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Examining the Role of PR Firms in Preventing Action on Climate Change
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I. Introduction

Chairman Grijalva, Chair Porter, Ranking Member Moore, and members of the Committee, my name is Christine Arena. I am a twenty-year communications industry professional specializing in sustainability and social-impact campaigns. I am also an author and researcher on greenwashing. Thank you for the opportunity to speak with you today about the role of public relations firms in preventing action on climate change. I come to this subject as a marketing practitioner and advocate for change inside my industry.

II. The Context

For decades, scientists, researchers, and journalists have carefully monitored the fossil fuel industry's public relations and lobbying efforts pertaining to climate change. Dozens of peer-reviewed papers have been published on the subjects of climate disinformation and greenwash, by institutions including the Union of Concerned Scientists, and Brown, Harvard, Yale, George Mason, and Stanford universities, among others. Multiple efforts to catalog and archive tens of thousands of documents related to the fossil fuel industry's influence on climate science research and environmental regulation are underway.¹ Thirteen lawsuits have been filed against fossil fuel companies—by cities and states including Baltimore, Massachusetts, Virginia, and Hawaii—on the basis of consumer-facing messaging that some of our country's top lawmakers consider to be so misleading that it is unlawful.²

¹ See Fossil Fuel Industry Documents, <https://www.industrydocuments.ucsf.edu/fossilfuel/>; The Lie-brary, <https://climateintegrity.org/lie-brary>; and Kathy Mulvey and Seth Shulman "The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation," Union of Concerned Scientists (July 2015), <https://www.ucsusa.org/sites/default/files/attach/2015/07/The-Climate-Deception-Dossiers.pdf>.

² Ben Franta, "Climate Litigation Rising: Hotspots to Watch," *Trends: American Bar Association Section of Environment, Energy, and Resources* 53, no. 3 (January/February 2022), https://www.americanbar.org/groups/environment_energy_resources/publications/trends/2021-2022/january-february-2022/climate-litigation-rising/.

These ongoing efforts to illustrate the vast communications architecture behind climate policy obstruction are not about demonizing an industry or playing politics. They are about revealing the truth and protecting lives.

In her complaint against ExxonMobil, Massachusetts Attorney General Maura Healey alleges that the company launched an effort, “reminiscent of the tobacco industry’s long denial campaign about the dangerous effects of cigarettes,” to deceive consumers and investors about climate change. She argues that both the company’s misleading statements to consumers and investors about its fossil fuel products and its failure to disclose that the products themselves are disrupting the climate “are particularly deceptive given the stark contrast between the company’s long internal knowledge of the role its fossil fuel products play in causing climate change and the extensive marketing statements in which the company promotes the purported environmental benefits of those same products.”³

Her complaint further alleges that ExxonMobil’s advertising and public relations messaging deceptively positions the company as an environmental steward while it is actually massively ramping up fossil fuel production and spending only a small portion of revenues on developing clean energy. She contends that ExxonMobil’s misrepresentations and failures to disclose are “unlawful” and have delayed the needed transition to clean energy, making existential climate-driven threats to local, national, and global economies, from severe droughts and floods to infrastructure failures, with more likely to occur.

Disinformation is about much more than the communications of a single corporation. The correlation between deliberately misleading public relations and advertising messaging, and climate policy obstruction, is widely documented worldwide. In April 2022, the United Nations Intergovernmental Panel on Climate Change (IPCC)—a body comprised of more than 270 researchers from 67 countries around the world—released a report addressing climate mitigation strategies. In the report, the IPCC stated that “vested interests have generated rhetoric and misinformation that undermines climate science and disregards risk and urgency.”⁴ It warned of “corporate advertisement and brand-building strategies that may also attempt to deflect corporate responsibility to individuals or aim to appropriate climate-care sentiments in their own brand-building.”⁵

³ Complaint: Commonwealth of Massachusetts v. ExxonMobil Corporation, October 24, 2019: 153-56, <https://www.mass.gov/files/documents/2019/10/24/Complaint%20%20Comm.%20v.%20Exxon%20Mobil%20Corporation%20-%2010-24-19.pdf>.

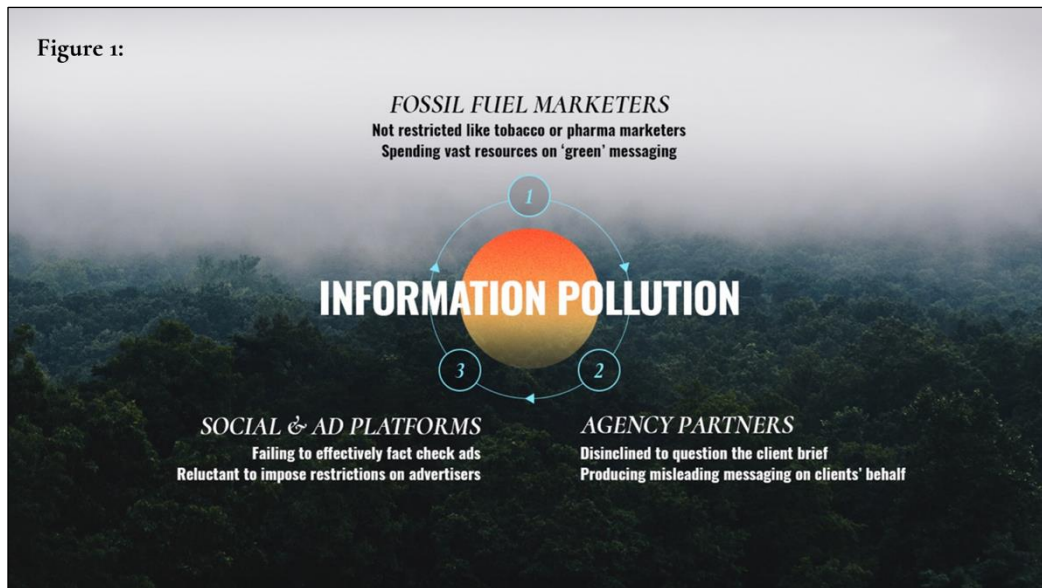
⁴ IPCC, 2022: *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Full_Report.pdf

⁵ IPCC, 2022, TS-106.

The IPCC report also noted that the greatest barrier to achieving the ambitious emissions cuts that are required in order to ward off the worst climate change impacts is not technological in nature, but social and political. The missing ingredient for climate action globally and in the United States is political will. The communications and lobbying activities of a powerful minority, whom the IPCC calls the “vested interests,” are in turn strategically focused on disrupting that will.

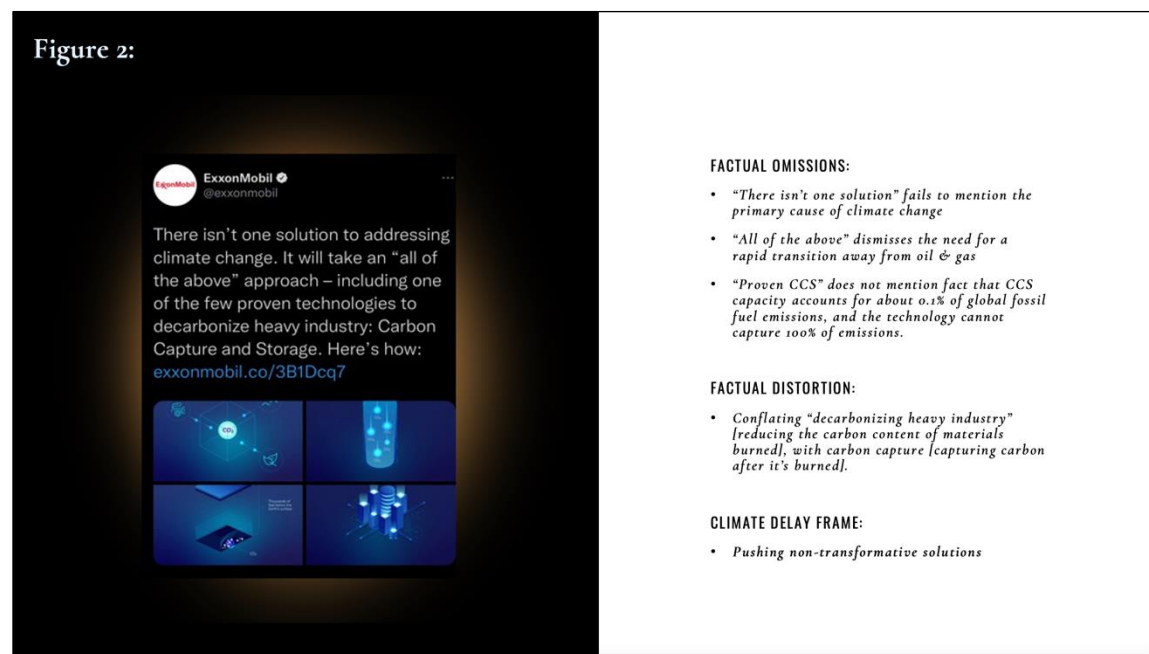
We are caught in an unrelenting cycle: The worse the climate crisis gets, the faster renewable energy scales, the harder vested industry interests push back against progress. New empirical analyses of greenwashing and climate disinformation are constantly emerging in the wake of an inundation of fossil fuel–industry public relations and advertising messaging across social media platforms and news websites. It is increasingly difficult to log into Facebook or Twitter, or the *New York Times* or Fox News online, without seeing one of the fossil fuel industry’s misleading ads or posts.

“Information pollution,” or a flood of misleading content, continues to circulate in the public sphere, as neither fossil fuel marketers, nor their public relations, advertising, or media partners, are financially incentivized to stop it (see fig. 1).



In addition to increasing in volume, misleading fossil fuel advertising and public relations messaging has also grown more complex. Fossil fuel marketers have shifted from denying or minimizing the science behind climate change to falsely suggesting that oil and gas are a central part of the climate-solutions mix. Almost all green-themed fossil fuel ads contain factual

omissions and distortions, and many also contain climate delay frames, or common discourses that justify inaction or inadequate efforts.⁶ Because these omissions, distortions, and delay frames are more subtle and nuanced than blatant lies or overt climate denial, they are more difficult for consumers to discern (see fig. 2).



According to a new report from research organization and think tank InfluenceMap, which evaluated the public relations messaging, advertising, lobbying, and business activities of six top oil and gas firms, there is a “greenwashing epidemic” afoot—that is, “a systemic pattern of pro-climate public relations and marketing messaging that is deeply inconsistent with the companies’ government policy influencing and investments strategies on climate change.”⁷

Across a research sample of 3,421 items of recent public communications analyzed from five top oil and gas companies, 60 percent contained at least one green claim, while only 23 percent contained claims promoting oil and gas. However, only 12 percent of the five companies’ 2022 combined capital expenditure (CapEx) is forecasted to be dedicated to “low-carbon” activities.

⁶ On omissions and distortions, see Cortie Werthman and Emily Rockwell, “Beyond Climate Denial: The Public Relations Industry’s Role in Obstructing Climate Action,” Climate and Development Lab, November 30, 2021, http://www.climatedevlab.brown.edu/uploads/2/8/4/0/28401609/beyond_climate_denial_-_cdl_2021_report.pdf; on climate delay frames, see William F. Lamb et al., “Discourses of climate delay,” *Global Sustainability* 3 (2020), <https://doi.org/10.1017/sus.2020.13>.

⁷ InfluenceMap, “Big Oil’s Real Agenda on Climate Change,” September 2022: 7–9, <https://influencemap.org/report/Big-Oil-s-Agenda-on-Climate-Change-2022-19585>.

In Exxon’s case, 65 percent of its public messaging contained a green claim, while just 8 percent of its capital expenditures are devoted to low-carbon activities.

In Chevron’s case, 49 percent of its public messaging contained a green claim, compared to 5 percent of its capital expenditures devoted to low-carbon activities.

In BP’s case, 61 percent of its public messaging contained a green claim, compared to 15 percent of its capital expenditures devoted to low-carbon activities.

Many other studies also indicate that greenwashing is a pervasive problem, as strategies related to decarbonization and clean energy are dominated by pledges rather than concrete actions, while a continuing business model dependence on fossil fuels and “insignificant and opaque spending” on clean energy is widely observed.⁸

According to InfluenceMap, the prominence of pro-climate public communications from fossil fuel supermajors also appears to be misaligned with the messaging they direct at policy makers. None of the companies assessed have aligned their climate policy engagement activities with the goals of the 2015 Paris Agreement. None disclose on the strategies that inform their public messaging on climate change, nor on the resources they dedicate to related activities. None mentioned the fact that overall oil and gas production appears set to increase up until 2026, which significantly overshoots the recommendations in the International Energy Agency’s Net Zero Emissions by 2050 Scenario.

In response to resounding scientific consensus and stark guidelines issued by the industry’s own trade bodies, these companies are quite literally turning up the gas.

As described in the 2022 paper, “An Integrated Framework to Assess Greenwashing,” there remains not only an enormous gap between the words and actions of polluting companies, but also an accountability gap: “The high percentage of greenwashing in advertising shows that companies feel sufficiently confident that they will not be held accountable for their claims.”⁹

⁸ Mei Li, Gregory Trencher, and Jusen Asuka, “The clean energy claims of BP, Chevron, ExxonMobil and Shell: A mismatch between discourse, actions and investments,” *PLoS One* 17, no. 2 (February 16, 2022): e0263596, <https://doi.org/10.1371/journal.pone.0263596>.

⁹ Noémi Nemes et al., “An Integrated Framework to Assess Greenwashing,” *Sustainability* 2022, 14, no. 8: 4431, <https://doi.org/10.3390/su14084431>.

This accountability gap is even more concerning when you consider the fact that much of the greenwashing and climate disinformation circulating in the public sphere originates not from commercial advertisements, but from carefully calibrated, multimillion-dollar public relations and lobbying activities—including sponsored content, social media posts, strategy memos, letters to lawmakers, talking points, public presentations, media tours, local events, pledges, sponsorships, endorsements, partnerships, and certifications—that are not often discernible to the target audience nor within the scope of national regulations.

This brings me to the role of public relations firms, and the strategies and tactics some of them use to obstruct climate action on behalf of their clients.

III. PR Strategies and Tactics Used to Obstruct Climate Action

Until now, public relations firms working with fossil fuel clients have largely escaped public scrutiny of the true extent and nature of their role in preventing action on climate change, largely because they closely guard the identity of their clients. The cloak of client confidentiality and client privilege provides an effective shield from climate accountability, particularly for firms with the deepest fossil fuel–industry ties; however, new social science research, investigative journalism, and public records shed light on the extraordinary scope and impact of that work.

In their 2021 paper, “The Role of Public Relations Firms in Climate Change Politics,” Brown University researchers Dr. Robert Brulle and Carter Werthman reveal that a concentrated group of PR firms have deep relationships spanning across the oil, gas, coal, rail, and utility sectors, serving both corporate and trade association clients in each.¹⁰ As Brulle and Werthman’s paper describes, in some cases relationships with fossil fuel clients amount to tens or hundreds of millions of dollars in agency revenues, largely stemming from projects intended to shape public understanding and discourse about climate change, and to influence climate policy decisions at local and national levels.

Brulle and Werthman examined the strategies and tactics that the most highly utilized PR firms employed in order to help advance the objectives of their fossil fuel clients, and found that the three most common approaches are:

¹⁰ R. J. Brulle and C. Werthman, “The role of public relations firms in climate change politics,” *Climatic Change* 169, 8 (2021), <https://doi.org/10.1007/s10584-021-03244-4>.

1. **Corporate image promotion.** Including greenwashing or corporate advertising that is meant to convey a socially and environmentally responsible public image, and therefore uphold a company's or industry's social license to operate.
2. **Third-party mobilization.** Including the recruitment of advocates that echo industry talking points, and the creation of "astroturf" groups, or fake grassroots organizations that simulate the appearance of citizen support for a corporate position and appear to be led by local community members, but are often run by PR firms and their corporate or trade-association clients.
3. **Delegitimization of the opposition.** Including more divisive efforts to monitor, surveil, discredit, distract, intimidate, or smear individuals and groups that oppose the fossil fuel industry's entrenched positions.

These three strategies can be executed simultaneously to great effect. For example, in the days surrounding Russia's invasion of Ukraine, the US fossil fuel industry increased its efforts to promote oil and gas as a patriotic solution to the war, to engage and enlist third-party advocates to echo misleading talking points regarding the reasons for high energy prices, and to attack or delegitimize proponents of climate policy and renewable energy.¹¹

Across an array of platforms including social media, traditional media, public presentations, investor calls, and direct interactions with policy makers, the fossil fuel industry and its third-party advocates framed more drilling and looser regulation as solutions to energy volatility; falsely claimed that liquefied natural gas (LNG) is a clean or green energy source; and advocated for policies that had tenuous connections to the global energy crisis, but were nonetheless favorable to the industry's policy interests.¹²

Evidence suggests that the fossil fuel industry's misleading narratives were greatly amplified through a combination of concentrated media buys and bot or false amplification activity on social media that quickly spread misinformation to an even wider audience. According to research and media organization Media Matters for America, and misinformation-monitoring organization Triplecheck, misinformation posts peaked during US climate envoy John Kerry's speech about Ukraine and climate change on February 21, 2022,¹³ and the top one hundred

¹¹ InfluenceMap.

¹² Judd Legum and Tesnim Zekeria, "Fossil fuel companies are exploiting Russia's attack on Ukraine," Popular Information, March 1, 2022, <https://popular.info/p/fossil-fuel-companies-are-exploiting>.

¹³ John Kerry, "Implementation Plus: Global Climate Action in 2022," Remarks of Special Presidential Envoy for Climate, U.S. Department of State, American University Cairo, Cairo, Egypt, February 21, 2022,

misinformation posts yielded 5,205,281 likes, comments, and shares during a two-week period in February and March (see fig. 3).¹⁴ During roughly the same time, 70 percent of climate misinformation retweets came from bot accounts (see fig. 4).¹⁵

Figure 3:

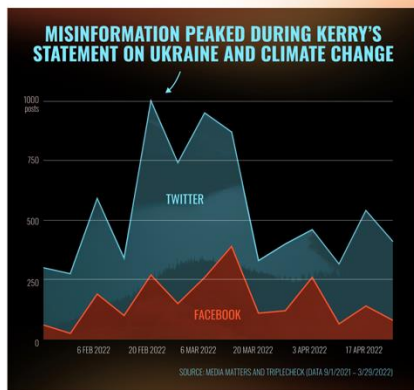
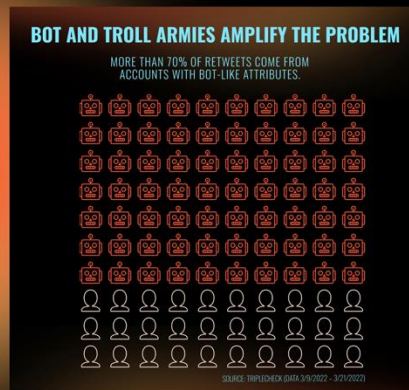


Figure 4:



Of equal note, Energy Citizens, the astroturf arm of the American Petroleum Institute (API), ran 761 ads on Facebook between January 26 and April 1, 2022.¹⁶ Although the ads included claims that failed AFP (Agence France-Presse) fact checks,¹⁷ the group received 19.6 million impressions on the platform. By comparison, in the final three months of 2021, Energy Citizens ran just sixty-seven similar ads, which were seen six million times.¹⁸

The US oil and gas sector has always pushed for policies that allow for new fossil fuel expansion, and against policies that would reduce demand. But what has changed recently is the intensity of the industry's pursuits, and the vast resources it deploys through public relations and lobbying efforts meant to crush potential regulatory obstacles in its path. While the sector

<https://www.state.gov/special-presidential-envoy-for-climate-john-kerry-implementation-plus-global-climate-action-in-2022/>.

¹⁴ Media Matters for America, "Deep Dive: Top 100 Climate & Energy Misinformation Posts from September 1, 2021–March 29, 2022," April 2022, <https://www.mediamatters.org/>.

¹⁵ Triplecheck, "Climate Misinformation Tracker," March 2022.

¹⁶ InfluenceMap.

¹⁷ Rod Lever, "Posts mislead on factors behind US energy price spike," AFP Fact Check, March 10, 2022, <https://factcheck.afp.com/doc.afp.com.324Q7V7>.

¹⁸ InfluenceMap.

engages in greenwashing to over-index its reputation on relatively small green commitments, it uses brute financial force to kill off sustainability initiatives at state and local levels.

IV. PR-Led Efforts to Obstruct Climate Action at Local and State Levels

A similar scene has played itself out over and over in communities across America, and the story often ends the same way: Local oil and gas operations lead to leaks, water contamination, accidents, and public health problems for the communities living near the industry's facilities. In response, impacted residents write their representatives, file complaints, start petitions, and plead with state lawmakers, regulators, and the courts, asking for tougher safety restrictions. Their efforts are almost always crushed by fossil fuel-funded groups with enough money and public relations resources to flood the zone with countermessaging.

Colorado's Proposition 112 is but one example of the above.¹⁹ Backed by the local community group Colorado Rising, Prop 112 pressed the need for setbacks ensuring that new oil and gas wells be located a half mile away from occupied buildings, playgrounds, schools, hospitals, and drinking-water sources. But the initiative was outspent by a factor of more than thirty to one. According to Ballotpedia, six committees spent \$31 million dollars on a sophisticated communications campaign that included direct mail, television ads, newspaper op-eds, public debates, and social media posts employing the industry's familiar three-pronged strategic approach:

1. **Image promotion.** Television ads, newspaper op-eds, and social media posts touted the environmental virtues of "clean burning" natural gas and the contributions of fracking to Colorado's economy and environment—without mentioning the potentially harmful health impacts of toxic compounds associated with fracking, the community's related public-health complaints, the recent bout of deadly fracking-industry accidents, or the fact that methane is responsible for five hundred thousand premature deaths annually and 30 percent of the rise in global temperatures since the Industrial Revolution.²⁰

¹⁹ Colorado Proposition 112, the Minimum Distance Requirements for New Oil, Gas, and Fracking Projects Initiative, 2018, <https://www.sos.state.co.us/pubs/elections/Initiatives/titleBoard/filings/2017-2018/97Final.pdf>.

²⁰ See David Sirota and Chase Woodruff, "Noble Energy Pumps Unregulated Cash Into Fight Against 112," Westword, October 18, 2018, <https://www.westword.com/news/nobel-energy-finds-way-to-pump-unregulated-cash-into-fight-against-colorados-proposition-112-10916014>; Doug Conarroe, "Anti Fracking Doomsday Warnings Full of Gas," Daily Camera, October 11, 2018, <https://www.dailycamera.com/2018/10/11/doug-conarroe-anti-fracking-doomsday-warnings-full-of-gas/>; on the dangers of fracking, see Bruce Finley, "A dozen fires and explosions at Colorado oil and gas facilities in 8 months since fatal blast in Firestone," *Denver Post*, December 6, 2017 at 7:51 p.m., updated December 19, 2017,

2. **Third-party mobilization.** The fossil fuel industry–funded PAC Protect Colorado led the opposition campaign and argued the setbacks would “devastate our economy, wipe out thousands of jobs, and endanger our environment.”²¹ A study by Common Sense Policy Roundtable, another fossil fuel–funded group, attacked the science behind the setbacks.²² Trusted organizations and individuals—from local hunting and fishing groups to oil and gas workers—were also recruited to amplify the message that unfettered fracking is good for the state, especially for its economy and local habitats. Paid protesters attended events in order to physically disrupt Colorado Rising’s engagement efforts.
3. **Delegitimization of the opposition.** Prop 112 was framed as “a liberal effort to drive a working-class industry—and its conservative employees—out of the state for good.”²³ Activists working at Colorado Rising reported being monitored, followed, and physically harassed by the paid protesters.²⁴

Using a similar public relations strategy and playbook to the tobacco industry, the Colorado oil and gas industry leveraged massive resources to minimize the hazards of fracking, undermine the related science, manufacture the appearance of grassroots support, hide behind trusted local sources, monitor and intimidate detractors, and manipulate public understanding and discourse about the true issues driving Prop 112.

In a statement, an oil and gas industry spokesperson framed its campaign, and specifically its use of paid protesters to physically stalk Colorado Rising members attempting to collect petition signatures as, “exercising our First Amendment rights,” and defended such intimidation as “standard practice in modern campaigns,” where “monitoring opposition is important.”²⁵

<https://www.denverpost.com/2017/12/06/colorado-oil-gas-explosions-since-firestone-explosion/>; on methane tracking, see International Energy Agency, “Global Methane Tracker 2022,” <https://www.iea.org/reports/global-methane-tracker-2022>.

²¹ Ballotpedia, “Colorado Proposition 112, Minimum Distance Requirements for New Oil, Gas, and Fracking Projects Initiative (2018),” [https://ballotpedia.org/Colorado_Proposition_112,_Minimum_Distance_Requirements_for_New_Oil,_Gas,_and_Fracking_Projects_Initiative_\(2018\)](https://ballotpedia.org/Colorado_Proposition_112,_Minimum_Distance_Requirements_for_New_Oil,_Gas,_and_Fracking_Projects_Initiative_(2018)).

²² The Common Sense Roundtable changed its name to the Common Sense Institute in June 2020.

²³ Julie Turkewitz and Clifford Krauss, “In Colorado, A Bitter Battle Over Oil, Gas and the Environment Comes to a Head,” *New York Times*, October 23, 2018, <https://www.nytimes.com/2018/10/23/us/colorado-fracking-proposition-112.html>.

²⁴ Sam Brasch, “Protests To Slow Signature Efforts: Another Front In Colorado’s Oil And Gas Ballot Battle,” CPR News, July 26, 2018, <https://www.cpr.org/2018/07/26/protests-to-slow-signature-efforts-another-front-in-colorados-oil-and-gas-ballot-battle/>.

²⁵ Brasch.

Let me be clear: There is nothing standard or ethical about these practices. They are deceptive communications practices that mislead our citizenry and undermine our democracy.

Just as ordinary citizens do not possess the specialized knowledge needed to detect the myriad factual omissions and distortions occurring in most “green” fossil fuel ads, they also do not have the financial resources required to make their voices heard over the industry’s extensive lobbying and public relations efforts. By architecting and executing the strategies and tactics described above on behalf of their oil and gas clients, certain public relations firms are not exercising first amendment rights. They are not helping to ensure that business, government, and citizens all have a seat at the table. Rather, they are suppressing these outcomes. They are helping prevent an informed populace from participating in a robust national climate conversation, and corresponding climate action.

Climate disinformation is not merely an ethical problem. At this scale, it arguably constitutes a calculated fraud on the public, and the harm caused to individuals, society, and the environment is no less grave than the harm caused by personal fraud. In the abstract to his forthcoming paper, “Disinformation and the First Amendment,” Barry University School of Law professor Wes Henricksen argues: “If we continue to permit unfettered fraud on the public, the result will likely be the continued growth and spread of knowingly false claims to the public at large, further damaging public health and the environment, poisoning political discourse, and generating further attacks on democracy.”²⁶

V. Addressing the Harms Caused by Misleading PR Campaigns

The implications of climate disinformation on our country and world should guide the PR industry’s next steps. We know that, like tobacco and firearms, fossil fuels are lethal products that contribute to almost nine million pollution-related deaths annually.²⁷ We know that fossil fuel marketers have a demonstrable history of misleading people about climate change and solutions. We know that the nature and prevalence of climate disinformation are worsening, and that the end result is suppressed climate action, and its dire, inevitable consequences. And, finally, we know that fossil fuel marketers will continue to categorically deny all wrongdoing,

²⁶ Wes Henricksen, “Disinformation and the First Amendment: Fraud on the Public (2022),” abstract, *St. John's Law Review*, <http://dx.doi.org/10.2139/ssrn.3860211>.

²⁷ Karn Vohra et al., “Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem,” *Environmental Research* 195 (April 2021): 110754, <https://doi.org/10.1016/j.envres.2021.110754>.

characterizing climate lawsuits as “frivolous,”²⁸ and the profound body of evidence against them as “misleading and without merit.”²⁹ They will likely never alter course of their own volition.

Therefore, the real questions for communications practitioners supporting fossil fuel clients, and for this Committee are: How will we manage these risks? How will we account for past damage done? What will we do to guard against future damage? When will we live up to Wes Henriksen’s call: “Those with the power to speak to the public have a responsibility to do so in good faith and without causing undue harm.”³⁰

The need for climate accountability is urgent, and the road map for change is right in front of us. A majority of Americans want to see oil and gas companies held to account for their deceptions.³¹ A bill to eradicate the federal tax deduction for fossil fuel advertising has been introduced. Communications-industry trade bodies, including the Institute for Advertising Ethics, are working on new greenwashing standards. Thousands of marketing practitioners have signaled their desire to help end deceptive practices, and our country’s top social scientists have given us the applicable research, tools, and frameworks.³² All we need to do is find the political will to act.

Thank you.

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²⁸ Chevron statement, quoted in David Sherfinski, “Fossil fuel firms face new challenge over ‘greenwashing’ ads,” Reuters, June 22, 2021, <https://www.reuters.com/article/us-usa-fossilfuel-climate-change-adverti/fossil-fuel-firms-face-new-challenge-over-greenwashing-ads-idUSKCN2DZ00B>.

²⁹ Exxon statement, quoted in Matt Egan, “Pro-fossil fuel Facebook ads were viewed 431 million times — in one year,” CNN Business, August 5, 2021, <https://www.cnn.com/2021/08/05/business/facebook-fossil-fuels>.

³⁰ Wes Henriksen profile page, SSRN, https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=2642213.

³¹ Natasha Grzincic and Anya Zoledziowski, “45% of Americans Don’t Believe Humans Cause Climate Change, VICE News/Guardian Poll Shows,” Vice News, October 26, 2021, <https://www.vice.com/en/article/qjbd9m/vice-guardian-poll-americans-climate-change-man-made-climate-crimes>.

³² Nemes et al.

