Deny Deceive Delay (Vol.3)

Climate Information Integrity Ahead of COP28

Climate Action Against Disinformation

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Introduction

A Year in Review: Breaking Records and Broken Records

2023 has been **another year of unprecedented temperatures, extreme weather events and disasters compounded by climate change**. After the warmest summer on record and an equally benchmark-setting October, scientists now estimate this will be the hottest year since 1940 at a global level. The world has witnessed historic heatwaves and storms, as well as the worst drought in East Africa for 40 years and wildfires which blazed a devastating trail across Canada, Greece, Spain, Portugal and the United States. According to NOAA (the National Oceanic and Atmospheric Association), there were 23 'billion-dollar weather and climate disasters' in the US alone from January-August 2023, and the World Meteorological Organisation has projected that such events will become the "new norm".

Failed Commitments

The impacts of climate change are becoming more observable and acute for billions of people, yet **progress on climate action has been slow**. The UAE – who will host this year's COP28 summit in Dubai – currently plan to expand oil and gas production in the coming years; a trend echoed in countries from Norway and Australia to the United Kingdom and China. Some of the largest oil and gas companies are also backtracking on their previous climate pledges. Shell has shelved plans to reduce oil production this decade, while BP reduced its previous commitment to cut emissions. In November 2023, the International Energy Agency (IEA) published a report showing that such companies only account for 1% of clean energy investment worldwide, despite what is widely presented to the public via marketing and PR campaigns. These backslides in progress are worrying when considered alongside sober warnings from the IEA, IPCC and others, which clearly state that limiting warming below 1.5-degrees is incompatible with new oil and gas development and requires the urgent phase out of all fossil fuels.

The Impacts of Mis- and Disinformation

At this pivotal juncture, it is more important than ever for societies to have a shared understanding of climate change, and to chart a path forward based on credible science and data. Realising meaningful plans for Net Zero requires information integrity, as without it a strong public mandate for meaningful action is far harder to build.

Unfortunately, **mis- and disinformation about climate continues to thrive. As well as undermining public and political support for action, it is increasingly linked to real-world harm**. Such content not only impacts debate and implementation of climate policy, but also centres climate as a vector for wider conspiracy theories, scapegoating and social division. With the latter, 2023 has seen alarming mobilisation to violence against those even loosely associated with climate action, from elected officials and policymakers to scientists, activists and journalists. When a traffic calming proposal in Oxford, UK, was falsely conflated with "climate lockdowns" and Stalinism, large scale protests broke out with death threats sent to local politicians. Similarly, a conspiracy claiming droughts were a result of geoengineering led to attacks on weather forecasters and Met Offices across the globe, with reports of trolling and abuse from Spain, France, the US and UK. More broadly, a study by Global Witness polled 468 climate scientists and found that 39% had experienced online harassment or abuse in recent months, with numbers increasing for those who present their evidence via the media or publications.

In Germany, the far-right Alternative for Germany (AfD) Party weaponised a bill which would see the country reduce emissions through heat pumps in homes and buildings – the resulting misinformation went viral across the country and has been held partially responsible for AfD's increased support in local elections. In July 2023, the EU's flagship Nature Restoration Law passed by just 12 votes, but was nearly defeated after widespread misinformation spread across the region and was championed by political leaders.

These are merely a handful of examples from the research we conduct at Climate Action Against Disinformation (CAAD) as well as wider reporting around the world. However, they highlight how severe the situation has become and how things may deteriorate further if we fail to confront the problem of mis- and disinformation.

Deny, Deceive, Delay (Vol. 3)

As climate has become co-opted into the culture wars, the potential objectives of mis- and disinformation have also widened. In brief, we can now view information warfare on this topic under two core pillars:

1) **Efforts to delay decarbonisation or combat the climate crisis at scale**
    - Create confusion about climate science and/or the viable pathways to Net Zero;
    - Weaken the public mandate for action;
    - Disrupt both national and multilateral legislative and regulatory efforts;
    - Maintain public investment in and/or subsidies for the carbon economy.

2) **Efforts to sow division and weaken buy-in for liberal democratic systems**
    - Frame climate action as a pretext for State overreach or tyranny backed by 'elites';
    - Use agendas like the Paris Agreement to deepen geopolitical tensions (e.g. pitting the Global North v. Global South; exploiting divides within the European Union);
    - Erode trust in institutions through the lens of climate (local/national government; multilateral bodies; academia; legacy media)

This report, the third in a series by CAAD partners, offers a window into **three distinct ecosystems engaged in climate mis- and disinformation: the fossil fuel lobby; State-affiliated actors; and those profiting from the 'outrage economy' online.** To a greater or lesser extent, all participate in and amplify the narratives outlined above, and serve to benefit from their proliferation.

The apparent incentives of these groups vary. Some have a financial stake in polluting technologies or are focussed on wider trade and diplomatic manoeuvring; others seem uninterested in the specifics, but have seen an opportunity to galvanise their audience and generate 'likes', subscriptions, ad revenue or media attention by weaponising climate issues. Whether driven by opportunism or ideology, profits or ego, actors across the board are successfully exploiting social media and other digital platforms to achieve their goals.

On the eve of COP28, **this report presents four case studies that provide a snapshot into the online world and what it tells us about the networks, narratives, and tactics** used by these actors. It shows the complexity of an environment where professionalised lobbyists with billions of dollars at their disposal sit alongside keyboard contrarians chasing the limelight and state actors playing games of geopolitical chess. The potential responses are diverse and well within our grasp, but require us to **remove the incentive structures for spreading false, misleading and divisive content.** In the curated environments of social media, freedom of speech must be distinct from freedom of reach, and companies should optimise their products for safety over mere engagement. For that to happen, we must first recognise the threat of mis- and disinformation for what it is: a barrier to cohesion, to action, and to a liveable future for all.

Key Findings

Section 1.1: #ClimateScam on X, Facebook and Instagram

- #ClimateScam, a hashtag frequently used to promote denialist and conspiratorial content, has **become more prominent on X/Twitter** since CAAD last studied the trend around COP27 in 2022.

- #ClimateScam has **relatively marginal prominence on Facebook and Instagram**, even accounting for the platforms' structural differences.

- The continued reach and influence of #ClimateScam is **linked to a small group of accounts** who use the hashtag prolifically and garner high engagement on their content.

- #ClimateScam **continues to be recommended as a top result and suggested in autocomplete by the search function on X/Twitter**, even when searching for incomplete terms like '#cl'. However, unlike last year, this now appears linked to observable trends in performance and the **viral nature of related content across the platform**.

Section 1.2: How ad tech helps monetise websites that host climate mis-/disinformation

- **Over 150 ad exchanges are enabling the monetisation of climate mis- and disinformation on 15 key websites.** These exchanges act as marketplaces in which online advertising is bought and sold. Publishers offer 'inventory' – such as space on their websites or mobile apps - and advertisers bid based on various targeting criteria.

- **25 ad tech companies stood out as critical vendors, including exchanges owned by Microsoft, Google, Amazon, and Yahoo.** Each helped to place ads on at least 8 of the 15 websites analysed. Many companies, including Google, Amazon, Criteo and OpenX, have explicit policies meant to prohibit publishers from accessing their ad products if content they host contradicts the scientific consensus on climate change or repeatedly includes false or misleading claims.

- Many of the 15 websites we studied - including Breitbart, Newsmax, The Washington Times and Townhall - host content which **rejects the premise of human-caused climate change in articles monetised through advertising**.

- Beyond direct readership, these websites also boast significant reach and potential influence across social media. Even when reviewing a small sample of articles they have published containing climate mis- or disinformation (see Annex 1), **citations were found in 584 Facebook public posts shared a combined 43,129 times**, as well as **21,586 posts, retweets and replies on X/Twitter.**

- **One monetised article originally published on the Daily Telegraph website was mentioned in 8,888 X/Twitter posts, replies and retweets;** its contents have been specifically debunked by Carbon Brief. Among those amplifying the content were high-traction accounts such as Jordan B. Peterson (over 4.8m followers), DiscloseTV (over 1.2m followers) and UK journalist Andrew Neill (1.2m followers). **Another monetised article from Breitbart was shared 11,181 times on Facebook and refers to the 'climate change industry' as a 'hoax'.**

- **Greater transparency and granular data are needed within the ad tech marketplace** so that brands can control how their ads are placed and their 'risk appetite' for appearing next to certain types of content – be it mis- and disinformation, hateful and extremist content, or other topics that do not align with their brand values.

Section 2: How Russian State accounts on Facebook engage with climate and energy

- Russian State media accounts - posting in English, French, German and Spanish - **do not have consistent messaging on climate science, climate action or energy supply.** Instead, they instrumentalise these topics to strengthen their influence campaigns targeting Western countries and the Global South respectively.

- For almost all topics related to climate and energy, **Russian media tend to 'play both sides', adapting their framing to benefit political allies (e.g. Iran, China) and condemn political opponents (e.g. the US, EU Member States).** As such, topics like renewable energy, fossil fuels and nuclear can be framed in contradictory ways depending on the intended audience and region.

- Russian State media outlets also **seek to amplify geopolitical tensions.** In the context of Western countries, accounts tend to amplify anti-establishment voices and try to discredit democratic institutions, e.g. by presenting climate action as a plot against national interests or casting doubt on renewable energies. Meanwhile, **in the Global South, Russia's main strategy is to present itself as an anti-colonial and anti-imperialist force**, aligned with countries in opposition to the 'Western Axis'.

- Despite these inconsistencies in framing, Russian State media **broadly promotes further fossil fuel extraction and development** across the globe, although only if funded by Russia and its allies as opposed to 'the West'. Regardless of the investor, such expansion is explicitly counter to projections and warnings from the International Energy Agency, IPCC and regarding fossil fuel use.

- Russian state media accounts consistently report on climate protests, especially those involving public disturbances and police action in Europe. Some of this content is explicitly hostile towards the protests and/or seems to promote the 'othering' of climate activists as separate from mainstream society - a tactic employed elsewhere by those opposed to Net Zero agendas.

Section 3: Fossil Fuel Advertising on Facebook

- From 1 January to 31 October 2023, just **13 fossil fuel companies published 2,562 ads on Facebook,** according to Meta's Ad Library. Since we can only view ads labelled as affecting 'Social Issues, Elections or Politics", our findings are likely a highly partial snapshot and company spending may vastly exceed this number.

- A **total of between $4.13 million and $5.21 million was spent** on these campaigns which, when combined, achieved **at least 246 million impressions on Facebook**.

- Investment in campaigns varied greatly, but the top 4 actors - **Shell, ExxonMobil, BP and TotalEnergies - accounted for approximately 98% of the ad spend** in this time frame.

- Almost all adverts identified from the **Chinese National Petroleum Company (CNPC) were targeting countries in the Global South**, in particular Asia and sub-Saharan Africa. They also appear to have disproportionate return on investment, in some cases **spending between $3 and $99 on campaigns that achieved nearly 1 million impressions.**

Section 1: The Attention Economy

1.1 #ClimateScam on X, Facebook and Instagram

Context

At COP26 (2021), explicit climate denialism seemed to be outpaced by subtler "discourses of delay" and attacks on climate action. However, in 2022, denialist content made a stark comeback on X (formerly, and at the time, Twitter) in particular, with the hashtag #ClimateScam spiking out of nowhere in July 2022. In "Deny, Deceive, Delay Vol.2", published in January 2023, we recorded over 362k mentions (including retweets) originating from over 91k unique users, with daily mentions never dropping below 1000 posts. The term often appeared to be trending despite data that showed more activity and engagement on other hashtags such as #ClimateCrisis and #ClimateEmergency. The source of its virality, including recommendation via the platform's search function and auto-complete tools, was therefore unclear, and highlighted the need for transparency on how and why platforms surface content to users.

What We Found

X/Twitter

Since December 2022, #ClimateScam has outperformed both #ClimateCrisis and #ClimateEmergency every month on X (formerly Twitter), regardless of whether you measure by retweets or likes. A particularly wide gap between the hashtags emerged in April 2023 and persisted through August 2023, from which point they began to converge. However, #ClimateScam has remained on average more popular across the analysed period.

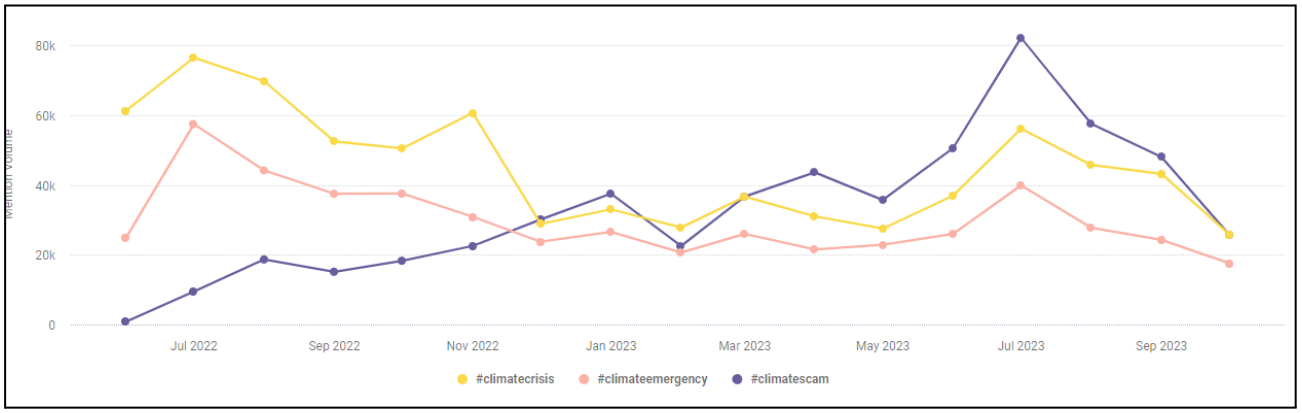


***Fig 1**: Monthly volume of **original tweets and replies** between 1 June 2022 and 31 October 2023 containing #Climate Scam [purple], #ClimateCrisis [yellow] and #ClimateEmergency [pink] respectively. Some posts cited more than one hashtag; in such instances, these were counted once in each category.*

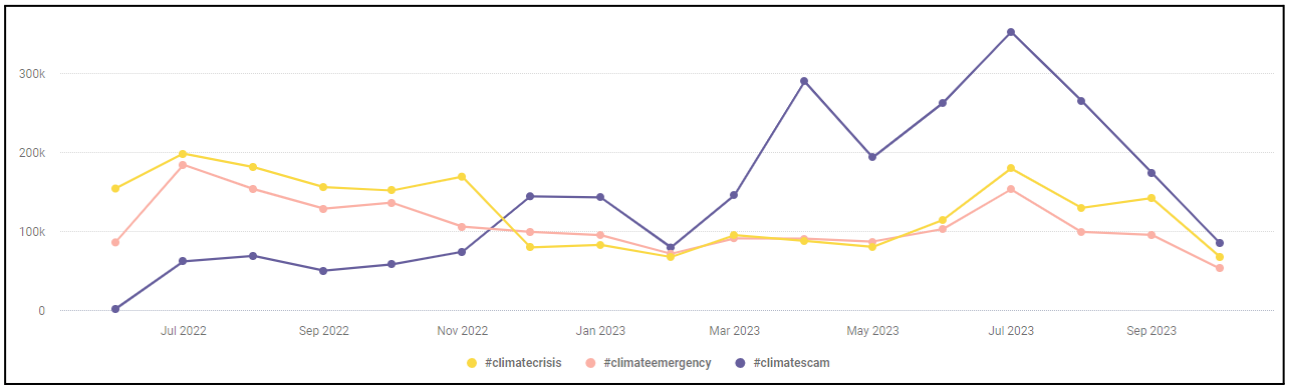
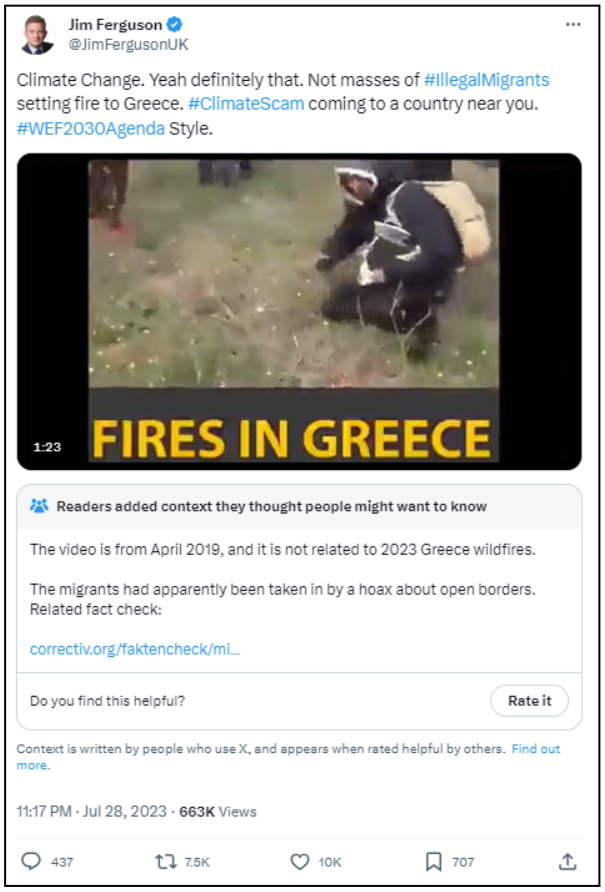


***Fig 2**: Monthly **volume of retweets** for original tweets and replies between 1 June 2022 and 31 October 2023 containing #Climate Scam [purple], #ClimateCrisis [yellow] and #ClimateEmergency [pink] respectively. Some posts cited more than one hashtag; in such instances, these were counted once in each category.*

Reviewing peaks in engagement, **summer months appear the most popular period for #ClimateScam content**, at least regarding share count. During the summers of 2022 and 2023, the world faced intense **heat waves** **and** **wildfires**, both of which played a prominent role in our dataset. In July 2023, when use and retweets of all three hashtags surged, the most widely shared posts focussed on these events. (Looking ahead to COP28, it is worth noting that November 2022 also saw a small uptick for #ClimateScam and #ClimateCrisis; a trend which may be repeated this year.)

***Fig 3**: Post from X/Twitter in July 2023, at the height of extreme weather in France. Translation: "10 August 1998 – Jul 2023: 25 years separate these two weather reports. Don't let yourself be influenced by climate crooks, their shame maps and malicious manipulations. #heatwavemyass #droughtmyass #heatwave #ClimateScam"*

Some posts with thousands of retweets **claimed that arson was responsible for the wildfires**, and even linked this accusation to comments around illegal migration (see screenshots below). The evolving nature of misinformation on wildfires was analysed by CAAD in our July Data Monitor. Other widely shared content used #ClimateScam in posts which **alleged the manipulation of weather maps by TV broadcasters**; a popular claim that has been repeatedly debunked in Germany, the United Kingdom, Sweden, the Netherlands and a wider array of geographies.



***Figs 4**: Examples of high-traction content using the hashtag #ClimateScam, posted by X Premium (formerly Twitter Blue) user Jim Ferguson (135.7k followers)*

Key Amplifiers

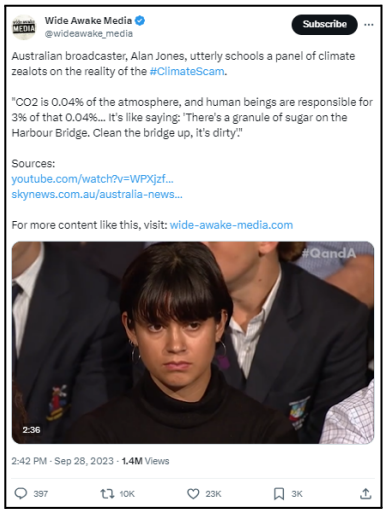
The engagement spikes surrounding #ClimateScam appear to be driven by a small group of accounts that regularly use the hashtag and garner thousands of likes and retweets for such content. This cohort includes:

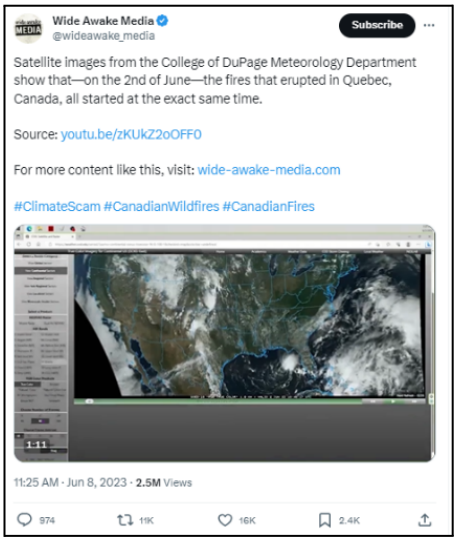
Wide Awake Media, a website that features content on conspiracy theories such as the Great Reset and World Economic Forum. The site originated as a Telegram Channel posting anti-lockdown and anti-vaccine content, but reports have highlighted their shift to X and pivot to anti-climate messaging since March 2023.

Their X account currently has over **250k followers** and **posted 354 times using #ClimateScam** in the analysed period; 127 of these posts gained over 1k retweets. The account has also seen a significant increase in audience over the past year. Social media data records follower count at the time a tweet was posted; as such, we can see that the first #ClimateScam post from WideAwakeMedia was shared on 9 March 2023 when they had only 322 followers. **Their base grew over 750 times to its current size in the following 8 months**.

Follower Count	Over 256k
Total #ClimateScam posts	354
Cumulative engagement with their #ClimateScam posts	Over 448k retweets Over 797k likes
X Premium?	Yes

Top 3 #Climate Scam Posts



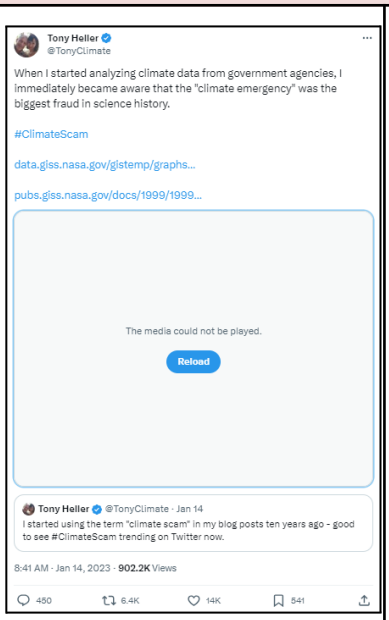


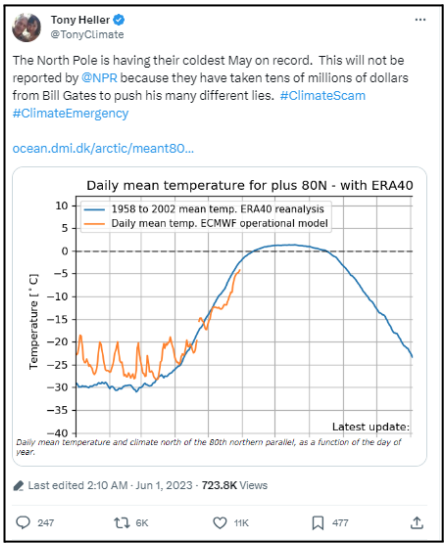
Over 2.1m views Over 18k shares Over 37k likes	Over 1.4m views Over 10k shares Over 23k likes	Over 2.5m views Over 11k shares Over 16k likes

Tony Heller, author of the climate-sceptic blog Real Climate Science, used the hashtag in **5,102 tweets**, of which 63 were retweeted over 1,000 times. A debunked claim that the world is cooling and that climate scientists falsify data, which gained mass exposure across conservative media, has previously been traced back to Heller's blog by Media Matters. Beyond his climate focus, Heller has also spread conspiracy theories about the Sandy Hook school shooting, former President Barack Obama's birthplace, and the results of the 2020 US Presidential election.

Follower Count	Over 60k
Total #ClimateScam posts	5,102
Cumulative engagement with their #ClimateScam posts	Over 537k retweets Over 1.4M likes
X Premium?	Yes

Top 3 #Climate Scam Posts



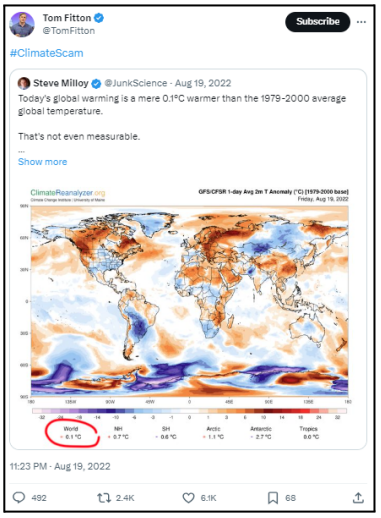


Nearly 1m views Over 8k shares Over 25k likes	Over 900k views Over 6k shares Over 14k likes	Over 720k views Over 6k shares Over 11k likes

Conservative US activist and President of Judicial Watch **Tom Fitton**, who used the hashtag **135 times** in tweets to his **2.4 million followers.** Fitton's role in the misinformation ecosystem has been covered in previous CAAD research, including 'Deny, Deceive, Delay' Volumes 1 and 2. Fitton has previously promoted false claims about vote counting during the 2020 US Presidential elections, and was identified as a major amplifier of COVID-19 disinformation by the Federation of American Scientists. He has denied that Judicial Watch has a stance on climate change, but previously tried to obtain the private communication of climate scientists working for the US government, which is one of the common tactics used to undermine climate science and intimidate experts in the field.

Follower Count	Over 2.4M
Total #ClimateScam posts	135
Cumulative engagement with their #ClimateScam posts	Over 53k retweets Over 140k likes
X Premium?	Yes

Top 3 #Climate Scam Posts

		
Over 7k shares Over 17k likes *View count unavailable*	Over 2k shares Over 6k likes *View count unavailable*	Over 1k shares Over 3k likes *View count unavailable*

<table>
<tr><td colspan="3">Denmark-based medical professional Anastasia Maria Loupis. While only using the hashtag in 28 tweets, Loupis had some of the most widely shared posts, including one with over 7k retweets.</td></tr>
<tr><td>Follower Count</td><td colspan="2">Over 1 million</td></tr>
<tr><td>Total #ClimateScam posts</td><td colspan="2">28</td></tr>
<tr><td>Cumulative engagement with their #ClimateScam posts</td><td colspan="2">Over 35k retweets
Over 159k likes</td></tr>
<tr><td>X Premium?</td><td colspan="2">Yes</td></tr>
<tr><td colspan="3">Top 3 #Climate Scam Posts</td></tr>
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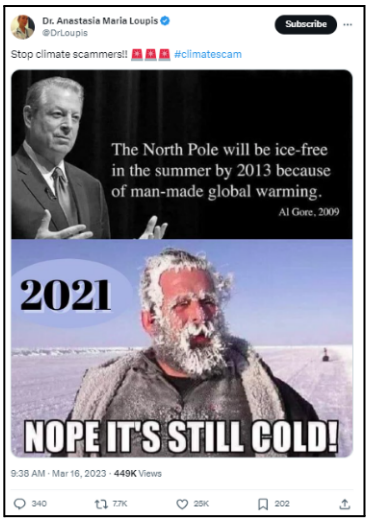
</td><td> 
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<tr><td>Over 8k shares
Over 14k likes
Over 340k views</td><td>Over 7k shares
Over 25k likes
Over 450k views</td><td>Over 7k shares
Over 45k likes
Over 1.4m views</td></tr>
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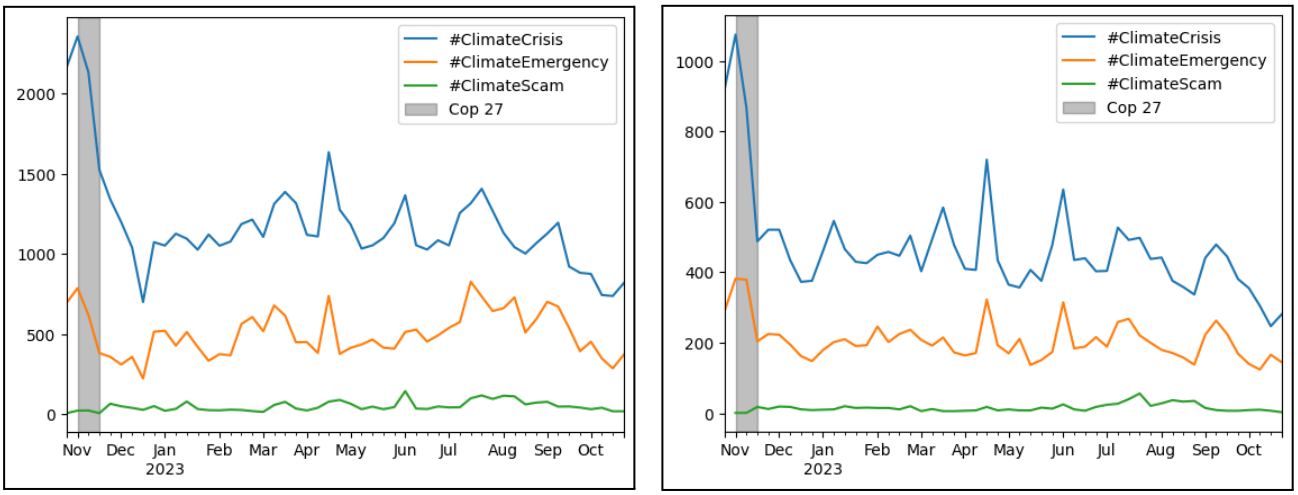
Key Narratives

The framing used by most successful #ClimateScam posts is not surprising. In particular, we identified **attempts to undermine climate science** and **accusations of manipulation levied against climate scientists, politicians, and the media**. In addition to the summer-specific content around wildfires and heatwaves, there were also high-traction posts with explicit references to the Great Reset conspiracy theory.

***Fig 5**: Examples of high-traction content using #ClimateScam, and referencing the Great Reset conspiracy or World Economic Forum*

Facebook/Instagram



***Figs. 6 and 7**: Weekly posts on Facebook (left) and Instagram (right) containing each of the three hashtags - #Climate Scam [green], #ClimateCrisis [blue] and #ClimateEmergency [orange]). Some posts cited more than one hashtag; in such instances, these were counted once in each category*

The overall volume of all three hashtags is significantly lower on both Instagram and Facebook, but #ClimateScam barely registers in comparison to the other two. Information dynamics differ significantly between social media platforms, making any direct comparison difficult; for example, hashtags are generally less relevant as a communication tool on Facebook (versus, say, Threads as a more direct counterpart to X). Nonetheless, the drastic shift in activity on X is notable when compared with relatively stable trends on the other two sites over the past 12 months.

X Marks the Hotspot

Despite its apparent virality on X, **use of #ClimateScam is relatively confined to the follower bases of a few prolific accounts,** especially Wide Awake Media. On an individual basis, the hashtag has been used by prominent figures like Jordan B. Peterson and Andrew Tate, but does not appear regularly in their posts. Nonetheless, even isolated cases from very large accounts risk exposing millions of users to false, misleading and conspiratorial content more broadly.

During COP27, we found that #ClimateScam was recommended by the autocomplete function of Twitter's search bar. At the time, analysis of the hashtag's performance did not seem to support this 'prioritisation' (i.e. the autocomplete recommendation) over #ClimateCrisis and #Climate Emergency.

Figs. 8: *Indicative posts on X shared by Jordan Peterson (4.8m followers) and Andrew Tate (8.3m followers)*

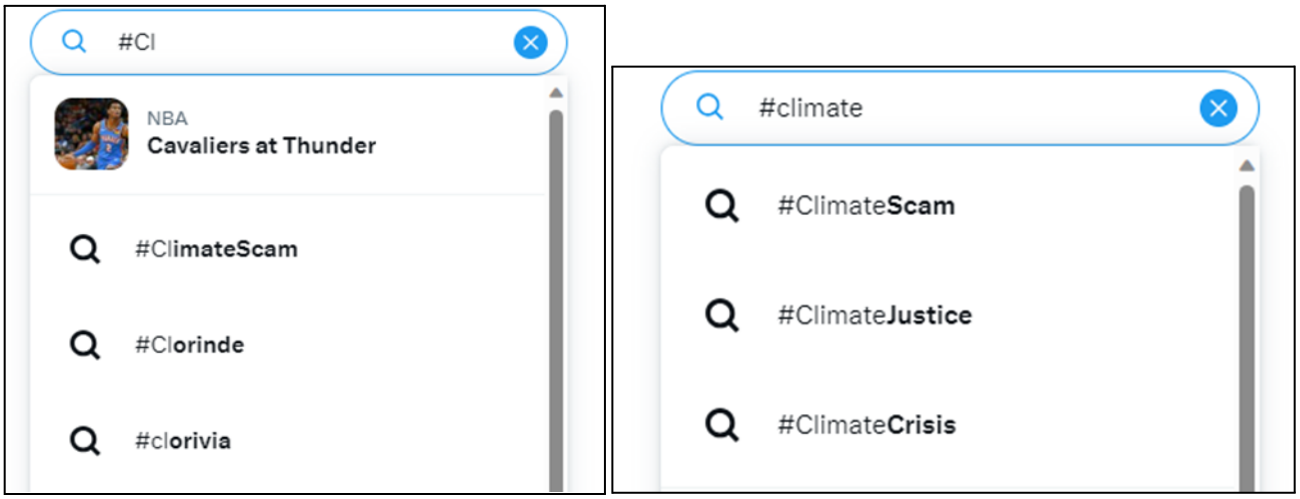


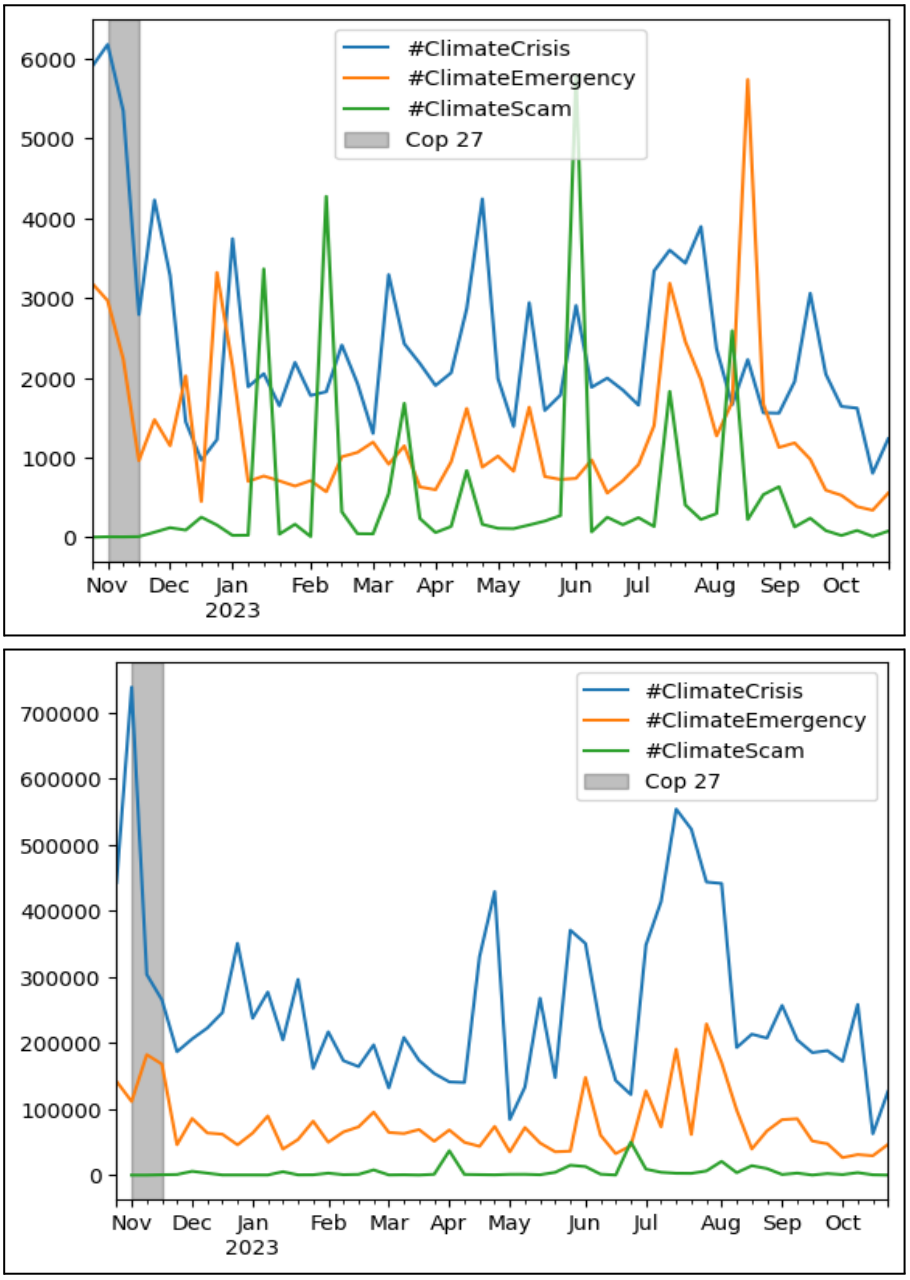
Fig. 9: Screenshots showing autocomplete suggestions on X. Examples demonstrate live results when typing "#climate" (12 November 2023) and "#cl" (9 November 2023)

We reviewed autocomplete suggestions over 5 days in November 2023, using a handful of newly created accounts, and found that **#ClimateScam was consistently recommended over a variety of other climate-related hashtags in X's search bar** (e.g. #ClimateAction, #ClimateCrisis, #ClimateJustice). However, this recommendation now appears grounded in data – on four of the five tested days, #ClimateScam was either the hashtag with the highest engagement at that time, or a strong engagement spike had taken place in the hours beforehand. Further detail on Methods can be found in Annex 1.

The centrality of specific accounts and their audiences may account for #ClimateScam's comparatively low profile on Facebook and Instagram, where the actors described above either appear to be absent, less active, or less inclined to use the hashtag in promoting their content. One clear example is Tom Fitton (353k followers), for whom we identified only one Instagram post using the hashtag which garnered just 324 likes. Other prominent users on Instagram were American country musician **Ted Nugent** (578k followers), and the **Epoch Times** (265k followers), a US far-right outlet associated with the Falun Gong. Each account only used the hashtag once in our dataset, though Nugent's post was **liked over 24k times**.

Fig. 10: Post on Instagram shared by country musician Ted Nugent (578k followers)

While such content occasionally makes a splash, as seen in the graphs below, both **Facebook and Instagram seem to lack dedicated promoters of this content**. As such, the specific term #ClimateScam does not appear to be a gateway for users to surface or engage with climate denial and conspiracies on either platform.



***Figs. 11**: Weekly shares on Facebook (top) and likes on Instagram (bottom) containing each of the three hashtags - #Climate Scam [green], #ClimateCrisis [blue] and #ClimateEmergency [orange]. Some posts cited more than one hashtag; in such instances, these were counted once in each category.*

1.2 How ad tech helps monetise websites that host climate mis-/disinformation

For this case study, we assessed the range of climate misinformation content hosted by 15 prominent websites, then Check My Ads investigated how that content has been monetised via the services of ad tech exchanges. Although only a snapshot, we sought to understand whether safeguards meant to prevent advertisers from funding false or misleading content are being overridden, and how extensive this problem may be. More research is needed to determine whether our examples reveal a flaw in the system of digital advertising, or a conscious loophole.

Context: Digital Advertising

Digital is now among the most important forms of advertising due to the rising popularity of online platforms worldwide. In 2022, this ecosystem was **estimated to be worth USD $616 billion globally**, and latest projections suggest that by 2027 revenue generated from online ads will exceed USD $1 trillion. Despite such meteoric growth, **digital advertising has a supply chain which remains complicated and opaque, vastly increasing the opportunity to monetise mis- and disinformation across the web**.

Ad Exchanges (also referred to as "ad tech" companies) act as marketplaces in which online advertising is bought and sold. Publishers offer 'inventory' - such as available space on websites or mobile apps - and advertisers bid for that based on various targeting criteria. The ad tech exchanges that connect publishers to brands are generally vague about how their services work in practice. Even when advertisers request 'log-level data' (i.e. greater transparency over how and where their ads are placed), such information is either difficult to obtain or lacks more granular detail.

Brands are increasingly reluctant for their products to appear next to content that is dangerous, hateful, or misleading. For example, in 2017, media buying agency Havas pulled its ad dollars from YouTube and Google Display Network in the UK after a Times of London report revealed ads for several high-profile brands and charities running next to neo-Nazi or jihadist content. Partly due to advertisers' concerns, **many ad exchanges have therefore introduced policies around the types of publishers they will engage or content they will serve adverts against**.

In 2021, **Google announced it would exclude publishers found to spread climate change disinformation from accessing its ad products**. Their publisher policy currently prohibits "content that contradicts authoritative scientific consensus on climate change", although in May 2023 CAAD research found widespread failures in enforcement. Amazon's content policy claims to prohibit "exploitation of sensitive events such as natural disasters, human-caused disasters, incidents of mass trauma and/or casualties", "deceptive, false, or misleading content," and "content that revolves around highly debated social topics" respectively. In turn, OpenX's ad exchange policy is meant to restrict sites which feature "a pattern of false or misleading information or news", while Criteo's Supply Partner Guidelines prevent the placement of ads on content that "shares mistruths and falsehoods" or "is intentionally designed to shock or horrify the user or generate attention through intentionally misleading or grotesque claims." **Despite this ostensible progress towards demonetising mis- and disinformation, the reality looks somewhat different**.

What We Found

To determine which websites we would review for this study, CAAD analysts compiled a long-list of 99 domains highlighted in past research on climate mis- and disinformation. This includes recent studies from organisations such as ISD, EU DisinfoLab, CCDH and others. We then excluded any domains that were not currently monetised by advertising (75 websites), or where explicit examples of misinformation could not readily be identified based on CAAD's three-tiered definition (9 websites). This left a **final sample of 15 websites for analysis**. Our full methodology - including a detailed evidence matrix with examples of mis- and disinformation found on each site - is available in Annex 1.

The sites in question were all included based on one or more of the following criteria:

1. The site has been ostensibly created specifically for climate change denial and/or 'discourses of delay' (i.e. single-issue websites);
2. The site has published high-traction examples of climate denial and/or 'discourses of delay' (e.g. outlets reporting on climate alongside other topics);
3. The site has platformed prominent climate deniers and/or delayists on more than one occasion (e.g. actors profiled in DeSmog's Disinformation Database), including where such voices are amplified via 'opinion' pieces or interviews without explicit endorsement from the host website;
4. The site has been cited frequently by online networks engaged in climate denial and/or 'discourses of delay', including around key events (e.g. as covered in 'Deny, Deceive, Delay' and CAAD Data Monitors).

Most examples of misinformation that we found being hosted on these 15 websites fell under Pillar 1 of the CAAD definition, namely content which "*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*" (see Annex 1). Some websites, including Breitbart, Newsmax and Townhall, published content explicitly using the term "Climate Hoax" in both headlines and articles. We also surfaced false claims that global warming is a 'natural occurrence', and that an increase in the earth's average temperature is positive for humankind.

Domains hosting climate mis- or disinformation	Brief Description
www.dailymail.co.uk	The Daily Mail is a UK-based tabloid newspaper with a history of running, and being compelled to correct or retract, climate misinformation. It was identified in our first Deny, Deceive, Delay report as one of the "key content hubs" in the mis- and disinformation ecosystem for climate change – a finding reinforced by the Anatasia Maria Loupis example on pg. 13 of this report.
www.telegraph.co.uk	The Daily Telegraph is a UK-based newspaper that was also profiled as a content hub for climate misinformation in Deny, Deceive, Delay Vol. 1. On 23 November 2023, DeSmog published a study analysing 171 opinion pieces published by the outlet on environmental issues during the year, and found that 85% attacked and/or undermined climate science, policy or associated groups.
www.spiked-online.com	Spiked is a UK-focussed online magazine funded by the Koch brothers (one of whom is now deceased), and was identified as a key spreader of climate misinformation during COP26.
www.breitbart.com	Breitbart is a right-wing news website that was identified as one of CCDH's Toxic Ten for spreading "hoax"-style climate misinformation. It is separately accused of having "laundered racist hate."
www.newsmax.com	Newsmax is a US-based broadcast news channel, currently facing a $1.6bn defamation suit over its election disinformation. It also featured among CCDH's Toxic Ten outlets and has been known to share overt climate denial, platform industry-backed disinformers, and use "climate hoax" content to exploit its audience.

www.washingtontimes.com	Founded by cult leader and self-proclaimed 'messiah' Sun Myung Moon, the Washington Times is a conservative US media company that regularly publishes climate conspiracies, greenwashing and disinformation, including from Russian officials. It also featured among CCDH's Toxic Ten outlets.
www.skynews.com.au	Sky News Australia is a conservative TV channel and wholly-owned subsidiary of News Corp, profiled extensively in Deny, Deceive, Delay. The outlet was found to have "breached industry codes" with coverage "that tried to undermine climate science and play down the threat of global heating on the Great Barrier Reef," as reported in The Guardian.
townhall.com	Townhall was founded by the industry-backed right-wing lobby group Heritage Foundation, and subsequently bought by the right-wing broadcast network Salem Media. It also featured among CCDH's Toxic Ten outlets.
www.gbnews.com	GB News is a UK-based broadcast channel which regularly spreads climate misinformation. According to an investigation published by DeSmog, one of the channel's owners – Paul Marshall - runs a hedge fund with a major financial stake in more than 100 oil and gas firms.
www.dailywire.com	Featured among CCDH's Toxic Ten outlets, the Daily Wire is a US website funded by a fracking billionaire. It previously violated Facebook rules against 'undisclosed paid relationships between publishers', and has paid for Google ads on 'climate hoax' searches.
www.thegatewaypundit.com	The Gateway Pundit is a US-based conservative blog that publishes attacks on activists, as well as climate misinformation that has been repeatedly fact checked.
www.realclearenergy.org	RealClearEnergy is a website that both aggregates content and publishes original pieces as part of the RealClear Foundation, an entity "funded by right-wing megadonors" like the Koch brothers (one of whom is now deceased).
www.washingtonexaminer.com	The Washington Examiner is a conservative US publication owned by billionaire fracker Philip Anshutz. It has published overtly false op-eds, attacks on climate policymakers, climate policy and/or climate scientists for over a decade.

www.westernjournal.com	According to the New York Times, the Western Journal was "founded by the veteran conservative provocateur Floyd G. Brown" and has "used misleading headlines and sensationalised stories to attract partisans, then profit from their anger." It has repeatedly run fact-checked disinformation on climate, and is one of CCDH's Toxic Ten.
www.iol.co.za	The Independent Online (IOL) is a major South African news outlet belonging to Independent Media, which is partially owned by a holding company belonging to the China International Television Corporation (CITVC) and the China-Africa Development Fund (CADFUND).

Why do these websites matter?

CAAD research during COP26 highlighted how **news outlets can serve as important hubs for climate mis- and disinformation**. Besides the audiences engaging directly with content on their websites or other channels, outlets are also cited extensively across social media and **often serve to 'normalise' or legitimise false and misleading claims**.

The full methodology for how we conducted our analysis can be found in Annex 1, but it is important to flag two significant limitations:

1. Since many websites analysed in this case study publish content on a range of issues, searching social media for mentions of their topline domain (e.g. www.breitbart.com) would not give us precise information. Instead**, we could only assess the reach for specific URLs *within* these websites, which were found to contain climate mis- or disinformation** based on the three pillars of the CAAD definition (e.g. https://www.breitbart.com/politics/2014/01/04/ice-and-cold-global-warming-believers-are-todays-climate-deniers/). We pulled the citations for a total of 70 URLs across the 15 websites, a sample of which are detailed in Annex 1 to illustrate rationale for inclusion. **We have likely missed other examples of high-traction content fitting our criteria** from these websites which were also shared across social media.
2. We conducted our analysis on X/Twitter and Facebook, and in both cases could only search public posts. On Twitter, posts are public by default, but for Facebook data is limited to public pages, public groups and verified profiles. This means **our reach metrics may not reflect the true extent of citations and reach**, since they exclude posts shared on the more substantial private and personal profiles on the platform, or among public profiles that have not been included in API tools.

Despite these constraints, data from the analysis tools Brandwatch and Crowdtanlgle confirm that **articles containing mis- and disinformation from these 15 websites have been widely shared on Facebook and Twitter**. Even the handful of examples listed in Annex 1 were **found in 584 Facebook public posts shared a combined 43,129 times**. Links to these examples were also **cited in 21,586 posts, replies and retweets on X/Twitter**.

Individual stories achieved substantial reach on social media, particularly when shared by major accounts with a large organic audience. From our list of examples, **the most widely shared story from the Daily Telegraph** (see left) **was shared in 8,888 X/Twitter posts, replies and retweets**. The claims in the article have an enormous potential audience. Among those amplifying the content were high-traction accounts such as Jordan B. Peterson (over 4.8m followers), DiscloseTV (over 1.2m followers) and UK journalist Andrew Neill (1.2m followers). The claims in the article have been specifically debunked by Carbon Brief.

Similarly, several pieces of content originally published on Breitbart, all referring to climate change as a 'hoax', also got high traction on both Facebook and X. Three separate stories were cited in 54, 51 and 15 public posts that were **shared over 10k, 11k and 9k times respectively on Facebook**. One of these articles was also popular on X, featuring in **1,383 posts, replies and retweets**. This included tweets by US TV personality Chuck Woolery (over 690k followers) and conservative US influencer Bill Mitchell (over 400k followers). Individual stories from The Western Journal and The Gateway Pundit were mentioned in 40 and 9 Facebook posts, which were **shared 5,923 and 2,412 times respectively**; both pieces deny or minimise the reality of global warming.

Even for a specific topic like climate change, the reach achieved by these 15 websites is notable. **Understanding how and where their content is monetised is therefore key, since mis- and disinformation can travel far beyond the original website** and may influence public discourse across the web.

Who is monetising these websites?

Check My Ads found 157 unique ad tech companies that were enabling the monetisation of these websites through advertising (i.e. by selling 'real estate' on the domains to a vast array of brands, as described in the introduction)**.** 25 companies were particularly prominent, each placing ads on at least 8 of the 15 websites analysed (see Fig. 9). In the network graphs below, the size of the circle or "node" corresponds to the number of sites in our dataset that the exchange is currently working for.

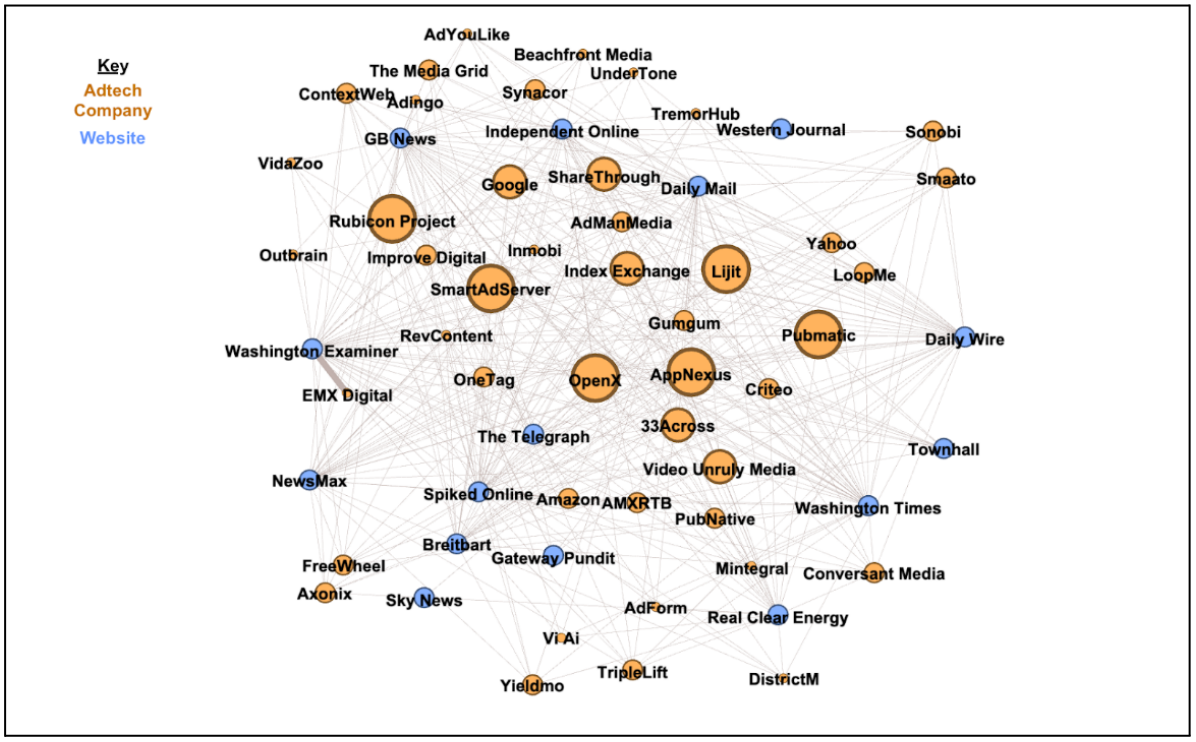
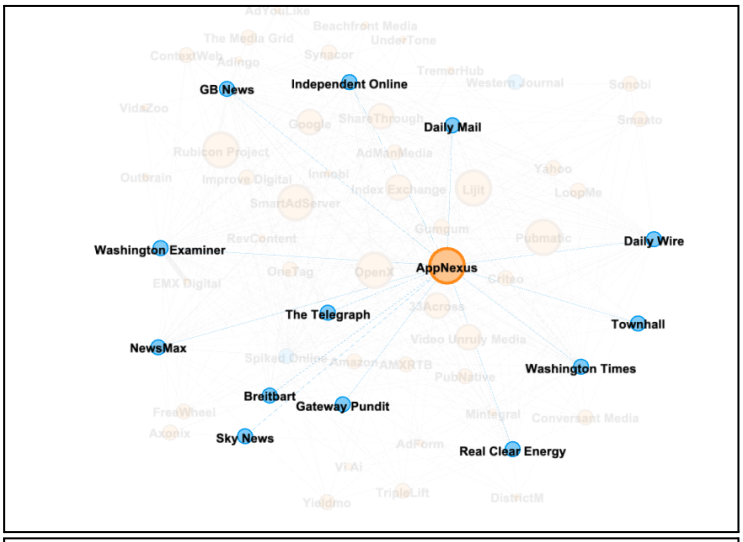
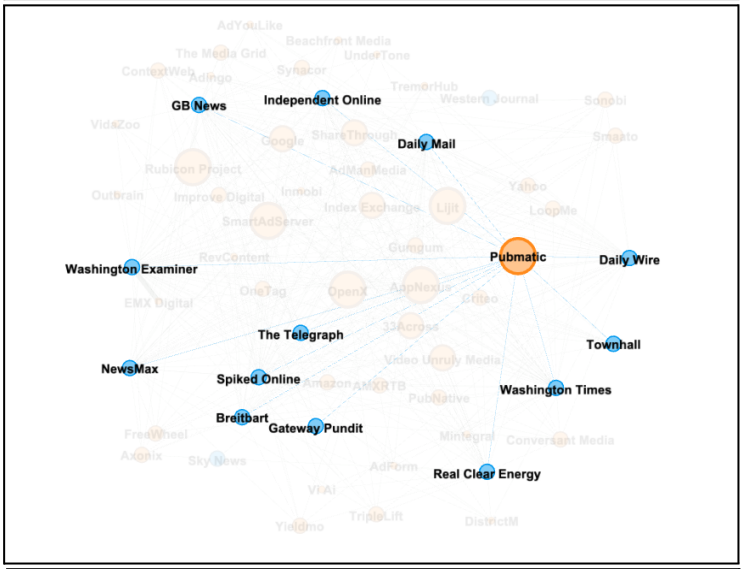


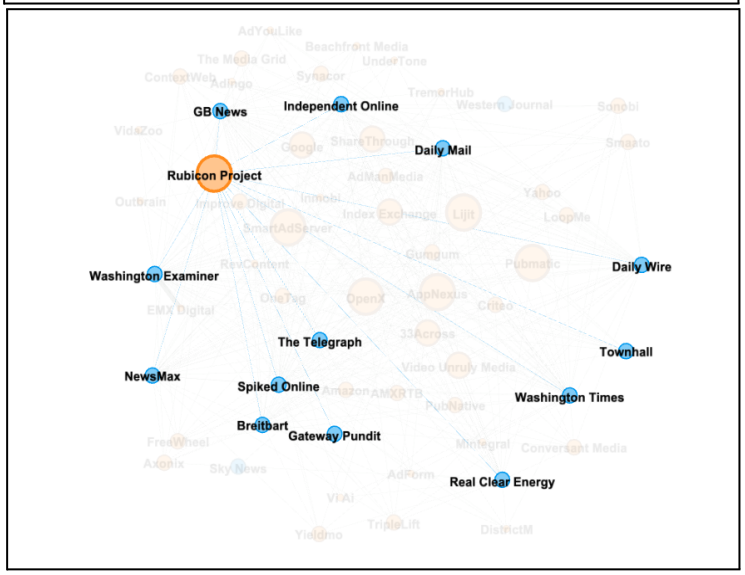
Fig. 12: Network map illustrating which ad tech exchanges (in orange) helped to monetise the 15 websites in our dataset (in blue) through ad placement services

Three exchanges analysed - AppNexus (owned by Microsoft), Pubmatic and Rubicon Project (also known as Magnite) – **all served ads on 13 out of the 15 websites in our dataset.**

Figs. 13: *Network maps illustrating which websites in our dataset were serviced by the ad tech exchanges AppNexus (top), Pubmatic (middle) and Rubicon Project/Magnite (bottom) respectively*







Indicative Examples

The screenshots below show misinformative content related to climate change, climate action or climate policy, as defined by the three pillars of the CAAD definition, hosted on one of the 15 websites in our dataset. In each case, Check My Ads have highlighted **which adverts we found being served alongside the content, and the specific ad exchange facilitating that placement**.

This is by no means an exhaustive list of brands found advertising next to content, nor can we assess whether the companies in question would be concerned by – or even aware of - such adjacency. In addition, **a visitor to any of these websites or articles would likely see different adverts each time, with targeting based on their browsing history** and previous online behaviour. The examples are therefore just a snapshot of online activity, but serve to illustrate:

1. That many **ad exchanges do not appear compliant with their own publisher policies** and guidelines, which often claim to prohibit ads being served next to mis- or disinformation;

2. That **companies using these exchanges to enable their digital marketing may have limited knowledge of where adverts are placed**, and therefore unwittingly monetise mis- or disinformation;

3. That **greater transparency and granular data are needed within the ad tech marketplace** so that brands can control how their ads are placed and their 'risk appetite' for appearing next to certain types of content; whether that means mis- and disinformation, hateful and extremist content or other topics that do not align with their brand values.

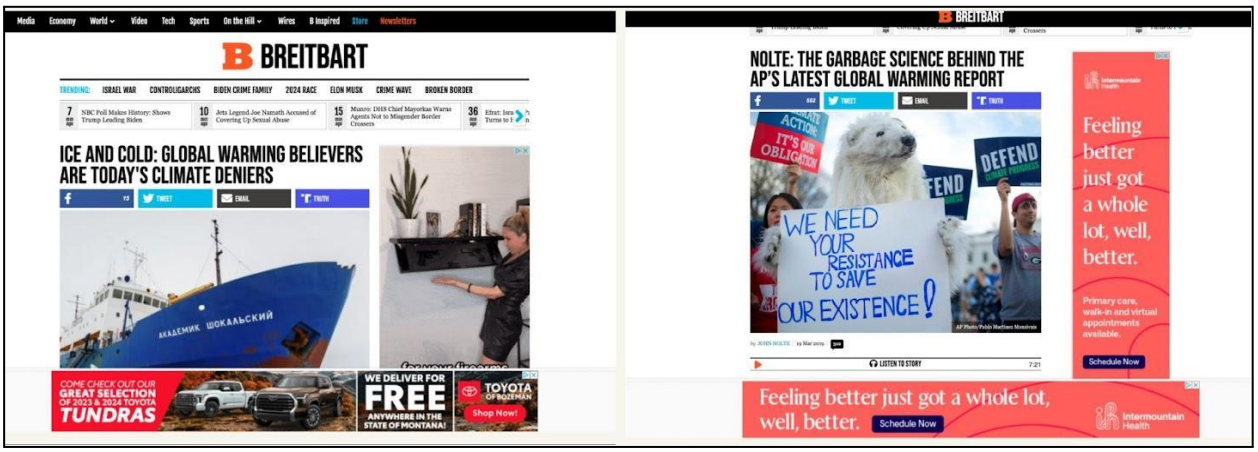


Fig. 14: Ads for car company Toyota and Intermountain Health (one of the largest hospital and healthcare companies in the US) are placed by Google on Breitbart articles. Both pieces claim that climate change is a "hoax", with the right-hand article stating: "There are all kinds of reasons not to believe in Global Warming — the cover-ups, the media bias, the outright lies; the science just being plain old wrong; the absurdity of using a hundred-or-so years of data on a planet billions of years old; the oh-so bizarre coincidence that the only solution to the "crisis" is to check off every item on the Marxist wish-list; the fact that Global Warming Believers live their lives like the rest of us instead of preparing for imminent catastrophe…"

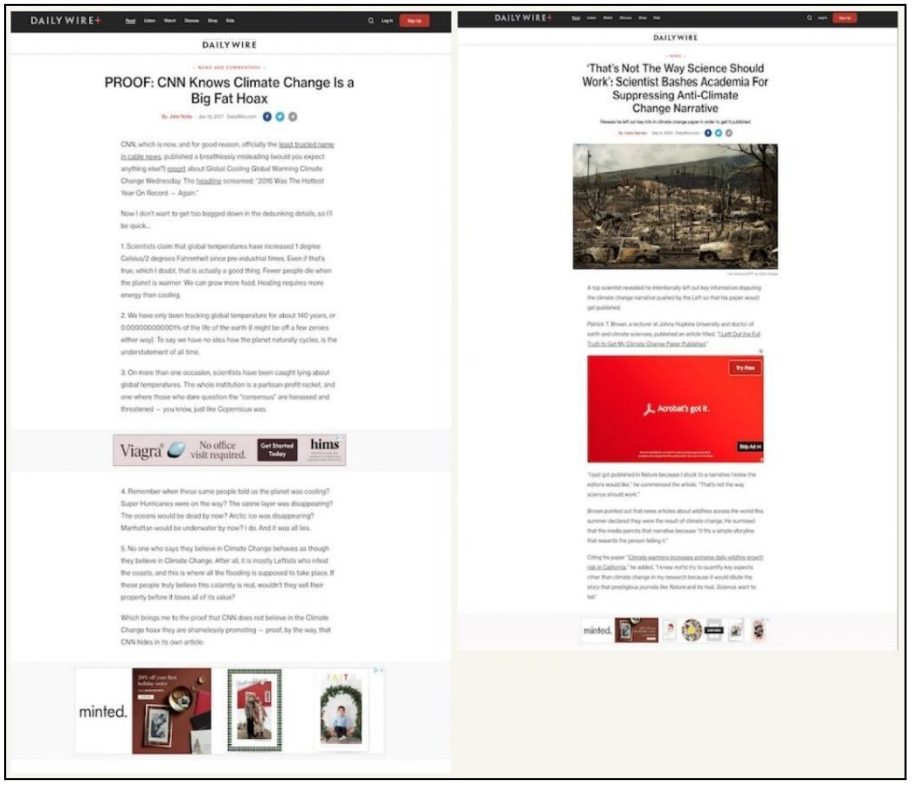


Fig 15: Left-hand image: Ads for Minted (a marketplace for independent artists and designers) and Hims (a telehealth company), monetise a Daily Wire article which argues that a warming planet "is a good thing" and that "fewer people die when the planet is warmer. We can grow more food. Heating requires more energy than cooling".

Right-hand image: Ads for Minted and Adobe (a computer software company) monetise an article in the Daily Wire, which promotes the repeatedly debunked claim there is no scientific consensus around climate change. Minted ad is served by Criteo, while the Adobe pre-roll video is served by Google.

Fig 16: Ad for online marketplace Temu is placed by Google on an article in The Telegraph. The claim presented in the headline and wider piece has been comprehensively debunked.

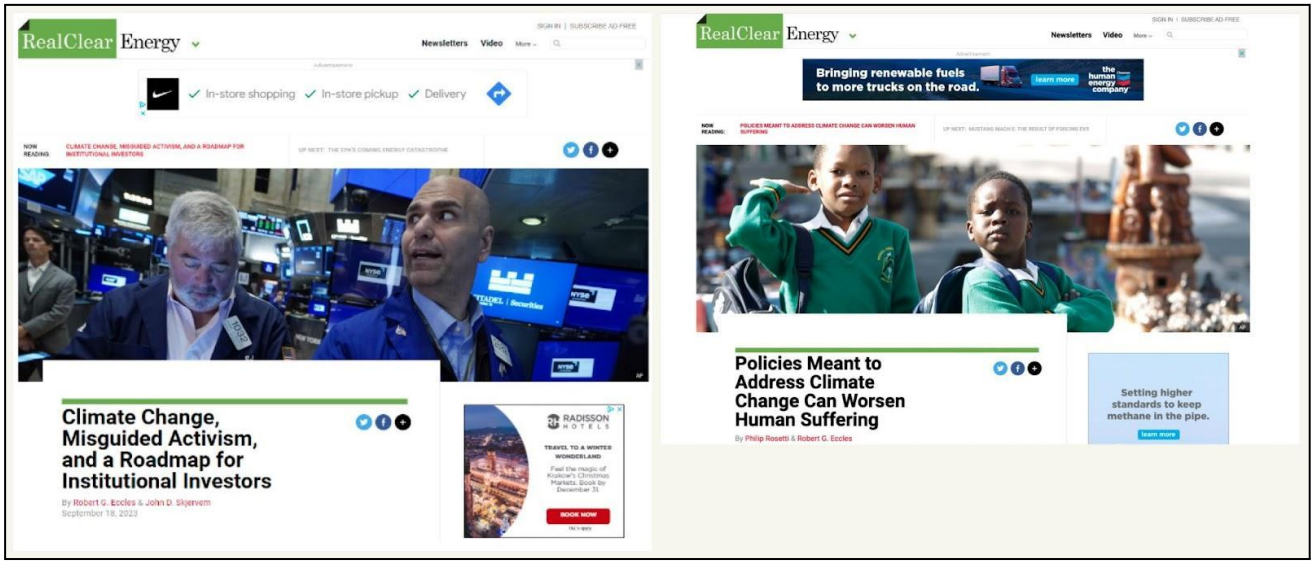


Fig 17: Left-hand side: Ads for sportswear brand Nike and the Radisson hotel group are served by Google next to an article on RealClear Energy, which pushes for 'oil and gas solutions to climate change' in direct opposition to warnings from the IEA and IPCC. The article also argues that wind and solar energy are "fruitless."

Right-hand side: A Chevron ad touting "renewable fuels" is placed next to another article from RealClear Energy that alleges "there are times when fossil fuels cut emissions." It should also be noted that so-called 'renewable fuels' have been repeatedly called into question by environmental scientists.

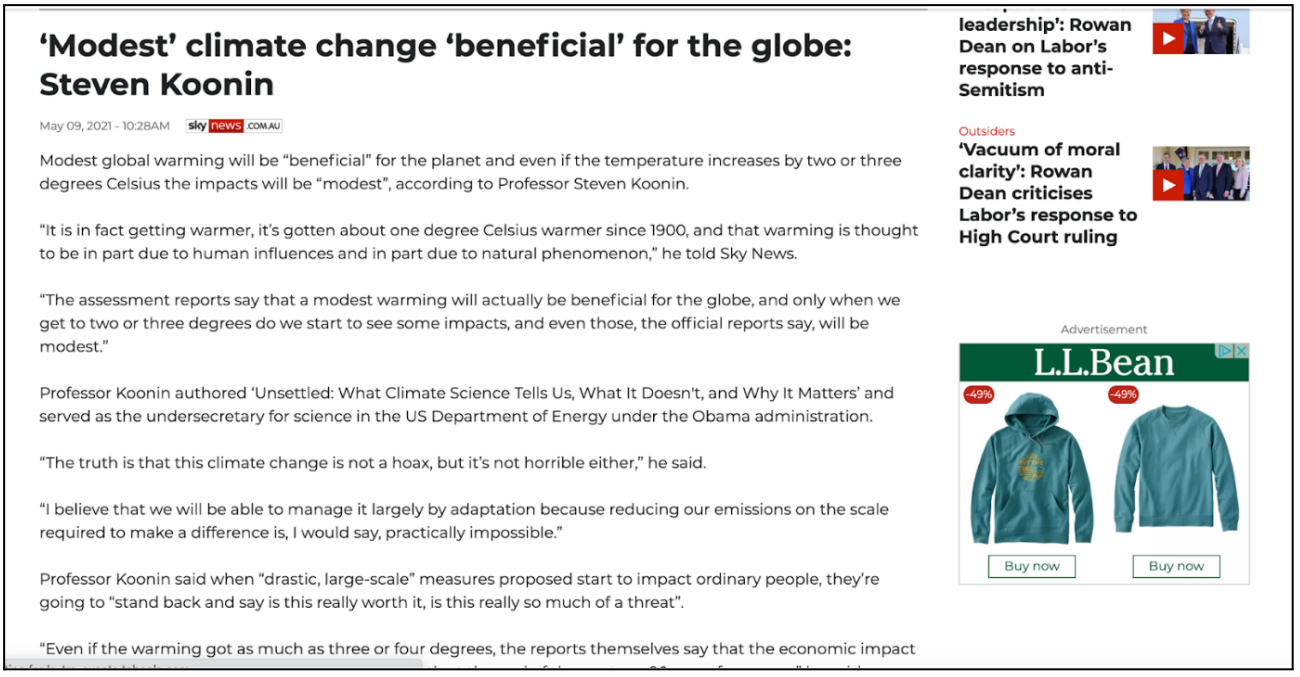


Fig 18: An ad for outdoor retailer L.L. Bean is displayed by Criteo on a Sky News Australia article claiming that 'modest' climate change is 'beneficial'. As outlined explicitly by the IPCC, even so-called 'modest' increases in global temperatures could have devastating impacts for humankind; according to NASA, the 2-degree limit should be viewed more as a 'critical threshold' above which those impacts will likely be compounded.

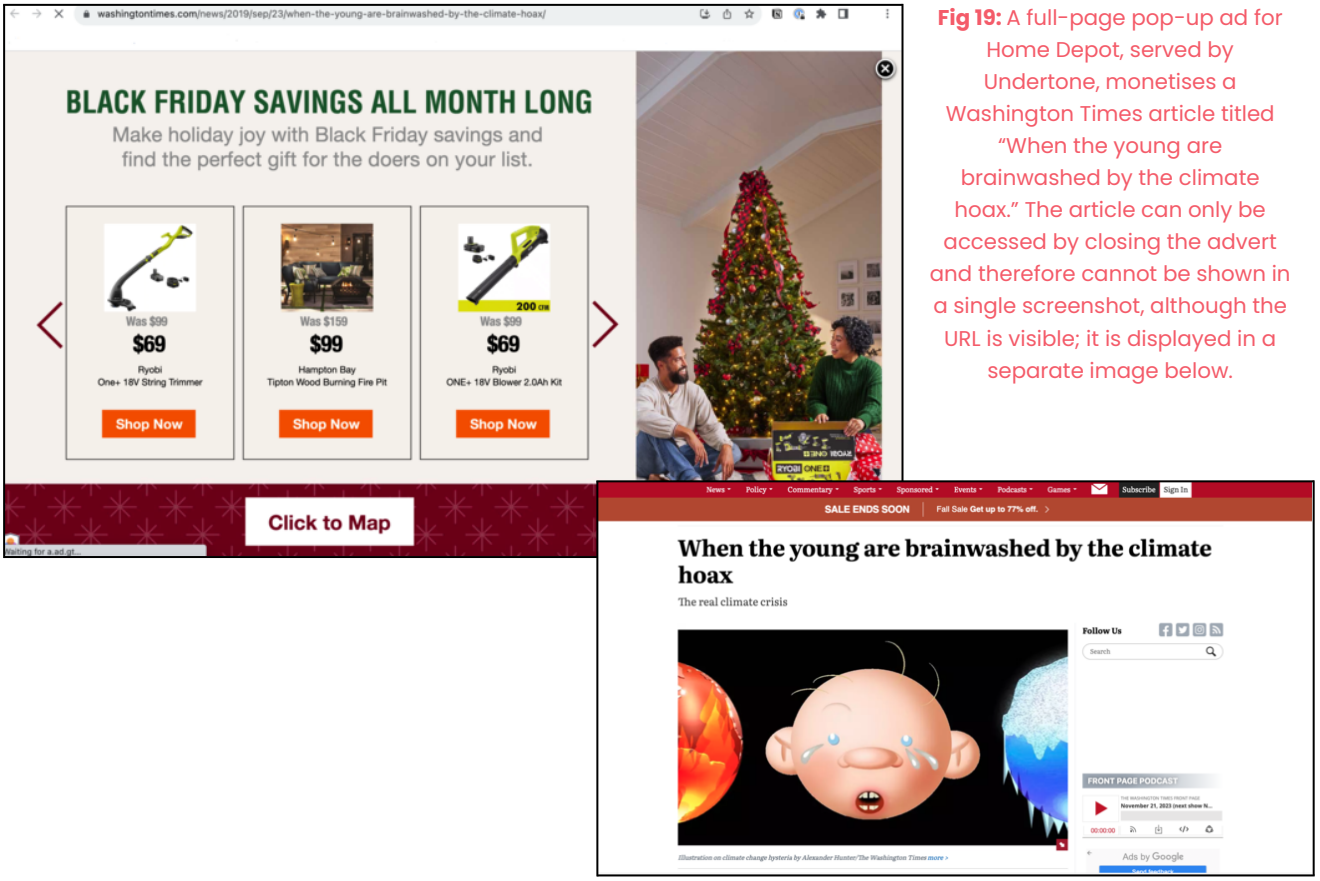


Fig 19: A full-page pop-up ad for Home Depot, served by Undertone, monetises a Washington Times article titled "When the young are brainwashed by the climate hoax." The article can only be accessed by closing the advert and therefore cannot be shown in a single screenshot, although the URL is visible; it is displayed in a separate image below.

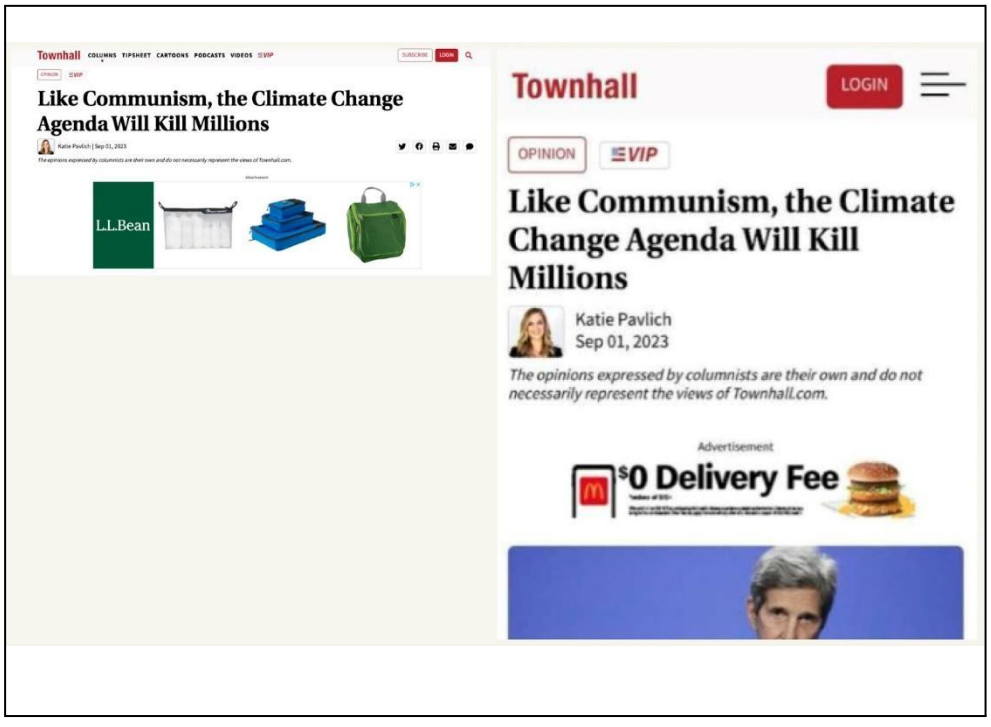


Fig. 20: Ads for McDonalds and L.L.Bean (an outdoor clothing retailer) placed next to a Townhall article stating that *"as the Biden Administration and tyrannical central planners across the globe continue with their push to control people's lives through an overbearing "climate change" agenda, implementing socialism under the guise of saving the planet, the human cost of their lunacy is becoming increasingly glaring."*

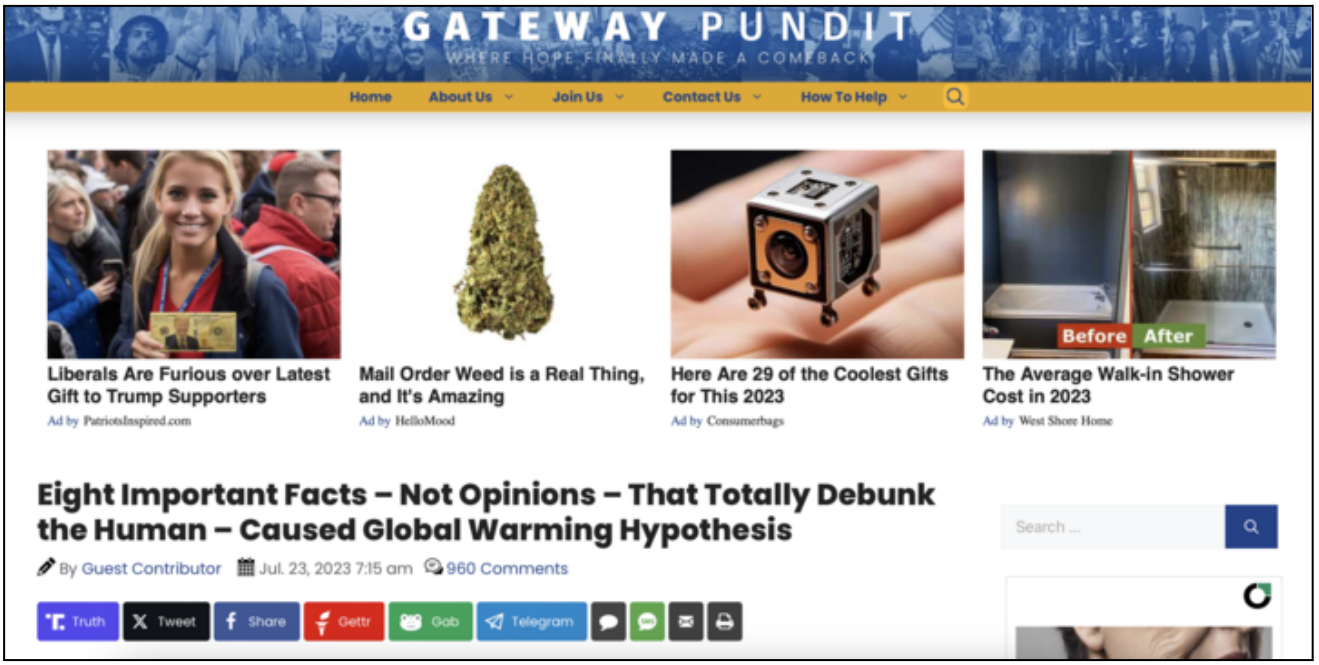


Fig. 21: Ads for PatriotsInspired.com (a Donald Trump fan site), HelloMood (a retailer of cannabis products), Consumerbags (a membership site for gift discounts) and West Shore Home (a home renovation company) placed by RevContent on a Gateway Pundit article, in which the 'facts' presented fundamentally contradict the scientific consensus on climate change.

Section 2: State-Affiliated Networks

2.1 How Russian state media and diplomatic accounts on Facebook discuss climate and energy

Context

At COP27 (2022), CAAD research found that Russian and Chinese State media were presenting climate through a distinct lens, broadly referred to as 'wokewashing': the weaponisation of progressive talking points to undermine climate action. This includes claims that climate policies are a form of 'neocolonialism' or 'Western imperialism,' engineered to undermine the development of the Global South, and that countries should therefore reject or discredit frameworks like the Paris Agreement. Such attacks disregard years of data from multilateral bodies, including the IPCC, which have shown how nations in the Global South will disproportionately shoulder the burden of climate change. This extensive body of evidence also states that phasing out fossil fuels is an indispensable step to limit catastrophic climate impacts.

Ahead of COP28, CAAD analysts examined Russian State media and diplomatic accounts in several languages to understand how these channels - which often have local networks of amplifiers - now present issues related to climate change or the energy transition across the globe. Our analysis covered **15 Russian State media outlets and 41 accounts of Russian Embassies posting content in English, French, German, and Spanish on Facebook**. A detailed Methodology can be viewed in Annex 1.

Russia's Tactical Playbook

Information operations linked to states like Russia, China and Iran are well-documented for **weaponising social media and seeking to exploit tensions abroad**. Such campaigns can be targeted at the domestic level (e.g. in countries like the UK and US), between countries (e.g. in key blocs like the EU), or can be intended to pit the so-called 'Western Axis' against the 'Global South'. State media and diplomatic accounts play an important and ongoing role in these campaigns.

Since Russia's full-scale invasion of Ukraine, the energy transition has become even more entangled in global geopolitics than it already was before the conflict. This case study seeks to understand how such issues are being discussed by State-affiliated networks online, and how they link to wider strategic communications around climate change and climate action.

Since Russia has been increasing its campaigns in Latin America and Sub-Saharan Africa over the past 18 months, we focussed on content that may target these regions in English, Spanish and French. We also included Germany in our analysis, since the country has proven a prime target for information warfare in the context of the energy crisis.

What We Found

Russian state content on climate and energy exploits a range of positions, many of them contradictory. Research has long highlighted how the Kremlin's propaganda model sustains its influence despite (or perhaps thanks to) a lack of consistency, even within the content shared by a single source like RT. Narratives seek to highlight and compound societal divisions, an approach seemingly replicated in the examples below. In this case study, we sought to understand some of the tactics used as a way of compounding this division in the context of climate mis/disinformation. Our analysis reviewed both diplomatic accounts (i.e. accounts of Russian Embassies globally) and Russian State media accounts (see Annex 1 for full list).

Diplomatic Accounts

Across the languages analysed, **Russian diplomatic accounts only engaged sporadically with climate and energy issues, generally focussing such content on the war in Ukraine**. One exception was the Russia-Africa Summit hosted in St. Petersburg in July 2023, which was widely discussed using the anti-colonial framing outlined above. Accounts promoted President Putin's speech, with posts specifically highlighting remarks about "counter[ing] neocolonialism" and Russian assistance "to meet the growing needs of the African economies in hydrocarbon fuel and electricity generating capacities." Other posts praised Russian fossil fuel investments across the continent, as well as the country's clean energy investments in the form of nuclear power.

Russian State Media

1) Energy Security

Within posts referring to energy security, we observed a focus on **discrediting sanctions imposed on Russia by Western governments** following its full-scale invasion of Ukraine, which include partial or total bans on the import of seaborne oil. Accounts pushed the narrative that Russian energy exports are highly sought after elsewhere, especially in India. They also amplified statements by Hungarian officials around the importance of Russian oil and gas and the country's opposition to further EU restrictions. Examples of countries allegedly struggling due to their sanctions regimes were presented as proof that Russian fossil fuel exports are necessary to keep European economies alive and to limit economic damage.

Such content sits alongside **praise for Russia in supporting expanded fossil fuel extraction in places like Uganda or Equatorial Guinea**, as well as **alleged examples of popular support for Russia in various African nations**. Overall, this narrative is unequivocal about the centrality and purported necessity of the carbon economy, despite warnings from the International Energy Agency (IEA) and IPCC that limiting warming below 1.5-degrees is incompatible with new oil and gas fields and requires the urgent phase out of existing fossil fuels.

Fig 22: *French-speaking post claiming that Spain is paying three times as much for natural gas from Algeria following its decision to end imports of Russian gas [Picture Caption: Algeria sees the price of its gas exported to the EU triple in two years.]*

Fig 23: *Example of post purporting to show popular support for Russia and anti-Western feeling in Africa*

2) Climate Policy and Renewable Energy

There is a **seemingly conscious ambiguity in how climate policy and renewable energy are framed, whereby the conclusions drawn depend on the (geopolitical) actor involved and the potential audience for content**. Fossil fuel investments in Africa were condemned as attempts to 'steal' the continent's resources when linked to Western countries, but hailed as championing economic development when related to Russia. Our analysis also identified accounts heavily promoting the idea that Global South countries should expand use of their fossil fuel reserves. Geopolitical developments – such as the recent coup in Niger - were also weaponised by some of the Russian state accounts we reviewed, with content created to suggest that Western nations intend to 'plunder' African resources.

Inconsistencies in positioning extended to **renewable energy projects, which were celebrated in the 'right' context but vilified elsewhere.** For example, a post in English profiled a solar farm in Iran as an effective way to resist the impact of Western sanctions. At the same time, German-language accounts highlighted a report about damaged wind turbines, preying on domestic controversy and confusion in recent years, and French-language content emphasised human rights abuses related to the mining of rare earth minerals for electric vehicles. Similarly, posts in Spanish praised Chinese investment in renewable energies while highlighting the alleged flaws of European investment in these same technologies. In discussions of nuclear power, English-language posts repeatedly amplified Chinese and South Korean concerns regarding the release of waste water from the Fukushima power plant. In parallel, Russia's own nuclear technology and plants built in Bangladesh, Turkey, Egypt, Hungary, India, China and Iran were strongly praised.

***Fig 24**: Post stating that a potential war in Niger (which experienced a coup on 26 July 2023) would give NATO a pretext to plunder the country's resources. [Picture Caption: "A war in Niger would help NATO 'to plunder our resources' says senior Malian official."]*

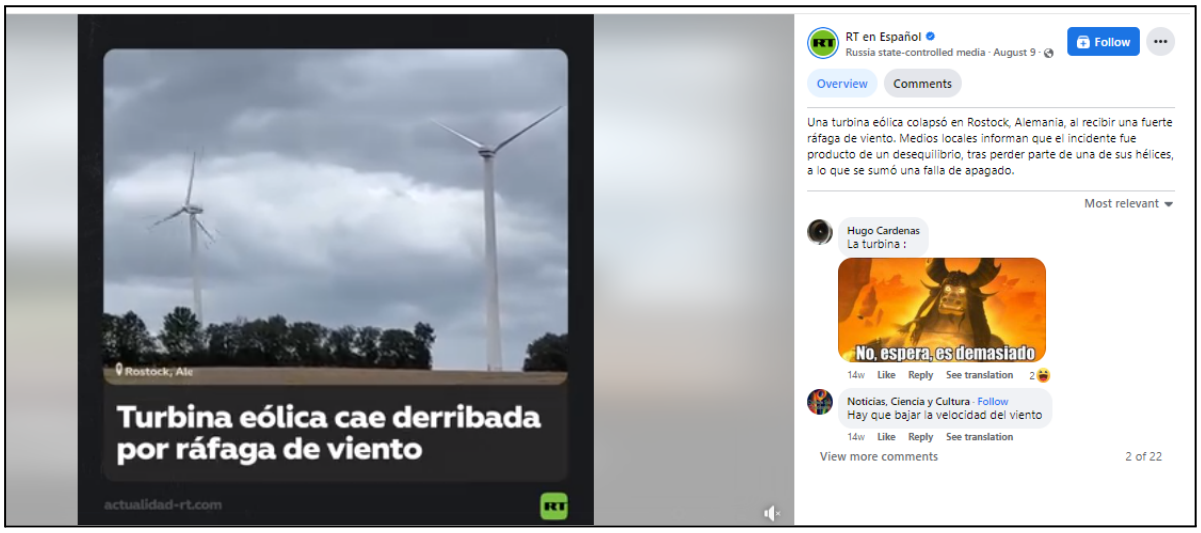
***Fig 25:** Post praising Iranian solar power plant*

Even climate change itself can be portrayed as either a problem or opportunity, depending on when it suits Russian interests. In one piece of content, the outlet Sputnik cited the CEO of Russian oil company Rosneft highlighting "opportunities" that global warming affords for the exploration of further oil fields in the (melting) Arctic.

***Fig. 26 (left)**: Post on Russian Arctic oil exploration.*

***Fig. 27 (below middle):** Example of Spanish-language post praising 'impressive' Chinese wind turbines.*

***Fig. 28 (below bottom):** Example of Spanish-language post reporting on the alleged collapse of a wind turbine in Germany. [Picture caption: "Wind turbine knocked down by gust of wind"]*



3) *Conspiracies and Climate Activism*

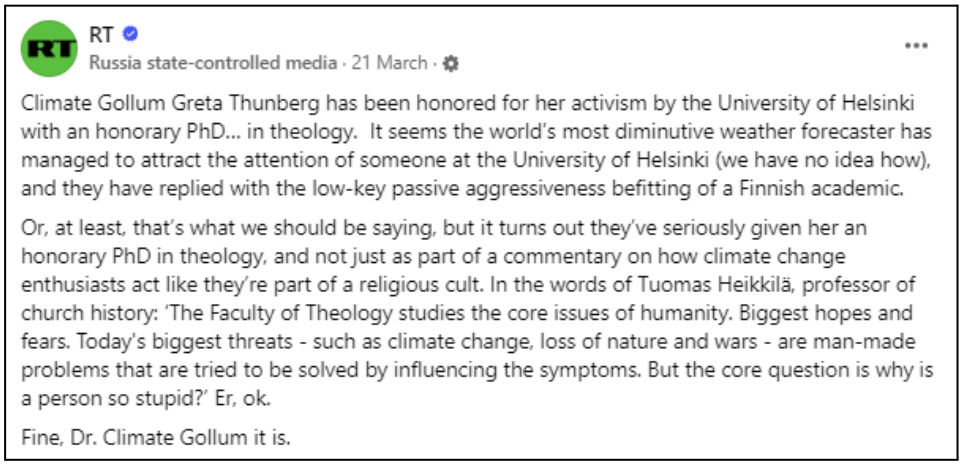
In some cases, conspiratorial messaging was used to oppose the energy transition, but only when it served a geopolitical purpose. For example, RT Germany shared posts by Beatrix von Storch, MP for the far-right Alternative for Germany (AfD) party, which claimed that phasing out domestic coal power is explicitly designed to benefit the United States. Von Storch also argued that climate activists - referred to using the pejorative term Klima-Kleber ('climate gluers') - are working for the furtherance of this end goal, at the expense of Germany's national interests.

Fig 29: *Post with video featuring AfD politician Beatrix von Storch claiming the "global finance industry" seeks a "hostile takeover" through climate policies. [Video caption: "The destruction of the Greens: Von Storch lays bare the "hostile takeover" of Germany."]*

Climate activism was a popular topic across all four languages studied (German, English, French, Spanish). While this mostly takes place as 'factual reporting' - i.e. highlighting that protests occurred in a given European country - there is a clear **tendency to highlight their disruptive nature and the need for police interventions**, especially when protesters use glueing as a tactic. This appears to be particularly prominent in German-language content, where Russian state-outlets have adopted the derogatory terminology of "Klima-Kleber" (climate-gluers) to refer to these activists. **German language posts also repeatedly referred to protesters as "apocalyptic"** ("Klimaapokalyptiker"). While negative framing and a focus on disturbances was also evident in English-language posts, this specific terminology was absent.

Fig 30: *Example of German-language post in RT Deutsch negatively reporting on glueing tactic used by environmental activists.*

Finally, analysts observed content with messaging that included explicitly pejorative descriptions and personal attacks on figureheads, especially Greta Thunberg. For example, RT reported on the honorary degree being conferred by the University of Helsinki, referring to her as 'Climate Gollum Greta Thunberg' and 'Dr. Climate Gollum.' The post also leans into the well-established Culture Wars frame of presenting climate activism as a 'religious cult'. Previous research by CAAD has shown that attacks on climate activists have become a key part of the anti-climate playbook. Across the globe, reports have found that in 2022 a climate activist was killed every two days.


RT
Russia state-controlled media · 21 March ·

Climate Gollum Greta Thunberg has been honored for her activism by the University of Helsinki with an honorary PhD... in theology. It seems the world's most diminutive weather forecaster has managed to attract the attention of someone at the University of Helsinki (we have no idea how), and they have replied with the low-key passive aggressiveness befitting of a Finnish academic.

Or, at least, that's what we should be saying, but it turns out they've seriously given her an honorary PhD in theology, and not just as part of a commentary on how climate change enthusiasts act like they're part of a religious cult. In the words of Tuomas Heikkilä, professor of church history: 'The Faculty of Theology studies the core issues of humanity. Biggest hopes and fears. Today's biggest threats - such as climate change, loss of nature and wars - are man-made problems that are tried to be solved by influencing the symptoms. But the core question is why is a person so stupid?' Er, ok.

Fine, Dr. Climate Gollum it is.

Fig 31: *Example of English-language post pejoratively referring to Greta Thunberg as 'Dr. Climate Gollum'.*

Section 3: Fossil Fuel Lobby

3.1 Fossil fuel advertising on Facebook

Context

Recognition of the climate crisis and the need for net zero transitions is steadily increasing among the general public and lawmakers alike. In tandem, we have seen a surge in the multi-billion-dollar economy of corporate greenwashing". Reflecting a broader shift from climate denial to subtler forms of 'delayism' and 'inactivism', those with vested interests in the fossil fuel economy have been forced to pivot their approach. Whether via traditional and digital ad spend, proxy group campaigning or even the use of paid-for 'influencers' on social media, industry is now marshalling its PR around two parallel (and contradictory) fronts in tandem:

1. Promoting the continued and 'absolute' necessity of oil and fossil gas to economies around the globe, especially in the wake of concurrent global crises - this includes Russia's invasion of Ukraine (with knock-on effects for inflation and energy supply chains) and the ongoing impacts of the COVID-19 pandemic (e.g. cost of living crises);

2. Overselling the contribution of industry actors to achieving 'net zero', in line with agendas like the Paris Climate Agreement - for example through supposed investment in 'green solutions' like wind and solar energy, as well as technology like Carbon Capture and Storage (CCS) for continued fossil fuel extraction;

As noted everywhere from the US House Committee on Oversight and Reform to Oil Change International, the Carbon Tracker Initiative and the International Energy Agency (see Fig. 28 below), this second argument is at odds with companies' investment portfolios both current and forecasted. Such greenwashing has gained increasing recognition as a barrier to climate action, with calls from multiple bodies and actors for it to be confronted through multilateral forums as well as domestic regulation. Recent developments include:

- At COP27 in November, the UN's High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities issued new guidance, stating that 'it's time to draw a red line around greenwashing' and setting more stringent criteria for net zero pledges;
- In October 2022, the UK Advertising Standards Agency ruled that two live poster campaigns from HSBC should be removed since the content therein was not 'adequately qualified' and could mislead consumers about the bank's green credentials;
- In October 2022, the UK Financial Services Authority published a consultation paper on 'Sustainability Disclosure Requirements', designed to mitigate greenwashing and ensure environmental claims from any regulated firm are 'clear, fair and not misleading' to consumers.

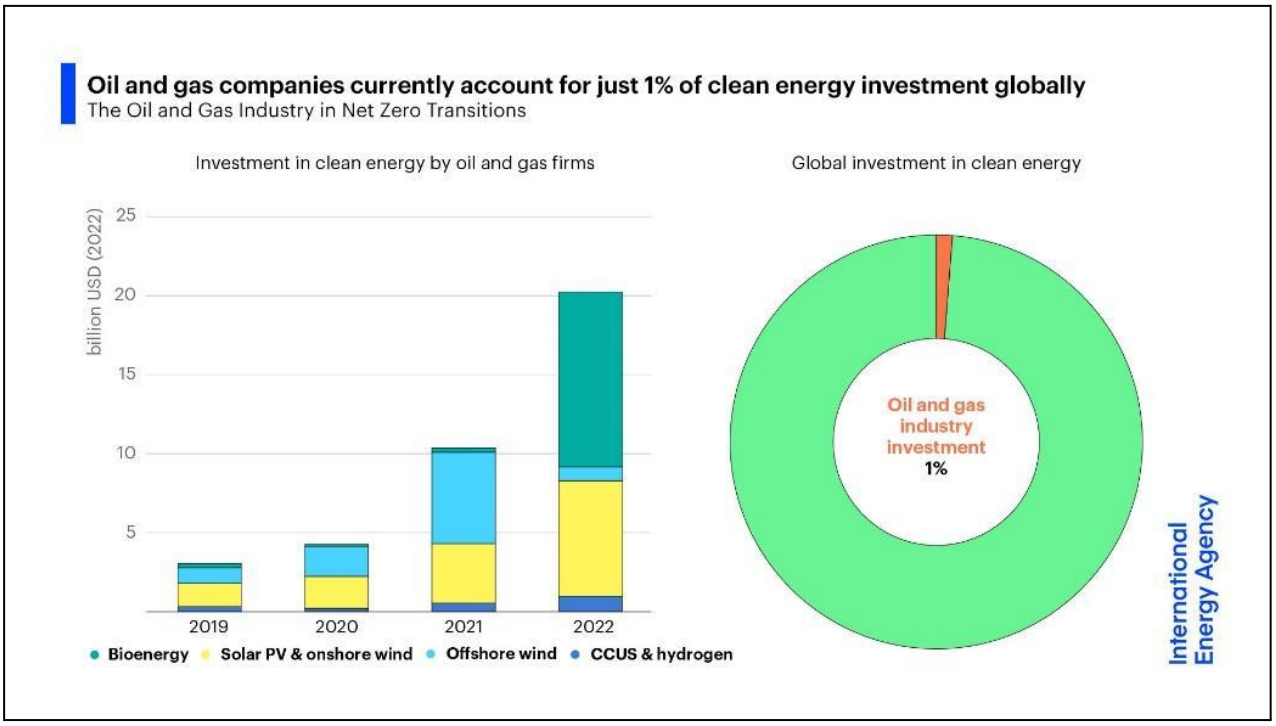


Fig. 32: Graph from IEA special report published in November 2023

The Greenwashing Playbook

Greenwashing is best summarised as "talk clean, act dirty". The key is to **provide fossil fuel producers with a "social licence" to operate, while touting marginal or experimental green projects** to the general public. There is a continued (and conscious) disconnect between the activities presented by companies in marketing and PR, versus their actual business practices or investment plans extending as far as 2050.

A recent AP report revealed that **most companies investigated "only have small, if any, investment in solar and wind power."** Previous investigations have also exposed this trend, with several entities investing three or even ten times more in their oil and gas portfolios than renewable alternatives. The minor but crucial distinction between low-carbon and ambiguous "lower carbon" solutions is a prime example of greenwashing and used to justify ongoing fossil fuel use.

One prominent example is the **promotion of Carbon Capture and Storage (CCS)** – such technology is considered a potential route for industries in which carbon emissions will be hard to abate with current technology for the foreseeable future. However, its deployment by the fossil fuel industry is often used to defend oil and gas extraction while seeming supportive of climate goals.

Some specific techniques of greenwashing are summarised in the images below.

Fig 33: Greenwashing claims at the 'product', 'idea' and 'firm' levels, as summarised by Stop Funding Heat (2022)

	GREENWASHING CLAIM	DESCRIPTION	FOSSIL FUEL INDUSTRY EXAMPLE
PRODUCT LEVEL	No proof	Claim cannot be substantiated by a reliable third party.	"We are investing more than ever into renewable energy" alongside little to no transparency into company investments.
	Hidden Trade off	Focusing on a narrow set of attributes without attention to other important environmental issues.	"By extracting oil from the North Sea, transport emissions for our products are very low" While this is true, it avoids the emissions for extraction, and that other local energies are cleaner.
	Vagueness	Poorly defined environmental attributes e.g. "non-toxic".	The "natural" in "natural gas" does not really mean anything and can trick consumers into thinking the product is relatively sustainable.
	False Labels	Presenting a label that has no meaning or basis in action e.g. "fights global warming".	Corporate front groups have often provided positive sounding labels for fossil fuel companies to boast being a part of, such as membership of the "Global Climate Coalition".
	Irrelevance	A true statement that is unimportant to environmental consideration.	The automotive industry will often promote rising numbers of electric vehicle models despite slower growth in sales.
	Lesser of Two Evils	A true comparison that risks distracting from the overall picture of environmental impact e.g. "organic cigarettes".	A common comparison is the lower oil and gas emissions to coal. Oil and gas emissions are still very high compared to other forms of energy.
	Fibbing	A false statement about a product or firm.	Volkswagen fitted hundreds of diesel models with technology that could cheat emissions tests so they could lie about the sustainability of the product.
IDEA LEVEL	False Hopes	Using the possibility of environmentalism in the future as a way to claim environmentalism now.	Many airlines imply sustainable aviation fuels can solve industry problems when they are in reality a highly unproven technology, and not being invested into sufficiently.
	Fearmongering	Fabricating insecurity in order to exaggerate the negative impact of not taking environmentally negative actions.	Using the insecure feeling of the war in Ukraine as a reason to double down on fossil fuels, despite the costs of such energy soaring.
	Broken Promises	Exploiting the hopes and trust of people without follow up.	"Fracking will lift up poor, rural communities" is a term regularly used to obtain social license to operate, but when this does not occur, companies do not correct the record.
	Injustice & Hazardous Consequences	Covering up the winners and losers from environmentally damaging activity.	Oil and gas companies are not very public about local environmental effects like water contamination, air pollution or accidents that occur as a result of fossil fuel extraction, nor the comparably high profits made from the activity.
	Profits Over People	Appearing to put people first in communications while in fact prioritising the bottom line.	An automotive firm stating "the planet and its citizens are our number one priority" would be greenwashing if internal company records show a lack of this.
	We're In This Together	Putting the onus on individuals or communities as a collective to solve environmental situations directly controlled by companies.	The concept of measuring and managing individual carbon footprint was allegedly created by BP.
FIRM LEVEL	Dirty Business	Participating in an inherently dirty business but promoting sustainable practices nonetheless.	Given the latest climate science, any fossil fuel company opening new oil and gas fields while presenting themselves as sustainable is arguably greenwashing.
	Ad Bluster	Diverting attention from sustainability issues through use of advertising.	Spending hundreds of thousands on an advertising campaign during Earth Day while not changing capital investments.
	Political Spin	Influencing regulations in a public forum.	Fossil fuel companies in the USA often use advertising to encourage citizens to vote against local legislation. Usually adverts will exaggerate prospective loss of employment or tax revenue resulting from such regulation.
	It's The Law, Stupid!	Taking credit for actions that are legally required.	Oil and gas firms may take credit for eliminating gas flaring despite this being a legal requirement in many places.
	Fuzzy Reporting	Taking advantage of one-way communication channels like a sustainability report to project a positive image.	Shell's "Sky Scenario" covered in the previous chapter does not critically assess its own operations, making it hard to meaningfully learn from.
	Co-opted endorsements	Using the positive environmental or social image of another person or organisation to boost the reputation of your own.	Partnering with a climate- or nature-focused NGO, or paying an eco micro-influencer to take a photo at a branded gas station.
	Ineffective voluntary programmes	Giving the impression of self-regulation but not taking any meaningful action.	Selling carbon offsets for consumer flights gives the impression of net zero flying but in reality does not achieve this.

What We Found

To assess the extent of greenwashing and how this is amplified online, we used the API for the Meta Ad Library to collect **ads run by major private fossil fuel companies** (BP, Shell, Chevron, TotalEnergies, Eni, ExxonMobil) **and their counterparts from the main Petrostates** (Saudi Arabia, UAE, Nigeria, Venezuela, Norway, Russia, Qatar, Azerbaijan) between 1 January and 31 October 2023. We also included Chinese and Indian entities because, while neither country is traditionally understood as a Petrostate, both have significant state-owned fossil fuel sectors and play a major role in global climate negotiations.

The UAE are hosting COP28 and the President – Sultan al Jaber – is both CEO of the Abu Dhabi National Oil Company (Adnoc) and sits on the Board of Directors for Masdar (the Emirates' main renewables initiative). As such, we included Masdar in our analysis as a potential vector for State greenwashing and PR.

Unfortunately, the Meta Ad Library only provides data for campaigns labelled as affecting "Social Issues, Elections or Politics" (SEP). This means researchers cannot view parallel data for ads categorised as 'commercial'. In all likelihood, our findings are therefore a highly partial snapshot of activity on Facebook, and company spending may vastly exceed the metrics presented below.

We identified **13 entities who posted 2,562 ads** in the timeframe that were labelled as SEP, with a **total associated spend of $4.13 million-$5.21 million** (we can only indicate the range rather than exact total, due to how Meta's Ad Library presents data). Combined, these ads **gained at least 246 million impressions on Facebook**.

Spending varied greatly and the top 4 actors - **Shell, ExxonMobil, BP and TotalEnergies - accounted for approx. 98% of the ad spend** in this period.

	Spend (USD $)	
Company	**Lower Bound**	**Upper Bound**
Shell	2.39 million	2.87 million
ExxonMobil	1.17 million	1.55 million
bp	263,000	323,000
TotalEnergies	245,000	361,000
Chevron	38,100	52,800
Masdar	15,700	22,000
aramco	8,280	12,200
Equinor	4,200	5,640
Saudi Green Initiative	1,300	9,520
CNPC	131	892
ADNOC Distribution	100	199
Sinopec	28	99
Bharat Petroleum Corporation Limited	22.8	33

Indicative Examples per Company

The following screenshots provide a window into the narrative strategies used by companies, showing the breadth of geographies targeted and the differentiated messaging between Petrostate and private companies. A fuller database of examples for the 13 entities in our sample, including available metadata for each campaign, is available on request.

ExxonMobil – 'Advanced recycling' (see an assessment of Exxon's efforts here)

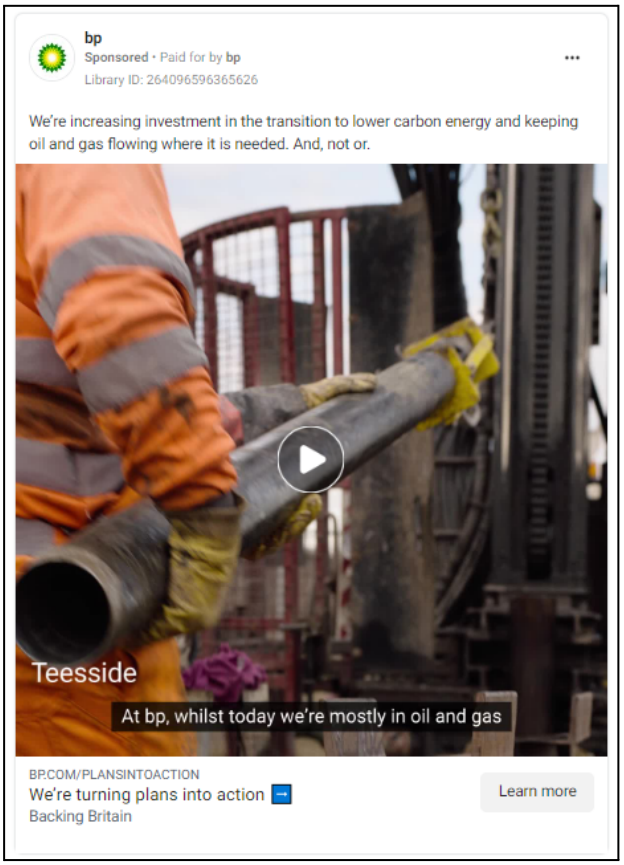
Impressions: 7.53 million

No. of ads containing this text: 26

Range of spend on ad: $136k-$163k

Targeted geographies: United States

BP – 'And, not or' (a framing challenged by the International Energy Agency)



Impressions: 3.6 million

No. of ads containing this text: 6

Range of spend on ad: $44.8k-$45.5k

Targeted geographies:
United Kingdom

TotalEnergies – 'Biogas is a renewable energy' (see analysis of that claim here)

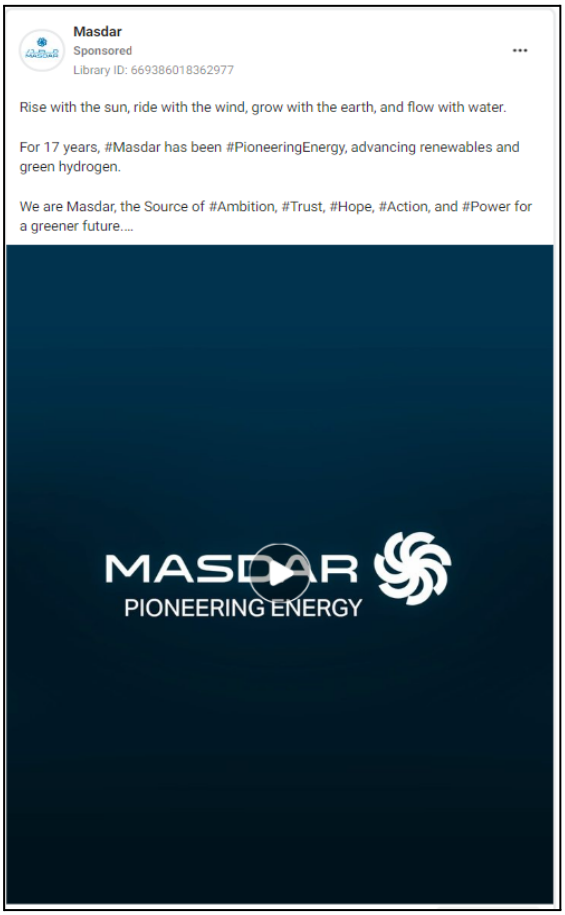
Impressions: 1.6 million

No. of ads containing this text: 2

Range of spend on ad: $21.1k–$30k

Impressions by country:
France (94% of impressions)
United States (4.2% of impressions)
United Kingdom (1.8% of impressions)

Masdar – 'Rise with the sun, ride with the wind'



Impressions: 2.9 million

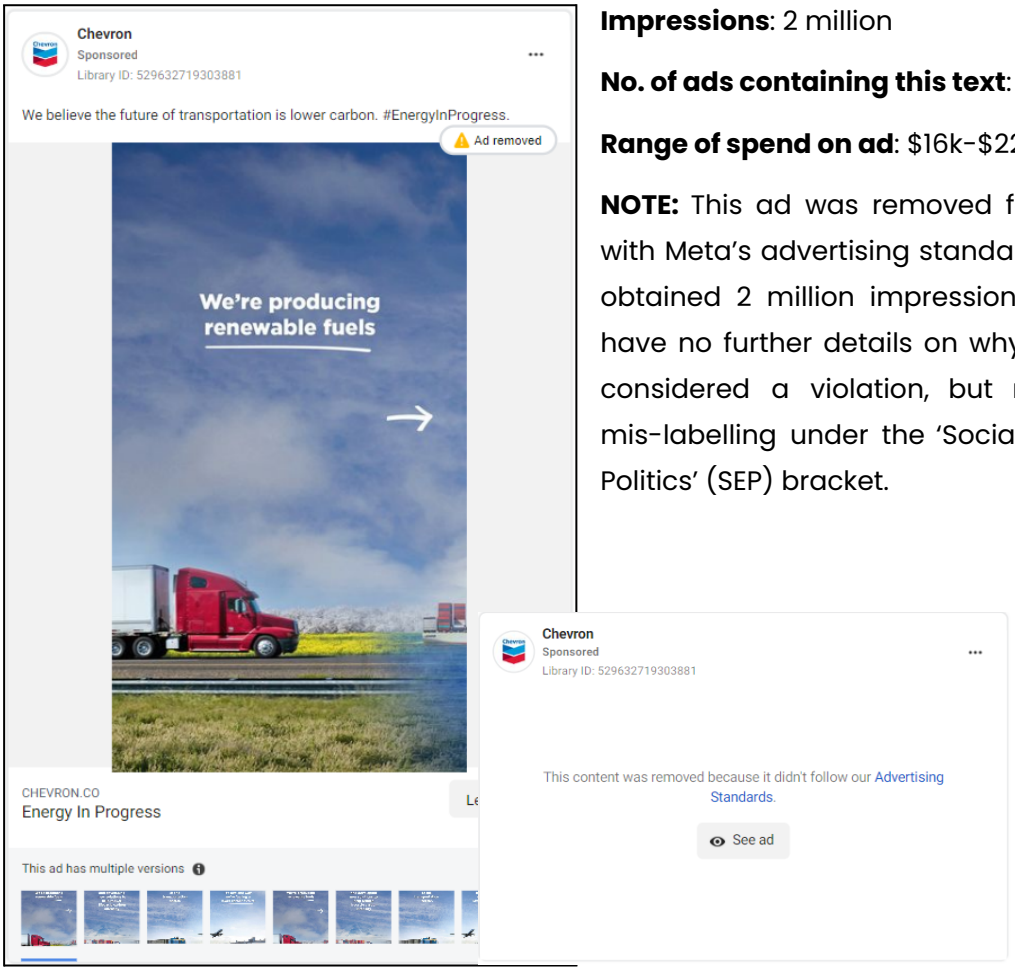
No. of ads containing this text: 17

Range of spend on ad: $7.88k – $38.4k

Impressions by country:
France (43% of impressions)
United States (26.8% of impressions)
Belgium (18.7% of impressions) *
United Kingdom (7.8% of impressions)

* It is worth noting that most EU institutions, including personnel working for the European Commission, European Parliament and Council of Europe, are based in Brussels, Belgium.

Chevron



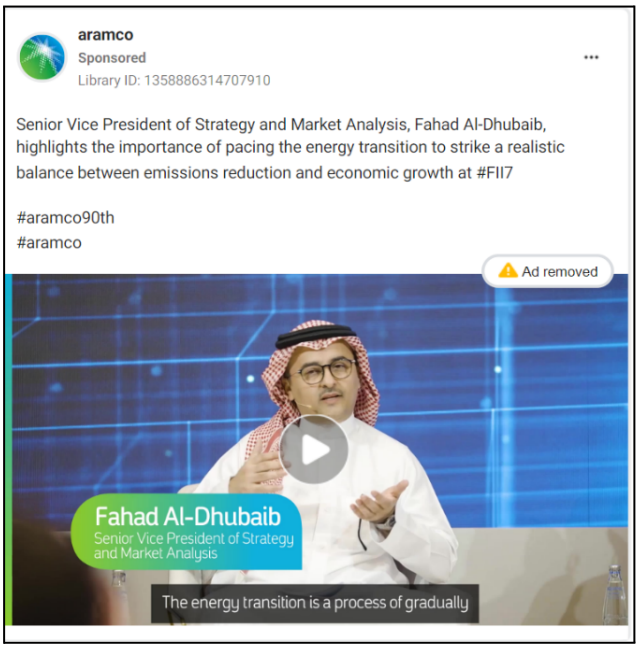
Impressions: 2 million

No. of ads containing this text: 2

Range of spend on ad: $16k-$22k

NOTE: This ad was removed for failing to comply with Meta's advertising standards, but had already obtained 2 million impressions by that point. We have no further details on why the campaign was considered a violation, but may be related to mis-labelling under the 'Social Issues, Elections or Politics' (SEP) bracket.

SaudiAramco – 'Emissions reductions vs. economic growth' (see counter-points from the International Monetary Fund and the London School of Economics)



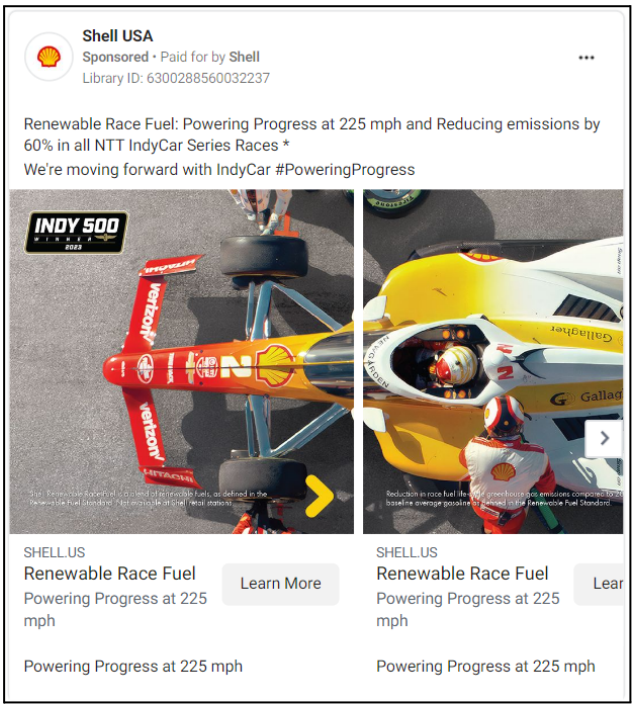
Impressions: 1 million

No. of ads containing this text: 4

Range of spend on ad: $800-$899 (particularly good reach for the amount spent, compared to other adverts in our dataset)

NOTE: This ad was also removed for failing to comply with Meta's advertising standards, but had already obtained 1 million impressions by that point.

Shell – 'Renewables fuels in the Indy500' (see here for an assessment of such claims)



Impressions: 8 million

No. of ads containing this text: 8

Range of spend on ad: $384k-$456k

Targeted geography: United States

NOTE: A series of adverts focussed on IndyCar and 'Renewable Race Fuel', all targeting the US and achieving millions of impressions in each case. The hashtag #poweringprogress was also used in campaigns related to: jobs created from a new offshore oil platform; soccer stadiums lit with renewable electricity; community development projects in Louisiana; support for a jazz artist in New Orleans following Hurricane Katrina.

Chinese National Petroleum Company (CNPC) – 'Oil fields covered in flowers' (see an analysis of nature-rinsing, also referred to as 'executional greenwashing', here and here)

Impressions: 1 million

No. of ads containing this text: 5

Range of spend on ad: $120-$595

Impressions by country:
India (42%)
Egypt (11%)
Indonesia (9%)
Myanmar (5%)
Pakistan (4%)
Bangladesh (4%)

NOTE: Almost all adverts analysed from CNPC targeted countries in the Global South, in particular in Asia and sub-Saharan Africa. Notably, most campaigns include English-language copy and forefront natural imagery from China with hashtags like #greenCNPC and #beautifulChina – this was true for ads discussing both renewable energy and oil and gas extraction.

Conclusion: What Next?

This report offers a snapshot into the activity of three actor groups: the fossil fuel lobby, State-affiliated networks and online influencers. While only a fraction of the bigger picture, it reveals a range of vulnerabilities in our information environment which must be addressed if we hope to progress with climate action and have vital, evidence-based debates about the pace, scale and trade-offs of a Net Zero transition.

Online platforms play a key role in this equation but have been repeatedly found wanting in their response. A scorecard published by CAAD in September 2023 reviewed the approaches taken by Pinterest, TikTok, Meta, YouTube and X/Twitter and found a sobering state of play:

1. YouTube, Meta and TikTok have made commitments to address climate misinformation, but their enforcement is underperforming and many of the policies fail to tackle root issues (e.g. algorithmic amplification).

2. Twitter/X lacks the policies which would be needed to address climate misinformation, offering no substantive transparency mechanisms for the public, and providing no evidence on effective policy enforcement.

3. All platforms fall short in providing algorithmic reporting, and most lack reporting on misinformation trends.

4. Most platforms lack policies to address greenwashing, a practice that falsely portrays a company or product as environmentally friendly.

Looking ahead to 2024, we hope that landmark regulation like the EU Digital Services Act, EU Code of Practice on Disinformation and UN Code of Conduct on Information Integrity may mark a turning point. However, coordinated pressure and advocacy is needed to ensure climate mis- and disinformation are broached alongside other vectors of harm.

The threat is clear, the evidence is mounting, and the time to act is now.