - Northwest Gas Association, members of which include NW Natural<sup>50</sup>
  - Independent Petroleum Association of America, members of which include:<sup>51</sup>
    - Occidental Petroleum<sup>52</sup>
    - BP Energy Company<sup>53</sup>
- **Center for Energy and Economic Development (industry coalition)**
  - Relevant years active: 1992—2008 (became American Coalition for Clean Coal Electricity (ACCCE) in 2008)
  - Description: Falsely told the public there was widespread scientific debate about the existence of climate change and downplayed its seriousness, claiming in 2000, for example, that “Supporters of the Kyoto Protocol may find themselves sweating, but this isn’t due to global warming...Research is not supporting the apocalyptic predictions of climate tragedies from global climate change;” the

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<sup>49</sup> For examples of the misleading economic analyses promoted by the Alliance for Energy and Economic Growth (e.g., that omit a comprehensive analysis of the replacement of fossil fuels by renewables), see Alliance for Energy & Economic Growth, AEEG Hosts State Climate Dialog (archived version of Feb. 8, 2011),

<https://web.archive.org/web/20110208152145/http://www.yourenergyfuture.org/>, including misleading economic analysis relating to impacts of carbon pricing in Oregon, <https://web.archive.org/web/20081128174408/http://www.accf.org/pdf/NAM/Oregon.pdf>

<sup>50</sup> Northwest Gas Association, The Board, <https://www.nwga.org/about-us>

<sup>51</sup> The Independent Petroleum Association of America does not make its full membership list publicly available, indicating the importance of discovery for this case.

<sup>52</sup> Independent Petroleum Association of America, Board of Directors, <https://www.ipaa.org/board-of-directors/>

<sup>53</sup> *Id.*



group's website claimed the Kyoto Protocol was "Wrong on the Science" and that CO<sub>2</sub> is "NOT [sic] a Pollutant."<sup>54</sup>

- Known Defendant members:
  - Phillips Coal Company (subsidiary of ConocoPhillips)
- **Coalition for American Jobs (industry coalition)**
  - Relevant years active: 2010—2013
  - Description: Ran TV ads that called efforts to reduce carbon emissions "arbitrary" and promoted misleading economic analyses exaggerating the cost of transitioning away from fossil fuels<sup>55</sup>
  - Known Defendant members:
    - American Petroleum Institute (see above)
    - American Chemistry Council (see above)
    - U.S. Chamber of Commerce (see above)
    - National Association of Manufacturers (see above)
    - American Forest and Paper Association (see above)
- **Coalition for Affordable and Reliable Energy (industry coalition)**
  - Relevant years active: 2001—2008
  - Description: Falsely promoted coal as environmentally friendly
  - Known Defendant members and funders:
    - American Chemistry Council (see above)
    - National Association of Manufacturers (see above)
    - U.S. Chamber of Commerce (see above)
    - Frontiers of Freedom Institute, funders of which include:<sup>56</sup>
      - ExxonMobil
      - Koch foundations<sup>57</sup>
- **Cooler Heads Coalition (industry coalition)**
  - Relevant years active: 1997—present
  - Description: Numerous members coauthored the industry's 1998 Global Climate Science Communication Plan (to convince public of scientific uncertainty about

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<sup>54</sup> Climate and Development Lab, Brown University, November 2018, Countermovement Coalitions: Climate Denialist Organizational Profiles, <https://www.climatedevlab.brown.edu/post/countermovement-coalitions-climate-denialist-organizational-profiles>, p. 19.

<sup>55</sup> *Id.*, p. 33.

<sup>56</sup> DeSmog, Frontiers of Freedom (FoF), <https://www.desmog.com/frontiers-freedom/>

<sup>57</sup> Koch foundations include the Charles G. Koch Charitable Foundation (since 2011 split into the Charles Koch Institute and Charles Koch Foundation), the Claude R. Lambe Charitable Foundation (disbanded in 2013), and the David H. Koch Charitable Foundation. DeSmog, Koch Family Foundations & Entities, <https://www.desmog.com/koch-family-foundations/>; Charles Koch Foundation, 2011 (archived version of May 28, 2013), <https://web.archive.org/web/20130528022945/http://cgkfoundation.org/>

- climate change and prevent action to prevent global warming);<sup>58</sup> continues to downplay the reality and seriousness of climate change
- Known Defendant members and funders:
    - Citizens for a Sound Economy, funders of which include Koch foundations<sup>59</sup>
    - FreedomWorks, funders of which include the American Petroleum Institute (see above)<sup>60</sup>
    - Frontiers of Freedom Institute (see above)
    - Committee for a Constructive Tomorrow, funders of which include:<sup>61</sup>
      - ExxonMobil
      - Koch foundations
      - Shell Oil Company Foundation
    - Competitive Enterprise Institute, funders of which include:<sup>62</sup>
      - ExxonMobil
      - Marathon Petroleum
      - Charles Koch Institute
      - David H. Koch (directly)
      - Koch Companies Public Sector (part of Koch Industries)
      - American Petroleum Institute (see above)
      - American Fuel & Petrochemical Manufacturers (see above)
      - Americans for Prosperity Foundation (see above)
    - Fraser Institute, funders of which include:<sup>63</sup>
      - Koch foundations
      - ExxonMobil
    - George C. Marshall Institute, funders of which include:<sup>64</sup>

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<sup>58</sup> Climate Investigations Center, Cooler Heads Coalition, <https://climateinvestigations.org/climate-deniers/cooler-heads-coalition/>. In 1998, Marlo Lewis Jr. from the Cooler Heads Coalition testified to Congress that “There are several reasons why we shouldn’t worry about global warming [...] [T]he probability of catastrophic warming is low. Indeed, it is not clear global warming is something we should prevent, even if that were easy and cost little. Spending trillions to avoid better weather and a greener planet would make no sense at all.” Climate and Development Lab, Brown University, 2018, Countermovement Coalitions: Climate Denialist Organizational Profiles, <https://www.climatedevlab.brown.edu/post/countermovement-coalitions-climate-denialist-organizational-profiles>, p. 16

<sup>59</sup> SourceWatch, Citizens for a Sound Economy, [https://www.sourcewatch.org/index.php?title=Citizens\\_for\\_a\\_Sound\\_Economy](https://www.sourcewatch.org/index.php?title=Citizens_for_a_Sound_Economy)

<sup>60</sup> DeSmog, FreedomWorks, <https://www.desmog.com/freedomworks/>

<sup>61</sup> DeSmog, Committee for a Constructive Tomorrow (CFACT), <https://www.desmog.com/committee-constructive-tomorrow/>

<sup>62</sup> DeSmog, Competitive Enterprise Institute (CEI), <https://www.desmog.com/competitive-enterprise-institute/>

<sup>63</sup> DeSmog, Fraser Institute, <https://www.desmog.com/fraser-institute/>

<sup>64</sup> DeSmog, George C. Marshall Institute (GMI) — Now CO2 Coalition, <https://www.desmog.com/george-c-marshall-institute/>



- ExxonMobil
- ExxonMobil Foundation
- Koch foundations
- Heartland Institute, funders of which include:<sup>65</sup>
  - ExxonMobil
  - Koch Industries
- Heritage Foundation, funders of which include:<sup>66</sup>
  - ExxonMobil
  - Koch foundations
  - Cato Institute (see above)
- John Locke Foundation, funders of which include:<sup>67</sup>
  - Koch foundations
  - Cato Institute (see above)
- National Center for Public Policy Research, funders of which include:<sup>68</sup>
  - ExxonMobil
  - American Chemistry Council (see above)
- Pacific Research Institute, funders of which include:<sup>69</sup>
  - ExxonMobil
  - Koch foundations
  - Heartland Institute (see above)
  - State Policy Network (see above)
- The Advancement of Sound Science Coalition, funders of which include:<sup>70</sup>
  - Amoco (now BP)
  - Chevron
  - ExxonMobil
  - Occidental Petroleum
- Americans for Prosperity, funders of which include:<sup>71</sup>
  - Koch foundations
  - American Petroleum Institute (see above)
  - American Energy Alliance, funders of which include:<sup>72</sup>
    - Koch foundations
    - American Fuel and Petrochemical Manufacturers (see above)

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<sup>65</sup> DeSmog, Heartland Institute, <https://www.desmog.com/heartland-institute/>

<sup>66</sup> DeSmog, Heritage Foundation, <https://www.desmog.com/heritage-foundation/>

<sup>67</sup> DeSmog, John Locke Foundation (JLF), <https://www.desmog.com/john-locke-foundation/>

<sup>68</sup> DeSmog, National Center for Public Policy Research (NCPPR), <https://www.desmog.com/national-center-public-policy-research/>

<sup>69</sup> DeSmog, Pacific Research Institute (PRI), <https://www.desmog.com/pacific-research-institute/>

<sup>70</sup> DeSmog, The Advancement of Sound Science Coalition (TASSC), <https://www.desmog.com/advancement-sound-science-coalition/>

<sup>71</sup> DeSmog, Americans for Prosperity, <https://www.desmog.com/americans-for-prosperity/>

<sup>72</sup> DeSmog, American Energy Alliance (AEA), <https://www.desmog.com/american-energy-alliance-aea/>

- Americans for Prosperity (reciprocally)
  - Cato Institute, funders of which include:<sup>73</sup>
    - Koch foundations
    - ExxonMobil
  - National Center for Policy Analysis, funders of which include:<sup>74</sup>
    - ExxonMobil
    - Koch foundations
    - Atlas Economic Research Foundation, funders of which include:<sup>75</sup>
      - Koch foundations
      - Cato Institute (see above)
      - State Policy Network (see above)
      - Heritage Foundation (see above)
- **Coalition for Vehicle Choice (industry coalition)**
  - Relevant years active: 1991—2004
  - Description: Portrayed improved fuel efficiency as harmful to the environment and ignored effects of greenhouse gas emissions
  - Known Defendant members and funders:
    - Citizens for a Sound Economy (see above)
    - Competitive Enterprise Institute (see above)
    - National Association of Manufacturers (see above)
    - The Fertilizer Institute (see above)
    - U.S. Chamber of Commerce (see above)
    - American Legislative Exchange Council, funders of which include:<sup>76</sup>
      - Koch foundations
      - ExxonMobil
      - American Petroleum Institute (see above)
      - American Chemistry Council (see above)
    - Americans for Tax Reform, funders of which include:<sup>77</sup>
      - Koch foundations
      - American Petroleum Institute (see above)
      - American Natural Gas Alliance (merged with the American Petroleum Institute)<sup>78</sup>
- **Partnership for a Better Energy Future (industry coalition)**

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<sup>73</sup> DeSmog, Cato Institute, <https://www.desmog.com/cato-institute/>

<sup>74</sup> DeSmog, National Center for Policy Analysis (NCPA), <https://www.desmog.com/national-center-policy-analysis/>

<sup>75</sup> DeSmog, Atlas Network (Atlas Economic Research Foundation), <https://www.desmog.com/atlas-economic-research-foundation/>

<sup>76</sup> DeSmog, American Legislative Exchange Council (ALEC), <https://www.desmog.com/american-legislative-exchange-council/>

<sup>77</sup> DeSmog, Americans for Tax Reform (ATR), <https://www.desmog.com/americans-tax-reform/>

<sup>78</sup> Climate Investigations Center, America's Natural Gas Alliance, <https://climateinvestigations.org/trade-association-pr-spending/americas-natural-gas-alliance/>

- Relevant years active: 2014—present
- Description: Has downplayed the urgency and reality of climate change, calling climate change “an open discussion” not necessarily caused by fossil fuels
- Known Defendant members and funders:
  - American Coalition for Clean Coal Electricity (see above)
  - American Fuel & Petrochemical Manufacturers (see above)
  - American Petroleum Institute (see above)
  - Independent Petroleum Association of America (see above)
  - National Association of Manufacturers (see above)
  - Natural Gas Supply Association (see above)
  - The Fertilizer Institute (see above)
  - U.S. Chamber of Commerce (see above)
  - The Vinyl Institute, members of which include ExxonMobil Chemical (subsidiary of ExxonMobil)<sup>79</sup>
  - Styrene Information & Research Center, members of which include:<sup>80</sup>
    - Shell Chemical LP (subsidiary of Shell)
    - Total Petrochemicals USA, Inc. (subsidiary of TotalEnergies)
  - Consumer Energy Alliance, members of which include:<sup>81</sup>
    - Phillips 66 (part of ConocoPhillips until 2012)
    - Shell Oil
    - Shell USA
    - Motiva Enterprises
    - Anadarko (now Occidental Petroleum)
    - BP
    - Chevron
    - ConocoPhillips
    - ExxonMobil
    - Marathon Corporation
    - Marathon Energy
    - Marathon Petroleum Corporation
    - Occidental Petroleum Corporation
    - American Chemistry Council (see above)
    - American Forest & Paper Association (see above)
    - The Fertilizer Institute (see above)
    - U.S. Chamber of Commerce (see above)
    - America’s Natural Gas Alliance (see above)
    - American Coalition for Clean Coal Electricity (see above)
    - Partnership for Affordable Clean Energy (see above)
    - American Fuel & Petrochemical Manufacturers (see above)
    - American Gas Association (see above)

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<sup>79</sup> Vinyl Institute, Our Members, <https://www.vinylinfo.org/our-members/>

<sup>80</sup> Styrene Information & Research Center, Our People, <https://styrene.org/our-people/>

<sup>81</sup> DeSmog, Consumer Energy Alliance (CEA), <https://www.desmog.com/consumer-energy-alliance-cea/>

- American Petroleum Institute (see above)
- Independent Petroleum Association of America (see above)
- National Petrochemical and Refiners Association (see above)
- American Exploration & Production Council, members of which include ConocoPhillips<sup>82</sup>
- Natural Gas Supply Association, members of which include:<sup>83</sup>
  - BP
  - Chevron
  - ExxonMobil
  - ConocoPhillips
  - Shell
- Texas Oil & Gas Association, members of which include:<sup>84</sup>
  - Chevron
  - Anadarko (now Occidental Petroleum)
  - ExxonMobil
  - Occidental Petroleum
  - ConocoPhillips
  - Marathon Petroleum Corporation
  - Shell
  - Phillips 66 (part of ConocoPhillips until 2012)
  - Valero

The (non-exhaustive) lists above illustrate how Defendants have for decades deceived – and continue to deceive – the public about climate change not only directly but also through a complex array of front groups. Defendants’ deceptive activities have been and continue to be extensive. A peer reviewed analysis from 2013, for example, found that the climate change countermovement (the movement to downplay the seriousness of climate change and delay actions to address it), which comprised over 90 organizations at the time of the analysis, boasted an annual budget of nearly \$1 billion per year.<sup>85</sup> Much of the funding to these organizations has been passed through donor advised funds such as Donors Trust, which conceal the identities of the original funders. Despite the lack of transparency, researchers and journalists have documented Defendants’ extensive participation in these decades-long (and successful) efforts to mislead the public about the urgency and severity of climate change, the need to replace fossil fuels, and the viability (or lack thereof) of various proposed solutions. Many of the trade associations and front groups above do not publicly disclose their full membership and funding lists, indicating the importance of discovery in this case.

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<sup>82</sup> American Exploration & Production Council, Members, <https://axpc.org/members/>

<sup>83</sup> Natural Gas Supply Association, Our Members, <https://www.ngsa.org/members-page/>

<sup>84</sup> Texas Oil & Gas Association, Board of Directors, <https://www.txoga.org/about-us/board-of-directors/>

<sup>85</sup> Brulle, R.J. Institutionalizing delay: foundation funding and the creation of U.S. climate change counter-movement organizations. *Climatic Change* **122**, 681–694 (2014), <https://doi.org/10.1007/s10584-013-1018-7>

Membership in the above front groups was not passive or accidental. The purpose of these groups – and related trade associations, industry coalitions, and think tanks – was and is to promote the interests of their members and funders, often propagandizing on issues directly related to members’ activities and products, such as fossil fuels and climate change. Often, employees of member companies were placed on the boards or other strategic committees of these front groups, directing their propaganda efforts.<sup>86</sup> In essence, these front groups gave (and still give) cover to members and funders by engaging in misleading communications and potentially other dirty work that corporations may be reluctant to engage in openly. Often, Defendants were members or funders of climate deception front groups through multiple layers of other front groups – a complex web with the effect of obscuring and concealing from public view Defendants’ promotion of climate denial and disinformation. Indeed, Defendants’ participation in many of these front groups is in many cases only known thanks to extensive investigative efforts by dedicated researchers.

Also important to understand is that Defendants often supported climate deception front groups through affiliated philanthropic foundations. For example, numerous climate deception front groups have been funded by foundations associated with Koch Industries (almost entirely owned by Charles Koch and the estate of David Koch, who died in 2019), including the Claude R. Lambe Charitable Foundation (disbanded in 2013), the Charles G. Koch Charitable Foundation (since 2011 split into the Charles Koch Institute and Charles Koch Foundation),<sup>87</sup> and the David H. Koch Charitable Foundation.<sup>88</sup> A 2018 report from Greenpeace found that the Koch family foundations had spent at least \$168 million since 1986 in support of around 90 front groups and organizations promoting climate disinformation.<sup>89</sup> These foundations have been substantially controlled by Charles and David Koch and thus linked through governance to Koch Industries. For example:

- The 2010 IRS Form 990-PF from the Charles G. Koch Charitable Foundation lists its directors as Charles G. Koch (Chairman), his wife Elizabeth B. Koch, his daughter Elizabeth Robinson Koch, his son Charles Chase Koch, and longtime advisor (and Executive Vice President and board member of Koch Industries) Richard Fink (President).<sup>90</sup>

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<sup>86</sup> See, for example, AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc; Mobil Corporation; Bernstein, LS; Shlaes, John; Global Climate Coalition; Intergovernmental Panel on Climate Change; UNEP; WMO; Sundararaman, N. Global Climate Coalition Science and Technology Assessment Committee (STAC) Minutes of the January 16, 1997 Meeting. 1997 February 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/gyfl0228>

<sup>87</sup> Charles Koch Foundation, 2011 (archived version of May 28, 2013), <https://web.archive.org/web/20130528022945/http://cgkfoundation.org/>

<sup>88</sup> Jane Mayer, August 23, 2010, Covert Operations, *The New Yorker*, <https://www.newyorker.com/magazine/2010/08/30/covert-operations>

<sup>89</sup> Greenpeace, Koch Industries: Secretly Funding the Climate Denial Machine, <https://www.greenpeace.org/usa/climate/climate-deniers/koch-industries/>

<sup>90</sup> Charles G Koch Charitable Foundation, 2010, Form 990-PF, <https://pdf.guidestar.org/PDF/Images/2010/480/918/2010-480918408-07c8cd5b-F.pdf>, p. 42

- The 2015 IRS Form 990 from the Charles Koch Institute (previously the Charles G. Koch Charitable Foundation) lists its directors as Charles G. Koch (Chairman), his wife Elizabeth B. Koch, his son Charles Chase Koch, and longtime advisor (and Executive Vice President and board member of Koch Industries) Richard Fink (Vice Chairman).<sup>91</sup>
- The 2012 IRS Form 990-PF from the Charles Koch Foundation (previously the Charles G. Koch Charitable Foundation) lists its directors as Charles G. Koch (Chairman), his wife Elizabeth B. Koch, his son Charles Chase Koch, and longtime advisor (and Executive Vice President and board member of Koch Industries) Richard Fink (President).<sup>92</sup>
- The 2007 IRS Form 990 from the Claude R. Lambe Charitable Foundation lists its directors as Charles G. Koch, his wife Elizabeth B. Koch, his daughter Elizabeth R. Koch, his son Charles C. Koch, and longtime advisor (and Executive Vice President and board member of Koch Industries) Richard Fink.<sup>93</sup>
- The 2012 IRS Form 990-PF from the David H. Koch Charitable Foundation lists the only director as David H. Koch.<sup>94</sup>

To illustrate just a few examples of climate disinformation disseminated by front groups supported by Defendants, in 2015 and 2016, the Heartland Institute (which has been funded by ExxonMobil, Koch foundations, National Association of Manufacturers, and the American Petroleum Institute)<sup>95</sup> published a 100+ page report titled *Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus* (NIPCC stood for “Nongovernmental

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<sup>91</sup> Charles Koch Institute, 2015, Form 990, [https://990s.foundationcenter.org/990\\_pdf\\_archive/274/274967732/274967732\\_201512\\_990.pdf](https://990s.foundationcenter.org/990_pdf_archive/274/274967732/274967732_201512_990.pdf), p. 7; Richard Fink retired in 2015. Tim Alberta, Eliana Johnson, May 16, 2016, Exclusive: In Koch World ‘Realignment,’ Less National Politics, *National Review*, <https://www.nationalreview.com/2016/05/koch-brothers-campaign-activity-slows/>

<sup>92</sup> Charles Koch Foundation, 2012, Form 990-PF, <http://pdf.guidestar.org/PDF/Images/2012/480/918/2012-480918408-09eaa056-F.pdf>, p. 17

<sup>93</sup> Claude R. Lambe Charitable Foundation, 2007, Form 990-PF, <https://pdf.guidestar.org/PDF/Images/2007/480/935/2007-480935563-047307e3-F.pdf>, p. 28

<sup>94</sup> David H. Koch Charitable Foundation, 2012, Form 990-PF, <https://pdf.guidestar.org/PDF/Images/2012/480/926/2012-480926946-09e8507b-F.pdf>, p. 6

<sup>95</sup> DeSmog, The Heartland Institute, <https://www.desmog.com/heartland-institute/>



International Panel on Climate Change” – a clear imitation of the Intergovernmental Panel on Climate Change).<sup>96</sup> The report contained numerous false or misleading claims, including:<sup>97</sup>

- that no scientific consensus existed that fossil fuels were causing climate change (e.g., “There is no survey or study showing ‘consensus’ on the most important scientific issues in the climate change debate,” p. xi; “Extensive survey data show deep disagreement among scientists on scientific issues that must be resolved before the man-made global warming hypothesis can be validated. Many prominent experts and probably most working scientists disagree with the claims made by the United Nations’ Intergovernmental Panel on Climate Change (IPCC),” p. xi);
- that the IPCC is not a credible source of information regarding climate science (e.g., “IPCC, created to find and disseminate research finding a human impact on global climate, is not a credible source. It is agenda-driven, a political rather than a scientific body, and some allege it is corrupt,” p. xii);
- that greenhouse gases from fossil fuels and other sources were not and would not cause significant climate change (e.g., “GCMs [Global Climate Models] systematically over-estimate the sensitivity of climate to carbon dioxide (CO<sub>2</sub>),” p. xii; “a doubling of CO<sub>2</sub> from pre-industrial levels...would likely produce...about ~1 degree C of...warming,” p. xii (around three times smaller than predicted by the scientific consensus); “there has been no global warming for some 18 years,” p. xii; “Solar forcings are not too small to explain twentieth century warming. In fact, their effect could be equal to or greater than the effect of CO<sub>2</sub> in the atmosphere,” p. xiii; “Melting of Arctic sea ice and polar icecaps is not occurring at ‘unnatural’ rates and does not constitute evidence of a human impact on the climate,” p. xiii; “Best available data show sea-level rise is not accelerating,” p. xiii; “No evidence exists that current changes in Arctic permafrost are other than natural,” p. xiv);
- that climate change would not be harmful (e.g., “A warming of 2 degrees C or more during the twenty-first century would probably not be harmful,” p. xiii; “No convincing relationship has been established between warming over the past 100 years and increases in extreme weather events. ... A warmer world will see milder weather patterns” pp. xiii—xiv).

The report’s take-home messages were clear: that climate science was unreliable and that fossil fuel production and use should not be reduced – messages aligned with the commercial

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<sup>96</sup> Craig D. Idso, Robert M. Carter, S. Fred Singer, 2015, Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus (Heartland Institute), <https://colloquydowneast.org/wp-content/uploads/2019/06/NIPCC.pdf>; Craig D. Idso, Robert M. Carter, S. Fred Singer (Forward by Marita Noon), 2016, Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus, Second Edition (Heartland Institute), <https://heartland.org/wp-content/uploads/2023/09/Why-Scientists-Disagree-Second-Edition-with-covers.pdf>; Heartland Institute, Why Scientists Disagree about Global Warming, <https://heartland.org/opinion/why-scientists-disagree-about-global-warming/>

<sup>97</sup> Craig D. Idso, Robert M. Carter, S. Fred Singer, 2015, Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus (Heartland Institute), <https://colloquydowneast.org/wp-content/uploads/2019/06/NIPCC.pdf>

interests of the Heartland Institute's fossil fuel industry funders.<sup>98</sup> Incredibly, the report's authors wrote the "NIPCC...receives no corporate funding for its activities" and recommended that "Rather than rely exclusively on IPCC for scientific advice, policymakers should seek out advice from independent, nongovernment organizations and scientists who are free of financial and political conflicts of interest."<sup>99</sup> The Heartland Institute admitted in a 2019 undercover investigation that it dedicates the majority of the funding it receives from Donors Trust – which is one of Heartland's major funders and conceals its own funding sources – to promote skepticism about climate change.<sup>100</sup>

More recently, in 2022, the Heartland Institute published a book for students and teachers called *Climate at a Glance for Teachers and Students: Facts on 30 Prominent Climate Topics*, which portrayed – to children – global warming as beneficial or harmless, and the science of climate change as fundamentally uncertain. The book states, for example:<sup>101</sup>

- "Global crop yields have set new records almost every year as our planet has modestly warmed. ... Longer growing seasons, higher temperatures, and greater concentrations of atmospheric carbon dioxide are creating ideal crop conditions," p. 6;
- "The United States has benefited from additional precipitation and a reduction in drought conditions as the climate has modestly warmed," p. 8;
- "Floods always have and always will occur. With no increase in overall flooding activity, there is no justifiable reason to blame any recent, current, or near-future flooding event on climate change," p. 10;
- "Many activists now claim global warming causes high water levels [in lakes], but they have already claimed global warming causes low water levels, calling into question activists' assertion that the science is 'settled' on climate change and its consequences," p. 16; "After nearly 30 years of abundance [of water in Lake Mead], a decline was bound to eventually occur," p. 18;
- "Recent warming has allowed corals to expand their range poleward while still thriving near the equator. ... The primary causes of coral bleaching ... include oxybenzone (a chemical found in sunscreen), sediment runoff from nearby coastal lands, fertilizer and nitrogen loading from agriculture, and lower temperatures like those recorded in 2010 off the Florida coast," p. 24;
- "Climate activists, including government bureaucrats, claim the Greenland ice sheet is melting six times faster than it was 30 years ago, but 30 years ago, the Greenland ice sheet was barely melting at all. Six times almost no ice loss is hardly an example of a climate change crisis," p. 27;

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<sup>98</sup> DeSmog, Heartland Institute, <https://www.desmog.com/heartland-institute/>

<sup>99</sup> Craig D. Idso, Robert M. Carter, S. Fred Singer, 2015, *Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus* (Heartland Institute), <https://colloquydowneast.org/wp-content/uploads/2019/06/NIPCC.pdf>, pp. x, xiv

<sup>100</sup> Correctiv, The Heartland Lobby, Feb. 11, 2020, <https://correctiv.org/en/top-stories/2020/02/11/the-heartland-lobby/>

<sup>101</sup> Anthony Watts, James Taylor, 2022, *Climate at a Glance for Teachers and Students: Facts on 30 Prominent Climate Topics* (ed. H. Sterling Burnett) (The Heartland Institute), <https://heartland.org/wp-content/uploads/2023/01/CaaG-2022.pdf>



- “As the sea gradually rises, it brings sand and sediment along with it, building up island shorelines at a rate that offsets modest sea-level rise,” p. 30;
- “Ocean water is not overly acidic. ... The health of ocean life is improved, not harmed, by more carbon dioxide,” p. 32;
- “Sea levels have been rising at a fairly steady pace since at least the mid-1800s ... with no hint of acceleration,” p. 36;
- “The U.N. IPCC... find[s] no increase in the frequency or severity of hurricanes,” p. 41;
- “there is no strong evidence that shows global warming is making heat waves more severe or frequent ... recent heat wave frequency and intensity remain in line with the historical norm. ... In recent decades in the United States, heat waves have been far less frequent and severe than they were in the 1930s,” p. 49;
- “There has been no significant warming in the United States since 2005. Any claimed recent warming and impacts at specific places in the United States are isolated and indicative of random variation, not a long-term warming trend. Thermometer readings in the United States suggest current temperatures are similar to those temperatures recorded eight decades ago,” p. 51;
- “Compared to the first half of the twentieth century, the number of wildfires occurring in the United States over the past decade is lower, and the fires have been less severe,” p. 54;
- “American ranchers and meat consumption have virtually no impact on overall greenhouse gas emissions or climate change,” p. 64;
- “For decades, scientists have debated the Earth’s climate sensitivity, due to the uncertain nature of the climate feedback in various models. ... climate model temperature projections are dubious, at best ... The best evidence indicates climate sensitivity is that the lower end of the estimated range, [with global warming] unlikely to exceed 1.5 degrees C in the twenty-first century,” p. 72;
- “a strong majority of scientists have said they are not deeply concerned about it [global warming]. ... the only consensus that ought to matter is whether scientists are extremely worried about climate change,” p. 76;
- “Climate activism, not climate change, poses a significant threat to U.S. national security. ... Proposals to restrict U.S. carbon dioxide emissions would impose expensive, unstable energy sources on Americans that could destroy the U.S. economy. Earth’s modest recent warming is reducing national security ‘threat multipliers,’ such as crop failures and weather-related catastrophes,” p. 80.

Heartland Institute president James Taylor, in a January, 2022 article posted on the organization’s website, bragged about how The Heartland Institute unveiled its book targeting students and teachers in October, 2021 – just four months after the climate-change-driven extreme heat dome of 2021 struck Multnomah County.<sup>102</sup> Taylor announced that The Heartland Institute would send copies of the book to a list of 100,000 high school and middle school science teachers across the U.S. (presumably including Oregon). Taylor also wrote that in 2017, Heartland had sent more than 300,000 copies of the deceptive NIPCC report *Why Scientists*

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<sup>102</sup> James Taylor, January 28, 2022, Teachers and Students Finally Given Access to the Truth About Climate Change, The Heartland Institute, <https://heartland.org/opinion/teachers-and-students-finally-given-access-to-the-truth-about-climate-change/>

*Disagree About Global Warming* to middle school, high school, and college science teachers throughout the country (including, presumably, to teachers in Oregon), and that “many ... teachers used the book as a valuable resource to provide their students with much-needed balance on the global warming topic.”<sup>103</sup>

Even more recently, in 2024, The Heartland Institute published a pamphlet called “The so-called climate crisis is a sham,” which promoted falsehoods including, “The Sun is the primary driver of recent warming,” “Nearly all the heat-trapping ability of CO<sub>2</sub> has already occurred – more CO<sub>2</sub> will have virtually no impact on future temperatures,” and “Carbon dioxide and warmer temperatures are a benefit rather than a harm.”<sup>104</sup> These are just a few illustrative examples of the deceptive messaging promoted by fossil fuel companies, including Defendants, through front groups and other third parties.

A few Defendants deserve special mention and further elaboration here. In 2021, NW Natural targeted school children as young as kindergarten in Oregon, distributing games and other curricular material portraying fossil gas as clean, healthy, and irreplaceable – all while omitting the fact that fossil gas causes climate change.<sup>105</sup> For example, the cartoon activities reproduced below show a cheerful cartoon bus “powered by natural gas” and suggest the bus is “clean” by comparing it to a diesel bus (while omitting that fossil fuel gas emits harmful gases including greenhouse gases).<sup>106</sup> Mike Rosen, a former Portland Public Schools board member, told climate investigative journalism site DeSmog that NW Natural’s targeting of children was “like the old ads that used to appear in magazines talking about DDT and how DDT is your friend. ... It’s just propaganda.”<sup>107</sup> Following a legal challenge, the Oregon’s Public Utility Commission ruled that NW Natural’s proposal to charge ratepayers for the costs of producing and distributing the material was unlawful.<sup>108</sup>

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<sup>103</sup> *Id.*

<sup>104</sup> James Taylor, Oct. 5, 2023, Climate Change: The so-called climate crisis is a sham, The Heartland Institute, <https://heartland.org/publications/climate-change-the-so-called-climate-crisis-is-a-sham/>

<sup>105</sup> Nick Cunningham, May 25, 2022, Gas Utility Sends Kid-Friendly Activity Books to Oregon Schools, DeSmog, <https://www.desmog.com/2022/05/25/northwest-natural-gas-utility-oregon-schools-booklets/>

<sup>106</sup> Nick Cunningham, May 25, 2022, Gas Utility Sends Kid-Friendly Activity Books to Oregon Schools, DeSmog, <https://www.desmog.com/2022/05/25/northwest-natural-gas-utility-oregon-schools-booklets/>

<sup>107</sup> *Id.*

<sup>108</sup> Jessica A. Knoblauch, May 13, 2024, How We Stopped a Gas Utility’s Scheme to Propagandize Children, Earthjustice, <https://earthjustice.org/article/how-we-stopped-a-gas-utilitys-scheme-to-propagandize-children>

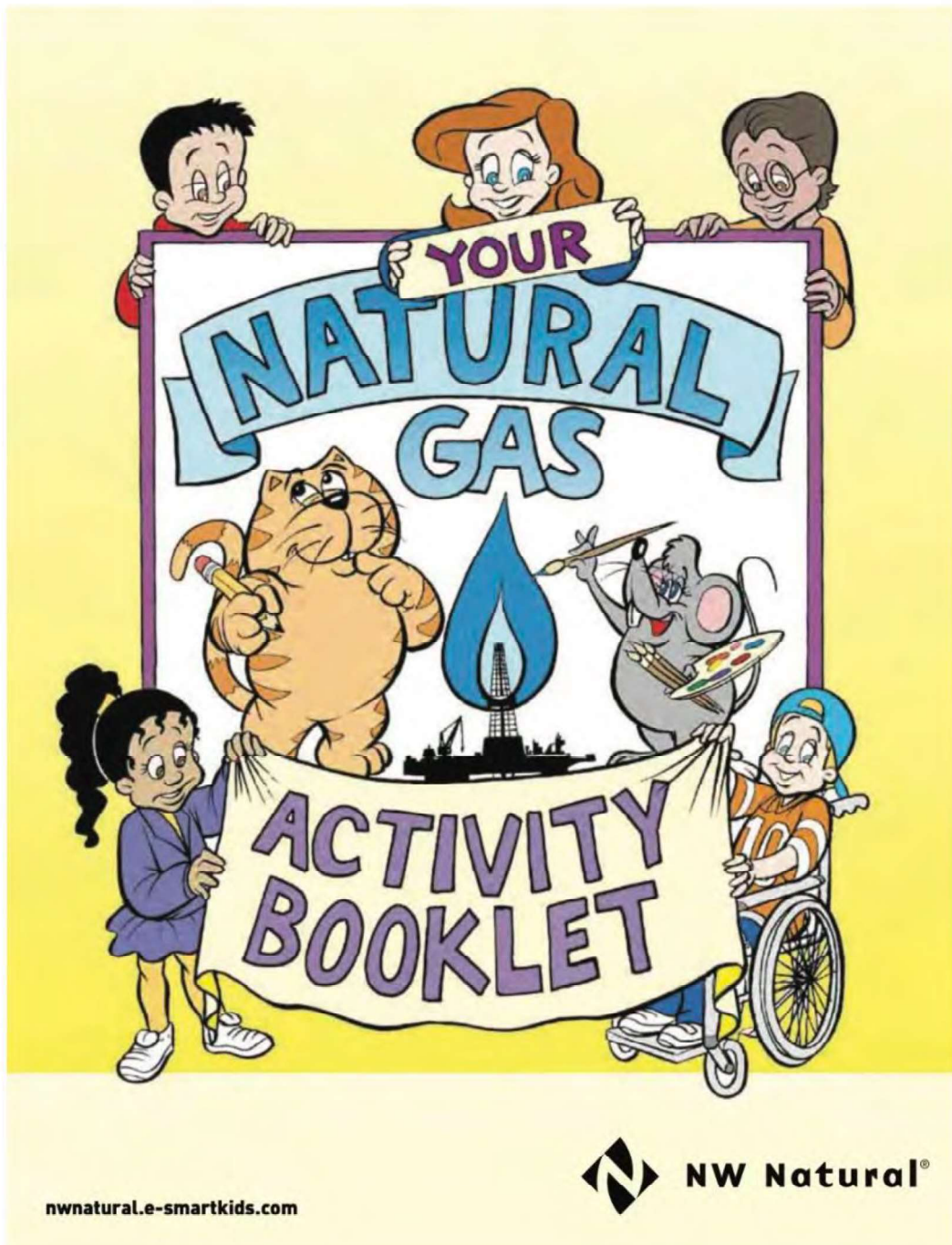


Image: The cover of a children's book promoting fossil gas made and distributed by NW Natural (as reported by Earthjustice).<sup>109</sup>

<sup>109</sup> Jessica A. Knoblauch, May 13, 2024, How We Stopped a Gas Utility's Scheme to Propagandize Children, Earthjustice, <https://earthjustice.org/article/how-we-stopped-a-gas-utilitys-scheme-to-propagandize-children>



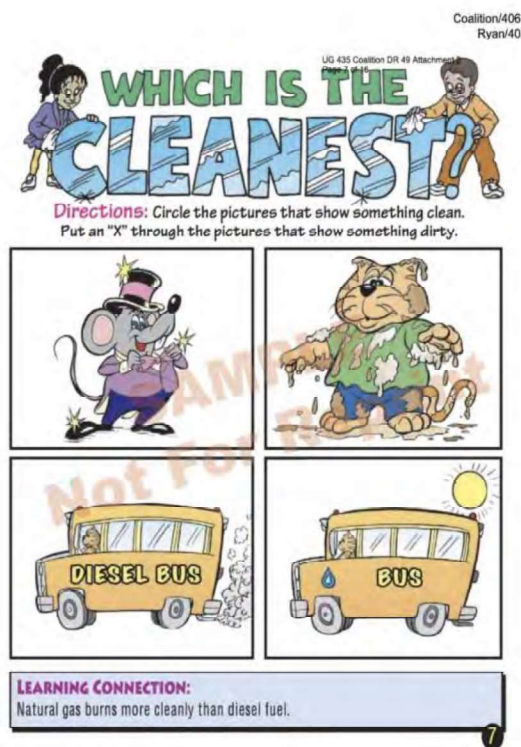
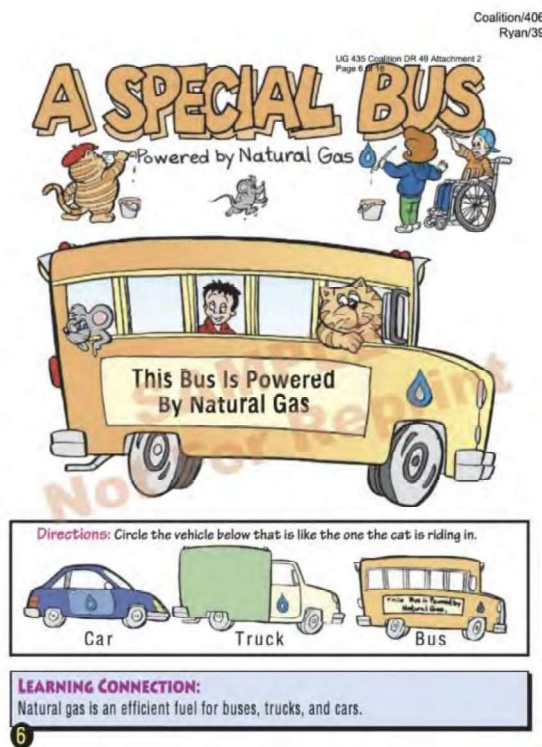


Image: NW Natural curricular material sent to schools in the utility's service area, portraying fossil gas as clean and healthy, as reported by DeSmog.<sup>110</sup>

Defendant McKinsey has supported deceptive front groups such as the Global Climate Coalition and the Alliance for Energy & Economic Growth through membership in trade associations including the American Chemistry Council, National Petrochemical and Refiners Association (now American Fuel and Petrochemical Manufacturers), U.S. Chamber of Commerce, and Business Roundtable (see above), and recent research has revealed the firm advises dozens of the world's largest fossil fuel companies – including Shell, BP, TotalEnergies, Eni, Saudi Aramco, and Koch Industries – and has advised companies and governments on how to promote and expand fossil fuel use, despite the enormous damages caused by fossil fuel products through climate change.<sup>111</sup>

The Oregon Institute of Science and Medicine, another Defendant, occupies a notorious position in the history of climate deception and denial. This nonprofit organization based in Cave Junction, Oregon has promoted various false or deceptive messages regarding climate change since the late 1990s. For example, in a Wall Street Journal article entitled “Science Has Spoken:

<sup>110</sup> Nick Cunningham, May 25, 2022, Gas Utility Sends Kid-Friendly Activity Books to Oregon Schools, DeSmog, <https://www.desmog.com/2022/05/25/northwest-natural-gas-utility-oregon-schools-booklets/>

<sup>111</sup> Ben Stockton, Hajar Meddah, Nov. 20, 2024, ‘Capitalism incarnate’: inside the secret world of McKinsey, the firm hooked on fossil fuels, *The Guardian*, <https://www.theguardian.com/business/2024/nov/20/mckinsey-fossil-fuels>

Global Warming Is a Myth,” dated December 4, 1997, Arthur Robinson and Zachary Robinson from the Oregon Institute of Science and Medicine wrote, “there is not shred of persuasive evidence that humans have been responsible for increasing global temperatures” and that “carbon dioxide emissions have actually been a boon for the environment.”<sup>112</sup> These statements directly contradicted the findings of the Intergovernmental Panel on Climate Change’s Second Assessment Report, published in 1995, which found a discernible human impact on the global climate.<sup>113</sup> Robinson and Robinson went on to call global warming a “myth” and a “hypothesis” that “does not hold up,” falsely claiming that “measurements have definitively shown that major atmospheric greenhouse warming of the atmosphere is not occurring and is unlikely ever to occur” and that “the scientific method requires that the global warming hypothesis be rejected.”<sup>114</sup> A chart printed in the article featured data misleadingly presented to portray the Earth as cooling rather than warming and proclaimed, “What Warms the Earth? It’s Solar Activity ... Not Carbon Dioxide.”<sup>115</sup> Robinson and Robinson went on to claim falsely that “computer climate models are very unreliable” and argue misleadingly that “the weatherman still has difficulty predicting local weather even for a few days” (even though predicting global warming is in some ways more straightforward than predicting local weather).<sup>116</sup> The authors concluded that “we needn’t worry about human use of hydrocarbons [fossil fuels] warming the Earth. We also needn’t worry about environmental calamities,” even falsely claiming that “Hydrocarbon [fossil fuel] use has major environmental benefits” and that “Our children will enjoy an Earth with twice as much plant and animal life as that with which we are now blessed [because of greenhouse gases from fossil fuels].”<sup>117</sup> Reducing fossil fuel use, the authors warned, would result in “global poverty and death[.]”<sup>118</sup>

Around the same time, the Oregon Institute of Science and Medicine distributed a petition against reducing fossil fuel use (and in particular, against U.S. participation in the UN Framework Convention on Climate Change Kyoto Protocol), based on similar false and deceptive claims, including, “There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gasses is causing or will, in the foreseeable future, cause catastrophic heating of the Earth’s atmosphere and disruption of the Earth’s climate,” that “increases in atmospheric carbon dioxide produce many beneficial effects up on the natural plant and animal environments of the Earth,” and that *limiting* greenhouse gas pollution “would *harm* the environment, hinder the advance of science and technology, and damage the health and

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<sup>112</sup> Arthur Robinson and Zachary Robinson, December 4, 1997, Science Has Spoken: Global Warming Is a Myth, *The Wall Street Journal* (Dow Jones & Company, Inc.), [https://www.desmog.com/wp-content/uploads/files/Oregon\\_Petition.pdf](https://www.desmog.com/wp-content/uploads/files/Oregon_Petition.pdf)

<sup>113</sup> Intergovernmental Panel on Climate Change, 1995, IPCC Second Assessment: Climate Change 1995, <https://archive.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf>, p. 22

<sup>114</sup> Arthur Robinson and Zachary Robinson, December 4, 1997, Science Has Spoken: Global Warming Is a Myth, *The Wall Street Journal* (Dow Jones & Company, Inc.), [https://www.desmog.com/wp-content/uploads/files/Oregon\\_Petition.pdf](https://www.desmog.com/wp-content/uploads/files/Oregon_Petition.pdf)

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

welfare of mankind [emphasis added].”<sup>119</sup> The petition was advertised online as having been signed by “over 31,000 American scientists” – even though many of the signatories had no credentials in climate science or did not even exist.<sup>120</sup> The petition was widely distributed alongside Robinson and Robinson’s *Wall Street Journal* article and a manuscript written by Robinson and Robinson and others from the George C. Marshall Institute (a think tank that widely promoted climate disinformation), which was formatted to appear as if it was a peer reviewed, scientific paper published in the *Proceedings of the National Academy of Sciences*, even though in reality it had not been peer reviewed nor published in any scientific journal.<sup>121</sup> This deception prompted the Council of the National Academy of Sciences to issue a statement noting the Oregon Institute of Science Medicine’s petition “has nothing to do with the National Academy of Sciences and that the manuscript was not published in the *Proceedings of the National Academy of Sciences* or in any other peer-reviewed journal” and that “[t]he petition does not reflect the conclusions of expert reports of the Academy.”<sup>122</sup> As reported by the climate journalism site DeSmog, less than 1% of the petition signatories had a scientific background in climatology or atmospheric science.<sup>123</sup> In later reporting, Arthur Robinson admitted little was done to verify the credentials of the signatories and that the petition included numerous fake signatures, including author John Grisham, actor Michael J. Fox, and one of the Spice Girls (who was listed twice).<sup>124</sup> Today, the Oregon Institute of Science and Medicine *still* promotes the petition online, claiming over 30,000 American scientists have signed it.<sup>125</sup> *To this day*, the petition’s website continues to promote the petition’s original language, including the claim that there is no convincing evidence that greenhouse gases cause global warming and that elevated levels of greenhouse gases in the atmosphere are beneficial for the environment. The Oregon Institute of Science and Medicine does not disclose its sources of funding, pointing to the

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<sup>119</sup> Oregon Institute of Science and Medicine, Petition Project, <https://www.oism.org/pproject/>

<sup>120</sup> H. Josef Herbert, May 1, 1998, Jokers Add Fake Names To Warming Petition (archived), *The Seattle Times*, <https://archive.is/eQIGW#selection-2095.0-2095.41>; DeSmog, Oregon Petition, <https://www.desmog.com/oregon-petition/>

<sup>121</sup> Arthur B. Robinson, Sallie L. Baliunas, Willie Soon, and Zachary W. Robinson, January 1998, Environmental Effects of Increased Atmospheric Carbon Dioxide, [https://www.desmog.com/wp-content/uploads/files/Oregon\\_Petition.pdf](https://www.desmog.com/wp-content/uploads/files/Oregon_Petition.pdf); for the Oregon Institute of Science and Medicine’s list of petition signatories, see Global Warming Petition Project, Qualifications of

Signers, [http://www.petitionproject.org/qualifications\\_of\\_signers.php](http://www.petitionproject.org/qualifications_of_signers.php) and DeSmog, Oregon Petition, <https://www.desmog.com/oregon-petition/>

<sup>122</sup> National Academies of Sciences, Engineering, and Medicine, April 20, 1998, Statement of the Council of the NAS Regarding Global Climate Change Petition (News Release), <https://www.nationalacademies.org/news/1998/04/statement-of-the-council-of-the-nas-regarding-global-change-petition>

<sup>123</sup> Kevin Grandia, July 22, 2009, The 30,000 Global Warming Petition is Easily-Debunked Propaganda, DeSmog, <https://www.desmog.com/2009/07/22/30000-global-warming-petition-easily-debunked-propaganda/>

<sup>124</sup> H. Josef Herbert, May 1, 1998, Jokers Add Fake Names To Warming Petition (archived), *The Seattle Times*, <https://archive.is/eQIGW#selection-2095.0-2095.41>

<sup>125</sup> Global Warming Petition Project, <http://www.petitionproject.org/>

importance of discovery for understanding which organizations have supported its decades of climate change disinformation orchestrated from within the State of Oregon.

The history of deception and disinformation from Defendants outlined here had the purpose and effect of protecting, promoting, and expanding the sale of fossil fuel products and downplaying concerns about climate change, resulting in increased damages from global warming today, both from increased climate change and from delayed understanding of and actions to prepare for the impacts of climate change.

Below, I expand on the above points further. First, I give an overview of Defendants' early knowledge of climate change and concealment of that knowledge. I then describe Defendant's decades-long, ongoing history of affirmative misrepresentations about climate change and fossil fuels, which have confused the public, made global warming worse, and impeded actions to prepare for the impacts of climate change. Finally, I discuss how Defendants' deceptive conduct has foreseeably caused damage to Multnomah County through the acceleration and worsening of climate change and by foreseeably reducing preparedness for its impacts.

## **1. Defendants' Historical Knowledge and Concealment of Climate Change**

Fossil fuel companies have been aware of the foreseeability of disastrous global warming from their products since the 1950s.<sup>126</sup> In 1954, for example, the API was informed of carbon isotope measurements indicating a buildup of atmospheric carbon dioxide from fossil fuels, and in 1959, the prominent physicist Edward Teller warned industry leaders of significant global warming – along with sea level rise and increased coastal flooding – from fossil fuels by the year 2000.<sup>127</sup> A few years later, in 1965, API president Frank Ikard informed attendees at the API's annual meeting that the US President's Science Advisory Committee had predicted fossil fuels would cause significant global warming the end of the century unless alternatives to fossil fuels were developed, stating:<sup>128</sup>

“The substance of the report [by the US President's Science Advisory Committee] is that there is still time to save the world's peoples from the catastrophic consequences of pollution, but time is running out.

“One of the most important predictions of the report is that carbon dioxide is being added to the earth's atmosphere by the burning of coal, oil, and natural gas at such a rate that by the year 2000 the heat balance will be so modified as possibly to cause marked changes in climate beyond local or even national efforts. The report further states, and I quote: ‘ . . . the pollution from internal combustion engines is so serious,

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<sup>126</sup> Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950—2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, chs. 1-3

<sup>127</sup> Benjamin Franta, 2018, Early oil industry knowledge of CO2 and global warming, *Nature Climate Change*, <https://doi.org/10.1038/s41558-018-0349-9>

<sup>128</sup> *Id.*



and is growing so fast, that an alternative nonpolluting means of powering automobiles, buses, and trucks is likely to become a national necessity.’ ”

By 1968, the API had asked its own scientific consultants at the Stanford Research Institute to examine the global warming issue, who in turn corroborated the findings of the US President’s Science Advisory Committee and privately warned the industry of climate change, writing, “Significant temperature changes are almost certain to occur by the year 2000, and these could bring about climatic changes. ... there seems to be no doubt that the potential damage to our environment could be severe.”<sup>129</sup> The industry’s consultants even urged the API to develop ways to reduce greenhouse gas pollution, writing, “Past and present studies of CO<sub>2</sub> are detailed and seem to explain adequately the present state of CO<sub>2</sub> in the atmosphere,” and urging the industry to work on “air pollution technology and ... systems in which CO<sub>2</sub> emissions would be brought under control.”<sup>130</sup>

Rather than follow these warnings, the API promoted ever greater fossil fuel use. In 1968, the industry association published a booklet called “Facts About Oil,” part of API’s “petroleum school program” for junior and high school students across the U.S.<sup>131</sup> (According to internal records from the API’s meetings of its board of directors, the group’s pro-industry materials were being used in 80% of American schools by 1966.)<sup>132</sup> “Facts About Oil” promoted to students a petroleum-heavy future for decades to come, limiting its section on “New Energy Sources” to a discussion of shale oil and tar sands, portraying the industry as a leader in tackling air pollution, and omitting any mention of greenhouse gases or global warming.<sup>133</sup> Then, as now, the fossil fuel industry intentionally targeted the nation’s children and schools with misleading information and false reassurances in order to cultivate generational acceptance of its dangerous and deadly products.

It was also around this time that the API recommended to its members that they advertise their research on environmental problems (problems often created by the industry itself) as a form of public relations, all while promoting ever greater use of fossil fuels – illustrating the use

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<sup>129</sup> Elmer Robinson & R.C. Robbins, Feb. 1968, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants*, Stanford Research Institute, pp. 109—110, <https://www.smokeandfumes.org/documents/document16>

<sup>130</sup> *Id.* p. 112

<sup>131</sup> American Petroleum Institute, June, 1968, Facts About Oil; Benjamin Franta, 2022, Big Carbon’s Strategic Response to Global Warming, 1950—2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 36

<sup>132</sup> American Petroleum Institute Board of Directors minutes, Nov. 14, 1966 (Bernard Majewski Papers, Box 58, American Heritage Center, University of Wyoming); Benjamin Franta, 2022, Big Carbon’s Strategic Response to Global Warming, 1950—2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 36-37

<sup>133</sup> American Petroleum Institute, June, 1968, Facts About Oil, Benjamin Franta, 2022, Big Carbon’s Strategic Response to Global Warming, 1950—2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 37



of corporate greenwashing by the industry beginning decades ago.<sup>134</sup> While privately aware of the danger of global warming from its fossil fuel products, the industry often omitted any mention of global warming in its public statements; for example, in 1970, API representative Peter Gammelgard misleadingly testified to Congress that “When burned completely, hydrocarbons [fossil fuels] produce just two byproducts, water vapor and carbon dioxide – neither of which has any significance from an air quality standpoint.”<sup>135</sup>

Documentary evidence also shows that French fossil fuel major Total (an API member with representatives on the API board of directors in at least 1965—1967 and 1974) (now TotalEnergies) was also aware of the “catastrophic consequences” that could result from continued fossil fuel use, which one of the company’s publications correctly predicted would cause atmospheric carbon dioxide concentrations to reach 400 parts per million by around the year 2010.<sup>136</sup> Despite this awareness, Total went on to play a key role – along with other fossil fuel companies including Exxon (now ExxonMobil), and through industry associations such as the International Petroleum Industry Environmental Conservation Association (IPIECA) – to promote climate disinformation since at least the 1980s, with the aim of preventing effective reductions in climate pollution from fossil fuels.<sup>137</sup>

In the late 1970s, scientific consensus developed that doubling atmospheric carbon dioxide concentrations would cause severe global warming with harmful effects worldwide.<sup>138</sup> Around this time, fossil fuel companies began to give the global warming problem even greater attention, including through the creation of secret, internal research programs focused on global warming, the existence of which has been made public only recently through investigative journalism and academic research.<sup>139</sup> These internal research programs found that severe – even

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<sup>134</sup> American Petroleum Institute, Planning Committee of the Committee on Public Affairs, 1970, *Public Affairs in the 1970's*, Benjamin Franta, 2022, *Big Carbon's Strategic Response to Global Warming, 1950—2020* (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 40

<sup>135</sup> Peter Gammelgard on behalf of the American Petroleum Institute, March 19, 1970, Congressional hearing on bills to amend the Clean Air Act, as cited in: Brad Johnson, Sep. 28, 2016, *A Timeline of Climate Science and Policy*, Medium, <https://medium.com/@climatebrad/climate-hearings-af27a3886a43>

<sup>136</sup> F. Durand-Dastès, 1971, *La pollution atmosphérique et le climat*, *Total Information*, no. 47, pp. 12—19, as cited in: Christophe Bonneuil, Pierre-Louis Choquet, Benjamin Franta, 2021, *Early Warnings and Emerging Accountability: Total's Responses to Global Warming, 1971-2021*, *Global Environmental Change* vol. 71, 102386, <https://doi.org/10.1016/j.gloenvcha.2021.102386>

<sup>137</sup> *Id.*

<sup>138</sup> For example: Jule G. Charney *et al.*, 1979, *Carbon Dioxide and Climate: A Scientific Assessment* (U.S. National Academy of Sciences), <https://nap.nationalacademies.org/catalog/12181/carbon-dioxide-and-climate-a-scientific-assessment>

<sup>139</sup> For example: Neela Banerjee, John H. Cushman, Jr., David Hasemyer, Lisa Song, Paul Horn, and David Sassoon, 2015, *Exxon: The Road Not Taken* (InsideClimate News), <https://insideclimatenews.org/book/exxon-the-road-not-taken/>

catastrophic – climate change was the foreseeable consequence of fossil fuels, and that preventing such impacts required immediate actions to reduce the use of fossil fuels and replace them with other sources of energy.<sup>140</sup>

Since the time fossil fuel companies became aware of the necessity of replacing their products with non-fossil alternatives, they have continuously deceived the public through lies of omission and commission in order to reduce public concern about climate change and protect, promote, and expand sales of the industry’s damaging fossil fuel products. Fossil fuel companies and their enabling collaborators have achieved this by, variously, convincing the public that climate change isn’t a problem (*e.g.*, that climate change doesn’t exist, is unproved, or is not especially harmful) or that the climate change problem is already being successfully solved (often portrayed as being solved by fossil fuel companies themselves). The industry (including Defendants) have employed numerous deceptive messaging tactics over decades, but the goal has been consistent: to reduce public understanding of and concern about climate change, increase public acceptance of fossil fuels, and demotivate and stall efforts to reduce fossil fuel use, with the ultimate goal of prolonging and expanding the sale of fossil fuel products.

Fossil fuel companies have employed this deception-based business model, which continues today, since at least the 1980s, in a continuous, extensive, decades-long campaign of disinformation and doubt. Although the industry’s deceptive messaging has evolved over time, the historical record shows an unbroken chain of deception from which no one in society was spared, going back decades, representing a continuous course of deceptive conduct that continues today.

The purpose of the industry’s deceptions – to perpetuate and expand the sale of fossil fuel products – is confirmed in its own internal documents. Already in 1979, Exxon scientist Henry Shaw noted growing opposition to fossil fuels based on climate change concerns and urged the company to create a “very aggressive defensive program” on climate in order to protect Exxon’s fossil fuel business.<sup>141</sup> The same year, President of Exxon Research & Engineering Edward David, Jr. made similar recommendations to Exxon Corporation Senior Vice President George Piercy, suggesting the company develop scientific expertise on climate to provide the company with the credibility needed to argue against calls to reduce fossil fuel use.<sup>142</sup> In 1980, Exxon created a public relations plan focused on “establish[ing] Exxon’s credibility as a leading authority on CO<sub>2</sub> / Greenhouse science, particularly among opinion leaders who are not scientists,” motivated because “future public decisions aimed at controlling the build-up of

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<sup>140</sup> Benjamin Franta, 2025 (in press), *How the Most Important Fact of Global Warming Has Been Obscured*, in *Ignorance Unmasked: Essays in the New Science of Agnotology* (ed. Robert N. Proctor and Londa Schiebinger, Stanford University Press)

<sup>141</sup> Shaw, Henry. [Memo from H Shaw to HN Weinberg Regarding Research in Atmospheric Science]. 1979 November 19. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/yqwl0228>, pp. 1-2

<sup>142</sup> Edward E. David, Jr. to George T. Piercy, Nov. 9, 1979, ER&E’s “Greenhouse Effect” Program, Exxon Research & Engineering Company, pp. 1—3, <https://www.industrydocuments.ucsf.edu/fossilfuel/docs/#id=rqwl0228>

atmospheric CO<sub>2</sub> could impose limits on fossil fuel combustion.”<sup>143</sup> These examples from the industry’s own internal memos illustrate how, from the start, its public communications and scientific research on climate change were motivated by the goal of *selling more fossil fuel products*. In 1980, soon after Exxon (now ExxonMobil) sought to establish its scientific credibility on climate in order to more effectively confuse the public, company scientist Henry Shaw began using his access to scientific workshops to exaggerate uncertainties in climate science and downplay the seriousness of climate change.<sup>144</sup>

Later internal documents further attest to the fundamental purpose of the industry’s involvement in climate issues (namely, to protect the fossil fuel business and sell more fossil fuel products). An internal, twenty-page “Scoping Study on CO<sub>2</sub>” from Exxon Research & Engineering in 1981 reiterated that the purpose of Exxon’s involvement in climate science was to “make an early assessment of the possible impact of the greenhouse effect on Exxon’s business,” “reduce the business risk of poorly formulated Government policy,” and “enhance the Exxon image and provide public relations value” (notably, solving the problem of climate change was not listed).<sup>145</sup> The next year, Director of Exxon Research and Engineering’s Theoretical and Mathematical Sciences Laboratory, Roger Cohen, flagged “the connection between Exxon’s major business and the role of fossil fuel consumption in contributing to the increase of atmospheric CO<sub>2</sub>” and described the purpose of the company’s scientific research on climate “to provide Exxon with the credentials required to speak with authority in this area” (again, *not* to solve the problem of climate change).<sup>146</sup>

Defendants’ intent behind involvement in climate change issues – to protect and expand fossil fuel sales – is again evidenced by internal documents more recently reported by the *Wall Street Journal*.<sup>147</sup> As reported by the *Journal*, in 1988, in response to impending policy action to reduce greenhouse gas emissions, Exxon’s head of corporate research Frank Sprow circulated an internal memo warning, “If a worldwide consensus emerges that action is needed to mitigate

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<sup>143</sup> E. K. Wiley to R. E. Barnum, M. P. Margolis, and N. R. Werthamer, June 24, 1980, CO<sub>2</sub> / Greenhouse [sic] Communications Plan, Exxon Research & Engineering Inter- Office Correspondence, pp. 1—2,

<https://www.industrydocuments.ucsf.edu/fossilfuel/docs/#id=zqwl0228>

<sup>144</sup> Henry Shaw to D. E. Smiley, Dec. 5, 1980, re: copy of my comments to the NCAQ, Exxon internal memorandum, <https://www.industrydocuments.ucsf.edu/fossilfuel/docs/#id=pqwl0228>; Benjamin Franta, 2022, Big Carbon’s Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), pp. 86—87, <https://purl.stanford.edu/hq437ph9153>

<sup>145</sup> G. H. Long to P. J. Juchesi, R. E. Lyon, Jr., P. H. Rohr, F. B. Sprow, and L. E. Swabb, Jr., Feb. 5, 1981, Atmospheric CO<sub>2</sub> Scoping Study (by R. E. Barnum), Exxon Research and Engineering Company, pp. 6, 9,

<https://www.industrydocuments.ucsf.edu/fossilfuel/docs/#id=yxfl0228>

<sup>146</sup> Roger W. Cohen to A. M. Natkin, September 2, 1982, Ref. 0757-L-RWC, Exxon Research and Engineering Company, p. 3,

<https://www.industrydocuments.ucsf.edu/fossilfuel/docs/#id=krwl0228>

<sup>147</sup> Christopher M. Matthews, Collin Eaton, September 14, 2023, Inside Exxon’s Strategy to Downplay Climate Change, *The Wall Street Journal*, <https://www.wsj.com/business/energy-oil/exxon-climate-change-documents-e2e9e6af>

against Greenhouse gas effects, substantial negative impacts on Exxon could occur,” and recommending that “Any additional R&D [research and development] efforts within [Exxon] Corporate Research on [the] Greenhouse [effect] should have two primary purposes: 1. Protect the value of our resources (oil, gas, coal). 2. Preserve Exxon’s business options.” According to Sprow, as reported by the *Wall Street Journal*, his recommendations were adopted as Exxon policy, and the company focused its scientific research on “science to support our business.”<sup>148</sup> As reported in the same *Wall Street Journal* article, according to Martin Hoffert, who worked as a scientific consultant to Exxon on climate science in the 1980s, Sprow’s memo was “an oblique way of saying we’re in the oil business and we’re not going to get out the oil business, and we’ll do everything we can to make money in the oil business.”<sup>149</sup>

Historical documents show that the motivation to protect and expand fossil fuel sales (even at the cost of deceiving the public about climate change, delaying effective action to address the problem, and imposing enormous costs on the public) was shared across the industry. In 1980, for example, the American Petroleum Institute (API) publicly downplayed the threat of climate change in order to promote decades of further fossil fuel expansion, despite internally being warned of “globally catastrophic effects” from climate change.<sup>150</sup> At the 1984 meeting of the International Petroleum Industry Environmental Conservation Association (IPIECA) (of which many Defendants were or are members), Exxon (now ExxonMobil) shared its concerns about actions to reduce fossil fuel use with the broader industry, “because the stakes seemed to have become too great and a collective response from the [fossil fuel] profession [was] required,” according to the former Environmental Director of French oil and gas company Elf (now TotalEnergies) Bernard Tramier.<sup>151</sup> In 1986, Tramier wrote privately to the executive committee of Elf (now TotalEnergies) that “the accumulation of CO<sub>2</sub> and CH<sub>4</sub> in the atmosphere and the resulting greenhouse effect will inevitably modify our environment. ... it is obvious that the oil industry will once again have to prepare to defend itself.”<sup>152</sup> In short order, an industry-wide defense was organized: in 1988, the industry (including Defendants), through IPIECA, created a “Working Group on Global Climate Change,” which included representatives from Exxon (now ExxonMobil), Mobil (now ExxonMobil), Elf (now TotalEnergies), BP, Shell, Texaco (now Chevron), Saudi Aramco, the American Petroleum Institute, and IPIECA.<sup>153</sup> In

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<sup>148</sup> *Id.*

<sup>149</sup> *Id.*

<sup>150</sup> Benjamin Franta, 2021, Early Oil Industry Disinformation on Global Warming, *Environmental Politics* vol. 30, pp. 663-668, <https://doi.org/10.1080/09644016.2020.1863703>

<sup>151</sup> Christophe Bonneuil, Pierre-Louis Choquet, and Benjamin Franta, 2021, Early Warnings and Emerging Accountability: Total’s Responses to Global Warming, 1971--2021, *Global Environmental Change* vol. 71, 102386, <https://doi.org/10.1016/j.gloenvcha.2021.102386>

<sup>152</sup> *Id.*, p. 14.

<sup>153</sup> LeVine, D. (Exxon, now ExxonMobil), chairman; Mal-Shari, A. (Saudi Aramco); Bernstein L. (Mobil, now ExxonMobil); Flannery B. (Exxon now ExxonMobil), Graham-Bryce I. (Shell); Henderson U.V. (Texaco, now Chevron); Kraweld H. (Shell); McKay J. (BP); Tramier B. (Elf Aquitaine, now TotalEnergies), Yosie, T. (API); Lemlin J. (IPIECA) (1990), Potentially Enhanced Greenhouse Effect: A Briefing Document for IPIECA Membership Prepared by the Working Group on Global Climate Change, Feb. 1990, as reported in: Christophe Bonneuil, Pierre-Louis Choquet, and Benjamin Franta, 2021, Early Warnings and Emerging

1990, the Working Group sent strategy documents to IPIECA members around the world, which would have included many of the Defendants, which warned that the U.S. and world would soon seek to control fossil fuels to prevent global warming in a way similar to the control of ozone-depleting chemical pollutants, which at the time had recently been codified into law through the 1987 Montreal Protocol.<sup>154</sup> The fossil fuel protection strategy promoted by IPIECA to its members included emphasizing (in reality, exaggerating) uncertainties in climate science and the costs of reducing fossil fuel use, calling for further research on climate change (filibuster research, similar to the tobacco industry's delay tactics), and promoting false solutions to climate change that, in reality, would protect and expand fossil fuel sales.<sup>155</sup>

In 1988, the same year fossil fuel companies created the Working Group on Global Climate Change at IPIECA, fossil fuel companies and others (including Defendants) created the Global Climate Coalition, which publicly denied the reality of climate change and its link to fossil fuels, exaggerated the cost of addressing climate change, and successfully impeded societal efforts to address the problem for more than a decade.<sup>156</sup>

Incredibly, the industry implemented its disinformation campaigns despite detailed awareness of the catastrophic consequences of continued reliance on fossil fuels. In 1989, for example, Royal Dutch Shell developed a series of future scenarios describing possible paths the industry (and world) could take with respect to global warming.<sup>157</sup> One scenario was called "Sustainable World," in which greenhouse pollution would peak around the year 2000 and decline thereafter (a feasible scenario, in Shell's view), with maximum CO2 concentrations in the atmosphere limited to around four hundred parts per million, significantly lower than what we see today. That scenario illustrated the industry's awareness that averting climate catastrophe was possible, yet the industry instead implemented a plan that it knew would lead to enormous damage worldwide – another scenario called "Global Mercantilism" in Shell's report described the consequences in the 21<sup>st</sup> century of continued fossil fuel expansion:

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Accountability: Total's Responses to Global Warming, 1971--2021, *Global Environmental Change* vol. 71, 102386, <https://doi.org/10.1016/j.gloenvcha.2021.102386>

<sup>154</sup> D. LeVine, 1989, The Potential Greenhouse Effect: Status \ Projections \ Concerns and Needs for Constructive Approaches, Exxon Corporation, p. 16, as reported in Christophe Bonneuil, Pierre-Louis Choquet, and Benjamin Franta, 2021, Early Warnings and Emerging Accountability: Total's Responses to Global Warming, 1971--2021, *Global Environmental Change* vol. 71, 102386, <https://doi.org/10.1080/09644016.2020.1863703>; see Levine, Duane G; Exxon Corporation. Potential Enhanced Greenhouse Effects. 1989 February 22. Climate Investigations Center Collection. Climate Investigations Center.

<https://www.industrydocuments.ucsf.edu/docs/xsw10228>

<sup>155</sup> *Id.*

<sup>156</sup> Robert J. Brulle, 2022, Advocating Inaction: A Historical Analysis of the Global Climate Coalition, *Environmental Politics*, <https://www.tandfonline.com/doi/full/10.1080/09644016.2022.2058815>

<sup>157</sup> Royal Dutch Shell, "Scenarios 1989 - 2010: Challenge and Response" (Confidential Group Planning, PL89 S01), Oct. 1989, <https://s3.documentcloud.org/documents/23735737/1989-oct-confidential-shell-group-planning-scenarios-1989-2010-challenge-and-response-disc-climate-refugees-and-shift-to-non-fossil-fuels.pdf>.



“... dramatic temperature changes which would take place at temperature latitudes. There would be more violent weather—more storms, more droughts, more deluges. Mean sea level would rise at least 30 cm. Agricultural patterns would be most dramatically changed. Something as simple as a moderate change in rainfall pattern disrupts eco-systems, and many species of trees, plants, animals, and insects would not be able to move and adapt.

The changes would, however, most impact on humans. In earlier times, man was able to respond with his feet. Today, there is no place to go because people already stand there. Perhaps those in industrial countries could cope with a rise in sea level (the Dutch example) but for poor countries such defences are not possible. ... The potential refugee problem in GLOBAL MERCANTILISM could be unprecedented. Africans would push into Europe, Chinese into the Soviet Union, Latins into the United States, Indonesians into Australia. Boundaries would count for little - overwhelmed by the numbers. Conflicts would abound. Civilization could prove a fragile thing.”<sup>158</sup>

Shell’s document, noticed by historians only in 2023, illustrates the company’s awareness of both the catastrophic consequences of its fossil fuel products and the preventability of those consequences. Yet Shell, like fossil fuel companies throughout the industry (including Defendants), proceeded to engage in a coordinated, large scale, and decades-long enterprise of deception to ensure that the public remained confused about global warming, that fossil fuels would continue to flow, and that the catastrophic impacts the company had predicted would come to pass, just as the world (and the Plaintiff) is now experiencing.

In summary, fossil fuel producers and other companies (including the Defendants in this case) individually and collectively understood a great deal about climate change and its main cause – their fossil fuel products – since the 1950s. By the late 1970s and early 1980s, the industry also understood that to prevent potentially catastrophic impacts from climate change, immediate action was necessary to phase out and replace fossil fuels with other energy sources. Fossil fuel companies (including the Defendants), individually and collectively were warned of potentially catastrophic effects of climate change, including extreme heat, worsened droughts, sea level rise, and other impacts, and these companies proactively developed their own understanding of climate change and monitored scientific and policy developments on the issue.

Rather than warn the public and pursue remedial action, however, fossil fuel companies (including the Defendants) often concealed their own knowledge and downplayed the seriousness and urgency of the climate problem. In the late 1980s, as the public began taking steps to prevent climate catastrophe, the industry (including Defendants) worked through existing trade associations and front groups – and created new front groups – to deny the problem, deceive the public, and delay preventive and remedial action, knowingly ensuring the occurrence of climate-related disasters such as the 2021 Pacific Northwest heatwave and other costly impacts on Multnomah County.

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<sup>158</sup> *Id.*, p. 36.



## 2. Defendants' Decades of Disinformation and Deception About Climate Change

Since the late 1980s, Defendants, individually and collectively, have programmatically misled the public about climate change and fossil fuels through trade associations, coalitions, and front groups, as well as directly – a sordid history that is increasingly documented.<sup>159</sup> For example, through the American Petroleum Institute, Defendants hired economists to exaggerate the costs of reducing fossil fuel use and downplay (or ignore entirely) the costs of climate change itself.<sup>160</sup> Through associations including the American Petroleum Institute, the National Association of Manufacturers, the U.S. Chamber of Commerce, the Chemical Manufacturers Association, the Business Roundtable, and others, as well as individually, Defendants participated in front groups including the Global Climate Coalition, which promoted disinformation about climate change to consumers and the broad public for over a decade,<sup>161</sup> including outright lies such as “there is no convincing evidence that future increases in greenhouse gas concentrations will produce significant climate effects”<sup>162</sup> and “Climate scientists don’t say that burning oil, gas and coal is steadily warming the earth” (the latter written in *The Washington Post* by Executive Vice President of the API and Chairman of the Global Climate Coalition William O’Keefe in 1997, *after* the Intergovernmental Panel on Climate Change had

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<sup>159</sup> Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>; Brulle, R. J. (2022). Advocating inaction: a historical analysis of the Global Climate Coalition. *Environmental Politics*, 32(2), 185–206. <https://doi.org/10.1080/09644016.2022.2058815>; Franta, B. (2021). Weaponizing economics: Big Oil, economic consultants, and climate policy delay. *Environmental Politics*, 31(4), 555–575. <https://doi.org/10.1080/09644016.2021.1947636>; Geoffrey Supran and Naomi Oreskes 2020 *Environ. Res. Lett.* **15** 119401, <https://iopscience.iop.org/article/10.1088/1748-9326/ab89d5>; Geoffrey Supran and Naomi Oreskes, 2021, Rhetoric and frame analysis of ExxonMobil's climate change communications, *One Earth* vol. 4, issue 5, 696-719, <https://doi.org/10.1016/j.oneear.2021.04.014>; G. Supran *et al.*, Assessing ExxonMobil’s global warming projections, *Science* **379**, eabk0063 (2023), DOI:[10.1126/science.abk0063](https://doi.org/10.1126/science.abk0063); Kinol A, Si Y, Kinol J, Stephens JC (2025) Networks of climate obstruction: Discourses of denial and delay in US fossil energy, plastic, and agrichemical industries. *PLOS Clim* 4(1): e0000370. <https://doi.org/10.1371/journal.pclm.0000370>

<sup>160</sup> Franta, B. (2021). Weaponizing economics: Big Oil, economic consultants, and climate policy delay. *Environmental Politics*, 31(4), 555–575. <https://doi.org/10.1080/09644016.2021.1947636>

<sup>161</sup> Advocating inaction: a historical analysis of the Global Climate Coalition. *Environmental Politics*, 32(2), 185–206. <https://doi.org/10.1080/09644016.2022.2058815>

<sup>162</sup> Gerald Karey, May 27, 1997, BP charts its own course on warming, *Platt's Oilgram News* vol. 75, no. 101, as cited in: Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 164

reported that global warming had been detected and that continued fossil fuel use would cause further climate change).<sup>163</sup>

In 1996, API and Exxon chairman Lee Raymond reminded industry attendees (including Defendants) at the API's annual meeting that efforts to combat climate change represented "the greatest long-term threat to our industry," another reminder of Defendants' overriding focus – to sell more fossil fuels, rather than to solve the catastrophic climate problem the industry knew was (and is) caused by those products.<sup>164</sup>

### *Defendants' Use of Front Groups and Third Parties to Conceal Their Deceptive Activities*

From the late 1980s through the present, fossil fuel companies and other Defendants have concealed their involvement in deceiving the public about climate change through the use of numerous front groups and third parties, as described above.<sup>165</sup> Defendants participated in and supported these groups both directly and indirectly through trade associations and yet other front groups. The scale and scope of Defendants' concealment of their own deceptive activities has only recently begun to be mapped by scholars, journalists, and other investigators.

One of the most prominent of these front groups was the Global Climate Coalition.<sup>166</sup> From 1989—2002, fossil fuel companies and others banded together through this front group to convince the public, variously, that 1) climate change was not happening, 2) climate science was too uncertain to act, 3) the link between climate change and fossil fuels was uncertain, 4)

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<sup>163</sup> William F. O'Keefe, July 5, 1997, A climate policy, *The Washington Post* (op-ed), as cited in: Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 165; Intergovernmental Panel on Climate Change, 1995, IPCC Second Assessment: Climate Change 1995, <https://archive.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf>, p. 22

<sup>164</sup> Oil & Gas Journal, Nov. 18, 1996, API girds for Clinton greenhouse tax battle, *Oil & Gas Journal*, as cited in: Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 163

<sup>165</sup> Robert J. Brulle, 2019, Networks of Opposition: A Structural Analysis of U.S. Climate Change Countermovement Coalitions 1989–2015, *Sociological Inquiry* vol. 91, 3, Table S-4, <https://onlinelibrary.wiley.com/doi/10.1111/soin.12333>; dates of operation for Partnership for a Better Energy Future from: Downie C. Ad hoc coalitions in the U.S. energy sector: Case studies in the gas, oil, and coal industries. *Business and Politics*. 2018;20(4):655. doi:10.1017/bap.2018.18; for American Petroleum Institute funding of Citizens for the Sound Economy and the Cato Institute, see Climate and Development Lab, Brown University, November 2018, Countermovement Coalitions: Climate Denialist Organizational Profiles, <https://www.climatedevlab.brown.edu/post/countermovement-coalitions-climate-denialist-organizational-profiles>, p. 11.

<sup>166</sup> Brulle, R. J. (2022). Advocating inaction: a historical analysis of the Global Climate Coalition. *Environmental Politics*, 32(2), 185–206. <https://doi.org/10.1080/09644016.2022.2058815>

delaying action to address climate change (often under the guise of “we need more research”) would not be harmful, 5) climate change would not cause significant economic harm, and 6) controlling fossil fuels would be prohibitively costly, despite contemporaneous scientific consensus and the industry’s own internal documents showing the falsity or misleading nature of these narratives.<sup>167</sup> In reality, fossil fuel companies’ own internal documents show that they understood that fossil fuels would inevitably cause climate change on the timeline the world has observed, that climate change would have devastating and costly effects across the globe, and that delaying actions to reduce fossil fuel use would make global warming worse and more costly.

Although the Global Climate Coalition formally ended operations in 2002, Defendants continued deceiving the public through various other front groups, including the Alliance for Climate Strategies and others, shown below.

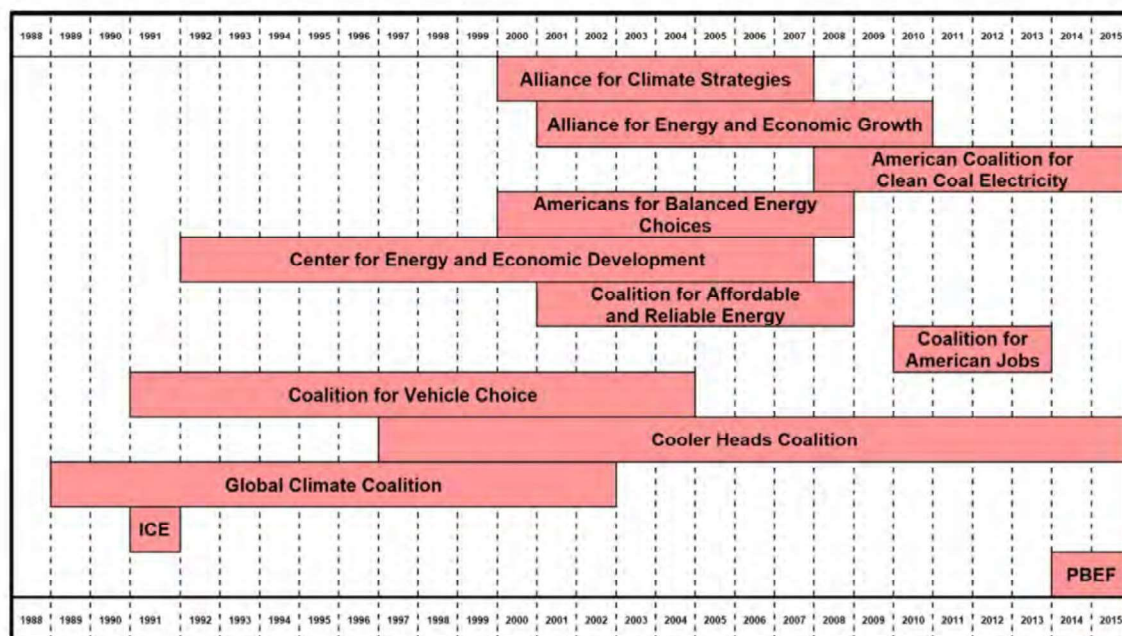


Figure: Front groups promoting false or misleading information about climate change and fossil fuels, 1989—2015. From Robert J. Brulle, 2019, *Networks of Opposition: A Structural Analysis of U.S. Climate Change Countermovement Coalitions 1989–2015*, *Sociological Inquiry* vol. 91, 3, <https://onlinelibrary.wiley.com/doi/10.1111/soin.12333>

Participation in these deceptive front groups was neither accidental nor passive, with individual companies often paying membership dues and/or sending employees to serve on the boards and committees of these front groups. For example, internal documents from the Global

<sup>167</sup> Benjamin Franta, 2022, *Big Carbon's Strategic Response to Global Warming, 1950-2020* (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>; Brulle, R. J. (2022). Advocating inaction: a historical analysis of the Global Climate Coalition. *Environmental Politics*, 32(2), 185–206. <https://doi.org/10.1080/09644016.2022.2058815>

Climate Coalition show that founding members, board-level members, or members of the Coalition's Science and Technology Assessment Committee (which focused on monitoring and challenging climate science) included the American Petroleum Institute, Amoco Corporation (now BP), ARCO (now BP), Business Roundtable (see above), Chemical Manufacturers Association (now the American Chemistry Council, see above), National Association of Manufacturers (see above), Occidental Chemical Corporation (part of Occidental Petroleum), Petroleum Marketers Association of America (now Energy Marketers of America, see above), Phillips Petroleum (which later merged with Conoco to become ConocoPhillips), Shell Oil Company, Texaco, Inc. (now Chevron), the U.S. Chamber of Commerce, American Forest and Paper Institute (now American Forest & Paper Association, see above), Exxon (now ExxonMobil), Mobil (now ExxonMobil), and Chevron, with meetings of the Global Climate Coalition often held at the offices of the American Petroleum Institute or those of other members.<sup>168</sup>

For individual companies, board membership in the Global Climate Coalition cost 4—8 times more in dues than general membership (\$5000--\$20,000 per year depending on company revenue, in 1990 dollars). The board, according to internal documents, was “composed of CEOs or senior officers of compan[ies] or trade association[s],” set the front group's policy, approved its budget, and selected candidates for the group's Operating Committee (which were ratified by

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<sup>168</sup> Global Climate Coalition Membership. 1989 November 16. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/nlfl0228>; Global Climate Coalition; GCC; Cohen, John. [Memorandum from John Cohen Regarding the Global Climate Coalition Information]. 1991 November 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/xqfl0228>; Global Climate Coalition; GCC; Cohen, John. [Memorandum from John Cohen Regarding the Global Climate Coalition Information]. 1991 November 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/xqfl0228>; GCC; Global Climate Coalition. Global Climate Coalition Membership. 1993. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/rzfl0228>; Global Climate Coalition; EOP Group Inc, The. Progress Report on US Industry Voluntary Actions to Curb Greenhouse Gas Emissions. 1996 March. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/hsfl0228>; AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc. [Memo from Gregory J Dana to AIAM Technical Committee Regarding Copy of the Minutes of the September 19, 1996 Meeting of Science and Technology Assessment Committee of the GCC]. 1996 September 03. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/znfl0228>; AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc; Mobil Corporation; Bernstein, LS; Shlaes, John; Global Climate Coalition; Intergovernmental Panel on Climate Change; UNEP; WMO; Sundararaman, N. Global Climate Coalition Science and Technology Assessment Committee (STAC) Minutes of the January 16, 1997 Meeting. 1997 February 18. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/gyfl0228>



the Global Climate Coalition's general membership).<sup>169</sup> The Operating Committee, in turn, had "broad authority to clear letters and testimony, set lobbying objectives, fund projects, hire staff and consultants and make administrative decisions."<sup>170</sup> The salary of the Executive Director/Spokesperson of the Global Climate Coalition was set at \$140,000--\$180,000 per year in 1990 dollars (around \$350,000--\$440,000 today).<sup>171</sup> Many front groups' leadership structures and relationships with member companies and funders remain opaque, pointing to the importance of discovery in this case.

As mentioned above, the Global Climate Coalition maintained a special committee called the Science and Technology Assessment Committee (STAC), which focused on monitoring climate change science and challenging science that was adverse to the industry's interests (including commissioning reports and even recruiting authors to influence the IPCC process).<sup>172</sup> Members of STAC included representatives from the American Petroleum Institute, ARCO (now BP), Chemical Manufacturers Association (now the American Chemistry Council, see above), Exxon (now ExxonMobil), Mobil (now ExxonMobil), and Texaco, Inc. (now Chevron).<sup>173</sup> Internally, STAC held a sophisticated understanding of the dangers of climate change, even as the group downplayed those dangers to the public. For example, at a STAC meeting on September 19, 1996, D. J. Devlin from Exxon Biomedical Sciences, Inc. gave a presentation to the group entitled "Purported Impact of Climate Change on Human Health."<sup>174</sup> Devlin noted growing concern about the effects of global warming on health from the scientific community and popular press, including over "More Severe Weather Events" and "Drought Increase in Number and Severity."<sup>175</sup> Devlin reported widespread scientific concern that "Human Health will be Directly Impacted by Climatic Changes," including "Suffering and Death Due to Thermal Extremes," "Physical/Psychological Injury, Death Due to Weather-Related Disasters," and

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<sup>169</sup> Global Climate Coalition, Dec. 18, 1990, Global Climate Coalition: A Proposal to Reorganize and Staff the Coalition, in: Global Climate Coalition; GCC; Cohen, John. [Memorandum from John Cohen Regarding the Global Climate Coalition Information]. 1991 November 18. Climate Investigations Center Collection. Climate Investigations Center.

<https://www.industrydocuments.ucsf.edu/docs/xqfl0228>

<sup>170</sup> *Id.*

<sup>171</sup> *Id.* For value conversion over time, see Federal Reserve Bank of Minneapolis Inflation Calculator, <https://www.minneapolisfed.org/about-us/monetary-policy/inflation-calculator>

<sup>172</sup> AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc; Mobil Corporation; Bernstein, LS; Shlaes, John; Global Climate Coalition; Intergovernmental Panel on Climate Change; UNEP; WMO; Sundararaman, N. Global Climate Coalition Science and Technology Assessment Committee (STAC) Minutes of the January 16, 1997 Meeting. 1997 February 18. Climate Investigations Center Collection. Climate Investigations Center.

<https://www.industrydocuments.ucsf.edu/docs/gvfl0228>

<sup>173</sup> *Id.*

<sup>174</sup> AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc. [Memo from Gregory J Dana to AIAM Technical Committee Regarding Copy of the Minutes of the September 19, 1996 Meeting of Science and Technology Assessment Committee of the GCC]. 1996 September 03. Climate Investigations Center Collection. Climate Investigations Center.

<https://www.industrydocuments.ucsf.edu/docs/znfl0228>

<sup>175</sup> *Id.*, PDF p. 15.



“Increase in Particulates and Ozone ... Increased Hospitalizations And Deaths From Cardio-Pulmonary Diseases.”<sup>176</sup> The presentation specifically discussed extreme heat hazards caused by global warming, observing, “Sudden Extreme Increases in Ambient Temps Result in ‘Excess’ Deaths: Elderly, Sick, Very Young Have Limited Physiological Capacity to Adapt; Urban Poor Lack Escape from Exposure ... ‘Urban Heat Island Effect’; ‘J-Shaped’ Relationships Between Daily Death Rates and Outdoor Temp.” and that “Other Factors Exacerbate Effect of Heat: High Humidity, Low Wind, Solar Radiation ... ‘Oppressive Umbrella of Air.’”<sup>177</sup> Yet rather than warn the public or take action to reduce the harm, the “Potential Next Steps” recommended were to “Monitor and Critique Ongoing Developments,” “Identify and Critique Relevant Predictive Models,” “Identify Scientific Leaders with Diverse Views,” and “Promote Concept of Relative Risk ... Significance of Climate Impacts Vs. Other Disease Factors” (to dilute attention on climate change).<sup>178</sup> The Global Climate Coalition, despite this awareness, went on to downplay the reality, urgency, and severity of global warming to the public.

Around the same time, in 1996, the API (whose Executive Vice President and Chief Operating Officer William O’Keefe was also Chairman of the Global Climate Coalition)<sup>179</sup> published a book entitled “Reinventing Energy: Making the Right Choices,” which included a chapter called, “Is global climate change a reason to phase out oil use?”<sup>180</sup> Rather than warn the public that urgent action was needed to prevent tremendous, irreversible harm, the API portrayed climate science as uncertain, stating, “Additional scrutiny is needed because climate change is enormously complex and there are manifold unknowns. We do not yet know the answers to fundamental scientific questions regarding how and when climate might change. ... Currently, **no** conclusive – or even strongly suggestive – scientific evidence exists that human activities are significantly affecting sea levels, rainfall, surface temperatures or the intensity and frequency of storms. After all, a conclusion that the global climate is changing as a result of human activity would require much more scientific knowledge about the **entire** earth system than exists today [emphasis in original]. ... More than two decades of scientific scrutiny of the global climate has produced uneven results.”<sup>181</sup> The API went on to quote MIT professor and climate science denier Richard Lindzen, stating, “ ‘in the unlikely event that [significant warming] occurs, it most certainly will not be for the reasons currently put forth. ... In point of fact, there is neither observational nor theoretical basis for expecting substantial warming’ ” [brackets in original].<sup>182</sup> API’s book presented a buffet of misdirections, half-truths, false reassurances, selective quotes from industry-funded or denialist academics, and outright falsehoods, including that “The general consensus is that such warming [from doubling atmospheric CO2 concentrations] would present few if any problems,” “The scientific understanding of climate is itself in a state of flux,” “For the United States, a 1991 economic study estimated that climate change on more than 85

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<sup>176</sup> *Id.*, PDF p. 16, 18.

<sup>177</sup> *Id.*, PDF p. 19.

<sup>178</sup> *Id.*, PDF p. 28.

<sup>179</sup> DeSmog, William F. O’Keefe, <https://www.desmog.com/william-o-keefe/>

<sup>180</sup> American Petroleum Institute; API. Reinventing Energy, Making the Right Choices. 1996. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/zjfl0228>, p. 79

<sup>181</sup> *Id.*, p. 79

<sup>182</sup> *Id.*, p. 80

percent of the economy would be negligible,” “If a change occurred in air temperature ... relatively little adaptation would be needed ... we have no need to worry if the global climate becomes somewhat warmer over a 100-year period,” “If climate change was more dramatic, society would take greater steps to adapt,” and “Neither an apocalyptic crisis nor an inevitable Malthusian meltdown of society looms over the horizon. ... most levels of emission reductions now under consideration lack sound analytical basis.”<sup>183</sup> The overall message was that climate science was uncertain, climate change might not be real or caused by fossil fuels, and if climate change were real, it was not urgent and would not be especially harmful. API published this exemplar of climate disinformation despite the decades of internal warnings the API and other Defendants had received and despite the fact that the year prior, in 1995, the IPCC Second Assessment Report had concluded that “the balance of evidence suggests a discernible human influence on global climate” and that “climate is expected to continue to change in the future.”<sup>184</sup>

The extensive deceptive conduct of Defendants and these front groups largely escaped critical scrutiny until relatively recently, with some of the first comprehensive academic analyses of these deceptive activities and groups appearing around 2018.<sup>185</sup> Furthermore, the role of front groups in spreading climate disinformation is not confined to the past: according to a peer reviewed 2019 study by sociologists Maxwell Boykoff and Justin Farrell, the media presence of front groups and third party climate denial organizations was three times *higher* in the period 2007—2016 compared to 1997—2006 (and may be even higher today).<sup>186</sup> Boykoff and Farrell analyzed over 160 organizations involved in promoting climate change skepticism and denial in the U.S., finding that the most influential organizations among these received funding from ExxonMobil and the Koch family foundations.<sup>187</sup>

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<sup>183</sup> *Id.*, pp. 85, 86, 87, 89

<sup>184</sup> Intergovernmental Panel on Climate Change, 1995, IPCC Second Assessment: Climate Change 1995, <https://archive.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf>, p. 22

<sup>185</sup> Downie C. Ad hoc coalitions in the U.S. energy sector: Case studies in the gas, oil, and coal industries. *Business and Politics*. 2018;20(4):643-668. doi:10.1017/bap.2018.18; Robert J. Brulle, 2019, Networks of Opposition: A Structural Analysis of U.S. Climate Change Countermovement Coalitions 1989–2015, *Sociological Inquiry* vol. 91, 3, <https://onlinelibrary.wiley.com/doi/10.1111/soin.12333>

For an overview of front group activities, see Climate and Development Lab, Brown University, November 2018, Countermovement Coalitions: Climate Denialist Organizational Profiles, <https://www.climatedevlab.brown.edu/post/countermovement-coalitions-climate-denialist-organizational-profiles>

<sup>186</sup> Maxwell Boykoff, Justin Farrell, 2019, Climate change countermovement organizations and media attention in the United States (in: Climate Change Denial and Public Relations: Strategic communication and interest groups in climate inaction, ed. Núria Almiron, Jordi Xifra) (Routledge), p. 126, <https://www.taylorfrancis.com/chapters/oa-edit/10.4324/9781351121798-8/climate-change-countermovement-organizations-media-attention-united-states-maxwell-boykoff-justin-farrell>

<sup>187</sup> *Id.*, pp. 126, 135 (noting ExxonMobil funding of the American Enterprise Institute, which offered \$10,000 for articles casting doubt on the findings of the Intergovernmental Panel on Climate Change)

More recently, a 2020 report by the Senate Special Committee on the Climate Crisis described fossil fuel companies' historical and ongoing use of front groups and third parties to spread climate denial, including funding of the Global Climate Coalition, the Heartland Institute (which stated in a 2019 undercover investigation that it dedicates between 2/3 and ¾ of its funding from Donors Trust – one of its major donors which itself conceals its sources of funding – to promote skepticism about climate change),<sup>188</sup> and the Competitive Enterprise Institute (which ran an ad campaign in 2006 saying, “Carbon dioxide? They call it pollution. We call it life.”)<sup>189</sup> The report notes that peer reviewed reports have identified over 100 fossil fuel industry front groups, which have been and continue to be deactivated, reactivated, paused, and renamed over time such that obtaining a complete picture of such groups, activities, or funding relationships is made difficult.<sup>190</sup> One of the purposes of these front groups and trade associations is to conduct dirty work for their member companies: as Tom Donohue, CEO of the U.S. Chamber of Commerce from 1997—2021, admitted, “I want to give [my members] all the deniability they need.”<sup>191</sup>

Similarly, in 2021, one of ExxonMobil's lobbyists, Keith McCoy (then senior director of federal relations for ExxonMobil), admitted in an undercover investigation that ExxonMobil's advertised support for climate action was not genuine but rather a public relations exercise, that the company had a history of “aggressively fight[ing] against some of the science,” and that the company had “join[ed] some of these shadow groups” to counteract efforts to address climate change.<sup>192</sup>

Defendants' use of front groups and third parties continues. A peer reviewed study published in 2025 in *Energy Research & Social Science*, for example, found that fossil fuel interests, including the American Fuel and Petrochemicals Manufacturers, continue to fund (directly or indirectly) local groups opposing wind power, including by exaggerating greenhouse gas emissions from wind power, the effect of offshore wind power on whales, and the imminence of commercially available nuclear fusion power, and by understating emissions from fossil gas.<sup>193</sup>

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<sup>188</sup> Correctiv, The Heartland Lobby, Feb. 11, 2020, <https://correctiv.org/en/top-stories/2020/02/11/the-heartland-lobby/>

<sup>189</sup> Senate Democrats' Special Committee on the Climate Crisis, August 25, 2020, The Case for Climate Action: Building A Clean Economy For The American People, [https://www.schatz.senate.gov/imo/media/doc/SCCC\\_Climate\\_Crisis\\_Report.pdf](https://www.schatz.senate.gov/imo/media/doc/SCCC_Climate_Crisis_Report.pdf), pp. 199-214

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*, p. 209.

<sup>192</sup> Hiroko Tabuchi, June 30, 2021, In Video, Exxon Lobbyist Describes Efforts to Undercut Climate Action, *The New York Times*, <https://www.nytimes.com/2021/06/30/climate/exxon-greenpeace-lobbyist-video.html>

<sup>193</sup> Isaac Slevin, William Kattrup, Charlotte Marcil, J. Timmons Roberts, 2025, Beyond dark money: Information subsidies and complex networks of opposition to offshore wind on the U.S. East Coast, *Energy Research & Social Science* 119 103829, <https://www.sciencedirect.com/science/article/abs/pii/S2214629624004201>

A key conclusion from the literature on the history of climate disinformation is that the industry has often concealed its membership in and support for such groups through layers of trade associations, think tanks, and other organizations (e.g., a fossil fuel company may be a member of and fund a trade association, which in turn funds a think tank engaging in climate disinformation, which in turn supports an industry coalition engaging in climate disinformation). Such complex membership and funding arrangements have served to conceal various companies' involvement in deceptive climate communications for decades, indicating the crucial importance of legal discovery for shedding light on the issue. Indeed, only recently have scholars begun to unravel and systematically map these activities.

### *Defendants' Continued Efforts to Disinform the Public About Climate Change*

In 1998, following adoption of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC), fossil fuel companies (including Defendants) redoubled their efforts to maintain and expand fossil fuel sales. That year, an internal strategy document was drafted at API headquarters called the "Global Climate Science Communications Action Plan," which stated that "Unless ... the Kyoto proposal is defeated and there are no further efforts to thwart the threat of climate change, there may be no moment when we can declare victory for our efforts."<sup>194</sup> The industry's plan as described in the document had three prongs. The first was a media influence campaign to "undercut the 'conventional wisdom' on climate science" by promoting the notion that climate science was highly uncertain. Defendants sought to accomplish this by "Identify[ing], recruit[ing] and train[ing] a team of five independent scientists" to spread Defendants' narratives; influencing journalists and the media to believe there was a scientific debate about the existence of climate change; producing a "steady stream" of anti-climate narratives to science writers and newspapers nationwide; and orchestrating (fake) "grassroots" debates about climate science in universities.<sup>195</sup> In this way, the industry (including Defendants) planned to continue to deceive the public about climate change while hiding the industry's own involvement – yet another layer of deception.

The second prong of the new deception plan was to establish a scientific think tank in Washington, D.C. that would appear as a non-partisan, non-profit environmental educational foundation with an advisory board of "respected climate scientists," but which in reality would be staffed by the industry's employees and agents.<sup>196</sup> The plan described how the think tank would monitor the nation's "key climate scientists," recruit scientists with views useful to the industry, and fund apparent grassroots activities similarly useful to the industry.<sup>197</sup> In this way, the industry (including Defendants) sought to manipulate the scientific community and the public's understanding of climate change while hiding the industry's own involvement.

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<sup>194</sup> Walker, Joe. Draft Global Climate Science Communications Plan. 1998 April 03. Climate Investigations Center Collection. Climate Investigations Center.  
<https://www.industrydocuments.ucsf.edu/docs/jtwl0228>, p. 1

<sup>195</sup> *Id.*, p. 4

<sup>196</sup> *Id.*, p. 5

<sup>197</sup> *Id.*

The third prong of the industry's new plan was to convince the public that efforts to reduce fossil fuel emissions, such as the Kyoto Protocol, were not grounded in climate science. This campaign of confusion sought to target "members of Congress, state officials, industry leadership, and school teachers/students," give business leaders "information kits" that would allow them "to raise serious questions on the science," and use the new think tank discussed above (which would in fact be a front for the industry) to partner with the National Science Teachers Association and thereby inject pro-fossil-fuel, anti-climate-action narratives into school classrooms nationwide, which, by confusing the next generation of Americans about climate change, would, as described in the plan, "begin to erect a barrier against further efforts to impose Kyoto-like measures in the future."<sup>198</sup> The industry's secret Global Climate Science Communications Action Plan illustrates the sophistication of the industry's (and Defendants') disinformation efforts: manipulating the scientific community and the media, creating new front organizations, and indoctrinating children across the nation (including, presumably, Oregon) to reduce concern about climate change and promote the continued use of fossil fuels.

In the late 1990s, Defendants began acknowledging the existence of climate change while misleadingly portraying themselves as solving it (discussed further below). Yet denial and downplaying of climate science continued. For example, in October, 1997, Executive Vice President of the American Petroleum Institute (and Chairman of the Global Climate Coalition) William O'Keefe spoke at the 15<sup>th</sup> World Petroleum Congress in China, bragging about the industry's environmental record while deceiving his audience about climate science.<sup>199</sup> O'Keefe called the idea that "the world must act quickly to reduce emissions to avoid potentially damaging temperature increases sometime in the next century" a "shaky premise" and "a rush to judgment" that "go[es] well beyond the state of knowledge," denying the observed global temperature increase that had been confirmed by the Intergovernmental Panel on Climate Change in its 1995 Second Assessment Report.<sup>200</sup> At the same conference, Exxon Chairman and CEO Lee Raymond asserted:<sup>201</sup>

"Many people – politicians and the public alike – believe that global warming is a rock-solid certainty. But it's not. ... sensitive satellite measurements have shown no warming trend since the late 1970s. In fact, the earth is cooler today than it was 20 years ago. ... Leaping to radically cut [greenhouse gas emissions] on the premise that it will affect climate defies common sense and lacks foundation in our current understanding of the climate system. Forecasts of future warming come from

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<sup>198</sup> *Id.* p. 6

<sup>199</sup> W. F. O'Keefe, 1998, The Petroleum Industry's Global Commitment to the Environment: Achievements and Challenges, Proceedings of the 15<sup>th</sup> World Petroleum Congress (John Wiley & Sons), <https://onepetro.org/WPCONGRESS/proceedings-abstract/WPC15/All-WPC15/WPC-28237/202843>

<sup>200</sup> *Id.*, p. 227; Intergovernmental Panel on Climate Change, 1995, IPCC Second Assessment: Climate Change 1995, <https://archive.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf>, p. 22

<sup>201</sup> Lee R. Raymond, 1998, Remarks, Proceedings of the 15<sup>th</sup> World Petroleum Congress (John Wiley & Sons), pp. 40—41, <https://www.climatefiles.com/exxonmobil/1997-exxon-lee-raymond-speech-at-world-petroleum-congress/>



computer models that try to replicate the Earth's past climate and predict the future. They are notoriously inaccurate. ... So the case for so called global warming is far from air tight. ... What should we do? First, let's agree there's a lot we really don't know about how climate will change in the 21<sup>st</sup> century and beyond. That means we need to understand the issue better, and fortunately, we have time. It is highly unlikely that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now. ... the real secret to environmental improvement is economic growth. And as this growth continues, the economies of this region [*i.e.*, China and East Asia] will need to import more oil, and, to a lesser degree, gas. ... It would be tragic indeed if the people of this region were deprived of the opportunity for continued prosperity by overdoing it with unnecessary restrictions and regulations."

O'Keefe announced the industry was "committed to being part of the solution to the climate risk,"<sup>202</sup> and Defendants began painting themselves with a green brush, creating advertising campaigns portraying themselves as turning to renewable energy (when in reality, they were not) and promoting a panoply of false solutions that would either go nowhere (carbon capture, hydrogen fuel, biofuels), distracted from the need to reduce fossil fuel use (carbon offsets, minor efficiency improvements, blaming consumers for lifestyle habits), or would actually make climate change worse (fossil / "natural" gas).<sup>203</sup> In reality, Defendants were not transitioning away from fossil fuels or developing meaningful solutions to climate change: A 2023 report from the International Energy Agency found that oil and gas majors were still directing only 3% of their investments into renewables – more than two decades after Defendants' green branding began.<sup>204</sup>

Even after acknowledging the existence of climate change, however, Defendants continued (and continue) to downplay the science of climate change. In 2005, ExxonMobil CEO Lee Raymond said in a television interview about climate change: "There is a natural variability that has nothing to do with man...It has to do with sun spots...with the wobble of the Earth...[T]he science is not there to make that determination [as to whether global warming is human-caused]...[T]here are a lot of other scientists that do not agree with [the National Academy and IPCC]...[T]he data is not compelling."<sup>205</sup> In 2007, ExxonMobil's website stated that "[G]aps in the scientific basis for theoretical climate models and the interplay of significant natural variability make it very difficult to determine objectively the extent to which recent

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<sup>202</sup> Oil & Gas Journal, Nov. 2, 1998, API: U.S. oil industry recognizes climate change risk, *Oil & Gas Journal*, p. 28, as cited in: Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 174

<sup>203</sup> Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, ch. 13

<sup>204</sup> Sidhi Mittal, Nov. 23, 2023, IEA: Oil and gas majors putting less than 3% of investments into renewables, *edie*, <https://www.edie.net/iea-oil-and-gas-majors-putting-less-than-3-of-investments-in-renewables/>

<sup>205</sup> G. Supran *et al.*, Assessing ExxonMobil's global warming projections, *Science* **379**, eabk0063 (2023), p. 5, DOI:[10.1126/science.abk0063](https://doi.org/10.1126/science.abk0063)

climate change might be the result of human actions.”<sup>206</sup> And in 2013, ExxonMobil CEO Rex Tillerson said, “[T]he facts remain there are uncertainties around the climate...what the principal drivers of climate change are...[T]here are other elements of the climate system that may obviate the one single variable [of burning fossil fuels]...And so that’s the uncertainty issue...”<sup>207</sup> As recently as 2018, Shell also continued to downplay the seriousness of climate change, portraying the problem as essentially solved, with the company’s Chief Climate Change Advisor David Hone writing on Shell’s website, “Has climate change run its course? ... the potential extent of change in the climate itself could now be limited. In other words, the prospect of runaway climate change might have passed.”<sup>208</sup>

2023 reporting from the *Wall Street Journal*, mentioned above, further attests to Defendants’ continued deception around climate science. Even after ExxonMobil issued its first acknowledgment that fossil fuels cause climate change in 2006, the company secretly continued to muddle climate science and sought to reduce public concern about climate change.<sup>209</sup> In 2008, for example, as reported by the *Journal*, ExxonMobil manager of global regulatory affairs and research planning Gene Tunison encouraged the company to assist the American Petroleum Institute to write an article emphasizing uncertainty in climate science, and in 2012, ExxonMobil CEO Rex Tillerson directed company researchers to “influence” the Intergovernmental Panel on Climate Change (IPCC) in response to the IPCC’s finding that unabated fossil fuel emissions will cause global catastrophe. According to the same reporting, the company also sought to downplay the effects of climate change in the Arctic, fearing that public awareness would threaten Arctic oil and gas development. And although the company publicly claimed to support the 2015 Paris Agreement, which seeks to limit global warming to 1.5—2.0 degrees Celsius, ExxonMobil CEO Rex Tillerson privately told the company’s board that the Paris target was “something magical” and said, “Who’s to say 2.5 [degrees global warming] is not good enough?” In response to the revelations in the *Wall Street Journal*, ExxonMobil CEO Darren Woods asserted that “None of these old emails and notes matter” and that ExxonMobil is “building an entire business dedicated to reducing emissions” – another deception, given that the company is *still* not investing significantly in sustainable energy sources.<sup>210</sup>

### *Defendants’ Ongoing History of Greenwashing*

Around the turn of the millennium, Defendants, acting in tandem, accelerated their efforts to greenwash their image and downplay the threat of climate change through thousands of false

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<sup>206</sup> *Id.*

<sup>207</sup> *Id.*

<sup>208</sup> David Hone, June 14, 2018, Has climate change run its course??. Shell Climate Change (blog), <https://blogs.shell.com/2018/06/14/has-climate-change-run-its-course/>; for all entries in Shell’s climate change blog, see <https://blogs.shell.com/>

<sup>209</sup> Christopher M. Matthews, Collin Eaton, September 14, 2023, Inside Exxon’s Strategy to Downplay Climate Change, *The Wall Street Journal*, <https://www.wsj.com/business/energy-oil/exxon-climate-change-documents-e2e9e6af>

<sup>210</sup> Louis-Maxence Delaporte, Henri Her, Bastien Gebel, May 2024, Assessment of ExxonMobil’s Energy Strategy, *Reclaim Finance*, [https://reclaimfinance.org/site/wp-content/uploads/2024/05/202405\\_Assessment-of-ExxonMobils-climate-strategy.pdf](https://reclaimfinance.org/site/wp-content/uploads/2024/05/202405_Assessment-of-ExxonMobils-climate-strategy.pdf)

or misleading advertisements, which have falsely portrayed Defendants as successfully solving the problem of climate change. This industry-wide greenwashing campaign had the same fundamental purpose and effect as the Defendants' prior deception campaigns: to reduce public concern about climate change caused by fossil fuels (by convincing the public the problem was being solved), increase public acceptance of fossil fuels and of Defendant brands, and ultimately to protect, maintain, and expand the sale of fossil fuel products.

Recent research illustrates the pervasiveness of Defendants' false and misleading climate greenwashing advertisements. According to reporting from March, 2025, researchers from the University of Oxford have identified over 1,700 different climate-themed advertisements (representing tens of thousands of ad repetitions and an enormous number of consumer impressions) from Defendants ExxonMobil, Chevron, ConocoPhillips, Shell, BP, TotalEnergies, and the American Petroleum Institute, which aired across the U.S. (including Oregon) from 2006—2024.<sup>211</sup> These ads promoted (and continue to promote) false and misleading narratives about Defendant companies and climate change, including that fossil gas and hydrogen are low carbon, that biofuels and carbon capture are meaningfully reducing emissions and are viable solutions for solving climate change, and that Defendant companies are transitioning away from fossil fuels. Every one of these advertisements may be materially deceptive, given they misleadingly portray fossil fuel companies as sustainable and/or meaningfully fixing global warming. Important to appreciate is that this pervasive deceptive advertising remains ongoing: the Oxford researchers found nearly a thousand such ads airing from 2018 to the present. Even this vast number of examples is necessarily an *underestimate* of the full scope of Defendants' deceptive communications targeting consumers. In fact, a 2016 study by Media Matters found that CNN viewers saw *five times* more fossil fuel advertising than climate-related news coverage, an example of the dominance of Defendants' misleading messaging in comparison to accurate information about climate change and fossil fuels.<sup>212</sup>

Particularly concerning is that even a *single* exposure to *one* of these misleading ads can measurably deceive consumers about climate change and Defendants' role in causing it. A peer reviewed scientific study published in March, 2025 found that exposing U.S. consumers to just one misleading, climate-themed "Future of Energy" advertisement from ExxonMobil in the *New York Times* – which portrayed the fossil fuel company as environmentally friendly and investing significantly in algae biofuels – measurably changed consumers' beliefs about ExxonMobil, even when consumers were advised that what they were seeing was an advertisement, and *even when*

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<sup>211</sup> University of Oxford Smith School of Enterprise & Environment, 10 March 2025, Researchers can explore 1700 fossil fuel ads through the Oxford Carbon and Climate Advertising Library, <https://www.smithschool.ox.ac.uk/news/researchers-can-explore-1700-fossil-fuel-ads-through-oxford-carbon-and-climate-advertising>

<sup>212</sup> Kevin Kalhoefer, April 25, 2016, STUDY: CNN Viewers See Far More Fossil Fuel Advertising Than Climate Change Reporting, *Media Matters*, <https://www.mediamatters.org/washington-post/study-cnn-viewers-see-far-more-fossil-fuel-advertising-climate-change-reporting>

consumers were given contrary, accurate information before seeing the ad.<sup>213</sup> Specifically, after seeing the ad just once, consumers were more likely to believe the false statements, “Companies like ExxonMobil are investing heavily in becoming more environmentally friendly” and “ExxonMobil is investing heavily in alternative fuels like algae and farm waste.” In the words of the study authors, their results show that “even a single exposure to misleading climate claims can shape beliefs.”<sup>214</sup> This result rebuts the industry’s frequent argument that the public availability of accurate information about climate change (e.g., in scientific papers) means the industry could not have deceived consumers through false and misleading messages. In reality, Defendants’ deceptive messaging has deceived (and continues to deceive) consumers even when accurate information has also been available. (Also relevant here is that accurate, scientific information – even when in principle available – has often been relatively inaccessible to the public due to expertise or cost barriers.) The study described above also found widespread confusion about fossil (“natural”) gas, with consumers generally unable to identify the falsity of the statements “Natural gas is just as environmentally friendly as wind and solar energy” and “Natural gas is clean and green source of energy,” belying Defendants’ false assertion that consumers have long understood the ins and outs of climate change and fossil fuels.<sup>215</sup> In reality, widespread confusion about climate change and fossil fuels persists, in significant part due to Defendants’ decades of pervasive deceptive messaging, which continues today.

Indeed, ExxonMobil’s own marketing agency found that ExxonMobil’s “Future of Energy” advertising campaign achieved over 400 million impressions, “Shifted perception of ExxonMobil,” and “Achieved our goal and exceeded 10% lift in brand favorability” among consumers – an incredible impact for just *one* advertising campaign out of numerous from Defendants over the past 30+ years.<sup>216</sup> An internal “BP Creative Workshop Briefing Document” prepared by WPP for BP in 2020 stated that BP’s brand positioning included the (false) idea that “No company is more willing or able to accelerate the energy transition” and that BP is “transforming itself to help the world transition to a low carbon future,” and that BP targeted “influencers” and “younger people” with these false messages.<sup>217</sup> WPP presented BP with marketing metrics showing US consumers exposed to BP’s ads showed a 7-point increase in the belief that BP “Is a leader in developing low carbon products, services, and businesses” (from 13% to 20%) and an 11-point increase in the UK (from 11% to 22%);<sup>218</sup> metrics showing 59% of

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<sup>213</sup> Amazeen, M.A., Sovacool, B.K., Krishna, A. *et al.* The “Future of Energy”? Building resilience to ExxonMobil’s disinformation through disclosures and inoculation. *npj Clim. Action* 4, 19 (2025). <https://doi.org/10.1038/s44168-025-00209-6>

<sup>214</sup> *Id.*, p. 5

<sup>215</sup> *Id.*, p. 4.

<sup>216</sup> House Natural Resources Committee Staff Hearing Report, Sept. 14, 2022, The Role of Public Relations Firms in Preventing Action on Climate Change, Appendix 3: ExxonMobil / Universal McCann – Unexpected Energy, <https://www.congress.gov/117/meeting/house/115094/documents/HHRG-117-II15-20220914-SD007.pdf>

<sup>217</sup> WPP, 14 January 2020, BP Creative Workshop Briefing Document, p. 25, [https://www.dropbox.com/scl/fi/h9p3rvjgmqts1jmyz4qqp/2020\\_BP-Creative-Workshop-V3-no-film.pdf?rlkey=trb2448gq5u08abez0dmjg0mh&e=1&dl=0](https://www.dropbox.com/scl/fi/h9p3rvjgmqts1jmyz4qqp/2020_BP-Creative-Workshop-V3-no-film.pdf?rlkey=trb2448gq5u08abez0dmjg0mh&e=1&dl=0)

<sup>218</sup> *Id.*, p. 34

the public think BP is leading the introduction of EV charge points and that 60% of the public "now consider gas a partner to renewable [energy];"<sup>219</sup> and noted that "Future KOLs [key opinion leaders] care about 'why' you are doing something far more than 'what' you're doing," and "We must find the right people to tell our story and we [BP] certainly shouldn't be telling it ourselves," apparently alluding to companies' use of front groups and other third parties to spread their deceptive messages.<sup>220</sup> Public access to internal industry evaluations of advertising effectiveness is rare, underlining the importance of discovery to shedding light on how – and to what degree – consumers are misled by the industry's pervasive advertising campaigns.

One of the industry's own strategists, Richard Berman, has also described how false messages are effective even in the presence of accurate information. In a 2014 presentation to the Western Energy Alliance – a fossil fuel trade association whose known past or current members include Defendants Anadarko Petroleum (now Occidental Petroleum), Occidental Petroleum, Marathon Oil, Koch Petroleum Group (now Flint Hills Resources, part of Koch Industries),<sup>221</sup> Koch Exploration Company (part of Koch Industries), Phillips Petroleum (now ConocoPhillips), ConocoPhillips, BP, Chevron, Shell, and Shell Exploration & Production Company (part of Shell)<sup>222</sup> – Berman explained the value of muddying the waters in order to "win ugly," saying, "You get into people's mind a tie. They don't know who is right. And you [oil and gas companies] win all ties because the tie basically insures the status quo. ... I'll take a tie any day if I'm trying to preserve the status quo."<sup>223</sup> Just as the tobacco industry created a "holding strategy" to maintain the status quo using disinformation, deception, and doubt, so too have fossil fuel Defendants in order to protect, promote, and expand the sale of fossil fuel products.<sup>224</sup>

Defendants spend hundreds of millions of dollars per year on consumer-facing advertising,<sup>225</sup> and a growing body of peer reviewed research has found that Defendants' advertisements and other public-facing communications about climate change and fossil fuels are

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<sup>219</sup> *Id.*, p. 35

<sup>220</sup> *Id.*, p. 52

<sup>221</sup> DeSmog, Koch Industries, Inc. – Company Holdings and Investments, <https://www.desmog.com/koch-industries-inc-company-holdings-and-investments/>

<sup>222</sup> DeSmog, Western Energy Alliance, <https://www.desmog.com/western-energy-alliance/>

<sup>223</sup> Rick Berman Tells Fracking Advocates to 'Win Ugly,' Oct. 31, 2014, Bloomberg, <https://perma.cc/8TSP-7YVX>; Sharon Kelly, Oct. 31, 2014, Oil and Gas Industry's "Endless War" on Fracking Critics Revealed by Rick Berman, DeSmog, <https://www.desmog.com/2014/10/31/oil-and-gas-industry-s-endless-war-fracking-critics-revealed-rick-berman/>

<sup>224</sup> 'The Roper Proposal'. 01 May 1972. Bates No. TIMN0077652-7655.

<http://tobaccodocuments.org/ti/TIMN0077652-7655.html>, as discussed in: Proctor RN.

"Everyone knew but no one had proof": tobacco industry use of medical history expertise in US courts, 1990-2002. *Tob Control*. 2006 Dec;15 Suppl 4(Suppl 4):iv117-25. doi: 10.1136/tc.2004.009928. PMID: 17130619; PMCID: PMC2563588.

<sup>225</sup> Brulle, R.J., Aronczyk, M. & Carmichael, J. Corporate promotion and climate change: an analysis of key variables affecting advertising spending by major oil corporations, 1986–2015. *Climatic Change* **159**, 87–101 (2020). <https://doi.org/10.1007/s10584-019-02582-8>



misleading.<sup>226</sup> As discussed above, peer reviewed research, as well as the industry’s own internal marketing assessments, show that Defendants’ false and misleading advertisements about climate change – of which Defendants have issued thousands – measurably affect consumer beliefs, and that the deceptive effects of Defendants’ misleading advertising are not fully reversed by the availability of accurate information.<sup>227</sup> A host of research has also found that green branding

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<sup>226</sup> Li M, Trencher G, Asuka J (2022) The clean energy claims of BP, Chevron, ExxonMobil and Shell: A mismatch between discourse, actions and investments. PLoS ONE 17(2): e0263596. <https://doi.org/10.1371/journal.pone.0263596> (finds public statements from Carbon Majors about corporate decarbonization are inconsistent with company investments, which remain predominantly focused on fossil fuels); Kim Sheehan, 2018, This Ain’t Your Daddy’s Greenwashing: An Assessment of the American Petroleum Institute’s Power Past Impossible Campaign, in Intellectual Property and Clean Energy (ed. Matthew Rimmer), [https://link.springer.com/chapter/10.1007/978-981-13-2155-9\\_11](https://link.springer.com/chapter/10.1007/978-981-13-2155-9_11) (finds the API’s Power Past Impossible ad campaign “provides evidence of greenwashing through both explicit communications (such as unsubstantiated claims that ‘gas comes cleaner’ and ‘oil runs cleaner’) and implicit communications (the use of green imagery)”); Megura and Gunderson, 2022, Better poison is the cure? Critically examining fossil fuel companies, climate change framing, and corporate sustainability reports, Energy Research & Social Science, <https://doi.org/10.1016/j.erss.2021.102388> (finds, based on fossil fuel companies’ annual sustainability reports, that fossil fuel companies frame climate change in a way that is a “subtle form of denialism that acknowledges climate change as a problem without diagnosing the root cause of the problem”); Carbon Disclosure Project, 2023, Research reveals no oil and gas companies have plans in place to phase out fossil fuels, <https://www.cdp.net/en/articles/media/research-reveals-no-oil-and-gas-companies-have-plans-in-place-to-phase-out-fossil-fuels> (finds Carbon Majors lack plans to phase out fossil fuels in alignment with the Paris Agreement); Robert Brecha et al., 2022, Institutional decarbonization scenarios evaluated against the Paris Agreement 1.5 °C goal, *Nature Communications*, <https://www.nature.com/articles/s41467-022-31734-1> (finds emissions reductions pledges from Carbon Majors are not aligned with the Paris Agreement); Polly Bindman, 2023, Are the oil majors destined for extinction?, *Energy Monitor*, <https://www.energymonitor.ai/finance/are-the-oil-majors-destined-for-extinction/?cf-view> (features chart showing Carbon Majors’ investments in fossil fuels dwarf their investments in renewables); Sidhi Mittal, 2023, IEA: Oil and gas majors putting less than 3% of investments into renewables, *edie*, <https://www.edie.net/iea-oil-and-gas-majors-putting-less-than-3-of-investments-in-renewables/> (reports International Energy Agency finding that Carbon Majors putting less than 3% of their capital investments into renewables)

<sup>227</sup> Amazeen, M.A., Sovacool, B.K., Krishna, A. *et al.* The “Future of Energy”? Building resilience to ExxonMobil’s disinformation through disclosures and inoculation. *npj Clim. Action* 4, 19 (2025). <https://doi.org/10.1038/s44168-025-00209-6>; Ronald Friedman and Dylan Campbell, 2023, An Experimental Study of the Impact of Greenwashing on Attitudes toward Fossil Fuel Corporations’ Sustainability Initiatives, *Environmental Communication*, <https://www.tandfonline.com/doi/full/10.1080/17524032.2023.2215959> (finds that a single exposure to a greenwashing ad from a fossil fuel company increases consumer belief in the efforts and progress of fossil fuel companies in transitioning to renewable energy, and that

measurably increases consumers' purchase intention and willingness to pay, and that consumers typically cannot distinguish between genuine and false environmental claims in advertisements.<sup>228</sup> In other words, Defendants' deceptive advertisements and other public statements mislead the public, reduce public concern about climate change, and increase public acceptance of fossil fuel companies and fossil fuels, which worsens climate change, reduces public awareness of and preparedness for climate change impacts, and ultimately increases costs and damages from climate change.

### *Parallels to Tobacco Industry Propaganda*

A common theme of fossil fuel industry propaganda is to blame consumers and the broader public for climate change while evading industry responsibility. Fossil fuel companies sometimes argue that 1) public discussions of climate change have occurred for over a century, so the public has been well informed and has essentially assumed the risk of using fossil fuels, and 2) expert consensus about climate change is relatively recent, so the industry should be excused for emphasizing uncertainty and not doing more about the problem. These historically

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providing corrective information to consumers after exposure to a greenwashing ad did not fully reverse the effects of the greenwashing ad on the consumer)

<sup>228</sup> Grimmer and Bingham, 2013, Company environmental performance and consumer purchase intentions, *Journal of Business Research*, <https://www.sciencedirect.com/science/article/abs/pii/S0148296313000416?via%3Dihub> (finds consumers show higher purchase intention for brands with higher perceived environmental performance, especially for consumers with higher environmental involvement and for higher priced products); Sun et al., 2020, What you see is meaningful: Does green advertising change the intentions of consumers to purchase eco-labeled products?, *Business Strategy and the Environment*, <https://doi.org/10.1002/bse.2648> (finds that green advertising increases purchase intention); Hartmann and Apaolaza-Ibañez, 2012, Consumer attitude and purchase intention toward green energy brands: The roles of psychological benefits and environmental concern, *Journal of Business Research*, <https://www.sciencedirect.com/science/article/abs/pii/S0148296311004012?via%3Dihub> (finds that nature-themed advertising increases consumer purchase intentions for green-branded energy; reports that public opinion surveys find 30% of consumers willing to pay price premium for green energy); Schmuck et al., 2018, Misleading Consumers with Green Advertising? An Affect–Reason–Involvement Account of Greenwashing Effects in Environmental Advertising, *Journal of Advertising*, <https://www.tandfonline.com/doi/full/10.1080/00913367.2018.1452652> (finds that nature-evoking images increase consumers' positive evaluation of ads and brands and has a stronger effect on consumers than their perception of the presence of greenwashing); Zhang, Chen, and Li, 2024, The effects of green advertising appeal and message type on purchase intention, *Journal of Retailing and Consumer Services*, <https://doi.org/10.1016/j.jretconser.2024.104007> (reports that green advertising is linked to consumer purchase intention, citing Schuhwerk, 1995 and Arnold et al., 2022); Timmons et al., 2024, Consumers struggle to distinguish genuine and 'greenwashed' environmental claims in advertisements, *ESRI Research Bulletin*, <https://www.esri.ie/publications/consumers-struggle-to-distinguish-genuine-and-greenwashed-environmental-claims-in> (finds that consumers usually cannot distinguish between genuine and false environmental claims in advertisements)

misleading arguments parallel the false narratives used by the tobacco industry to deflect attention from its own extensive history of deception.<sup>229</sup> Stanford University historian of science Robert Proctor calls these evasions “‘common knowledge’ and ‘open controversy,’” with “the masses being all-knowing and the experts all confused.”<sup>230</sup> These narratives contain numerous logical inconsistencies and historical inaccuracies, not least of which is presented by the question: If knowledge of climate change was so commonplace, how did it escape the industry’s grasp for so long?

Just as with tobacco, the industry’s messages of common knowledge and open controversy are misleading when it comes to climate change. The common knowledge argument ignores, for one, that fossil fuel companies themselves took action to *confuse and destroy* public understanding of climate change and its link to fossil fuels. (Historians have a term for this – *agnogenesis* – referring to the deliberate production of ignorance or doubt.)<sup>231</sup> Indeed, historical public opinion data show rapid changes in public understanding and beliefs about climate change at precisely the same time fossil fuel companies accelerated their public-facing disinformation campaigns in the early 1990s, with the percentage of the public believing global warming was real declining from 68% to 57% from 1992 to 1994; the percentage believing immediate action should be taken to reduce emissions dropping from nearly 30% to only 10% from the late 1980s to 1994; and the percentage opposed to taxing fossil fuel companies to incentivize a transition away from fossil fuels increasing from only 28% to nearly 50% from 1990 to 1994.<sup>232</sup> In other words, there were large, rapid shifts in public awareness of and beliefs about climate change at precisely the same time fossil fuel companies (including Defendants) expanded their disinformation campaigns, and about precisely the issues these companies deceived the public about (viz., that climate change is real, serious, urgent, and caused primarily by fossil fuels).

Historical Gallup poll data also show that from around 2000 to 2010 – when fossil fuel companies accelerated their public-facing greenwashing campaigns, which falsely portrayed (and continue to falsely portray) fossil fuel producers as solving the problem of climate change – public concern about the seriousness of climate change significantly declined, with the percentage of the public believing that the seriousness of climate change was exaggerated increasing from 30% to nearly 50%.<sup>233</sup> Perhaps there is no better reflection of the effectiveness of decades of climate disinformation – and illustration that knowledge about climate change remains far from universal – than the fact that the President of the United States in 2024 claimed climate change is a “scam.”<sup>234</sup> The pervasive influence of fossil fuel interests in public discourse

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<sup>229</sup> Proctor RN. "Everyone knew but no one had proof": tobacco industry use of medical history expertise in US courts, 1990-2002. *Tob Control*. 2006 Dec;15 Suppl 4(Suppl 4):iv117-25. doi: 10.1136/tc.2004.009928. PMID: 17130619; PMCID: PMC2563588.

<sup>230</sup> *Id.*, pp. 117, 118

<sup>231</sup> *Id.*

<sup>232</sup> Matthew C. Nisbet & Teresa Myers, 2007, Twenty Years of Public Opinion About Global Warming, *Public Opinion Quarterly*, Vol. 71, No. 3 444, <https://www.jstor.org/stable/4500386>

<sup>233</sup> Gallup, In Depth: Topics A to Z, Environment, <https://news.gallup.com/poll/1615/environment.aspx>

<sup>234</sup> James Liddell, 30 September, 2024, Trump sparks controversy for calling climate change a ‘scam’ as Hurricane Helene leaves trail of destruction, *The Independent*,

around climate change is also represented by academic researchers' findings in 2021 that contracts between public relations firms and the oil and gas, utility, and coal/steel/rail sectors vastly outnumber contracts with the environmental movement and the renewable energy industry, and that public relations engagement with the fossil fuel sector often includes corporate brand greenwashing work.<sup>235</sup>

The historically inaccurate narrative of *open controversy* about climate change is also deceptive. Historical accounts promoted by fossil fuel companies often confuse scientific certainty about climate change with the observed *detection* of climate change, yet these scientific developments in the history of climate science are distinct. Since the late 1970s, scientific consensus has existed that doubling atmospheric carbon dioxide concentrations from fossil fuels would cause global warming of, on average, around 3 degrees Celsius, with foreseeably costly or catastrophic consequences worldwide.<sup>236</sup> Fossil fuel companies have been aware of this consensus and accurately predicted the timing and magnitude of global warming, along with many of its disastrous impacts.<sup>237</sup> Yet the industry often conflates this consensus about the *anticipation* of climate change with consensus about the *detection* of climate change (which was reported in the IPCC's Second Assessment Report in 1995).<sup>238</sup> Even as climate attribution science continues to develop (as it will for many years to come), the fact remains that by 1980, fossil fuel companies (including the Defendants) had notice that immediate action was needed to prevent enormous foreseeable damage from climate change caused by fossil fuels.<sup>239</sup>

Finally, Defendants also deceive the public about their own history of deception. ExxonMobil's own website proclaims the company's statements "have been consistent with our understanding of climate science."<sup>240</sup> In 2021, the chief executives from ExxonMobil, Chevron, Shell, and BP testified to Congress under oath that they had never engaged in campaigns to

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<https://www.independent.co.uk/news/world/americas/us-politics/trump-climate-change-scam-hurricane-helene-georgia-b2621271.html>

<sup>235</sup> Brulle, R.J., Werthman, C. The role of public relations firms in climate change politics. *Climatic Change* **169**, 8 (2021). <https://doi.org/10.1007/s10584-021-03244-4>

<sup>236</sup> Jule G. Charney *et al.*, 1979, Carbon Dioxide and Climate: A Scientific Assessment (U.S. National Academy of Sciences), <https://nap.nationalacademies.org/catalog/12181/carbon-dioxide-and-climate-a-scientific-assessment>

<sup>237</sup> For example: G. Supran *et al.*, Assessing ExxonMobil's global warming projections, *Science* **379**, eabk0063 (2023), p. 5, DOI:[10.1126/science.abk0063](https://doi.org/10.1126/science.abk0063)

<sup>238</sup> Intergovernmental Panel on Climate Change, 1995, IPCC Second Assessment: Climate Change 1995, <https://archive.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf>, p. 22

<sup>239</sup> How the Most Important Fact of Global Warming Has Been Obscured, 2025 (in press), *Ignorance Unmasked: Essays in the New Science of Agnotology*, ed. Robert N. Proctor and Londa Schiebinger (Stanford University Press, Stanford, California); Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>

<sup>240</sup> ExxonMobil, August 23, 2017, ExxonMobil statement on inaccurate, activist-funded climate communications study, <https://corporate.exxonmobil.com/news/news-releases/statements/statement-on-study>



mislead the public about climate change and fossil fuels, with ExxonMobil CEO Darren Woods testifying that the company's public statements about climate change and fossil fuels were always "entirely consistent" with contemporaneous scientific consensus, and Shell President Gretchen Watkins ignoring a request to commit to cease obstructing efforts to address climate change, instead saying, "What I'll commit to is continuing to be an active member of the API [American Petroleum Institute]." <sup>241</sup> By rewriting and selectively omitting their own history, Defendants continue to deceive the public about their own historical and ongoing deception.

### **3. Effects of Defendants' Deceptions on Multnomah County**

Defendants' deceptions directly and foreseeably harmed Plaintiff in at least two distinct ways: 1) by causing higher atmospheric greenhouse gas concentrations (in turn resulting in more rapid and severe global warming) and 2) by reducing public preparedness for the disastrous impacts of global warming, including but not limited to extreme heat events such as the 2021 Pacific Northwest heatwave; more frequent, intense, and extensive droughts (such as the 2020—2022 drought affecting Oregon); and more frequent, intense, and extensive wildfires (such as the wildfires that affected Multnomah County in September 2020), among other impacts. <sup>242</sup>

Multnomah County would not have experienced the 2021 Pacific Northwest heatwave and other impacts of climate change (including wildfires and droughts) when and as it did but for Defendants' deceptive conduct. Defendants, individually and collectively, were aware by the late 1970s and 1980s that prompt action to control climate pollution from fossil fuels was necessary to prevent severe global warming, yet Defendants developed and implemented plans over multiple decades to confuse the public about global warming, promote ever greater fossil fuel production and use, and prevent and weaken efforts to control fossil fuel pollution and limit global warming. <sup>243</sup> Shell, for example, acknowledged in an internal future scenarios report in 1989 that prompt action to reduce climate pollution and replace fossil fuels with non-fossil energy sources could limit atmospheric greenhouse gas concentrations to less than 400 parts per million by 2021 (whereas actual measured greenhouse gas concentrations in 2021 were 410—420 parts per million, according to data from the US Environment Protection Agency). <sup>244</sup>

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<sup>241</sup> Hiroko Tabuchi and Lisa Friedman, Oct. 28, 2021, Oil Executives Grilled Over Industry's Role in Climate Disinformation, *The New York Times*, <https://www.nytimes.com/2021/10/28/climate/oil-executives-house-disinformation-testimony.html>

<sup>242</sup> Affidavit of John Wasiutynski, May 19, 2025, pp. 3-4

<sup>243</sup> How the Most Important Fact of Global Warming Has Been Obscured, 2025 (in press), *Ignorance Unmasked: Essays in the New Science of Agnotology*, ed. Robert N. Proctor and Londa Schiebinger (Stanford University Press, Stanford, California); Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>

<sup>244</sup> Royal Dutch Shell, "Scenarios 1989 - 2010: Challenge and Response" (Confidential Group Planning, PL89 S01), Oct. 1989, <https://s3.documentcloud.org/documents/23735737/1989-oct-confidential-shell-group-planning-scenarios-1989-2010-challenge-and-response-disc-climate-refugees-and-shift-to-non-fossil-fuels.pdf>; United States Environmental Protection Agency, Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases,



Defendants' pervasive and continued stream of deception, carried out over multiple decades and continuing today, has for decades directly and foreseeably impeded public understanding of and efforts to prevent global warming, resulting in more severe global warming, climate change impacts, and economic and human harm in Multnomah County and countless other communities around the nation and world.

Not only did Defendants' intentionally deceptive conduct make global warming worse, but Defendants' decades of denying and downplaying the problem (and falsely reassuring the public that the climate problem was being successfully addressed) foreseeably resulted in reduced public preparedness for the effects of global warming, including the 2021 Pacific Northwest heatwave and droughts and wildfires worsened by global warming. Multnomah County implemented extensive relief efforts in response to the unprecedented 2021 heatwave event yet suffered enormous harm from an event of such magnitude (with maximum temperatures reaching 116 degrees Fahrenheit).<sup>245</sup> Climate scientists subsequently found that a heatwave of such magnitude in Multnomah County would have been virtually impossible without global warming, and with continued climate pollution from fossil fuels could occur every five to ten years by the year 2040.<sup>246</sup>

Similarly, scientists have found that global warming is causing wildfires to worsen: one research team, publishing its findings in the prestigious scientific journal *Nature Climate Change*, found that climate change increased the area burned by wildfires worldwide by 16% in the period 2003—2019<sup>247</sup> (the effect may be greater now as global warming worsens), and another research team, publishing its findings in the prestigious scientific journal *Environmental Research Letters*, found that 37% of the area burned by wildfires in the western US and southwestern Canada (including the area surrounding Multnomah County) since 1986 can be attributed to greenhouse pollution from the 88 largest fossil fuel and cement producers, and that these companies' climate pollution has caused drought and fire danger conditions in the region to nearly double since 1901.<sup>248</sup>

Scientists have also found that climate change is causing droughts in the western U.S. to become more severe and extensive. For example, a study published in 2024 in the peer reviewed

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<https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases>

<sup>245</sup> Multnomah County, June 2021 Extreme Heat Event: Preliminary Findings and Action Steps, [https://multco.us/file/june\\_2021\\_heat\\_event\\_preliminary\\_findings\\_and\\_action\\_steps-0/download](https://multco.us/file/june_2021_heat_event_preliminary_findings_and_action_steps-0/download); for the County's reports and analyses of heat events, see Multnomah County, Reports and Analysis of Heat Events, <https://multco.us/info/reports-and-analysis-heat-events>

<sup>246</sup> World Weather Attribution, July 7, 2021, Western North American extreme heat virtually impossible without human-caused climate change, <https://www.worldweatherattribution.org/western-north-american-extreme-heat-virtually-impossible-without-human-caused-climate-change/>

<sup>247</sup> Burton, C., Lampe, S., Kelley, D.I. *et al.* Global burned area increasingly explained by climate change. *Nat. Clim. Chang.* **14**, 1186–1192 (2024). <https://doi.org/10.1038/s41558-024-02140-w>

<sup>248</sup> Kristina A Dahl *et al* 2023 *Environ. Res. Lett.* **18** 064011, DOI: 10.1088/1748-9326/acbce8

scientific journal *Science Advances* found droughts in the Western U.S. are becoming more severe and extensive due to temperature increases driven by climate change, and that continued climate pollution from fossil fuels would cause droughts like the unprecedented 2020—2022 western U.S. drought event (which severely impacted Oregon and was expected to occur less than once every thousand years) to occur on average every six years by the end of the century.<sup>249</sup> Another peer reviewed study in *Science Advances* published in 2024 found that extreme droughts in the western U.S. are increasingly driven by increased heat from global warming.<sup>250</sup>

Tragically, even communities practicing due diligence in monitoring and preparing for anticipated impacts of climate change – such as communities in Multnomah County – were and continue to be exposed to disinformation from Defendants, reasonably leading to confusion and under-preparation. As described in reports from Multnomah County issued after the disastrous 2021 heatwave, the County had been preparing for the effects of climate change since at least 2001,<sup>251</sup> but, as declared by the County in an affidavit for this case, “The County was unaware, and could not have foreseen, that a heat event as extreme as this one would occur this soon in time. ... Had any fossil fuel producer or their representatives been truthful to the County that it should expect extreme heat events of the type and severity that struck the County in June and July of 2021, the County would have better prepared for the heat’s destructive potential, and likely new normal. ... The County received no such warnings, and in fact, it had to contend with misinformation fossil fuel producers have long used to deny or downplay the magnitude and timing of harmful climate change – misinformation that needlessly but effectively sewed [sic] substantial public doubt about the likelihood, severity, and imminence of human-made climate destruction in our community, like that rendered by the extreme heat of 2021.”<sup>252</sup> In its immediate assessment of the 2021 heat dome disaster, the County described how despite its active efforts to prepare for climate change, the impacts of climate change and global-warming-driven extreme events are occurring sooner than expected, observing that “Dramatic negative impacts of the climate crisis that seemed far off are hurting our community today.”<sup>253</sup>

Yet the fossil fuel industry (including the Defendants) was on notice long ago of the potential for such extreme impacts from its products, even as it worked to downplay the problem the confuse the public. For example:

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<sup>249</sup> Yizhou Zhuang et al., 2024, Anthropogenic warming has ushered in an era of temperature-dominated droughts in the western United States, *Science Advances*, 10,eadn9389, DOI:10.1126/sciadv.adn9389

<sup>250</sup> Karen E. King et al., 2024, Increasing prevalence of hot drought across western North America since the 16th century, *Sci. Adv.* 10, eadj4289, DOI:10.1126/sciadv.adj4289

<sup>251</sup> Multnomah County, June 2021 Extreme Heat Event: Preliminary Findings and Action Steps, [https://multco.us/file/june\\_2021\\_heat\\_event\\_preliminary\\_findings\\_and\\_action\\_steps-0/download](https://multco.us/file/june_2021_heat_event_preliminary_findings_and_action_steps-0/download), p. 21

<sup>252</sup> Affidavit of John Wasiutynski, May 19, 2025, pp. 2-3

<sup>253</sup> Multnomah County, June 2021 Extreme Heat Event: Preliminary Findings and Action Steps, [https://multco.us/file/june\\_2021\\_heat\\_event\\_preliminary\\_findings\\_and\\_action\\_steps-0/download](https://multco.us/file/june_2021_heat_event_preliminary_findings_and_action_steps-0/download), p. 21

- At a 1988 conference on global warming featuring numerous fossil fuel industry sponsors including the American Gas Association, the American Petroleum Institute, and Texaco, Inc. (now Chevron), climate scientist Stephen Schneider of the National Center for Atmospheric Research warned that “increased global temperatures increase evaporation of water from our farm fields and make extreme heat waves more likely.”<sup>254</sup> Schneider went on to warn: “Another way that people can understand why a few degrees warming deserves our concern is to focus on the unpleasant issue of intense heat waves. ... Certainly it seems logical that if the average temperature of the world is rising that heat waves will be more frequent or more intense. Indeed, two of my colleagues and I calculated just how we might be loading the climatic dice. For example, in Washington, D.C., the probability of 5 or more days in a row in July with afternoon temperatures greater than 95 degrees F is now about 1 chance in 6 — the odds of getting one face of an unloaded die. If the temperature increased by ‘only’ 3 degrees F, and nothing else in the climate changed, then then the odds of that very unpleasant heat wave go up to nearly 1 in 2 — 3 faces of the newly loaded die! In Des Moines, the odds for this go from 1 in 17 to 1 in 5. And in Dallas, the odds of 5 or more 100 degrees + F days in a row goes from 1 in 3 to 2 in 3 if July average temperatures go up by 3 degrees F.”<sup>255</sup> Yet rather than act on these warnings, the industry, including Defendants, proceeded to cast doubt on the existence and seriousness of global warming, including through front groups such as the Global Climate Coalition, discussed above.
- Another article from the same conference warned of passing “critical thresholds” from global warming, including “worsened ‘storm surges’ ... ‘droughts’ on the Great Plains ... and [] ‘heat waves’ in cities...”<sup>256</sup>
- And yet another article from the same conference warned that, “Hot weather ... places additional stress on the circulatory system. This effect is magnified in individuals ill with various diseases. Heat waves thus are often accompanied by increased mortality in individuals with cardiovascular, cerebrovascular or respiratory disease.”<sup>257</sup>
- An internal document from the Global Climate Coalition from 1996 noted, “Suggestions have been made man-made greenhouse gases either have or will lead to death or illnesses from increased heat waves, climate-related droughts, floods and other disasters,” even as the Global Climate Coalition document went on to downplay the problem.<sup>258</sup>

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<sup>254</sup> Second North American Conference on Preparing for Climate Change. 1988 December 06. Climate Investigations Center Collection. Climate Investigations Center.

<https://www.industrydocuments.ucsf.edu/docs/pjfl0228>, original p. 61 (Stephen H. Schneider, The Greenhouse Effect: Reality or Media Event)

<sup>255</sup> *Id.*, original p. 62-63

<sup>256</sup> *Id.*, original p. 160 (William E. Riebsame, Climate Change as Natural Hazard: Three Perspectives from Natural Hazards Research Useful for Analyzing the Social Implications of Global Warming)

<sup>257</sup> *Id.*, original p. 142 (Janice Longstreth, Overview of the Potential Effects of Climate Change on Human Health)

<sup>258</sup> GCC; Global Climate Coalition. Global Climate Coalition - various overview documents. 1996. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/ygg10228>, p. 11

- At an internal meeting of the Global Climate Coalition Science and Technology Assessment Committee (STAC) on January 18, 1996, an article which had appeared in The New York Times was distributed to attendees including representatives from API and Mobil (now ExxonMobil), which stated, “a warming climate is expected to produce hotter heat waves and more severe droughts,” yet the Global Climate Coalition continued to cast doubt on the reality, urgency, and severity of global warming.<sup>259</sup>
- A 1997 article in the Philadelphia Daily News following a heat wave in that city quoted a meteorologist from the climate denying Franklin Institute (funded by the Charles G. Koch Charitable Foundation, according to DeSmog),<sup>260</sup> who downplayed the event and cast doubt on any link to global warming, telling the public, “This heat wave is sort of overblown... It's just that there's no way to link global warming – assuming it's occurring, which is not a closed issue – to the weather we're experiencing this week,” even though the IPCC had already reported a scientific consensus that human-caused global warming had been detected.<sup>261</sup>
- A 2012 report by the Cato Institute (funded by the Charles G. Koch Charitable Foundation, David H. Koch Charitable Foundation, Charles Koch Institute, and ExxonMobil, among others, according to DeSmog)<sup>262</sup> admitted that “Mean summer temperatures in the first decade of the 21<sup>st</sup> century are similar to those of the 1930s [when many extreme heat records were set], but there now appears to be more heat excursions under conditions of high humidity than there were then,” yet then proceeded to cast doubt on the reliability of heat measurements, deflect blame for heat waves away from global warming and onto urbanization, and reassure the public intensified heat waves would not be harmful as society would adapt to them, stating, “heat-related mortality appears to *decline* [emphasis added] as temperature excursions become more frequent and extreme,” “greenhouse warming, coupled with greater use of air conditioning and other adaptations, has resulted in an overall decrease in temperature related mortality,” and “If there is any linkage between global warming and extreme weather events in the United States, the adaptational response of our society has rendered the change inconsequential.”<sup>263</sup>

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<sup>259</sup> AIAM; Dana, Gregory J; Association of International Automobile Manufacturers, Inc. Global Climate Coalition GCC- Science and Technology Assessment Committee (STAC) Meeting - February 15, 1996 Summary. 1996 February 27. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/rnfl0228>, document p. 11 (William K. Stevens, January 14, 1996, Blame Global Warming for the Blizzard, *The New York Times*)

<sup>260</sup> <https://www.desmog.com/franklin-centre-government-and-public-integrity/>

<sup>261</sup> AFL-CIO; Farm Bureau; Philadelphia Daily News; Russell, Don; Daily News; Washington Post, The; Samuelson, Robert J. Global Warming Promise to Become a Large and Gushing Source of National Hypocrisy. 1997 July 09. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/jgg10228>, p. 4

<sup>262</sup> DeSmog, Franklin Center for Government and Public Integrity, <https://www.desmog.com/cato-institute/>

<sup>263</sup> Cato Institute; Crane, Edward H. Global Climate Change Impacts in the United States. 2012 September 27. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/qzwl0228>, pp. 44, 45, 141, 145

The industry also had notice of global warming impacts in the Pacific Northwest. For example:

- A 1979 internal memo at Exxon (now ExxonMobil) entitled “Controlling the CO<sub>2</sub> Concentration in the Atmosphere” and marked “PROPRIETARY” predicted that global warming of 3 degrees Fahrenheit (around 1.7 degrees Celsius) would have effects similar to a southerly shift in latitude equal to “the north to south height of the state of Oregon. ... Most of the glaciers in the North Cascades and Glacier National Park would be melted. There would be less of a winter snow pack in the Cascades, Sierras, and Rockies, necessitating a major increase in storage reservoirs. Marine life would be markedly changed. Maintaining runs of salmon and steelhead and other subarctic species in the Columbia River system would become increasingly difficult. The rate of plant growth in the Pacific Northwest would increase 10% due to the added CO<sub>2</sub>, and another 10% due to increased temperatures” (which could foreseeably increase wildfire risk in combination with increased heat and drought from global warming).<sup>264</sup>
- At a 1988 conference on global warming featuring numerous fossil fuel industry sponsors including the American Gas Association, the American Petroleum Institute, and Texaco, Inc. (now Chevron), researchers warned that global warming could impact forests in the Pacific Northwest over the proceeding 30—50 years, stating, “Climate change, however, will be significant enough to create site-specific problems along the margins of the current natural range [of Douglas fir], especially water stress.”<sup>265</sup> (Extensive die-off of fir trees due to climate change in Oregon, Washington, and Northern California has since been reported.)<sup>266</sup>
- A 2012 report by the Cato Institute (funded by the Charles G. Koch Charitable Foundation, David H. Koch Charitable Foundation, Charles Koch Institute, and ExxonMobil, among others, according to DeSmog)<sup>267</sup> proceeded to cast doubt on the existence and seriousness of climate change in the Pacific Northwest, while reassuring readers that future changes would be gradual, far-off, and manageable, stating for example, “As the climate and snowpack climatology gradually changes over the course of this century, infrastructure and the regulatory structure for water management will adapt,” and “innovation and capital investment result in adaptation to, or even profit, from climate change.”<sup>268</sup>

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<sup>264</sup> Exxon Research and Engineering Company; Ferrall, WL; Knisely, S. Controlling the CO<sub>2</sub> Concentration in the Atmosphere. 1979 October 16. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/mqwl0228>, p. 12.

<sup>265</sup> Second North American Conference on Preparing for Climate Change. 1988 December 06. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/pjfl0228>, document p. 304

<sup>266</sup> Nathan Gilles, Nov. 25, 2023, ‘Firmageddon’: Climate change is hastening the demise of Pacific Northwest forests, *Associated Press*, <https://apnews.com/article/trees-climate-environment-pacific-northwest-iconic-cedars-d1f58b79c5c92376f4fe835f6b433602>

<sup>267</sup> DeSmog, Cato Institute, <https://www.desmog.com/cato-institute/>

<sup>268</sup> Cato Institute; Crane, Edward H. Global Climate Change Impacts in the United States. 2012 September 27. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/qzwl0228>, document p. 201



In other words, the industry, including Defendants, was warned that global warming would foreseeably cause various extremely damaging impacts, including heatwaves, droughts, and other impacts, yet proceeded publicly to cast doubt on the existence, seriousness, and urgency those impacts and global warming more broadly. Defendants' multi-decade campaign of disinformation targeted the entire nation, including Oregon and Multnomah County – no one has been excluded from the industry's pollution of the public's understanding of global warming. The foreseeable consequence of Defendants' downplaying of the dangers posed by global warming (including more extreme and frequent heatwaves, wildfires, and droughts) has been that communities around the nation, including in Multnomah County, have been caught underprepared as such dangers have materialized.

In summary, but for Defendants' conduct, Multnomah County's experiences of damaging climate change impacts, including the disastrous 2021 Pacific Northwest heatwave, droughts, wildfires, and other impacts, would not have occurred when and as they have. Had Defendants been honest, global warming would be less severe, and counties including Multnomah would reasonably be better prepared for it. Indeed, in a 2023 report, the IPCC found that addressing the risks of global warming "has been made more urgent by delays due to misinformation about climate science that has sowed uncertainty and impeded recognition of risk (*high confidence*). ... Vested interests have generated rhetoric and misinformation that undermines climate science and disregards risk and urgency (*medium confidence*). Resultant public misperception of climate risks and polarized public support for climate actions is delaying urgent adaptation planning and implementation (*high confidence*)."<sup>269</sup> The report went on to explain that "Rhetoric and misinformation on climate change and the deliberate undermining of science have contributed to misperceptions of the scientific consensus, uncertainty, disregarded risk and urgency, and dissent (*high confidence*)," "Vested economic and political interests have organized and financed misinformation and 'contrarian' climate-change communication," "While there is expert scientific consensus on anthropogenic climate change, rhetoric, misinformation and politicization of science have contributed to misperceptions (*high confidence*), polarization on the severity of impacts and risks to society, indecision and delayed action (*high confidence*) ... In North America, this impedes adaptation efforts ... and inflates climate risks (*high confidence*)."<sup>270</sup>

Just as found by the IPCC, a key purpose of Defendants' engagement with climate change since at least the 1980s has been to protect the fossil fuel business by delaying effective action to address climate change, as exemplified by then-CEO of Exxon (now ExxonMobil) Lee Raymond's false reassurance in 1996 at the API's annual conference that "there's ample time to

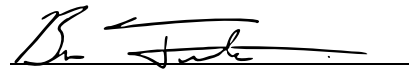
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<sup>269</sup> Hicke, J.A., S. Lucatello, L.D., Mortsch, J. Dawson, M. Domínguez Aguilar, C.A.F. Enquist, E.A. Gilmore, D.S. Gutzler, S. Harper, K. Holsman, E.B. Jewett, T.A. Kohler, and K.A. Miller, 2022: North America. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 1929–2042, doi:10.1017/9781009325844.016, p. 1931

<sup>270</sup> *Id.*, pp. 1939, 1940, 1982

better understand climate systems and consider policy options. So there's simply no reason to take drastic action [to address climate change] now."<sup>271</sup> Similarly, the same year, Executive Vice President and Chief Operating Officer of the API William O'Keefe told the media there was no need for prompt action to prevent climate change, claiming, "we have time to do rational studies ... We have at least 20 years to take steps, if necessary, to make significant reductions in greenhouse gas emissions. Time is on our side."<sup>272</sup> Contrast those public statements with Shell's internal global warming report from 1988, which stated, "by the time global warming becomes detectable it could be too late to take effective countermeasures to reduce the effects or even to stabilise the situation."<sup>273</sup>

Delay – of effective measures to reduce climate pollution from fossil fuels, as well as delay of the public's full appreciation of the threat – has been the goal of Defendants' (and the broader industry's) deceptions, and Defendants have succeeded, leaving communities like those in Multnomah County facing severe global warming impacts while under-prepared for its consequences.

  
Benjamin A. Franta

**June 27, 2025**

Date

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<sup>271</sup> See Benjamin Franta, 2022, Big Carbon's Strategic Response to Global Warming, 1950-2020 (PhD Dissertation, Stanford University), <https://purl.stanford.edu/hq437ph9153>, p. 164

<sup>272</sup> *Id.*, pp. 162-163; DeSmog, William F. O'Keefe, <https://www.desmog.com/william-o-keefe/>

<sup>273</sup> Shell Internationale Petroleum Maatschappij BV; United Nations Environment Programme; Griffiths, MH. The Greenhouse Effect. 1988 May 01. Climate Investigations Center Collection. Climate Investigations Center. <https://www.industrydocuments.ucsf.edu/docs/khfl0228>, p. 1

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**CURRENT POSITION**

**Titular Associate Professor (2023--) and Senior Research Fellow in Climate Litigation (2022--),** Founding Head of the Climate Litigation Lab, Oxford Sustainable Law Programme, Smith School of Enterprise and the Environment and Faculty of Law, University of Oxford

Teaching: The Law and Science of Climate Litigation (with Dr. Rupert Stuart-Smith and Dr. Juliana Vélez Echeverri), School of Geography and Environment (Michaelmas 2023 and 2024); Saïd Business School Climate Bootcamp (Michaelmas 2024)

Advisees: Ellena Damini (MSc Sustainability, Enterprise and the Environment), Joy Hou (MSc Sustainability, Enterprise and the Environment), Max Nathanson (DPhil Economic Geography), Laura Hildt (PhD, University of Ghent), Adam Parr (DPhil Geography, 2024), Samantha Climie (MSc Environmental Change and Management, 2024), Shivaun Chandiramani (MSc Sustainability, Enterprise and the Environment, 2024, distinction), Hansa Mukherjee (MSc Sustainability, Enterprise and the Environment, 2024); Keble College advisees: Alexandra Abbate, Sofya Olenicheva; DPhil examinees: José Luis Reséndiz García (Geography and Environment)

Other: Co-Director, Oxford Sustainable Law Programme Executive Education Programme (2024); Academic Affiliate, Oxford Bonavero Institute of Human Rights; Associate Faculty, Oxford Faculty of Law; Fellow, Oxford Martin Programme on Net Zero Regulation and Policy; Senior Research Fellow, Institute for New Economic Thinking at the Oxford Martin School; Senior Associate, Oxford Net Zero; Fellow, Keble College; Associate Member, Nuffield College; Member, Departmental Research Ethics Committee (2023—24); International Expert Group, British Institute of International and Comparative Law; Advisory Board, Centre on Law & Social Transformation (Bergen, Norway)

**PROFESSIONAL LICENSE, EDUCATION, AND AWARDS**

**License to Practice Law:** State Bar of California, USA (since 2021)

**Stanford University**, PhD, History (History of Science) (September 2022)

Thesis: Big Carbon's Strategic Response to Global Warming, 1950—2020 (advisor: Robert Proctor)

Teaching: Women and Gender in Science, Medicine, and Engineering (Prof. Londa Schiebinger), Environmental Change and Society (Profs. Mikael Wolfe, Zephyr Frank, and Rosamond Naylor), The International History of Nuclear Weapons (Prof. David Holloway), World History of Science (Prof. Robert Proctor), syllabus for new sources and methods course "History of Climate Science and Politics" approved by the History Department

Other: Distinguished Departmental Scholar; Graduate Representative, History Dept. (2017–18)

**Stanford Law School**, JD (June 2021)

Clinic: Environmental Law Clinic (supervisor: Deborah Sivas)

Other: John Hart Ely Prize for Outstanding Performance in Lawyers and Leadership course (Prof. Deborah Rhode)

**Harvard University**, PhD, Applied Physics (May 2016)

Thesis: Fabrication Techniques for Femtosecond Laser Textured and Hyperdoped Silicon (advisor: Eric Mazur)

Teaching: The Climate-Energy Challenge (Prof. Daniel Schrag), Electricity and Magnetism (Prof. Eric Mazur)

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- Patent: Creation of hyperdoped semiconductors with concurrent high crystallinity and high sub-bandgap absorptance using nanosecond laser annealing, PCT/US2015/060385
- Other: Research Fellow in Science, Technology, and Public Policy at the Belfer Center for Science and International Affairs at the Harvard Kennedy School of Government (2014–16), Postdoctoral Fellow at the Harvard School of Engineering and Applied Sciences (2016), Harvard University Graduate Consortium on Energy and Environment, Harvard Graduate School Leadership Institute, Harvard Photonics (cofounder and president), Graduate Student Council, Harvard-Radcliffe Collegium Musicum

### University of Oxford, MSc (with Distinction), Archaeological Science (October 2010)

- Thesis: Luminescence of Glacial Sediment: Toward a More Robust Palaeoclimate Chronology (advisors: Mark Pollard, Jean-Luc Schwenninger)
- Other: Fieldwork in Iceland and Greece, Keble College Choir

### Coe College, BA (Summa Cum Laude), Physics and Mathematics (May 2009)

- Thesis: Laser-Induced Modifications of Vanadate and Borate Glasses (advisor: Mario Affatigato)
- Other: Writing Center consultant, acting roles in four theatre department productions, canoe guide at Boundary Waters field station, varsity cross country running team, member of college drumline and choir, college newspaper editor, studied abroad in Greece

### Awards

- 1) Institute of Physics (IOP) Trusted Reviewer (2024) (top 15% of peer reviewers based on quality of reviews)
- 2) US National Science Foundation Graduate Research Fellow
- 3) US National Defense Science and Engineering Graduate Fellow
- 4) USAID Research and Innovation Fellow
- 5) Stanford University Interdisciplinary Graduate Fellow
- 6) University of Oxford Clarendon Scholar
- 7) Coe College Williston Jones Scholar
- 8) National Merit Scholar Finalist
- 9) Barry M. Goldwater Scholar
- 10) R.J. McElroy Trust Scholar
- 11) Keble College, Oxford Award for Fieldwork
- 12) Coe College Swanson Science Writing Prize
- 13) Coe College James Young Essay Prize
- 14) Coe College Outstanding Senior Physics Major
- 15) American Climate Leadership Award Semifinalist
- 16) American Geophysical Union Outstanding Student Presentation Award
- 17) US DOE Better Buildings Case Competition Most Innovative Proposal
- 18) SPIE Green Photonics Award for Laser-Assisted Manufacturing and Micro/Nano Fabrication
- 19) National Phi Kappa Phi Love of Learning Award
- 20) Phi Beta Kappa, Phi Kappa Phi, Sigma Pi Sigma honor societies

## PUBLICATIONS, PRESENTATIONS, AND INTERVIEWS

**Scholarly Articles and Outputs** (25 published or in press; Google Scholar H-Index: 15; have reviewed for publishers including *Nature Scientific Reports*, *Environmental Research Letters*, *Climatic Change*,

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*Environmental Politics*, *Applied Physics Letters*, *Optical Materials Express*, Oxford University Press, Environmental Law Institute)

- 1) Patrick Hegarty Morrish and Benjamin Franta, in review, Cultures of Sustainability: Protecting Mobile Peoples' Land Rights in a Time of Climate Change and Environmental Degradation
- 2) Blaire Bernstein and Benjamin Franta, in review, Domestic Law Approaches to Address Export Credit Agency Support for Fossil Fuels
- 3) Samantha Climie, Benjamin Franta, in review, A Frame Analysis of Carbon Majors' Advertising of Fossil Gas in the United States, 2006—2023
- 4) Sam Fankhauser, Myles Allen, Johanna Arlinghaus, Kaya Axelsson, Mirte Boot, Aoife Brophy, Ben Caldecott, Emily Cox, Alice Evatt, Siyu Feng, Benjamin Franta, Steven Fries, Cameron Hepburn, Conor Hickey, Stuart Jenkins, Injy Johnstone, Radhika Khosla, Javier Lezaun, Sam Loni, Alexis McGivern, Jessica Omukuti, Stephen M. Smith, Sugandha Srivastav, Joseph Stemmler, Ingrid Sundvor, Thom Wetzer, in review, The Fossil Fuel Endgame
- 5) Kuberan Hansraj Kumaresan, Benjamin Franta, in press, Opportunities for Corporate Climate Litigation in South-East Asia, *Asia Pacific Journal of Environmental Law*
- 6) Grace Nosek, Joana Setzer, Benjamin Franta (coordinating lead authors), Alyssa Johl, Lisa Benjamin, Sharon Yadin, William W. Buzbee, Aria Kovalovich (contributing authors), in press, Legal and State Efforts to Address Climate Obstruction, *Climate Obstruction* (Edited by: J. Timmons Roberts, Carlos R. S. Milani, Jennifer Jacquet, and Christian Downie) (University of Oxford Press)
- 7) Benjamin Franta, in press, How the Most Important Fact of Global Warming Has Been Obscured, *Ignorance Unmasked: Essays in the New Science of Agnotology* (edited volume, Stanford University Press)
- 8) Meghana Patakota, Jake Rutherford, Benjamin Franta, 2024, Climate Accountability Research Assistant (CLARA), Oxford Sustainable Law Programme Climate Litigation Lab, University of Oxford, <https://clara-research.com>
- 9) Juliana Velez Echeverri, Sam Faroqui, Samantha Climie, Kimathi Muiruri, Benjamin Hitchcock Auciello, Emily Hsu, Rebecca Weir, Annika Weis, Cartie Werthman, Benjamin Franta, 2024, Oxford Carbon and Climate Advertising Library (OxCCAL), Climate Litigation Lab, Oxford Sustainable Law Programme, University of Oxford (online)
- 10) Oxford Sustainable Law Programme, 2024, Workshop Proceedings: High-Level Dialogue on Responding to the Climate Emergency to Protect Human Rights (eds. Lara Ibrahim & Benjamin Franta), Smith School of Enterprise and the Environment and Faculty of Law, University of Oxford
- 11) Thomas Hale, Thom Wetzer, Selam Kidane Abebe, Myles Allen, Amir Amel-Zadeh, John Armour, Kaya Axelsson, Ben Caldecott, Lucilla Dias, Sam Fankhauser, Benjamin Franta, Cameron Hepburn, Kennedy Mbeva, Lavanya Rajamani, Steve Smith, Rupert Stuart-Smith, 2024, Turning a groundswell of climate action into ground rules for net zero, *Nature Climate Change* 14, 306-308
- 12) Benjamin Franta, 2023, A Future Foreseen and Transition Delayed: The American Petroleum Industry and Global Warming, 1959–1986, *Energy Transitions: A History of Energy Transitions in Europe and North America* (edited volume, University of Pittsburgh Press)
- 13) Jessica Wentz, Delta Merner, Benjamin Franta, Peter Frumhoff, 2023, Research Priorities for Climate Litigation, *Earth's Future*, vol. 11, issue 1
- 14) Jessica Wentz and Benjamin Franta, 2022, Liability for Public Deception: Linking Fossil Fuel Disinformation to Climate Damages, *Environmental Law Reporter* (editors' article of the month)
- 15) Delta Merner, Benjamin Franta, Peter Frumhoff, 2022, Identifying Gaps in Climate-Litigation-Relevant Research: An Assessment from Interviews with Legal Scholars and Practitioners (policy briefing), Climate Social Science Network



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- 16) Akriti Bhargava, Benjamin Franta, Karla Martínez Toral, Aradhna Tandon, 2022, Climate-Washing Litigation: Legal Liability for Misleading Climate Communications (policy briefing), Climate Social Science Network
- 17) Benjamin Franta, Christophe Bonneuil, Pierre-Louis Choquet (co-first authors), 2021, Early Warnings and Emerging Accountability: Total's Responses to Global Warming, 1971–2021, *Global Environmental Change* (#1 trending geography article worldwide over prior year)
- 18) Benjamin Franta, 2021, Weaponizing Economics: Big Oil, Economic Consultants, and Climate Policy Delay, *Environmental Politics*, DOI: 10.1080/09644016.2021.1947636 (#1 trending political science article worldwide over prior year)
- 19) Maria Isabel Sánchez, Philippe Delaporte, Yohann Spiegel, Benjamin Franta, Eric Mazur, Thierry Sarnet, 2021, A Laser-Processed Silicon Solar Cell with Photovoltaic Efficiency in the Infrared, *Physica Status Solidi A* 218:7
- 20) Benjamin Franta, 2021, Early Oil Industry Disinformation on Global Warming, *Environmental Politics* 30:4 (top trending political science article worldwide)
- 21) Benjamin Franta, 2018, Early Oil Industry Knowledge of CO<sub>2</sub> and Global Warming, *Nature Climate Change* 8:1024–26
- 22) Benjamin Franta, Eric Mazur, S.K. Sundaram, 2017, Ultrafast Laser Processing of Silicon for Photovoltaics, *International Materials Reviews*, DOI: 10.1080/09506608.2017.1389547
- 23) Benjamin Franta, 2017, Litigation in the Fossil Fuel Divestment Movement, *Law & Policy* 39: 393–411
- 24) Benjamin Franta, Hilly Ann Roa-Quiaoit, Dexter Lo, Gemma Narisma, 2016, Climate Disasters in the Philippines: A Case Study of Immediate Causes and Root Drivers from Cagayan de Oro, Mindanao and Tropical Storm Sendong/Washi, *Harvard Belfer Center for Science and International Affairs Report*
- 25) Benjamin Franta, David Pastor, Hemi H. Gandhi, Paul H. Rekemeyer, Silvija Gradečak, Michael J. Aziz, Eric Mazur, 2015, Simultaneous High Crystallinity and Sub-Bandgap Optical Absorptance in Hyperdoped Black Silicon Using Nanosecond Laser Annealing, *Journal of Applied Physics* 118:225303
- 26) Eric Mazur, Benjamin Franta, David Pastor, Hemi Gandhi, Alexander Raymond, 2015, Laser Doping and Texturing of Silicon for Advanced Optoelectronic Devices, *Proc. CLEO Pacific Rim* doi:10.1109/CLEOPR.2015.7375844
- 27) Matthew J. Smith, Meng-Ju Sher, Benjamin Franta, Yu-Ting Lin, Eric Mazur, Silvija Gradečak, 2014, Improving Dopant Incorporation During fs-Laser Doping of Si with a Se Thin-Film Dopant Precursor, *Applied Physics A* 114:1009-1016
- 28) Matthew J. Smith, Meng-Ju Sher, Benjamin Franta, Yu-Ting Lin, Eric Mazur, Silvija Gradečak, 2012, The Origins of Pressure-Induced Phase Transformations During the Surface Texturing of Silicon Using Femtosecond Laser Irradiation, *Journal of Applied Physics* 112:0835518
- 29) Benjamin Franta, Landon Tweeton, Steve Feller, Mario Affatigato, 2009, Laser Modification of Alkali Borate Glasses, *Physics and Chemistry of Glasses-B* 50:305-10(6)
- 30) Benjamin Franta, Tim Williams, Cory Faris, Steve Feller, Mario Affatigato, 2007, Laser Modification of Vanadate Glasses, *Physics and Chemistry of Glasses-B* 48:357-62(6)

### Patent

- 1) Benjamin Franta, Pastor D., Aziz M., Mazur E., Creation of Hyperdoped Semiconductors with Concurrent High Crystallinity and High Sub-Bandgap Absorptance using Nanosecond Laser Annealing, US Patent 10121667 (granted Nov. 6, 2018)

**Selected Meetings, Presentations, and Lectures**

- 1) The Role of Law in Addressing Fossil Fuel Industry Impacts on Public Health (invited seminar), Strategies to Recover (From) the Commercial Determinants of Public Health, Brocher Foundation, Hermance, Switzerland (June 17—19, 2025)
- 2) Invited faculty, Disinformation Summer Institute, University of California, San Diego (June 3—6, 2025)
- 3) Taking climate to the courts: The global growth of climate change litigation (invited seminar), Benioff Ocean Science Laboratory Seminar, University of California, Santa Barbara (May 5, 2025)
- 4) The Global Growth of Climate Change Litigation (invited guest lecturer), Amsterdam Complexity School on Climate Change (April 30, 2025)
- 5) The Global Growth of Climate Change Litigation (invited guest lecturer), TERRA Clinic Seminar, New York University School of Law (April 1, 2025)
- 6) The Global Growth of Climate Change Litigation (invited seminar), Global Systems Institute, University of Exeter (Feb. 26, 2025)
- 7) Using the Law and Journalism for Climate Accountability, International Journalism Festival, Perugia, Italy (Apr. 20, 2024)
- 8) Climate Disinformation and Accountability (invited panelist), Society of Environmental Journalism Annual Conference, Philadelphia, USA (Apr. 3, 2024)
- 9) Can Lawsuits Save the World? (invited speaker), Garden Club of America, Washington, DC, USA (Mar. 18, 2024)
- 10) The Climate Cover-Up: Seeking Compensation for Corporate Deception (invited speaker), NYU Climate Law Accelerator Strategic Webinar (Mar. 7, 2024)
- 11) Climate Change and Anthropology (invited lecturer), Oxford Dept. of Anthropology (Mar. 4, 2024)
- 12) Detecting Greenwashing (invited speaker), ESG Investing (Feb. 29, 2024)
- 13) Sustainability Cluster (invited lecturer), Oxford Blavatnik School of Government (Feb. 26, 2024)
- 14) Sociotechnical Transitions for Net Zero (invited lecturer), Oxford Smith School of Enterprise and the Environment / School of Geography and the Environment (Feb. 14, 2024 and Feb. 2023)
- 15) How Big Carbon Obstructed Climate Action (invited speaker), US Medical Society Consortium on Science and Health Annual Meeting (Feb. 11, 2024)
- 16) Earth Rights Advocacy Clinic (invited lecturer), NYU Law School (Feb. 6, 2024)
- 17) Landscape of Climate Litigation (invited lecturer), Oxford School of Climate Change (Feb. 1, 2024)
- 18) University of California Climate Resilience course (invited lecturer) (recorded Jan. 15, 2024)
- 19) Climate Litigation and Sustainable Development Goal 13 (Climate Action) (invited lecturer), Global Leadership Challenge 2023 (University of Oxford and St. Gallen Symposium) (Dec. 7, 2023)
- 20) Engaging in Global Stocktake through Legal Lenses, Climate Law & Governance Day 2023, COP28, Dubai (remote) (Dec. 5, 2023)
- 21) The Global State of Climate Litigation and Relevance for Energy Sector Investors, Longspur Capital Advisory Board Meeting, 5 Hertford Street, London (Dec. 4, 2023)
- 22) Human and Planetary Health (invited lecturer), Stanford University (Nov. 30, 2023)
- 23) Legal Action for the Climate: A Teaching Tool, Oxford Education Deanery (invited lecturer) (Nov. 21, 2023)
- 24) Can Litigation Solve the Climate Crisis (with Estelle Dehon, KC), Meeting Minds Oxford (Sep. 23, 2023)
- 25) Climate Law for Sustainability (invited lecturer), Oxford SSEE Summer SCENE (July 3, 2024)
- 26) The Legal Landscape of Greenwashing (invited speaker), Cannes, France (June 20, 2023)
- 27) Climate Disinformation and Litigation (invited lecturer), University of Exeter (May 25, 2023)
- 28) Oxford School of Geography and Environment seminar (May 24, 2023)

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- 29) Law for Sustainable Development Goals (invited lecturer), Oxford SDG Impact Lab (May 24, 2023)
- 30) Global Change & the Ecology & Evolution of Infectious Diseases (invited lecturer), Stanford University (May 2, 2023)
- 31) Climate Disinformation and Accountability (invited keynote, declined); Varmere, Våtere, Villere; Bergen, Norway (March 2023)
- 32) Climate Change Litigation, Oxford Law School Japanese lawyer delegation visit (Mar. 10, 2023)
- 33) Legal 500 Inaugural Green Summit (invited panelist), London (Feb. 9, 2023)
- 34) Confronting Emotions in the Climate Science (invited lecturer), Stanford University (Jan. 31, 2023)
- 35) The Landscape of Climate Litigation, Oxford Institute for New Economic Thinking (Jan. 2023)
- 36) Climate Litigation: A Changing Landscape for Companies, Governments, and Institutional Investors (invited panelist), Net Zero Investor's Annual Conference, London Stock Exchange (Dec. 12, 2022)
- 37) Greenwashing Prevention: Practical Frameworks and Tools (invited panelist), Institute for Advertising Ethics (Dec. 8, 2022)
- 38) Climate Litigation as a Tool to Advance Equity and Justice (invited speaker), Climate Protection, Energy Security, Geopolitics: Squaring the Circle, All Souls College, Oxford, UK (Dec. 7, 2022)
- 39) Global Trends in Climate Change Litigation and Activism (invited panelist), City & Financial Global Climate Litigation and Activism Summit, London (Nov. 22, 2022)
- 40) Science at the Crossroads: Intersections Between Academic Research and Journalism on Energy, Environment, and Correcting the Scientific Record (invited speaker), Paris (Nov. 2, 2022)
- 41) A New Initiative to Inform Global Climate Litigation Through Research, International Conference on Fossil Fuel Supply and Climate Policy, Oxford, UK (Sep. 26, 2022)
- 42) Fossil Fuel Funding on Campus: What to Do? (invited lecture), UC San Diego Institute for Practical Ethics (April 21, 2022)
- 43) Be a Climate Superhero (invited speaker), American Climate Leadership Summit (March 29, 2022)
- 44) Evidentiary Issues in Climate Change Litigation (invited faculty presenter), Continuing Legal Education Society of British Columbia Climate Law Conference 2022 (Feb. 25, 2022)
- 45) Attributing Climate Change Impacts to Fossil Fuel Companies (panelist), Center for Climate Integrity (Jan. 20, 2022)
- 46) Climate-Litigation-Relevant Research: Defining a Growing Field (panelist), American Geophysical Union Fall Meeting (Dec. 16, 2021)
- 47) ABC News and the Climate Emergency (invited panelist), New York Communities for Change (Dec. 13, 2021)
- 48) Making an Impact with Climate Research: Insights, Perspectives, and Inspiration (invited panelist), Taylor & Francis webinar (Nov. 16, 2021)
- 49) The Long Game: How Big Oil Delayed Climate Action for Four Decades (invited presentation), New York University Dept. of Environmental Studies, New York, New York (Nov. 11, 2021), [https://www.youtube.com/watch?v=g3e\\_Aw1dB50](https://www.youtube.com/watch?v=g3e_Aw1dB50)
- 50) Denialism: From Climate Change to COVID-19 (panelist), Stanford University (Nov. 9, 2021)
- 51) Climate Politics: Knowledge, Delay, and Accountability (invited presentation), Columbia University (Oct. 25, 2021)
- 52) The Unique Combination of Research Experience and Liberal Arts Education (keynote presentation). Coe College Research Symposium (April 7, 2021)
- 53) Global Warming: From Scientific Warning to Corporate Casualty. Stanford TEDx (Feb. 27, 2021)
- 54) Climate Science in the Courtroom: How Scientists Can Inform Climate Litigation and the Law (panelist). American Geophysical Union Fall Meeting (Dec. 9, 2020)

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- 55) Experts' Consultation on Philippines Commission on Human Rights Carbon Majors Inquiry (panel presentation given to Greenpeace Southeast Asia, Dec. 1, 2020)
- 56) Sharing the Burden: Determination of Fossil Fuel Companies' Fair Shares (panelist). University of British Columbia School of Law (Climate Accountability Webinar Series, Nov. 16, 2020)
- 57) Science, Climate Litigation, and the Law: Opportunities and Priorities for Research to Inform Climate Litigation and the Law (panelist). Union of Concerned Scientists (webinar, Nov. 12, 2020)
- 58) Science, Climate Litigation, and the Law (panelist). Union of Concerned Scientists (webinar, Sep. 17, 2020)
- 59) Historical and Legal Developments Impacting the Energy Industry (invited talk). Optical Society of America Advanced Photonics Congress (July 13, 2020)
- 60) The Case for Climate Liability: Recent Appellate Decisions on Holding Fossil Fuel Producers Accountable for Climate Damages (panel moderator). Stanford Law School (July 9, 2020)
- 61) Facilitating the Green New Deal Through History and Law (Outstanding Student Presentation Award recipient). American Geophysical Union fall meeting, San Francisco, CA (Dec. 12, 2019)
- 62) Research and Advocacy in a Green New Deal World (panelist). American Geophysical Union Fall Meeting, San Francisco, CA (Dec. 10, 2019)
- 63) Countering Fossil Fuel Disinformation and Policy Delay. American Geophysical Union Fall Meeting, San Francisco, CA (Dec. 9, 2019)
- 64) Informing Litigation Efforts (briefing before members of the US Senate), Washington, D.C. (Oct. 22, 2019)
- 65) Engaging Society Through History of Science. History of Science Society Annual Meeting (invited plenary speaker), Utrecht, the Netherlands (July 26, 2019)
- 66) NSF-Funded Climate Litigation Workshop (invited workshop participant), Washington, D.C. (Nov. 14–15, 2018)
- 67) The American Petroleum Institute and Global Warming: Industry Knowledge, Denial, Obstruction, and the Potential of Lawsuits for Supply-Side Policy, 2nd Conference on Fossil Fuel Supply and Climate Policy, Oxford, UK (Sep. 24, 2018)
- 68) History of Petroleum Industry Knowledge of Global Warming and Policy Obstruction Strategies (briefing before members of the US Senate), Washington, DC (April 24, 2018)
- 69) Weaponizing Economics: Charles River Associates and the Decades-Long Sabotage of Climate Policy. Histories of Research Integrity and Fraud in Scientific Practice, Uppsala, Sweden (April 12, 2018)
- 70) Big Oil and Global Warming: Early Knowledge and the Denial Machine. Conference on Anti-Fossil Fuel Politics: Social Activism, Government Policy, and International Cooperation, Berkeley, CA (April 3, 2018)
- 71) Fossil Fuel Industry Funding of Climate-Relevant Research at US Universities (with Geoffrey Supran). American Geophysical Union Fall Meeting, New Orleans, LA (Dec. 13, 2017)
- 72) Climate Change: Awareness, Denial, and Progress. Keynote presentation for the 79th National Medical Congress of the College of Physicians and Surgeons of Costa Rica, Garabito, Costa Rica (Nov. 8, 2017)
- 73) Pump-Probe Study of fs-Laser Hyperdoping and Texturing of Si for Advanced Non-Equilibrium Materials. Air Force Office of Scientific Research (AFOSR) 4th annual Ultrashort Pulse Laser-Matter Interactions Meeting, Arlington, VA (June 2, 2016)
- 74) Nanosecond Laser Annealing of Hyperdoped Black Silicon. US Army Armament Research Development and Engineering Center (ARDEC) Benet Labs Black Silicon Workshop, Watervliet, NY (Aug. 5, 2015)
- 75) Hyperdoped Black Silicon (with David Pastor). Air Force Office of Scientific Research (AFOSR) 3rd Annual Ultrashort Pulse Laser-Matter Interactions meeting, Arlington, VA (May 27, 2015)

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- 76) Climate Risk in the Philippines. Community stakeholder meeting, Cagayan de Oro, Mindanao, Philippines (Feb. 23, 2015). Also presented at the Belfer Center for Science and International Affairs at Harvard University, Cambridge, MA (May 13, 2015)
- 77) Improving the Properties of Hyperdoped Black Silicon with ns Pulsed Laser Melting. Optical Society of America (OSA) Incubator on the Fundamental Limits of Optical Energy Conversion, Washington, DC (Nov. 13, 2014)
- 78) Ways Forward in Climate Politics (invited presentation). 49th Wellfleet Psychohistory Meeting, Wellfleet, MA (Oct. 25, 2014)
- 79) Toward Increased Efficiency in Solar Energy Harvesting via Intermediate States (invited presentation). Pacific Rim Conference on Ceramic and Glass Technology (PACRIM), San Diego, CA (June 6, 2013)
- 80) Femtosecond Laser Texturing and Doping of Metals and Semiconductors for Solar Harvesting (invited presentation, with Kasey Phillips). SPIE Optics + Photonics, San Diego, CA (Aug. 16, 2012)
- 81) Harvesting Sunlight: Roadmaps to Next-Generation Solar Panels. Science and Technology Policy Gordon-Kenan Research Seminar, Waterville Valley, NH (2012)
- 82) Dating Englacial Sediment with Luminescence. Graduate Climate Conference, Woods Hole, MA (2011)
- 83) Laser Modification of Alkali Borate Glasses. 6th International Conference on Borate Glasses, Crystals, and Melts, Himeji, Japan (2008)

### Selected Interviews and Media Appearances

- 1) The History of Climate Disinformation, *Economics for Rebels* (podcast, in production)
- 2) Fighting the Fossil Fuel Industry's Pseudo-Economics, *Speaking Out of Place* (podcast, Jan. 9, 2024)
- 3) Revisiting the Enablers: The Firms Behind Fossil Fuel Falsehoods, *Climate One* (podcast and radio, Dec. 30, 2022)
- 4) Climate Propaganda: The Fossil Fuel Industry's Big Lie, *News Beat* (podcast, Sep. 8, 2022)
- 5) Fox in the Henhouse: Getting Oily Hands Off Climate Research, *Cool Solutions* (podcast and radio, August 5, 2022)
- 6) Black Gold, Paramount+ (May 17, 2022)
- 7) The Power of Big Oil, PBS Frontline (April 19, 2022), <https://www.pbs.org/wgbh/frontline/film/the-power-of-big-oil/>
- 8) The Enablers: The Firms Behind Fossil Fuel Falsehoods, *Climate One* (podcast and radio, Feb. 11, 2022), <https://www.climateone.org/audio/enablers-firms-behind-fossil-fuel-falsehoods>
- 9) How Much Did Fossil Fuel Companies Know About Climate Change, and When? *Climate 21* (podcast, Nov. 10, 2021), <https://www.climate21podcast.com/1329991/9520013-how-much-did-the-fossil-fuel-companies-know-about-climate-change-and-when-a-chat-with-ben-franta>
- 10) Big Oil Holds 'Fate of the Planet in Their Hands': A Look at the Industry's Disinformation Campaign, *NPR Here & Now* (WBUR) (radio, Oct. 28, 2021), <https://www.wbur.org/hereandnow/2021/10/28/big-oil-climate-change>
- 11) Climate : Les Pétroliers Savaient (Climate: Tankers Knew), *France Télévisions (France 2)* (television, Oct. 22, 2021), [https://www.francetvinfo.fr/economie/energie/video-climat-les-petroliers-savaient\\_4813601.html](https://www.francetvinfo.fr/economie/energie/video-climat-les-petroliers-savaient_4813601.html)
- 12) *The ABCs of Big Oil*, Episode 4: We're Going Streaking (podcast, Oct. 15, 2021), <https://podcasts.apple.com/us/podcast/the-abcs-of-big-oil-ep-4-were-going-streaking/id1439735906?i=1000538713035>
- 13) How Economists Helped Big Oil Obstruct Climate Action for Decades, *Grist* (republished in Mother Jones and National Observer) (online print, Oct. 8, 2021)



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- 14) How Fossil Fuel Interests Weaponized Economists to Delay Climate Action, *The Climate Pod* (podcast, Sep. 15, 2021), <https://podcasts.apple.com/gb/podcast/how-fossil-fuel-interests-weaponized-economists-to/id1469270123?i=1000535392349>
- 15) Discourses of Delay, *Franknews* (online print, Sep. 9, 2021)
- 16) Konspirationsteorierna om klimatet (the climate conspiracy theories), *Sverigesradio* (Swedish national public radio, Sep. 8, 2021)
- 17) On Weaponizing Economics, *Environmental Politics* (online print, Aug. 31, 2021)
- 18) Global Warming: From Scientific Warning to Corporate Casualty, TEDx Stanford (July 20, 2021)
- 19) The API was Pushing Climate Denial Way Earlier than Anyone Thought, *Drilled* (podcast, March 5, 2021)
- 20) Big Oil's History of Secret Climate Change Knowledge, Cimpatco Studios (online video, July 16, 2020)
- 21) *Drilled*, Season 1, Episode 6 (podcast, Nov. 17, 2018), <https://www.criticalfrequency.org/drilled>
- 22) EPA Then and Now, *Climate One* (radio; Feb. 1, 2018)
- 23) Vender Kunnskapen Ryggen (Does Knowledge Regress?), *Forskerforum* (Norwegian print, May 11, 2017)
- 24) Quoted in *Bloomberg*, *The Guardian*, *Rolling Stone*, *The Atlantic* and more