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the Federal Budget”

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I. Introduction

My name is Christine Arena. I am a twenty-year communications industry professional and an author and researcher on greenwashing. Thank you for the opportunity to discuss fossil fuel dark money's systemic threats to climate and the federal budget. I will focus on the tactics that certain corporations and related special interests use to spread disinformation about the existence of, causes of, and solutions to climate change.

II. The Strategic Purpose of Corporate Disinformation

In December 1953, chief executives of the major US tobacco companies gathered together in New York City. Their goal was to devise a strategy for countering negative publicity generated from medical studies linking their products to lung cancer. Working closely with John Hill, founder of the public relations firm Hill & Knowlton, industry leaders authored a manifesto titled "A Frank Statement to Cigarette Smokers" and published it in 448 newspapers on January 4, 1954.¹

To give the tobacco industry a relatable human face, the "Frank Statement" included the personal signatures of the chief executives, who assured Americans, "we accept an interest in people's health as a basic responsibility, paramount to every other consideration in our business." It paid homage to the science, while subtly undermining its credibility, "We do not believe any serious medical research, even though its results are inconclusive, should be disregarded or dismissed." It announced the formation of an advisory board "of unimpeachable integrity and national

¹ Kelly D. Brownell and Kenneth E. Warner, "The Perils of Ignoring History: Big Tobacco Played Dirty and Millions Died. How Similar is Big Food?" *Milbank Quarterly* 87, 1 (2009): 259-94, <https://doi:10.1111/j.1468-0009.2009.00555>.

repute...including a group of distinguished men from medicine, science and education” to conduct the industry’s own research. Furthermore, it insisted that there was “no proof” that smoking caused lung cancer and promised that “we always have and always will cooperate closely with those whose task it is to safeguard the public’s health.”²

The Frank Statement was anything but frank. It laid the groundwork and structural arguments for a half-century-long, industry-wide disinformation effort that intentionally misled Americans about the deadly effects of cigarette smoking. The goal of the tobacco industry’s disinformation campaign was to prevent or delay negative shifts in public sentiment that could potentially give rise to legal, legislative, and regulatory interventions, which in turn could erode profits.

Over a fifty-year period, the industry consistently dismissed medical warnings and smoking-related reports, including by the US Office of the Surgeon General, as biased or inconclusive. It suggested that environmental factors such as air pollution and occupational hazards accounted for growing rates of lung cancer. It also framed hard scientific evidence as medical controversy, casting antismoking health authorities as publicity-seeking zealots. And, perhaps most distressingly, it seized the opportunity to market “healthier” light and filtered cigarettes, extolling the benefits of smoking and praising freedom of choice.

Stanford University professor Robert Proctor argues that this elaborate exercise amounts to “agnotology,” a term he coined for the tobacco industry’s practice of “feigning its own ignorance of hazards, while simultaneously affirming the absence of definite proof in the scientific

² Tobacco Industry Research Committee, “A Frank Statement to Cigarette Smokers,” January 4, 1954, <https://www.industrydocuments.ucsf.edu/tobacco/docs/#id=fxjx0037>.

community, while also doing all it could to manufacture ignorance on the part of the smoking public.”³

The tobacco industry’s disinformation campaign did not merely seek to convince people that something false was true, or that something true was false. Instead, its aim was to erode the very basis for discerning between empirical fact, expert knowledge, and industry propaganda. It sought to undermine people’s ability to calculate risk and make informed purchasing decisions. As Proctor notes, the goal of manufacturing ignorance is not to eliminate policy debate or policy action. It’s to delay it in bad faith.

This bad-faith campaign worked for over forty years, successfully postponing legal, legislative, and regulatory interventions. During that period, tobacco industry profits soared, as did the economic and healthcare costs related to cigarette smoking. According to the Centers for Disease Control and Prevention (CDC), from 1950 to 1990 the overall age-adjusted death rate for lung cancer increased from 13.0 to 50.3 per 100,000 people. By 1990, approximately 419,000 deaths, or 20 percent of all deaths, in the US were attributed to smoking.⁴ The annual costs of direct medical care of adults linked to smoking reached \$130 billion by 2012.⁵ Cigarette smoking became the single most preventable and costliest form of premature death in the US.

³ Robert N. Proctor, “Agnotology: A Missing Term to Describe the Cultural Production of Ignorance (and Its Study),” in Robert N. Proctor and Londa Schiebinger, eds., *Agnotology: The Making and Unmaking of Ignorance* (Stanford: Stanford University Press, 2008), 13.

⁴ Centers for Disease Control and Prevention, “Mortality Trends for Selected Smoking Related Cancers—United States 1950-1990,” *Morbidity and Mortality Weekly Report* 42 (44), November 12, 1993, <https://www.cdc.gov/mmwr/preview/mmwrhtml/00022160.htm>.

⁵ U.S. Department of Health and Human Services, *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014, <https://www.hhs.gov/sites/default/files/consequences-smoking-exec-summary.pdf>.

Similar disinformation tactics in the hands of industries that make lethal products including opioids, guns, and fossil fuels have led to years of delay on important public policy issues, resulting in immense social and economic costs to society. As with smoking, in the case of fossil fuels, there is a correlation between rising environmental and human health consequences and the industry's aggressive disinformation efforts geared toward disrupting regulatory intervention.

A 2022 study in the *Lancet Planetary Health* links fossil fuel pollution from cars, trucks, and industry to nine million deaths a year globally, a figure that has risen 55 percent since 2000.⁶ In the US—the only fully industrialized country in the top ten nations for total pollution deaths—142,883 deaths were blamed on pollution in 2019 alone.

The study authors outline eight recommendations to reduce pollution-related deaths; chief among these was the need for a rapid, large-scale transition away from all fossil fuels to clean, renewable energy sources. “We absolutely know how to solve each one of those problems,” contends lead author Dr. Richard Fuller, “What’s missing is political will.”⁷

As many research organizations including the Intergovernmental Panel on Climate Change (IPCC) have noted, disrupting political will has been a central goal of fossil fuel industry disinformation efforts for almost five decades.⁸ That is why we can easily recognize Robert

⁶ Richard Fuller, Philip J. Landrigan, et al., “Pollution and health: a progress update,” *Lancet Planetary Health* 6 (6), June 2022, E535–E547, [https://doi.org/10.1016/S2542-5196\(22\)00090-0](https://doi.org/10.1016/S2542-5196(22)00090-0).

⁷ CBS News, “Global Pollution Kills 9 Million People Each Year, Study Finds,” May 17, 2022, <https://www.cbsnews.com/news/global-pollution-kills-9-million-people-each-year/>.

⁸ IPCC, 2022: *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, et al., eds.), (Cambridge, UK: Cambridge University Press, 2022), doi:10.1017/9781009325844.

Proctor's agnotology trifecta in the evolution of climate denial and delay discourse. The fossil fuel industry (1) feigns ignorance of the environmental and health hazards related to fossil fuel combustion; (2) simultaneously affirms the absence of definitive proof from the scientific community; and (3) manufactures public ignorance.

III. Modern Climate Disinformation Trends and Tactics

Disinformation is not a matter of differing opinions. It is the deliberate dissemination of false or misleading rhetoric that is spread for profit or political gain. In the realm of climate communications, both misinformation, which may be *unintentionally deceptive*, and disinformation, which is *intentionally deceptive*, are widely viewed as escalating problems that produce confusion, inertia, and policy inaction. The correlation between bad information and thwarted climate policy action is not abstract; numerous research studies illustrate how the former derails the latter.

According to the IPCC's 2022 report on climate impacts, adaption, and vulnerability: "Vested interests have generated rhetoric and misinformation that undermines climate science and disregards risk and urgency...Resultant public misperception of climate risks and polarized public support for climate actions is delaying urgent adaptation planning and implementation."⁹

Climate Action Against Disinformation (CAAD), a coalition of over fifty organizations committed to monitoring and mitigating the problem, also draws a direct line between disinformation and policy. In an open letter to the United Nations Framework Convention on

⁹ IPCC, 2022.

Climate Change (UNFCCC) and the CEOs of the largest social media platforms, CAAD underscores: “We cannot beat climate change without tackling climate misinformation and disinformation.”¹⁰

Tackling the issue requires a universal definition of climate disinformation that can be applied widely to decision makers and technology and advertising platforms that host misleading content. CAAD defines climate disinformation and misinformation as deceptive or misleading content that:

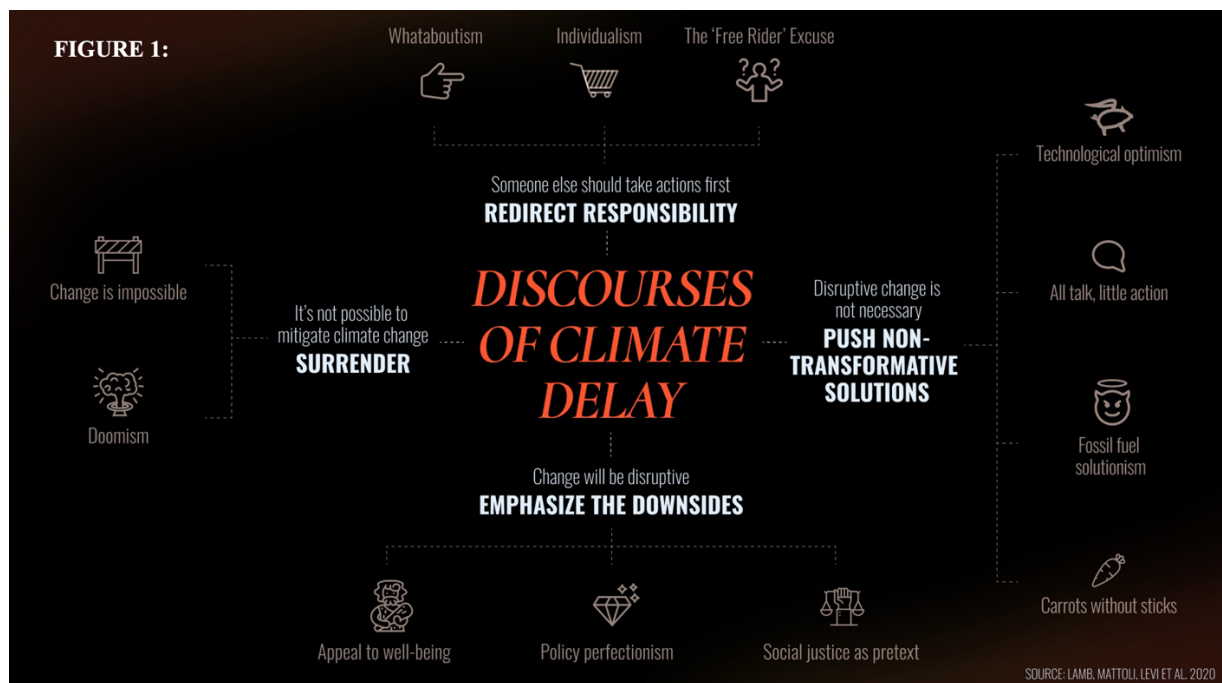
- Undermines the existence or impacts of climate change, the unequivocal human influence on climate change, and the need for corresponding urgent action according to the IPCC scientific consensus and in line with the goals of the Paris Climate Agreement;
- Misrepresents scientific data, including by omission or cherry-picking, in order to erode trust in climate science, climate-focused institutions, experts, and solutions; or
- Falsely publicizes efforts as supportive of climate goals that in fact contribute to climate warming or contravene the scientific consensus on mitigation or adaptation.¹¹

In recent years we have witnessed a clear evolution in prevailing climate disinformation rhetoric. While blatant climate denial is making a comeback online (see discussion below), most fossil fuel corporations and trade associations have shifted to subtler forms of obfuscation. New narratives have trended towards undermining arguments for a rapid transition to clean energy

¹⁰ Open Letter, Climate Action Against Disinformation, <https://caad.info/open-letter/>.

¹¹ “What is climate mis/disinformation?,” Climate Action Against Disinformation, accessed June 15, 2023, <https://caad.info/what-is-climate-disinformation/>.

sources as well as promoting false solutions to the climate crisis itself. In modern public discussions on what climate actions should be taken, by whom, and how fast, proponents of climate delay tend to redirect responsibility; propose non-transformative solutions that do not require a reduction in fossil fuel use; focus attention on the negative social and economic effects of climate policies; and raise doubt that mitigation is possible. These arguments have been called “discourses of climate delay” (see fig. 1).¹²



By focusing public attention on the gap between the recognition of irrefutable climate science and concrete action, fossil fuel interests can maintain the status quo without resorting to blatant science denial. Arguments framed as “pro-climate” or “pro-solution” can still advocate for

¹² William F. Lamb et al., “The Discourses of Climate Delay,” Cambridge University Press, July 2020, <https://doi.org/10.1017/sus.2020.1.3>.

inertia or inactivism, often using the veneer of fiscal responsibility, free-market logic, energy security, individual liberty, anti-woke, and non-elitism.

There is perhaps no public forum that illustrates the recent evolution of rhetorical and tactical shifts better than the UNFCCC Conference of the Parties (COP). In its two volumes of *Deny, Deceive, Delay*, CAAD summarized the results of its efforts to track, expose, and counter anti-climate campaigns around the global summits in Glasgow, UK, in 2021 (COP26) and Sharm el-Sheikh, Egypt, in 2022 (COP27). The report on COP27 details a “rampant disinformation” effort and describes how dangerous falsehoods that are spread can be tied back to specific fossil fuel actors.

According to the report, entities linked to the fossil fuel sector spent approximately 4 million USD on the Meta platform for paid online advertisements to spread false and misleading claims related to the climate crisis, net-zero targets, and the necessity of fossil fuels. The majority of those ads (3,781) were placed by Energy Citizens, the public relations arm of the American Petroleum Institute (API). CAAD analysts also detected a surprising increase in content related to outright climate denial, including a spike on Twitter for the hashtag #ClimateScam since July 2022.¹²

The report’s key findings also identify shifts in narrative, such as an us-versus-them frame that casts climate policy advocates as radical elites compared to the pro-fossil fuel mainstream; the

¹² Climate Action Against Disinformation, *Deny, Delay, Deceive, vol. 2, Exposing New Trends in Climate Mis- and Disinformation at COP27*, https://caad.info/wp-content/uploads/2023/01/DDD_ExposingClimateDisinfo-COP27.pdf.

use of cost-of-living increases as justification for eliminating efforts to curb greenhouse gas emissions; the sowing of false doubt about the reliability of green technology; and the false promotion of fossil fuels as clean, necessary, and reliable. Given that COP27 broke records for the presence of 636 fossil-fuel industry lobbyists at the summit, the report's authors note that trends show no signs of stopping or slowing in 2023. This is a clear example of the infiltration strategy described below.

In fact, greenwashing efforts related to the forthcoming COP28 summit in Dubai, UAE, have already been exposed by the Centre for Climate Reporting, and Dr. Marc Owen Jones, a data scientist at Hamad Bin Khalifa University in Qatar. Published in partnership with the *Guardian*, the Centre for Climate Reporting's investigation details how the team of Sultan al-Jaber, the Emirati president of COP28, attempted to polish his green credentials by making edits to a Wikipedia page that highlighted al-Jaber's role as CEO of the Abu Dhabi National Oil Company (ADNOC). In addition to adding a flattering quote from an editorial praising al-Jaber as "precisely the kind of ally the climate movement needs," a staffer also suggested the removal of references to ADNOC's fossil fuel expansion plans, including a multibillion-dollar oil pipeline deal that al-Jaber had signed in 2019.¹³ The editor only disclosed his direct ties to al-Jaber and ADNOC—an undeniable conflict of interest—after he was questioned by another editor and a Wikipedia administrator.

Shortly after the Wikipedia story was published, Dr. Jones uncovered a second "large, multilingual effort" involving at least one hundred fake Twitter accounts and thirty thousand

¹³ Ben Stockton, "COP28 President's Team 'Greenwashing' Wikipedia," Centre for Climate Reporting, May 30, 2023, <https://climate-reporting.org/climate-uac-oil-greenwashing/>.

tweets. Using AI-generated profile pictures, and purporting to be people based in the UAE, bots amplified talking points that were nearly identical to authentic tweets posted from UAE government accounts, suggesting an orchestrated attempt to promote official policy. “These accounts are pretending to be people that they’re not in order to give the illusion of popular grassroots support for a position,” according to Jones. “It’s an act of deception, and examples of newspapers quoting them means that they’ve definitely fooled people into thinking that they’re real people.”¹⁴ Jones also observed that the bots swarmed negative tweets about the UAE in an apparent attempt to limit reputational damage: “Whenever there is negative content about COP28, they swing into action to try and balance the narrative, muddy the waters.”¹⁵

These examples are the tip of a larger iceberg, as digital technology has supercharged online climate disinformation. A recent study evaluating the proliferation of bots on Twitter found that during an average day, bots produced an estimated one-quarter of all original tweets referencing climate change, and disproportionately spread climate-denial narratives compared to other narratives.¹⁶ Misinformation-monitoring organization Triplecheck, using data provided by the social media–analytics firm VineSight, found that during a single week in June 2023, fifty million people were exposed to climate disinformation content on Twitter. For over a year, Triplecheck’s weekly tracking reports have revealed that only approximately 30 percent of viral

¹⁴ Damian Carrington, “Army of fake social media accounts defend UAE presidency of climate summit,” *Guardian*, June 8, 2023, <https://www.theguardian.com/environment/2023/jun/08/army-of-fake-social-media-accounts-defend-uae-presidency-of-climate-summit?CMP=share>.

¹⁵ Matteo Civillini, “Fake social media profiles wage ‘organised’ propaganda campaign on Cop28,” *Climate Home News*, June 6, 2023, <https://www.climatechangenews.com/2023/06/06/cop28-bots-fake-social-media-twitter-accounts-uae/>.

¹⁶ Thomas Marlow, Sean Miller, and J. Timmons Roberts, “Bots and Online Climate Discourses: Twitter Discourse on President Trump’s Announcement of U.S. Withdrawal from the Paris Agreement,” *Climate Policy* 21 (1), <https://doi.org/10.1080/14693062.2020.1870098>.

climate-denial tweets are initiated by humans; the remaining approximately 70 percent are initiated by bot-like accounts.¹⁷

VineSight also analyzed the top five climate-denial narratives that were the most circulated on Twitter between January and June 2023—including “carbon does not cause global warming,” “clean energy is problematic and inefficient,” and “the push for climate action is compromising the freedoms of the general public”—as well as the volume and virality of those narratives over that time frame (see Appendix). The analysis demonstrates that smaller and relatively unknown accounts pushing climate denial have a bigger impact on spreading climate disinformation narratives than larger accounts from well-known pundits, suggesting the possibility that these low-profile accounts may have been planted to spread climate disinformation virally online. Furthermore, the analysis found that a bot network, in coordination with a few large accounts, routinely boosts anti-climate content that makes it into the larger online conversation.

Who is planting the smaller accounts, seeding false narratives, and funding anti-climate bot networks? These questions remain unanswered, but experts around the world are ringing the alarm bell.

A new policy brief from the United Nations reports that use of the hashtag #climatescam on Twitter shot up from fewer than 2,700 a month in the first half of 2022, to 80,000 in July 2022, to 199,000 in January 2023.¹⁸ In a related speech, UN Secretary-General António Guterres

¹⁷ VineSight Tracking Report, May 30, 2023–June 05, 2023.

¹⁸ United Nations, *Our Common Agenda, Policy Brief 8, Information Integrity on Digital Platforms*, June 2023: 12, <https://www.un.org/sites/un2.un.org/files/our-common-agenda-policy-brief-information-integrity-en.pdf>.

acknowledged digital technology's influence on climate disinformation, "New technology is moving at warp speed. And so are the threats that come with it...It is undermining public health and climate action—now."¹⁹

Technology is also deployed to attack or harass perceived opponents of the fossil fuel industry. As reported by the *Wall Street Journal* in March 2023, a recent hacking operation targeted members of Exxon Knew, a campaign that argues that ExxonMobil hid from the public the full extent of what it knew about climate change and the role of its products in causing it. Exxon denied involvement in the hacking operation, and the Israeli hacker would not disclose who hired him. However, one of the targeted individuals, Lee Wasserman of the Rockefeller Family Fund, maintained, "This defendant did not decide on his own to follow and target climate advocates in the US from halfway around the world. He was clearly working for corporate actors in this country."²⁰

As the climate crisis worsens and digital technologies advance, modern climate disinformation has become more prevalent, sophisticated, and dangerous. Its purpose is to manipulate public understanding and discourse about climate change and climate solutions, erode the foundations upon which people make decisions (in other words, produce ignorance), and, in some cases, intimidate or harass perceived opponents of the fossil fuel industry and advocates of clean energy.

¹⁹ António Guterres, "Secretary-General's Opening Remarks at Press Briefing on Policy Brief on Information Integrity on Digital Platforms," (UN Headquarters, New York, NY, June 12, 2023), <https://www.un.org/sg/en/content/sg/speeches/2023-06-12/secretary-generals-opening-remarks-press-briefing-policy-brief-information-integrity-digital-platforms>.

²⁰ Christopher Matthews, "Exxon's Climate Opponents Were Infiltrated by Massive Hacking-for-Hire Operation," *Wall Street Journal*, March 29, 2023, <https://www.wsj.com/articles/massive-hacking-for-hire-operation-infiltrated-exxons-climate-opponents-prosecutors-say-8ccfdbba>.

The most prevalent modern climate misinformation and disinformation tactics are:

Greenwashing: including the production of false positive perceptions of a company's or industry's environmental performance.²¹ Modern fossil fuel–industry greenwash rarely includes outright lies. Rather, it tends to rely on vague or ambiguous claims that are difficult to clearly define and therefore verify (also known as paltering), for instance, “lower carbon,” “cleaner burning,” or “climate friendly.” Fossil fuel greenwashing is also characterized by core business omissions, or the emphasis of environmental initiatives without mentioning the environmental impact of the company's primary products and business practices, as well as over-indexing, which refers to the over-promotion of an environmental initiative that only represents a fraction of a company's capital expenditures. Numerous research studies reveal the extent to which greenwashing is a pervasive problem in fossil fuel communications, 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.²² According to research organization and think tank InfluenceMap, 60 percent of the public communications of five oil supermajors in 2021 included green claims, while only 12 percent of their capital expenditures were dedicated to “low carbon” activities. 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

²¹ Definition adopted from the Climate Social Science Network, “2021:1 Integrated Framework to Assess Greenwashing,” <https://cssn.org/wp-content/uploads/2021/09/CSSN-Working-Paper-2021-on-Assessing-Greenwashing-1.pdf>.

²² 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>.

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.²³ These claim-to-capital expenditure ratios on top of each company's oppositional climate policy engagement and fossil fuel expansion plans reveal a deliberate effort to misrepresent their commitments to decarbonization.

Astroturfing: including activities intended to produce the illusion of grassroots community support or opposition to a message or position, while concealing their true origin. As described above, astroturfing occurs online through the use of bots, fake personas, and fake social media accounts that falsely amplify climate denial and pro-fossil-fuel narratives, as well as fossil fuel-funded websites or news sites that appear to be hosted by independent journalists or local communities but are really funded by fossil fuel companies and trade associations. Astroturfing also occurs offline, using nonprofits, front groups, paid advocates, or fake protesters that promote a corporate or industry position without disclosing who is funding the activity. For example, as recently reported by *Grist* and *Mother Jones*, Eugene Residents for Energy Choice describes itself as a “group of local Eugene residents” who are simply trying to “give the people of Eugene an opportunity for their voices to be heard.”²⁴ In actuality, the group, which successfully thwarted a local clean energy ordinance, appears to be funded by NW Natural, a gas-only utility with a long history advocating against electrification.

²³ 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>.

²⁴ Eugene Residents for Energy Choice, <https://www.eugeneresidentsforenergychoice.com/>.

Flooding the information environment: A similar tactic to astroturfing, flooding involves the purposeful production of online noise to disorient people and drown out opposing viewpoints. Flooding is often achieved through swarming or spamming social media posts and comment sections on websites. With respect to fossil fuel trade association and corporate advertising, flooding also entails highly concentrated media buys that coincide with a climate-related news event, such as COP, serving to overwhelm the information environment with fossil fuel narratives and in some cases, prevent accurate information from reaching key audiences. Closer to home, a 2021 InfluenceMap report showed how oil-and-gas industry ads spiked when then presidential nominee Joe Biden announced his plans for a \$2 trillion climate bill, with 6,782 ads running narratives promoting fossil gas as a climate solution, most of which came from the API and the American Gas Association.²⁵ Similarly, according to Triplecheck and research and media organization Media Matters for America, social media posts with climate disinformation peaked during US climate envoy John Kerry’s speech about Ukraine and climate change on February 21, 2022,²⁷ and the top one hundred misinformation posts yielded 5,205,281 likes, comments, and shares during a two-week period in February and March.²⁸ During roughly the same time, 70 percent of climate misinformation retweets came from bot accounts.²⁹

Infiltration: Related to disinformation, infiltration is a strategy used to derail climate conversations and negotiations such as COP, and to manipulate the results, timing, and

²⁵ InfluenceMap, “The US Oil and Gas Industry’s Digital Advertising Strategy,” October 2021, <https://influencemap.org/report/Climate-Change-and-Digital-Advertising-a40c8116160668aa2d865da2f5abe91b#1>.

²⁷ John Kerry, “Implementation Plus: Global Climate Action in 2022,” Remarks of Special Presidential Envoy for Climate, US Department of State, American University Cairo, Cairo, Egypt, February 21, 2022, <https://www.state.gov/special-presidential-envoy-for-climate-john-kerry-implementation-plus-global-climate-action-in-2022/>.

²⁸ 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/>.

²⁹ Triplecheck, “Climate Misinformation Tracker,” March 2022.

communication of scientific and academic research. For example, a 2023 study conducted by Data for Progress illustrates that the fossil fuel industry has built immense influence in academia, with leading companies including Chevron, BP, and Shell donating hundreds of millions of dollars to American universities such as Harvard, George Washington, MIT, Stanford, Columbia, and Texas A&M in order to support climate and environmental research.³⁰ A Columbia University study found that when research centers take money from fossil fuel companies, they produce results that are disproportionately favorable to the industry.³¹

Collectively, these tactics make it almost impossible for legitimate climate scientists to be heard over industry voices, for well-intentioned consumers to make informed choices, and for concerned lawmakers, including members of this committee, to take the necessary steps to protect their constituents.

As oil and gas supermajors continue to flood our information environment with greenwash, most have undermined their advertised climate commitments. ExxonMobil cancelled its widely publicized algae biofuels project after spending over \$350 million promoting it. The shareholders of ConocoPhillips rejected a plan to meet climate targets after the company claimed to be “the first US-based oil and gas company to adopt a Paris-aligned climate-risk strategy with specific targets.”³² After years promoting a rebrand as “Beyond Petroleum,” BP announced it will spend double the amount on oil and gas projects than on renewable investments in 2023, while scaling

³⁰ Data for Progress, “Unaccountable Allies: Undue Influence of the Fossil Fuel Industry Across Academia,” February, 2023, <https://www.filesforprogress.org/memos/accountable-allies-fossil-fuels.pdf>.

³¹ Douglas Almond, Anna Papp, and Xinming Du, “Favourability Towards Natural Gas Relates to Funding Source of University Energy Centres,” *Nature Climate Change*, November 2022, 12 (12): 1–7, <https://www.nature.com/articles/s41558-022-01521-3>.

³² ConocoPhillips, *2021 Proxy Statement*, <https://conocophillips.gcs-web.com/node/10446/html>.

back its plan to lower emissions by more than 35 percent by the end of this decade. After pledging to achieve net zero by 2050 and improperly marketing fossil gas as a renewable energy solution, Shell abandoned its pledge to cut oil production each year for the rest of the decade.³³

Despite such reversals and contradictions, public perceptions appear to be influenced by misleading green claims. A new research paper by Drs. Ronald Friedman and Dylan Campbell of the University at Albany demonstrates that greenwashing ads “successfully prompt individuals to adopt more positive attitudes toward fossil fuel companies’ environmental behavior than might be warranted and do so in a manner that is difficult to counteract.”³⁴ The study reveals that “individuals may have difficulty detecting greenwashing, are susceptible to being misled based on affective cues such as exposure to nature imagery, and may not adequately correct their attitudes in the face of debiasing information.”

Given that greenwashing ads are more prevalent and manipulative than ever, these findings raise concerns that prolonged exposure will disrupt individuals’ support for more forceful regulation along with an authentic transition to clean energy. According to the authors, “If greenwashing ads are indeed capable of convincing people that oil majors are engaging in sustainable business practices—despite objective evidence to the contrary—this might contribute to diminishing pressure to regulate their activities, allowing them to continue pursuing their environmentally destructive business model.”

³³ Maxine Joselow, “Oil Giant Shell Accused of ‘Greenwashing’ and Misleading Investors,” *Washington Post*, February 21, 2023, <https://www.washingtonpost.com/politics/2023/02/01/oil-giant-shell-accused-greenwashing-misleading-investors/>.

³⁴ Ronald S. Friedman and Dylan S. Campbell, “An Experimental Study of the Impact of Greenwashing on Attitudes toward Fossil Fuel Corporations’ Sustainability Initiatives,” *Environmental Communication*, May 25, 2023, <https://doi.org/10.1080/17524032.2023.2215959>.

The world's climate scientists leave no doubt that the window to act on climate is rapidly closing. Meanwhile the majority of big oil and gas companies increase production despite stark warnings from the International Energy Agency to limit new fossil fuel projects in order to meet the goals of the Paris Agreement. Given this state of affairs, climate misinformation and disinformation tactics may prove costly—and even deadly—to millions of people across America and around the world.

IV. The Need for Intervention and Action

Despite ample, demonstrative evidence to the contrary, US fossil fuel executives maintain—and have always maintained—that they have never deliberately misled the public on climate change or their efforts to curb carbon and methane emissions. Just like the tobacco executives before them, they characterize peer-reviewed science and investigative journalism that illustrates the extent of their deceptions as biased or inconclusive. They highlight their commitment to advancing climate solutions while simultaneously increasing oil and gas production. They pour money into academia to erode climate science at its very foundation. They frame climate activists and policy advocates as publicity-seeking zealots. They extoll the virtues of fossil fuels, while praising freedom of choice.

Fossil fuel companies and interests are not engaging in misinformation and disinformation solely in order to sell more products. They are using these tactics in bad faith to interfere with matters of policy. For this reason, more than any other, the American public has a right to know the truth.

Citizens deserve to know who is organizing and funding astroturf campaigns. Investors deserve to know their financial exposure to climate risks. Consumers deserve to know the health-related consequences of breathing fossil fuel–polluted air, as well as the economic and environmental risks of prolonged fossil fuel reliance. They deserve to know that in the absence of truth and accountability from the fossil fuel industry, they are the ones who pay for climate havoc, whether through rising insurance costs, loss of coverage, loss of property—or even loss of life. Without complete, candid disclosure, there is no freedom of choice.

At the start of the tobacco industry’s disinformation campaign, nearly half of all American adults smoked. Today, after successful litigation and government-mandated disclosure regarding the harmful effects of cigarette smoking, just 16 percent of American adults smoke, the lowest level ever recorded. If the tobacco industry had been forced to disclose the health risks of its products back in the 1950s, millions of lives and billions of dollars in health costs could have been saved globally.

The majority of my industry supports the principles outlined by the Institute for Advertising Ethics that as professional communicators, we share a common objective of honesty, transparency, and high ethical standards in serving the public.³⁵ The majority of Americans believe that manufacturers have an obligation to warn them about harmful products—including and especially their own—and that oil and gas firms should be held accountable for their misdeeds.³⁶

³⁵ Institute for Advertising Ethics, “Principles and Practices,” <https://www.iaethics.org/principles-and-practices>.

³⁶ The Guardian, “Revealed: 60% of Americans say oil firms are to blame for the climate crisis,” October 26, 2021.

If deception is the fossil fuel industry's marketing strategy, then the best solution is to challenge the system that enables it.

Thank you.

Appendix

Analysis of Toxic Climate Narratives

January 1 – June 12, 2023

By VineSight

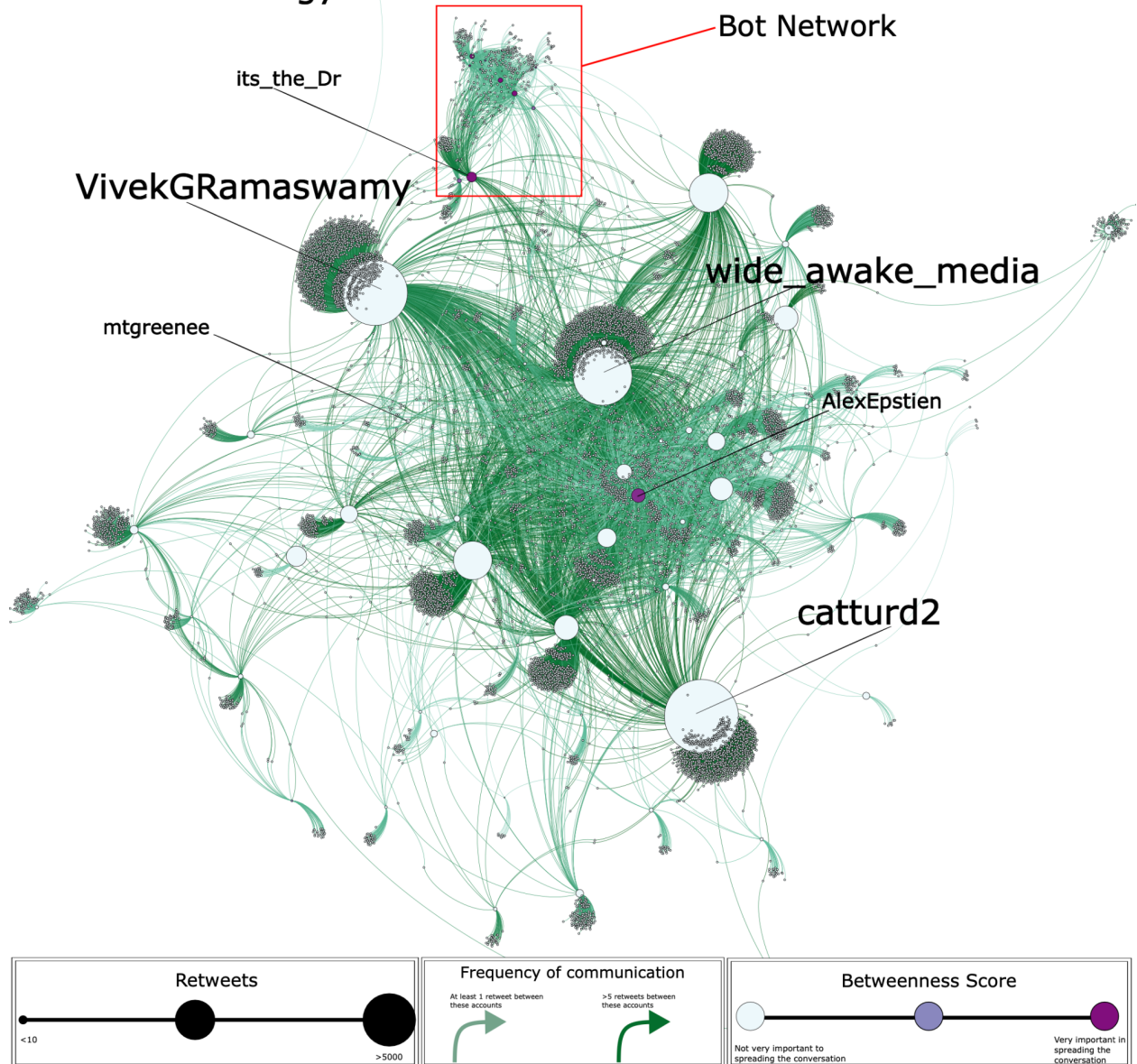
Overview:

The following report seeks to analyze our main findings in regards to climate misinformation and related bot-like behavior in the past six months. VineSight has extracted five main narratives of toxic climate information, with a minimum bot-like percentage of 50%. The narratives claim that:

1. Carbon does not cause global warming
2. Fossil fuels are the most consistent source of cheap energy, whereas clean energy is problematic and inefficient
3. Climate activists are hypocrites
4. The push for climate action is compromising the freedoms of the general public
5. Electric vehicles should not be used

Network Analysis:

Network Chart of Most Influential Anti-Clean Energy Tweeters



The network chart above illustrates the communication and interaction between influential anti-clean energy users on Twitter. Each circle represents a single Twitter account, with the size indicating the number of retweets received. The lines represent retweets between specific accounts, with the darkness indicating the frequency of interaction. Additionally, the circle color

indicates the account's effectiveness in reaching a diverse audience, with darker colors representing higher betweenness scores.

In this network displaying Twitter toxicity surrounding climate change, the betweenness measure serves as an indicator of an account's importance in connecting others to the conversation. For example, the account @catturd2 has a large number of retweets, indicating a wide reach. However, its low betweenness score (lack of purple color) suggests a minimal role in connecting different account types within the network.

On the other hand, @AlexEpstein's account exhibits a high betweenness measure despite a moderate number of retweets. This indicates a central role in bridging various groups or communities within the network, even though their tweets may not have been as extensively shared as @catturd2's.

The betweenness measure helps identify critical connectors within the network, highlighting accounts that play a key role in spreading information rather than simply having visible activity. A higher betweenness score indicates that an account can effectively disseminate information, even if it doesn't receive much attention.

The betweenness measure is particularly useful in understanding the dynamics of this Twitter network graph, identifying key accounts that facilitate information flow among different groups or communities. By focusing on this measure, we gain insights into how toxicity surrounding this narrative spreads and reaches diverse audiences.

Accounts with high betweenness measures are especially important for two reasons. First, they act as gatekeepers, controlling information flow between separate communities and potentially influencing the messages that reach these groups. Second, they serve as bridges, facilitating the exchange of ideas and communication between disconnected communities, leading to new connections, alliances, debates, and discussions.

Examining the betweenness measure in this Twitter network graph provides valuable insights into the network's structure, the role of key accounts, and the patterns of information dissemination.

There are two noteworthy aspects in this chart. Firstly, there is a bot network operating at the top of the graph, indicated by the red box. These accounts frequently retweet each other and exhibit suspicious bot-like attributes, such as fake profile pictures and suspicious messaging behavior.

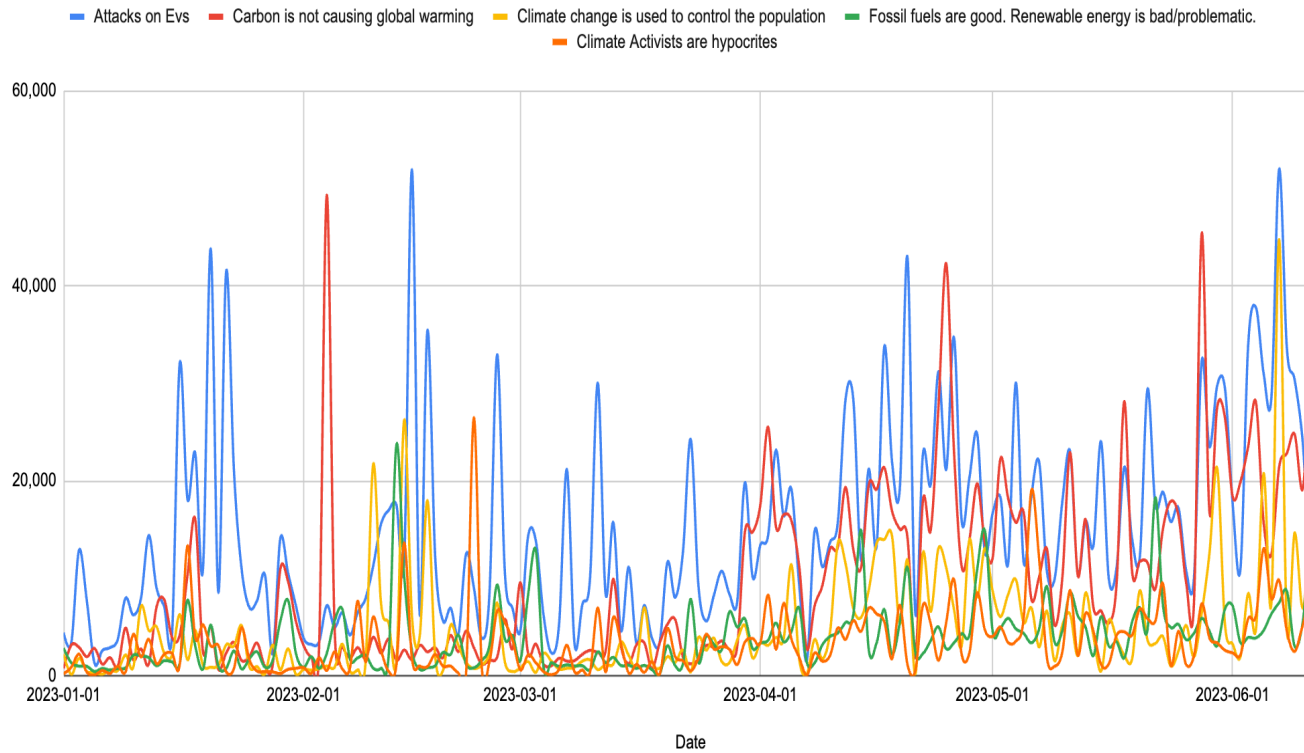
Although this network seems isolated from the rest of the chatter, the human account @its_the_Dr regularly interacts with this bot network, amplifying their influence. Consequently, @its_the_Dr has a high betweenness measure, as they capture the attention of bot networks, fringe media, and individual accounts.

The second noteworthy aspect is the retweeters of Ramaswamy. While Ramaswamy is a fringe candidate, he is not as politically fringe as @wide_aware_media or @catturd2, who frequently engage in QAnon-style conspiracies. However, many of Ramaswamy's retweeters belong to

these fringe communities, indicating that his anti-clean-energy tweets resonate with these extreme groups more than the rest of his platform.

Top Accounts in the Bot Network Identified		
Screen Name	Most Viral Post on Topic	Total Retweets Received on Topic
<u>its_the_Dr</u>	https://twitter.com/its_the_Dr/status/1630104122228715525	2,600
<u>udreams30</u>	https://twitter.com/udreams30/status/1616179061763747843	1,300
<u>MaldonDonmal</u>	https://twitter.com/MaldonDonmal/status/1638904255800315908	1,200
<u>CurtisHebert</u>	https://twitter.com/CurtisHebert/status/1661425139257311246	1,200
<u>TonemanLives</u>	https://twitter.com/TonemanLives/status/1637908845644095490	1,100

Retweets Over Time



Narratives:

Narrative 1: Carbon is not causing global warming

The image shows a collage of social media content. On the left, a tweet from 'Health Ranger' (@NaturalNews) with a green profile picture and 'gab' tag. The text says: 'Everything the #climate #fanatics are about is #ANTILIFE'. Below the text is a link to 'naturalnews.com/2023-06-13-carbon-dioxide-bui...' and the hashtag '#carbondioxide #CO2'. Below the text is a video thumbnail with the text 'CARBON DIOXIDE The Miracle Molecule of LIFE' over a forest background. Below the thumbnail is the text: 'Carbon dioxide isn't a pollutant; it's the building block of ALL LIFE on Earth. Ecologist, environmentalist, and Greenpeace co-founder Dr. Patrick Moore has a message for the world: carbon dioxide, or CO2, is not bad and does...'. In the center, a tweet from 'Wide Awake Media' (@wideawake_media) with a blue profile picture and 'Follow' button. The text says: 'Australian broadcaster, Alan Jones: "Carbon dioxide is 0.04% of the atmosphere. Human beings create only 3% of that 0.04%. Is anyone seriously suggesting that we should stand the economy on its head, force up energy prices, damage business, jeopardise employment, because 0.04%... Show more'. Below the text is a video thumbnail showing a man in a blue suit speaking, with a play button icon. Below the thumbnail is the text: '1:55 PM · May 30, 2023'. Below the text are the icons for '18.4K' likes, 'Reply', and 'Copy link', and a button that says 'Read 421 replies'. On the right, a tweet from 'Mr. Blackpill' (@MrBlackPill) with a red profile picture and 'Jun 3' date. The text says: 'Greenpeace co-founder, Dr. Patrick Moore: "There is no definitive scientific proof... that carbon dioxide is responsible for any of the slight warming of the global climate that has occurred during the last 300 years." "But there is certainly beyond a reasonable doubt that CO2 is the building block for all life on Earth, and that without its presence in the global atmosphere... this would be a dead planet."'. Below the text is a video thumbnail showing a man in a dark suit speaking at a podium, with a play button icon. The background of the video shows a screen with the text 'We Celebrate CO2' and 'October 14, 2016'.

This narrative claims that carbon dioxide is not the cause of global warming and, even if CO₂ did contribute to climate change, humans do not produce enough CO₂ to cause harm. It also claims that CO₂ is a natural and necessary element of the environment. **The bot-like percentage of this narrative is 56%.**

Narrative 2: Fossil fuels are good; Renewable energy is bad/problematic.

Silvano Trotta Official
tagesschau émission manquée ?
Page d'accueil · économie · technologie · Gaz à effet de serre SF6 comme danger climatique dans les éoliennes
gaz à effet de serre SF6
tueur de climat dans les éoliennes
Mise à jour : 18.06.2022 15:48
Les parcs éoliens doivent être développés plus rapidement. Mais les installations contiennent une substance qui contribue à l'effet de serre. Bien que cela puisse être évité, l'UE veut autoriser de longues périodes de transition.
EXTRAORDINAIRE ! Soit ils sont incompetents, soit machiavéliques ! Les éoliennes sont construites avec de l'hexafluorure de soufre (SF6), le plus connu des gaz à effet de serre. Ce gaz permet de construire des éoliennes plus compactes. Mais problème : 1 kg de SF6 est

Oddball @CaptDrimmie · Follow
2.5 billion worn out Solar panels - an eco-disaster waiting to happen
apple.news
Solar panels - an eco-disaster waiting to happen?
9:46 AM · Jun 4, 2023
5.1K Reply Copy link
Read 190 replies

David Icke @davidicke · Follow
They are lying to you; fossil fuel emissions do not cause global warming
davidicke.com
They are lying to you; fossil fuel emissions do not cause global warming
9:24 PM · Jun 11, 2023
17.6K Reply Copy link
Read 757 replies

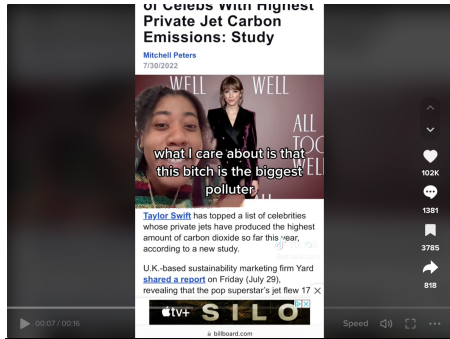
Mark Collett @MarkCollett gab
15m · 🌐

Carbon neutral is a scam whereby the taxpayer pays huge sums of money to unelected bodies who then use that money to reduce the quality of life for the average person. The net result is the creation of a new peasant class who own nothing, have no rights and live in servitude to an unaccountable and unassailable global elite.

if it cost 50 trillion dollars

This narrative expunges the idea that clean energy sources like windmills and solar panels are more environmentally friendly than fossil fuels. It claims that clean energy sources require significant energy to produce and are harmful in their decomposition. It also claims that windmills are harmful to wildlife, particularly for whales. Meanwhile, fossil fuels are a perfectly economical and reliable form of energy that we should continue to use, lest we harm the environment even further. **The bot-like percentage of this narrative is 53%.**

Narrative 3: Climate activists are hypocrites




Of Celebs with highest Private Jet Carbon Emissions: Study
Mitchell Peters
7/30/2022

what I care about is that this bitch is the biggest polluter.


Taylor Swift has topped a list of celebrities whose private jets have produced the highest amount of carbon dioxide so far this year, according to a new study.

U.K.-based sustainability marketing firm Yard shared a report on Friday (July 29), revealing that the pop superstar's jet flew 17 X

SILO



Travis @Travis_in_Flint · Follow
Happening Now:
Actress Jane Fonda says we have 7-8 years to cut carbon emissions in half or were doomed. She says white men and the patriarchy are to blame. She also stated that there would be no climate crisis without racism. She's been married 3 times, all to rich white... [Show more](#)



11:17 PM · May 28, 2023

[Read the full conversation on Twitter](#)


IntentionalGlitch @G_l_i_t_c_h_e_d · Follow
The same people that want you in electric cars, are buying Bugattis.
They want you in tiny homes, while buying multiple mansions.
They want to stop farting cows, then fly private jets.
They want you in 15 minute cities, while they fly to "islands."
They mandated the jab,... [Show more](#)
3:38 PM · Jun 5, 2023

17.4K Reply Copy link
[Read 366 replies](#)

This narrative calls out climate activists for emitting high levels of CO2 while simultaneously preaching the importance of living an eco-friendly lifestyle. The claims typically regard celebrities who frequent private jets and live lavishly, emitting more carbon dioxide than common people. **The bot-like percentage of this narrative is 60%.**

Narrative 4: Climate change is used to control the population


BREAKING: Trudeau's Carbon Tax 2
Pierre Poilievre was live



Share

Facebook Watch

The details on Trudeau's sneaky new SECOND carbon tax are out.
Carbon tax 2 will make gas, heat and groceries even more expensive while #JustinFlation rockets.

Wall Street Silver 
@WallStreetSilv · Follow

Are you ready for this New Yorkers?


New York City will begin tracking the carbon footprint of household food consumption and putting caps on how much red meat can be served.


05/14/23 · 861 FOOD · 861 ENERGY · NEWS

New York to Track Residents' Food Purchases and Place 'Caps on Meat' Served by Public Institutions

New York City will begin tracking the carbon footprint of household food consumption and putting caps on how much red meat can be served in public institutions as part of a sweeping initiative to achieve a 12% reduction in carbon emissions from food by 2030.


By Brenda Baletti, Ph.D.



Sean Hannity 
@seanhannity · May 17

TRUTH.

MANCHIN: "While I appreciate that these rules would only apply to new stoves, my view is that it's part of a broader, administration-wide effort to eliminate fossil fuels. For that reason, I'm not comfortable moving forward with Mr. Maroitian at this time." hannity.com/media-room/cooking...



COOKING WITH GAS! Manchin Pulls Support for Biden Energy Nominee Over Stove Ban
West Virginia Senator Joe Manchin is pulling





Disclose.tv 

BILD   

Now the economics minister also wants to know how Germans have been heating and how much energy they use. And how well or badly their houses are insulated.

This is what it says in the draft for a new law with the unwieldy name "Law for heat planning and for the decarbonization of heat networks". The draft (89 pages) is available to BILD. It could be passed by the traffic light government as early as the end of June.

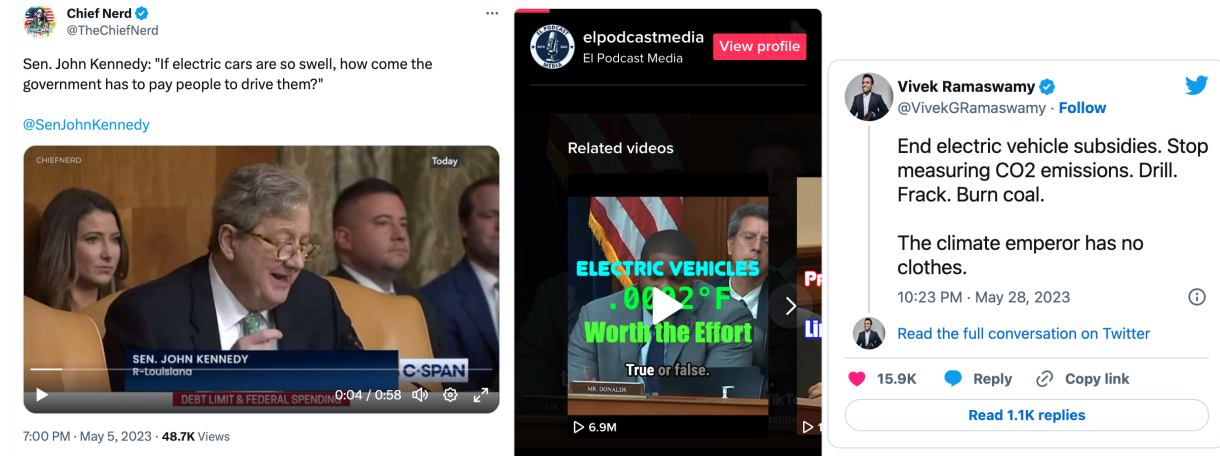
► Specifically, Habeck and Minister of Construction Klara Geywitz (47, SPD) call on the federal states and municipalities in the law: They should determine "building-specific annual final energy consumption (...) of the last three years in kilowatt hours per year".

This means that owners or tenants must report their heating and electricity consumption for the past three years.

JUST IN - German Economics Minister Habeck (Green Party) now wants to screen the heat and electricity consumption of all

This narrative claims that the government and big corporations are using environmentalism as a front to control the population. It claims that prices will be raised in the name of preventing climate change, and that energy use will be monitored and limited. **The bot-like percentage of this narrative is 60%.**

Narrative 5: Attacks on EVs



This narrative claims that electric cars are ineffective and environmentally unethical. It also claims that the government and EV companies are trying to promote their products by exaggerating the benefits of EVs. **The bot-like percentage of this narrative is 56%.**