REPORT

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Mapping climate disinformation

in French and Brazilian mainstream media

DATA FOR GOOD

QUOTA LIMAT

SCIENCE FEEDBACK

This report is produced by the NGOs Data For Good, QuotaClimat, and Science Feedback, as part of a collaboration between the Climate Safeguards project and the Media Observatory on Ecology. The French data is made public as part of a digital common, the Media Observatory on Ecology.

Since October 2025, figures on the detection of cases of misinformation and climate disinformation narratives in mainstream media have been available on the Observatory's website. They will be regularly updated to enable other NGOs, researchers, and citizens to continue their research and analysis.

The results on detection within the scope of Brazilian television are preliminary and have been made possible thanks to the cooperation of the organizations Lupa and Fala; they will be expanded upon and will be published in an upcoming note for COP30.

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— LSE, which supports the work of the NGOs Data For Good, QuotaClimat and Science Feedback against disinformation, as part of its "Journalism AI" call for projects,
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And all the partners active within the Media Observatory on Ecology.

Foreword

Mapping climate disinformation in French and Brazilian mainstream media by Klaus Bruhn Jensen

Ten years after the signing of the Paris Agreement (2015), the climate crisis is more urgent than ever: "The first 12-month period to exceed 1.5°C as an average was February 2023 – January 2024, boosted by El Niño, when the average temperature worldwide was estimated to be 1.52°C higher than 1850–1900."[1] This report is a timely contribution to identifying and remedying the crisis of information integrity that is exacerbating the climate crisis.

For citizens and policymakers around the world to undertake the necessary Climate Action (United Nations Sustainable Development Goal (SDG) #13), it is crucial that they have access to accurate, consistent, reliable, and transparent information about the causes and consequences of, and the available solutions to, climate change. However, the human response to the climate crisis is being obstructed and delayed by widespread, continuous, and coordinated communication of misleading information, as recently established by a comprehensive systematic review of research in the area from the International Panel on the Information Environment.[2]

The present report marks another important step in global efforts to counter the crisis of information integrity regarding climate change, by registering and addressing the nature and scale of the problem at hand. The detailed evidence and analyses bring home three key points. First, and most generally, the examination of Brazil and France provides an all too rare comparative perspective on the distinctive conditions of climate change communication in different cultural contexts. Second, the findings offer a welcome reminder that mainstream media remain central links in the chains of communication delivering climate information to national publics and political institutions. Amid widespread public and policy debate on social media and artificial intelligence, the classic role of public-service media and other key institutions of the public sphere remains one of securing dependable information for joint deliberation, opinion making, and collective agency. Last but not least, the report spells out the measures that can and should be taken in national politics to repair information integrity regarding climate change and to ensure that future media and communicative practices serve the interests of citizens and of humanity.

This report will be essential reading for political establishments as well as for civil society as we all move toward the pivotal dates of 2030 and 2050.

All notes can be found at the end of the report

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Glossary

In academic literature, climate misinformation is generally defined as follows:

Climate disinformation is defined as a false statement that carries a high risk of misleading the public about facts established by the state of scientific knowledge on climate change and climate action concerning mitigation and adaptation measures as established by the IPCC.

Climate misinformation is distinguished by the speaker's lack of demonstrated intent to cause harm, and may therefore be considered an error or susceptibility to misleading narratives[3,4].

This report takes an operational approach, focusing primarily on:

— The false nature of the content,
— Its potential negative impact on audiences or public policy, rather than on the intent or awareness of producers and disseminators.

In a media context, reported statements and claims that are immediately challenged are not classified as misinformation.

In this context, an additional term is used to refine the analysis:

Disinformation narrative: among the misinformation cases that are detected, a recurring narrative emerges in a statistically significant way (> 8 occurrences). Repetition is considered a strong enough indicator to suggest the existence of an intent aimed at misleading public opinion[5].

Mainstream media: All media organizations that play a central position in the public sphere due to their large audience, institutional legitimacy, and ability to set the media and political agenda (agenda-setting). These are generally established media outlets, national television and radio stations, major daily and weekly newspapers, news agencies, that enjoy professional recognition and exert a lasting influence on the formation of public opinion and policy[6].

The "new climate denial": A new form of climate change denial that no longer directly disputes the reality of global warming or its anthropogenic origin, but undermines or delays climate action by questioning the feasibility, effectiveness, legitimacy, or socio-economic consequences of mitigation and adaptation measures.[7]

All notes can be found at the end of the report

Key highlights

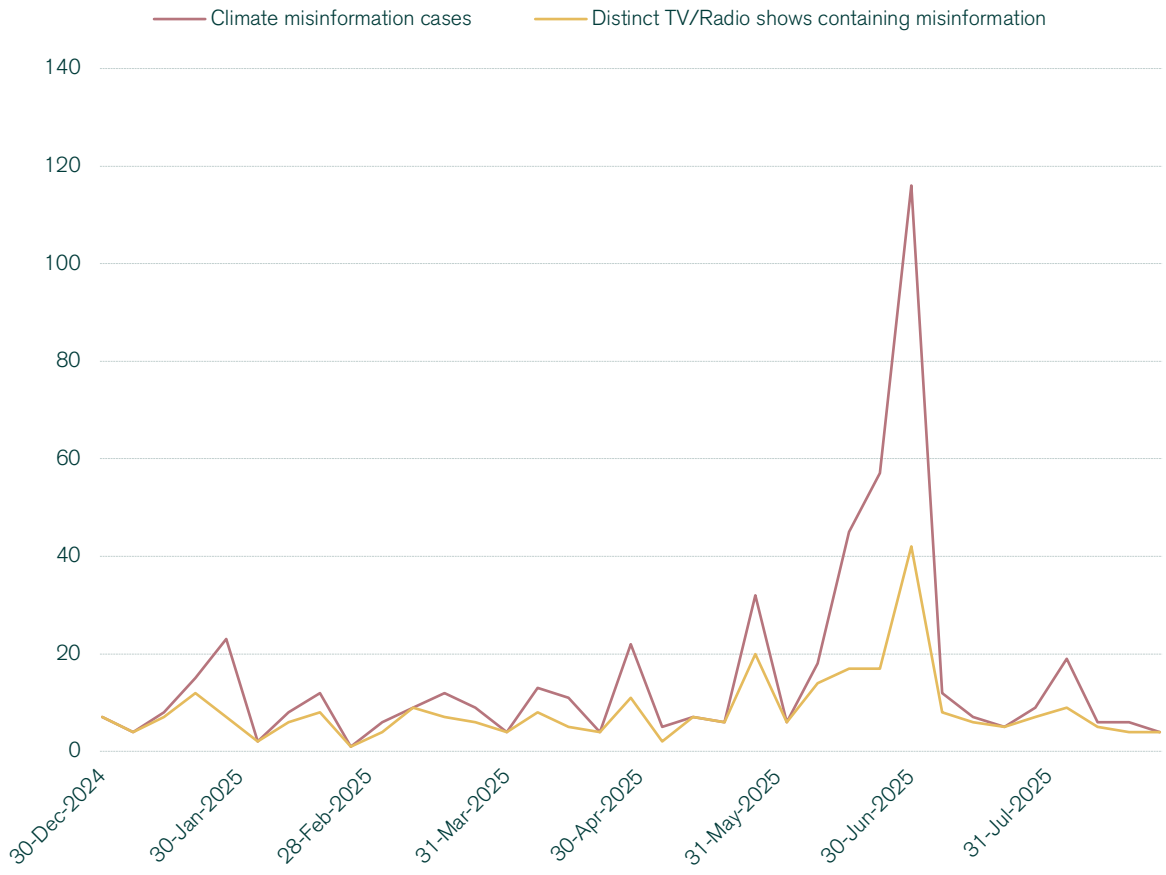
A. Key findings

In eight months of analysis, 529 cases of climate misinformation were detected in France. The average number of cases per month tripled during the summer (July–August) compared to the beginning of the year, with peaks concentrated around key political and geopolitical moments such as Donald Trump's inauguration, debates on low-emission zones (ZFE), discussions on the Third Multiannual Energy Plan (PPE3), and the heatwave.

In Brazil, detected misinformation is three to six times less prevalent than France[8], which could be explained in part by the lack of media coverage of climate issues, linked among other things to the influence of dominant economic sectors (agribusiness, mining) and the historical intertwining of the media and political sectors.

529 cases
of climate misinformation
detected in France in 8 months of analysis

Evolution of climate misinformation cases and TV/Radio shows contained misinformation



France

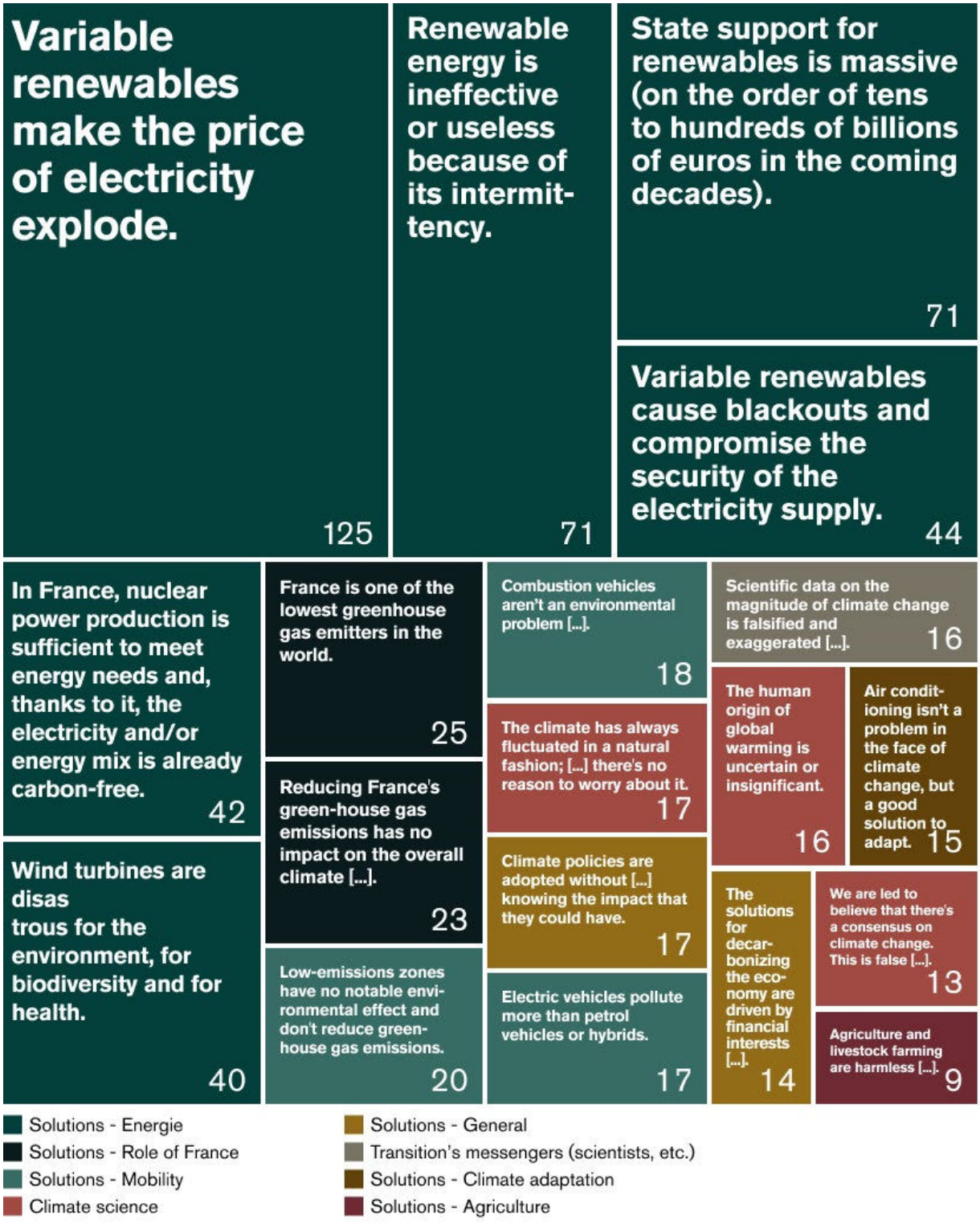
— 19 disinformation narratives were identified between January and August 2025.
— Almost all of these narratives have focused on the same topics since early 2025, mainly relating to climate action: over 90% of cases target net-zero solutions, with 70% related to the energy sector (particularly renewable energies), 10% to mobility, and 9% to France's role in global climate action.
— Among 24-7 news channels, public broadcasting is six times less permeable to climate disinformation narratives than private channels.
— Among general news channels (TV and radio), SudRadio, Europe 1, and RMC are the three channels most permeable to climate disinformation narratives.
— On SudRadio, one case of climate misinformation is detected every 40 minutes of news programming devoted to climate change. This figure rises to once every hour for CNEWS.
— Climate misinformation cases are mainly pronounced by guests (32%) and politicians (24%).
— In private media, 46% of cases are pronounced by journalists or editorialists.
— In the public sector, guests (including politicians) account for 92% of identified cases.

This report gives evidence that :
— The less 24-hour news channels cover climate change, the more vulnerable they are to disinformation. For example, CNews is the most exposed to disinformation narratives (one case per hour of climate coverage) while it devotes less than 2% of its airtime to climate change. On the other hand, France Info Radio registers fewer than 0.2 cases per hour on the topic, while dedicating more than 3.5% of its airtime to climate coverage.
— Generalist television channels (TF1, M6, France 2, France 3) and public broadcasters (France Télévisions, Radio France, RFI) are the most active bulwarks against climate disinformation.
— Analysis of the more than 500 statements detected shows that the inaccuracy or falsity of climate information cannot be explained by simple isolated failures in the production of information. The marked repetition of certain disinformation narratives, echoing the main narratives observed globally, suggests that this is a systemic amplification.

Brazil — preliminary results

— 70% of misinformation cases were identified on the Jovem Pan channel.
— Among all cases detected since April, 30% occurred in September, which appears to have been a peak period of disinformation.
— Three main topics emerge: agriculture and deforestation, COP30 and climate action, and electric vehicles and bioethanol.
— In August 2025, 12% of climate-related mentions in the Brazilian media directly concerned COP 30.

Main disinformation narratives
Study conducted on television and radio news programs in France, between January and August 2025



Mapping French TV Channels
by the Prevalence of climate misinformation claims

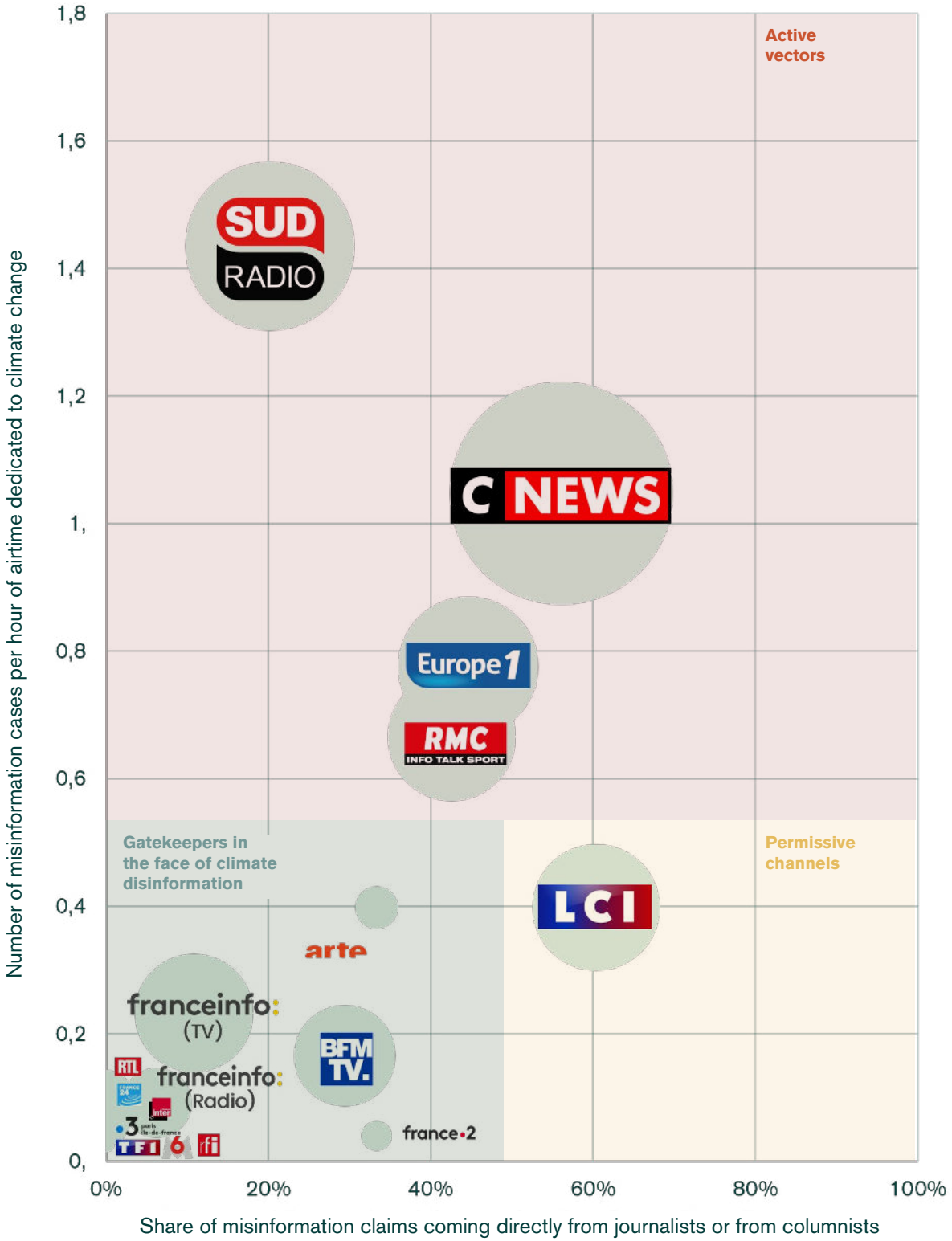


Figure Comparison between the prevalence of misinformation per hour of climate change news coverage and the proportion of misinformation cases reported by journalists or commentators in the media during the period analyzed [Jan. 25 - Aug. 25]. Source: Media Observatory on Ecology.
Key Circles: number of cases identified from January 25 to August 25
Scale Arte (6 cases); CNews (164 cases)

B. The role of mainstream media

Recognizing that misinformation cases spreads across all information channels, this report specifically examines the role of mainstream media. Despite the growth of social media, mainstream outlets remain the most trusted and influential source of information for most citizens and continue to shape political and economic decision-making. Their capacity to set the public agenda and reach beyond digital echo chambers positions them as key actors in legitimizing or challenging climate narratives. Yet, they are increasingly vulnerable to disinformation — whether deliberate or inadvertent — due to economic, political, or editorial pressures. Understanding their dual role, both as potential vectors and as crucial defenders against climate disinformation, is therefore essential to safeguarding informed democratic debate and access to scientifically reliable information.

This report identifies audiovisual media as being, depending on their editorial choices:

— Gatekeepers in the face of climate disinformation campaigns
— Permissive channels for misinformation
— Active vectors of climate disinformation campaigns

C. France and Brazil : contexts and courses of action

The aim of this report is to identify and objectively assess the scale of the phenomenon.

The results obtained lead us to warn of its rapid growth and to propose possible solutions to address it.

France

— Context

In France, several dynamics have been identified as contributing to the rise of climate disinformation narratives in the media:

1 – The recurrent use, in certain political discourses, particularly on the far-right, of misleading or unfounded claims about climate change and mitigation and adaptation policies;
2 – The historical influence of certain economic interests (fossil fuel, automotive, agricultural sectors) in the public debate, which strongly shapes narratives around the transition;
3 – Media coverage of environmental issues is often limited and sporadic, which allows misleading narratives to circulate more easily;
4 – The ideological stance of some media owners, especially those with far-right positions, has contributed to polarize opinion and create an information environment that blurs the line between scientific facts and opinions.

Climate disinformation narratives are regularly used by certain politicians as a rhetorical tool or distinctive stance in public debate. The lack of journalistic response or deterrent mechanisms to counter these narratives contributes to trivializing their dissemination and lowering the quality of information. These narratives can foster tacit public acceptance of policies that maintain or exacerbate France's contribution to global warming, encourage forms of maladaptation, or hinder mitigation efforts.

— Avenues for action

The media regulatory framework in France does not currently allow for an efficient and proportionate response to the growing threat of climate disinformation. However, strengthening this framework remains realistic and politically supported, as evidenced by the initiative to propose a law guaranteeing the public's right of access to information on envi-

ronmental and sustainability issues, which has been backed by nearly 100 members of the French National Assembly. This approach could be an effective legislative lever, offering a proportionate response capable of deterring the dissemination of misleading content and promoting reliable environmental information.

At the same time, other media and institutional levers for action can strengthen the resilience of the public sphere in the face of disinformation. These include promoting protected information slots during prime time, such as France 2's JT Météo-Climat and TF1's "Notre planète" program, and protecting public broadcasting, which plays a central role in improving coverage of environmental issues and establishing a quality standard for the information disseminated.

Brazil

— Context

In Brazil, environmental issues receive little media coverage and are often presented in a misleadingly neutral way.

This can be explained by the growing influence of agribusiness, the intertwining of the media with national politics, and discursive alignment with evangelical circles and the mining and fossil fuel industries.

Climate disinformation in Brazil is reflected in increased political opposition to certain environmental regulations and support for the acceptability of new extractive and agricultural projects. Furthermore, disinformation and greenwashing contribute to the increased endangerment of environmental defenders (activists and journalists) by discrediting them, normalizing the violence they face, fragmenting their social and institutional support, and increasing the vulnerability of native and local communities.

Avenues for action

The levers for action lie less in legislation, in a political context that is not very open to environmental issues, and more in the use of the judicial system, both to provide agile support to independent investigative journalists and victims of disinformation campaigns, and to provide a specific response to climate disinformation, after taking ambitious legal action against digital platforms.

D. Rapid response systems during extreme weather events: integrating media and disinformation dimensions

This report assesses the ability of current risk management and rapid response systems to protect citizens from extreme weather events.

In particular, it aims to highlight that the exponential spread of disinformation narratives and emotional polarization during extreme weather events greatly reduces the effectiveness of protective measures in the event of extreme events and undermines confidence in evacuation orders issued by local and national authorities.

In this context, the report calls for:

— Institutionalizing semi-automated detection systems to track disinformation narratives across all information channels, coordinated between monitoring bodies, civil society, and disaster management agencies, and entrusted to an independent agency attached to strategic bodies such as the Ministry of the Interior.

— Strengthen multi-channel communication strategies, integrating mainstream media, independent media, local media, and digital platforms, as an essential operational lever to ensure rapid, targeted, and verified dissemination of information, capable of countering disinformation and supporting the adoption of protective behaviors by populations.

Introduction

A. Intentions

"*Abandoning facts is abandoning freedom.*"
— Timothy Snyder, American historian of Central and Eastern Europe, the Soviet Union, and the Holocaust

In the 21st century, we are flooded with information but its quality is degrading.

Measuring the prevalence of climate disinformation in the mainstream media

Disinformation, a strategy in an ever-expanding information war[9], thrives in a context of increased vulnerability, where our era, plagued by successive global shocks and crises — economic, climatic, geopolitical- is becoming a "world in turmoil": each alert and each disruption reinforces the feverishness of citizens and institutions[10]. In this state of constant tension, fear, anger, and resentment, left "unchannelled," provide fertile ground for disinformation, which acts as a slow and insidious poison, disrupting the ability to think and act freely[11].

Disinformation has a particularly severe impact on scientific information about the climate. Global warming, as a global threat requiring structural decisions, massive investment, and major socio-economic trade-offs, has fallen victim to strategic manipulation of information: scientific facts and proposed solutions are deliberately questioned, denied, or taken out of context to sow doubt, strip transformative proposals of their substance, slow down the energy transition, and maintain dominant positions in a global economy that is still largely dependent on fossil fuels[12].

This lucid warning sums up the ambition of this report: to offer a data-driven analysis of climate misinformation in the mainstream media in France and Brazil, examine its mechanisms and democratic consequences, and propose avenues for transformation.

Documenting strategic skepticism towards science, particularly climate science

The two national contexts, illuminated by data, illustrate how "strategic skepticism" towards climate action has become a profitable political strategy — at the expense of the majority. In France, the manipulation of scientific information on climate change facilitates the presentation of the transition as an unnecessary economic burden, justifying a drive towards deregulation; in Brazil, disinformation has been used to dismantle environmental protections and legitimize extractive industries, particularly under far-right governments.

Beyond the design of climate policies, this report argues that strategic skepticism, the disinformation narratives that fuel it, and the resulting inertia are among the main drivers of confused public perception and the stalling of political, economic, and social progress[13].

Promoting the protection of verified, independent, pluralistic information through increased vigilance towards mainstream media

Without an information ecosystem that is immune to manipulation and intimidation, the ability of citizens and politicians to question power, demand accountability, and decide freely is compromised.

The central assumption of this report is that mainstream media and journalists are — or should be — among the gatekeepers of information integrity. Without democratic counterbalances, societies risk suffocating under indifference, manipulation, or passive resignation.

However, the unpublished data presented here show that, on an issue of general interest such as the environment, this role of "transmitter" is only partially fulfilled. Too often, mainstream media remain defensive, under-resourced, weakened, or subject to political and economic pressures, leaving the field open to disinformation that distorts public understanding and influences political decisions.

The burden of resisting disinformation cannot fall solely on citizens, who are already overwhelmed by a flood of information and everyday concerns. The report calls for responsibility to be restored to where it belongs: in the public sphere, when public figures — whether media personalities, politicians, or media guests — spread disinformation, exploiting trusted information spaces to deceive, confuse, and mislead. These actors must remain subject to democratic scrutiny, through a balance of incentives, minimum regulatory standards that act as a deterrent, and, where necessary, legislative and judicial action.

Methodology

Our approach is both civic and scientific: observing the growing porosity of newsrooms to misleading narratives, documenting their spread, and exposing their impact on public decision-making.

These findings are consistent with those of CAAD (Climate Action Against Disinformation) on social media[14] and those of the United Nations, which has now placed climate disinformation on the agenda for the COP30 negotiations[15].

The methodology is transparent and reproducible: the analysis is based on a representative sample and a typology of climate-skeptical narratives validated by academic literature (the CARDS typology)[16].

Our goal is clear: to defend pluralism, editorial freedom, and science-based journalism, without which citizens lose their factual compass and decision-makers become vulnerable to information manipulation.

Far from being an abstract plea, this study aims to name and describe a phenomenon whose normalization threatens to erode public confidence in institutions and structurally delay the necessary transformations.

B. Climate disinformation, the blind spot of the democratic and climate crisis

Current climate disinformation is characterized by its strategic elasticity: its narratives are protean, transforming according to political and media contexts and oscillating between skepticism, "doomism" ("it's too late to act") and relativism ("other problems are more urgent").

Recent data show that the era of "old denial" ("climate change does not exist") has given way to a more sophisticated repertoire, designed not to refute science, but to confuse, morally exhaust, and paralyze public opinion and political action.

The "new denial"

We are witnessing the rise of what researchers call "new denial."

According to the Center for Countering Digital Hate (CCDH), these new narratives already accounted for 70% of climate-skeptical content on YouTube in 2023, up from 35% in 2018[17].

Their goal is no longer to deny the existence of climate change, but to undermine public confidence in the viability of solutions and delegitimize the messengers who defend them.

These narratives target environmental agencies, scientists, and NGOs, portraying them as out-of-touch elites or threats to the social order. Climate policies are presented as instruments of control (e.g., "low-emission zones") or as economic burdens (e.g., wind turbines).

These narratives, which serve to obstruct progress, also feed into other divisions: rural identity and food sovereignty are exploited to turn "ordinary people" against the ecological transition.

At the root of this: a constellation of actors with strategic and opportunistic objectives

Climate disinformation is increasingly being used as a weapon of interference and information manipulation by foreign actors (FIMI). Polish counterintelligence services estimate that Russia spends around $4 billion a year on "cognitive warfare," with climate being one of the most targeted topics[18].

The fossil fuel industry actively finances the obstruction of climate policies and the spread of disinformation, as evidenced by internal documents from oil companies ExxonMobil and Shell, which, as early as the 1980s, recognized climate risks while financing campaigns to sow confusion[19]. Between 1998 and 2005, ExxonMobil invested $16 million in 40 ideological groups to discredit the science of global warming[20]. In addition, between 2020 and 2022, more than $219 million in tax-subsidized donations were allocated to organizations promoting climate misinformation in the United States[21,22].

Online platforms amplify and monetize this content by taking advantage of weak regulations: YouTube alone generated $13 million in annual advertising revenue from climate-skeptic channels in 2023[23].

The disinformation ecosystem now extends far beyond the traditional fossil fuel lobbies.

A constellation of intermediaries, think tanks (such as the Cato Institute, the Heritage Foundation, the Heartland Institute, the American Enterprise Institute, and the Competitive Enterprise Institute, which collectively received more than $500 million in fossil fuel-related funding through 2021), **professional associations, and conservative media outlets** have broadened the field of actors[24].

Certain climate-skeptical narratives are now being deployed by several sectors: **aviation, maritime and rail transport, but also meat and dairy industries,** whose emissions make it impossible to achieve the 1.5°C or even 2°C targets without costly structural industrial changes[25].

For electoral and/or economic reasons, this "coalition" of actors, bringing together fossil fuel interests, hostile foreign actors, far-right movements, libertarian networks, and conspiracy groups, is mobilizing a common repertoire with two clear objectives[26] :

— To use disinformation strategies to sow doubt about the distinction between facts and opinions and delegitimize the pillars of democracy, including the press, journalists, and civil society;
— Delay structural decisions and investments towards carbon-neutral modes of production and consumption.

By exploiting social tensions and taking advantage of social media, they manage to relegate science to the background and make inaction seem like a reasonable option.

This report therefore aims to support an unspoken aspect of the public debate: the obstacles to climate action are not only due to public apathy (globally, 75% of citizens consider global warming to be a concern and want their country to take action) or a lack of resources[27].

They also reflect coordinated and funded efforts to challenge the scientific consensus and delay the necessary investments in low-carbon projects.

From screens to AI: the multi-platform assault on science and climate policy

The media, (both online and mainstream) as key channels that shape perceptions and framings — the mental structures through which people interpret the world — are deliberately targeted by disinformation campaigns.

These campaigns aim to create the illusion of majority consensus by relying on repeated exposure across multiple media channels to influence perceptions, disorient citizens, and elicit emotional reactions that hinder rational deliberation.

Data remains incomplete and fragmented, but the available evidence confirms that climate disinformation is growing rapidly, spreading across digital platforms and gradually infiltrating mainstream media.

Online platforms: incubators and amplifiers of disinformation

In August 2025, climate change was the topic most targeted by online disinformation in the European Union, ahead of the war in Ukraine and the EU itself[28].

Between 2021 and 2024, the volume of climate-skeptical content increased by 43% on YouTube and 82% on X[29].

According to Yale Climate Connections, eight of the ten most-watched online programs in the United States now broadcast climate-skeptical messages[30]. This surge has measurable effects on our collective discernment: according to a 2025 Eurobarometer survey, 49% of Europeans struggle to distinguish reliable information from climate misinformation on social media[31].

The impact goes beyond confusion: it has a lasting influence on perceptions of climate action, with 42% of Europeans believing that "the climate crisis is a pretext for restricting individual freedoms"[32].

The amplification of these narratives online is reinforced by the inability of online platforms to moderate climate misinformation. A 2025 report by the CCDH indicates that 88% of misleading posts about extreme weather events on X come from verified accounts, 73% on YouTube, and 64% on Meta platforms. Regarding platform moderation policies, the European think tank EU DisinfoLab highlights significant gaps: TikTok is the only platform with a specific climate content moderation policy, while others apply generic rules against misinformation, or none at all. YouTube has refused to integrate third-party fact-checkers under the Digital Services Act (DSA), and Meta has removed its Climate Science Center from publicly available resources, signaling a decline in the priority given to climate information[33].

Generative AI as a tool for "laundering" disinformation on a global scale

Through what some calls "LLM laundering" (language model laundering), generative AI has become a new vehicle for legitimizing misinformation[34].

Networks such as Russia-led Pravda flood the web with millions of articles to embed misleading narratives that large language models reproduce and amplify. Tests conducted on ten leading chatbots showed that these systems repeated misleading claims in 33% of cases and even directed users to disinformation sites in 12% of cases[35].

Automated accounts further exacerbate the threat on social media: up to 25% of tweets relating to the US withdrawal from the Paris Agreement came from bots, which massively disseminated climate-skeptical messages[36].

The paradoxical role of mainstream media: vectors of legitimization or guardians of integrity?

Mainstream media occupy a paradoxical but distinctive place in the information ecosystem.

They remain the most reliable sources of information for the majority of citizens in the EU and the OECD[37], playing an agenda-setting role and providing a pluralistic space for public debate.

Traditional live television remains the most common way of consuming news, with 58% of Europeans watching it at least twice a week, and it enjoys much greater trust than social platforms such as Instagram, X, or YouTube[38].

In France, public media outlets such as France Télévisions and Radio France alone capture nearly 20% of media attention, twice as much as Meta (10.1%) and more than TF1 (9.9%)[39].

However, they seem to be increasingly exposed and vulnerable to disinformation.

Mainstream media offer disinformation narratives two major advantages:
1 – Access to much wider audiences than the echo chambers of social media;
2 – A "blind trust" effect: when disinformation narratives reach the mainstream media, they gain credibility and legitimacy, and become more difficult to challenge[40,41,42].

Mainstream media offer disinformation narratives two major advantages: access to much wider audiences than the echo chambers of social media, and a “blind trust” effect: when disinformation narratives reach the mainstream media, they gain credibility and legitimacy, and become more difficult to challenge.

Although they are often the targets and sometimes the victims of disinformation campaigns, certain media outlets or media actors actively amplify or disseminate such content when it serves their political or economic interests (e.g., GB News in the United Kingdom[43], CNews in France[44], Fox News in the United States[45]).

Climate misinformation narratives do not simply "circulate": they actively shape the frameworks through which citizens and decision-makers interpret the world. This is known as the "illusory truth bias," whereby repeated exposure to a claim, regardless of its veracity, eventually makes it appear credible, thus shaping public perceptions in the long term.

Thus, mainstream media are the ultimate target of disinformation campaigns.

However, this dynamic plays out differently in countries in the Global South. As this report shows in the case of Brazil, mainstream media consumption is fragmented due to widespread mistrust of "established sources of power," but it remains significant in certain regions where access to television and radio is limited. On the other hand, this report focuses on mainstream media because they retain the power to frame the public agenda and confer legitimacy on the narratives that circulate.

C. Climate disinformation, an emerging issue for multilateral and European cooperation

The World Economic Forum now ranks disinformation and extreme weather events among the top global risks, but these two crises are rarely treated as interconnected[46].

In 2024, the OECD warned against the manipulation of information that "distorts evidence-based debates, undermines citizens' ability to participate in democratic debate, degrades the quality of the information environment, and undermines trust in institutions and universal human rights" in its OECD recommendation on information integrity[47].

Global recognition: principles, but still little implementation

The United Nations Global Program for Climate Change Information Integrity, launched in September 2024 by the UN, Brazil, and UNESCO, is the first global initiative to identify climate misinformation as a priority[48].

Similar language appears in the OSCE-UN Joint Statement on the Climate Crisis and Freedom of Expression (2024), emphasizing the importance of ensuring access to reliable environmental information as a human right[49].

More recently, in June 2025, a joint France-Brazil statement called on other states to cooperate against climate misinformation, affirming the "centrality of scientific knowledge" in climate action[50].

These initiatives set important normative precedents but remain largely voluntary and have not yet produced operational monitoring and enforcement mechanisms.

European progress: a cross-cutting but overly general approach

In Europe, the last three years have seen the emergence of an unprecedented regulatory framework for the information ecosystem: the Digital Services Act (DSA), the Digital Market Act (DMA), the European Media Freedom Act (EMFA), the AI Act, and the Audiovisual Media Services Directive (AVMSD). These instruments constitute a powerful toolkit for information and communication governance.

However, their neutrality of content approach leaves climate disinformation in a regulatory blind spot.

Systemic risk assessments under the DSA remain indifferent to specific topics, unless specifically requested by the European Commission, and the Code of Practice on Disinformation contains few climate-related commitments and their implementation is weak[51].

This results in an asymmetry: platforms are forced to act quickly against electoral or war-related disinformation, but have little incentive to moderate climate disinformation, which directly undermines European climate, energy, and industry objectives.

National regulators therefore find themselves without a clear mandate or tools to treat climate as a specific systemic risk.

With the weakening of media control, the challenge to regulations, and the disengagement of platforms from fact-checking, the space for evidence-based debate and decision-making is rapidly shrinking, further exposing Member States.

National precedents

At the national level, the situation is also mixed. Climate misinformation is often considered a residual issue, dealt with incidentally through general mandates on information integrity.

A notable exception is France, where in 2024 ARCOM fined the CNews channel €20,000 for spreading climate misinformation, establishing that minimizing or denying the scientific consensus violates the media's obligations of honesty and accuracy.

This decision sets a legal precedent and affirms that climate misinformation is not an opinion, but a violation of professional standards[52].

However, interviews with European regulators reveal structural limitations: a lack of specific mandate on climate damage, weak monitoring tools, and a lack of political support to make it a priority over other threats deemed more urgent.

Part 1

Climate disinformation in the French media

A. The mainstreaming of climate disinformation campaigns

In France, the emergence and normalization of climate disinformation in public debate is the result of converging factors: political strategies that exploit information as a tool of influence, a democratic malaise in the face of this drift, and economic and political pressures that weaken mainstream media.

An unprecedented weakening of journalism in terms of its independence and pluralism

The weakening of journalism over the last decade is one of the main factors undermining information integrity in general, and environmental information in particular. Since 2015, the number of journalists has fallen by 10% in mainland France and by 20% in the overseas territories[53]. The precariousness of journalists' employment has increased significantly, with two out of three journalists under the age of 30 in precarious situations. The median salary for a journalist on a permanent contract fell by 7% between 2000 and 2022, from €3,847 to €3,580, while that of a freelancer fell by 15% between 2000 and 2022, from €2,301 to €1,954[54]. The succession of fixed-term contracts and freelance work puts young journalists in a difficult position and pushes an increasing number of them to leave the profession seven years after obtaining their press card[55].

This precariousness undermines journalists' independence and working conditions, and has concrete consequences for news and those who produce it. This is notably why quality is under threat, particularly with regard to investigative content, which requires greater investment than entertainment news or panel discussions. The trade-off between different sections leads to a preference for news items over structural issues, which are considered less profitable in terms of audience ratings.

At the intersection of deprioritized investigation and structurally disadvantaged subjects, environment reporters see their working conditions, reputation, and even their safety affected. There are numerous examples of intimidation against environmental journalists: journalist Morgane Large, following investigations into agribusiness in Brittany, first suffered intimidation before receiving death threats in 2023[56]. In the same year, journalist Martin Boudot was placed under police protection after receiving death threats from carbon tax fraudster Cyril Astruc[57]. Shortly afterwards, photojournalist Yoan Jäger-Sthul was charged with "criminal conspiracy" and "organized vandalism" for covering a sabotage action by Soulèvements de la Terre at a Lafarge factory[58].

In addition to the weakening of journalism, there has been a shift in news practices in France over the last decade, with online services rapidly gaining ground in the French information diet, particularly among younger people. Hence the economic model of the mainstream media is being undermined by growing competition in the advertising market: 53% of advertising expenditure is already online, with 90% of growth expected by 2030. [59]

Confronted with this economic fragility, media concentration has accelerated over the last decade: nine private media owners now own 80% of the daily press, more than 90% of the national weekly general-interest press, and 50% of the television and radio audience[60]. This media concentration is not only for economic reasons: the acquisition of a media outlet "is less about financial gain than about gaining more general influence, which could increase their operating margin in other economic activities or simply support a political agenda"[61]. This is particularly the case with Vincent Bolloré, majority shareholder of the Canal+ group and renowned defender of identity politics and Catholicism, as well as an active supporter of the conservative right and the far right. The acquisition of CNews, Le Journal du Dimanche, and Europe 1, among others, has led to increased visibility for climate-skeptical views in public debate, with prominent figures such as Pascal Praud stating on air that he is "not sure that humans can influence the climate."[62].

In a context of media precariousness, this concentration has been accompanied by editorial mergers, both in public broadcasting (merger of the editorial teams of France 2 and France 3[63], merger of France 3 and France Bleu[64]), weakened by modest budget increases, and in the private sector (Canal+[65], TF1[66], Groupe M6[67], CMA Média[68]). This phenomenon affects the entire press sector[69], in a context where journalists' unions representing employees have no legal protection in the event of sanctions or dismissal. Journalists' decision-making power is diminishing, reducing them to spectators of shareholder developments and forcing them, at best, to go on strike and, at worst, to exercise their conscience clause and pursue their careers elsewhere. The strikes at CNews in 2016, Le Journal du Dimanche in 2023, and La Croix in late 2024 are emblematic of these deve-

lopments. This weakening of journalism no longer affects only newsrooms, but also journalism schools, as illustrated by the takeover of the Paris School of Journalism in November 2024 by a consortium of numerous media owners[70].

The weakening of journalism — fueled by economic precariousness, politically motivated shareholder concentration, and competition from platforms — is undermining its ability to guarantee reliable information. These vulnerabilities are fueling growing mistrust of the mainstream media and facilitating the media coverage of climate misinformation narratives, bypassing ethical and democratic safeguards.

Persistent structural deficiencies in media coverage of environmental issues

Mainstream media outlets struggle structurally to cover environmental crises, thereby limiting public understanding of their urgency and systemic implications.

This under-coverage can be explained in particular by the economic fragility of newsrooms, their dependence on advertisers from high-emission sectors, and an editorial hierarchy focused on immediate news rather than long-term structural issues. It is also reinforced by the relatively homogeneous socio-economic profile of editors-in-chief and media executives, which tends to limit the diversity of editorial perspectives. Added to this is a structural deficit in training on scientific issues, particularly climate issues, and a lack of cross-functionality between different editorial departments, which hinders the integration of environmental issues into political, economic, or social coverage. In some cases, editorial policy is also influenced by advertisers or shareholders whose economic and political interests hinder the ecological transition.

Data provided by the Observatory of Media on Ecology (OME) provides an overview of media coverage of environmental issues:

— The share of content dedicated to environmental crises in audiovisual media news programs in 2024 is low and declining (to 3.7% in 2024, down 30% from 2023[71]).
— Media coverage focuses more on crises than on solutions

Media coverage of environmental issues remains closely linked to extreme weather events (fires, floods, heatwaves) and political and diplomatic developments.

Although this share increased in the first half of the year (5.3%, up 30% compared to the first half of 2024), there is a clear sense of general dissatisfaction with the media's coverage of environmental issues in France: while seven out of ten French people are interested in environmental news[72], a similar percentage believe that "the media does not talk enough about solutions or reasons for hope" and that "the media does not emphasize enough the economic and social issues related to climate change"[73]. At the same

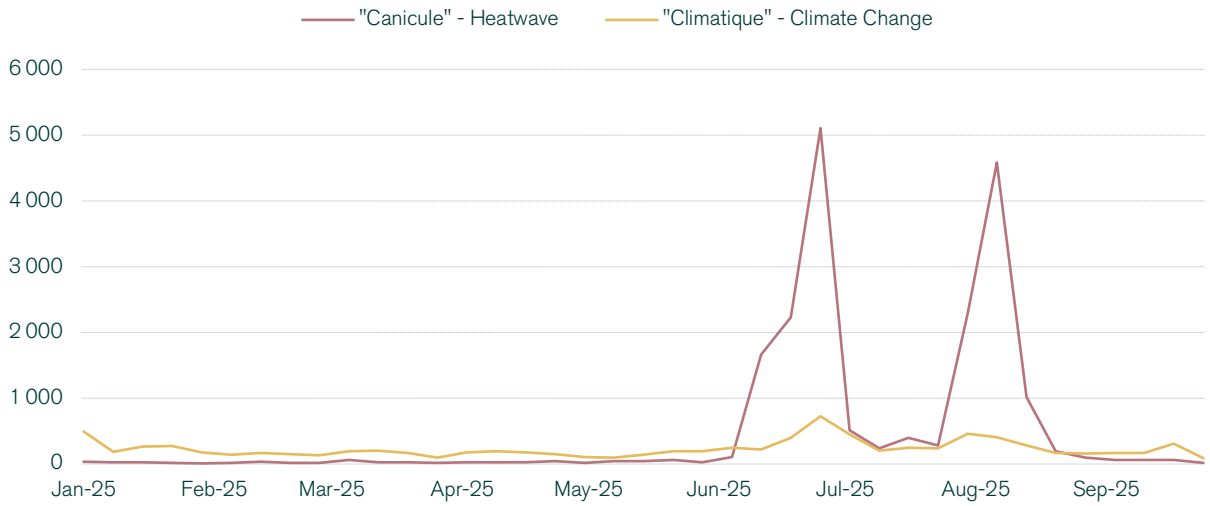


Figure Number of mentions of the keywords “climate” and “heatwave” in French generalist television news programs over the period analyzed [Jan. 25 – Aug. 25].
Source : Observatoire des Médias sur l’Écologie.

time, this coverage is considered "insufficiently solution-oriented and not rigorous or educational enough"[74].

This fragmented and "event-driven" media coverage of environmental issues indirectly allows for the creation of blinds for climate disinformation. By reducing the debate to episodes of crisis and neglecting structural dynamics and available levers for action, the media allow simplistic or misleading narratives to take hold, often amplified by political or economic actors hostile to climate policies. This fragility in media coverage is therefore not limited to a lack of information: it contributes to the normalization of disinformation and the erosion of public trust (only 32% say they "trust what the media say about major news stories"[75]).

Powerful far-right political forces, positioning themselves on environmental issues and exploiting climate disinformation campaigns for electoral purposes

In ten years, the National Rally (Rassemblement National), the main far-right political party in France, has seen its number of deputies rise from 2 in 2015 to 141 in 2024. As early as 2022, the party developed an environmental program with the aim of appealing to the traditional right and rural voters. Mobilizing concepts dear to the far right (localism, rejection of foreigners), the two themes mobilized during the presidential campaign were the defense of animals and the rejection of wind turbines[76]. The party's intellectual matrix can now be summarized in two pillars: agrarianism (a "common sense" ecology, rural and peasant-based, as opposed to that of the elites) and techno-solutionism (technology and the market will solve the crisis).

The far right defends what it calls "positive ecology"[77], which involves strong opposition to environmental standards, presented as unfavorable to the concerns of the population (purchasing power, individual freedoms), as well as to the binding objectives of decarbonizing the economy[78]. The party's proposals have a strong programmatic knock-on effect on the rest of the political spectrum: in 2022, the presidential program of the far-right Reconquête party led by Eric Zemmour also included measures to combat "ecology held hostage by ideology," including a moratorium on solar and wind energy[79]. During election periods, this political competition leads to an ever-increasing desire to stand out — and to unapologetic climate-skeptical discourses.

The RN is deploying a veritable strategy of "double standards"[80] on ecology: it combines questioning climate science, solutions to climate change, and the messengers of transition, but without openly declaring itself climate-skeptical. For example, former regional councilor Edwige Diaz, now a member of parliament for Gironde, stated in 2019 that "the hypothesis of climate change serves particular interests"[81]. In Carcassonne, Congressman Christophe Barthès questions the anthropogenic origin of climate change[82]. Faced with drought, and on the very day that a conference was held to present the IPCC report, local elected officials in Perpignan held a religious procession in 2023 to pray for rain[83].

The rise of the National Rally has created growing media opportunities to sow doubt about the scientific reality of environmental crises, as illustrated by the interview with MP Thomas Ménagé in August 2023 on France Inter: on France's most popular morning radio show, the parliamentarian claimed that "the IPCC sometimes tends to exaggerate"[84].

The political framing of net-zero transition as a freedom-destroying project or even "punitive ecology" echoes and validates the mistrust already present in public opinion. Media coverage of these views contributes to giving greater visibility and legitimacy to the idea that the fight against global warming is a pretext for establishing a "climate dictatorship" or limiting individual freedoms. According to a 2022 study by the Jean-Jaurès Foundation, 42% of French people surveyed agree with the idea that "the elites are planning to establish a climate dictatorship"[85]. 41% share the idea that "the climate crisis is a pretext used by world governments to limit individual freedoms."

Because of lax media oversight and weak regulations, politicians spread climate misinformation to support their political agendas. With media actors and citizens largely uninformed and unengaged, their public and media exposure trivializes and lends credibility to certain narratives that are contradicted by the current state of scientific knowledge, helping to entrench them in public debate.

The influence of emitting sectors on the public framing of environmental issues

Since the 1970s, several France-based economic sectors with high greenhouse gas emissions — such as the automotive industry, the petrochemical sector represented in France by TotalEnergies, and, to a lesser extent, the agricultural sector — have exerted a decisive influence on public policy and media framing of environmental issues.

This influence can be explained by decades of co-dependent relationships with the French state: in the case of the automotive industry, for example, the

development of road infrastructure and tax support for diesel have long been implicit pillars of French industrial policy. In exchange for the promise of growth and jobs, the state has supported the sector's technological choices, often to the detriment of lower-emission alternatives[86].

The petrochemical sector, dominated by TotalEnergies, has established itself as a central player in the French and global energy system, leveraging its economic weight and strategic role in energy supply. Through its position among the leading advertisers and partners of major French media outlets, TotalEnergies has benefited from visibility and legitimacy that have helped shape the public debate[87]. By presenting its strategy as compatible with economic growth and energy security[88], the company has reinforced the idea that climate transition poses a risk to employment and competitiveness, thereby diverting attention from its own responsibility for perpetuating the fossil fuel model[89].

Agricultural trade unions, mainly represented by the National Federation of Agricultural Holders' Unions (FNSEA), also play a structuring role in public debate. While declaring its support for the green transition, this majority union has often steered public debate and agricultural policies in favor of competitiveness and productivity, to the detriment of an agro-ecological transition supported by nearly 85% of French farmers[90]. Union rhetoric emphasizes the need to reduce the financial and administrative constraints on farmers and contrasts this demand with environmental measures. The High Council for Climate (HCC), an independent supervisory body advising the French Prime Minister, recently pointed out that the pluralism of agricultural representation in the public sphere and in governance bodies remains insufficient, a deficit that perpetuates the imbalance in debates and delays the transformation of the sector[91]. The almost exclusive media coverage of the FNSEA's positions, often presented as representing the profession as a whole, has contributed to shaping a persistent divide in public opinion regarding environmental policies[92].

Consequences for public debate

By defending their sectoral interests, these economic actors mobilize or amplify climate-skeptical narratives and disinformation arguments. Opposition to environmental regulations is often presented as a defense of jobs, industrial sovereignty, or national competitiveness. This framing transforms climate policies into economic threats and fuels narratives that the transition would be costly, ineffective, or imposed by elites disconnected from social realities.

This rhetoric sometimes opportunistically aligns with that of other political and social forces. The far right, in particular, appropriates these arguments to reinforce a nationalist and anti-ecological discourse, portraying the transition as a project hostile to the interests of the people and traditional lifestyles. Similarly, certain trade unions and rural collectives use these narratives to polarize the debate and justify blockading actions, as illustrated by the repeated attacks against the French Office for Biodiversity (OFB) in 2024[93].

The convergence of these narratives, between industrial emitters, populist political groups, and sectoral actors seeking leverage, contributes to the normalization of disinformation narratives in the public sphere. It undermines the legitimacy of climate policies and increases the vulnerability of the mainstream media to disinformation narratives that appear, wrongly, as legitimate points of view in the democratic debate. This phenomenon highlights the need to analyze climate disinformation not only as a failure of the media system, but also as the product of strategic alliances between economic, political, and ideological actors seeking to delay the transition.

B. Consequences of climate disinformation in France

Confused public perceptions: fertile ground for climate-skeptical narratives

Despite the accumulation of scientific evidence and the increasing frequency of extreme weather events, public perception of climate change remains fragmented in France. Nearly one-third of French people (33%, according to Obs'COP 2024[94]) still expresses doubts about the decisive role of human activities in global warming, a proportion that has remained stable for several years.

This minority but persistent base of climate skepticism provides fertile ground for the spread of disinformation, especially as it is combined with a high level of belief in conspiracy theories: more than 60% of French people say they believe in at least one conspiracy theory[95].

This situation contrasts with the extent of concern about climate risk. While 9 out of 10 French people recognize the reality of climate change, the intensity of this concern is declining: the proportion of people who say they are "very concerned" about the issue fell from 35% to 29% between 2021 and 2024, following a global trend (-3 points). This erosion can be explained in part by the competing hierarchy of threats: in a context marked by inflation, the war in Ukraine, and tensions in the Middle East, the cost of living and security are now at the top of Europeans' concerns. In France, climate change ranks only fourth[96].

This reconfiguration of priorities is accompanied by growing skepticism about the instruments of transition. Support for the ban on the sale of combustion engine cars by 2035 has fallen to 34% in France (-7 points in four years), and perceptions of electric vehicles are mixed: 71% of French people consider them to be as harmful to the climate as combustion engines, compared to 50% globally. These results reflect skepticism fueled by recurring disinformation campaigns involving fake news, publicized both on social media and in certain media outlets[97].

Attitudes towards changing lifestyles reveal another tension. Although a relative majority of French people (51%) still believe it is necessary to change their behavior to limit global warming, this proportion has fallen by 13 points in six years, while support for technology has increased (+10 points, to 26%). At the same time, the actual practice of moderation is declining: the proportion of French people who systematically or almost systematically avoid using their cars has fallen from 37% to 31% in two years, and the proportion who avoid flying has fallen from 36% to 32%. These developments reflect a fatigue with individual injunctions and a stronger demand for institutional action: 69% of French people believe that the government should act as a priority, but 58% also point to businesses, a higher level than in other countries[98].

This confusion of perceptions is reinforced by structural shortcomings in the information system. Mainstream media remain the primary channel for climate information, but their coverage is considered too uneducational and too focused on specific crises at the expense of solutions and long-term socio-economic issues[99][100]. The fragmentation of digital channels and the rapid circulation of sensationalist content amplify this lack of understanding and trust. Mistrust of media institutions results in a public space that is more receptive to messages from industrial, political, or activist actors seeking to downplay the climate emergency or reject responsibility for it.

This informational drift fuels a vicious circle. The perception of a costly or unfair transition, combined with low trust in institutions and the media, makes part of the public more receptive to narratives of obstruction spread by emitting sectors, particularly the oil and gas and automotive industries, or by political forces hostile to climate policies, such as the far right. By playing on fears of job losses, rejection of regulatory constraints, or defense of "threatened lifestyles," these narratives succeed in uniting diverse audiences around resistance to necessary change. They thus contribute to undermining the social consensus that is essential for ambitious and coherent climate action.

A weakening of legislative work and cumulative regulatory setbacks

One of the most worrying consequences of the mainstreaming of climate misinformation narratives is their ability to influence the legislative process. The ultimate goal of organized obstruction campaigns is not only to create doubt in public opinion: it is to ensure that these narratives are taken up in institutional and media debate, to the point of shaping political decisions[101].

This dynamic is all the more effective because decision-makers have a biased view of public opinion: politicians greatly underestimate their electorate's commitment to climate and environmental issues[102].

It is hard to prove a direct causal link between media coverage of disinformation and political decisions, but the impact is clear in the repeated rollbacks of regulations. According to the Climate Action Network, 43 environmental setbacks — postponements, weakening, or elimination of measures aimed at limiting emissions or accelerating the transition — were recorded in France during the first six months of 2025[103]. While these setbacks cannot be attributed exclusively to disinformation, peaks in detected disinformation activity regularly coincide with debates on structural policies[104] : multi-year energy planning, the national climate adaptation strategy, the widespread introduction of low-emission zones (LEZs), and the ban on the sale of new combustion-engine vehicles from 2035.

In the absence of tangible evidence to quickly counter skeptical or misleading narratives about the costs, technical feasibility, or social consequences of these measures, these setbacks feed a vicious circle: they reinforce public mistrust and skepticism, which becomes more receptive to disinformation arguments, further weakening the legitimacy of public action.

A recent example illustrates the crossing of a critical threshold: the moratorium on the development of new renewable energy facilities, voted in 2025 by the National Assembly[105], was justified in its explanatory statement by an argument based on a narrative of disinformation. This narrative attributed the blackout that occurred in late April 2025 in Spain and Portugal to "intermittent" renewable energies, which are unreliable and "pose the risk of a blackout"[106]. However, the Spanish government's investigation showed that this power failure was due to a failure in the electricity transmission network infrastructure, unrelated to the share of renewable energies. This episode shows how a false claim, first spread on social media and then amplified by certain media outlets, ended up being written in black and white in the text justifying a major legislative decision[107].

This distortion of public debate undermines parliamentary work and encourages a cascade of regulatory setbacks. It weakens the legitimacy of institutions by giving the impression that climate measures are being imposed "against the will of the people," while discouraging the adoption of ambitious policies at a time when they are most needed. The permeation of arguments based on disinformation in the political and regulatory arena shows that the issue is no longer limited to the circulation of "fake news": it is now a question of the erosion of democracy's ability to protect the public interest in the face of deliberate manipulation strategies, often supported by high-emission economic sectors and political forces hostile to the transition.

An economic and industrial fabric hampered by regulatory uncertainty, amplified by disinformation narratives

The structural decarbonization of French industry, which is necessary for the net-zero transition but also for reindustrialization and the consolidation of energy and industrial sovereignty, requires clear regulatory visibility. Without consistency between regulatory discourse, public policy, and citizen expectations, investment decisions are paralyzed.

In its annual report on the ecological transition (September 2025), the Court of Auditors emphasizes that France must take "urgent, vigorous, and better-planned" action to prevent regulatory instability and maladjustment from significantly increasing the costs of the transition[108]. For their part, in September 2025, around 150 French business leaders emphasized their "need for a stable European framework for investment, innovation and transformation," arguing that regulatory "wavering" is hampering both their investment and recruitment efforts[109]. These industry testimonials illustrate the consequences of uncertainty.

The emergence of this uncertainty comes amid an increase in disinformation campaigns that coincide with periods of public debate on structural measures: low-emission zones, national adaptation strategy, and the ban on the sale of combustion-engine vehicles from 2035. The discourse circulating at the time questions the technical feasibility, economic cost, and social impacts of these measures, often without solid evidence but with a strong capacity to mobilize the media.

In the French wind energy sector, climate misinformation now has measurable economic consequences. According to the Renewable Energy Union (SER), only 267 MW of new wind energy capacity was installed in the first six months of the year (2025), the lowest level in 20 years. This slowdown, described by the SER as a "moratorium that dare not speak its name," is the result of disinformation campaigns and ideological hammering, which have led to the absence of a stable multi-year framework and a national energy roadmap. Local political pressure is limiting developers' project portfolios, increasing uncertainty and slowing investment in this strategic sector for the energy transition[110].

Thus, more than ever, regulatory setbacks are not just symptoms, but amplifiers of a vicious circle in which misinformation fuels uncertainty, which slows industrial investment, reinforces public skepticism, and then provides arguments to justify further setbacks or delays.

C. Results of climate disinformation detection in France since January 2025

A sharp peak in climate misinformation cases observed in the summer

Over the period analyzed, 529 cases of climate misinformation cases were identified — including 116 in the week of June 30 to July 6, almost as many as in the entire first quarter of 2025.

Overview of the link between media coverage and misinformation

Climate misinformation is not correlated with media coverage of climate change, but rather seems to be linked to specific political moments.

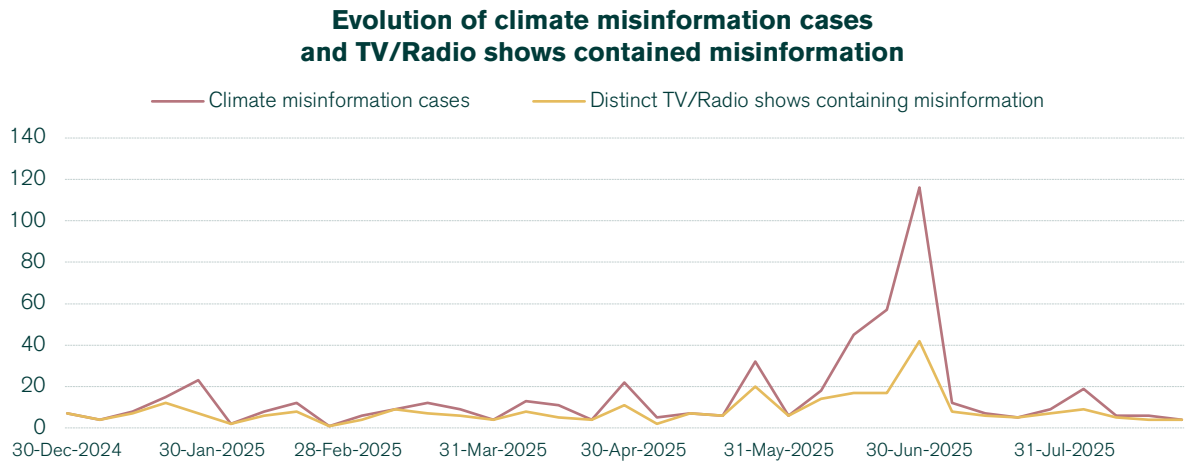


Figure Change in the number of cases of climate misinformation, as well as the number of separate programs containing cases of misinformation in French generalist television news programs over the period analyzed [Jan. 25 – Aug. 25]. Source: Observatoire des Médias sur l'Écologie (Media Observatory on Ecology).

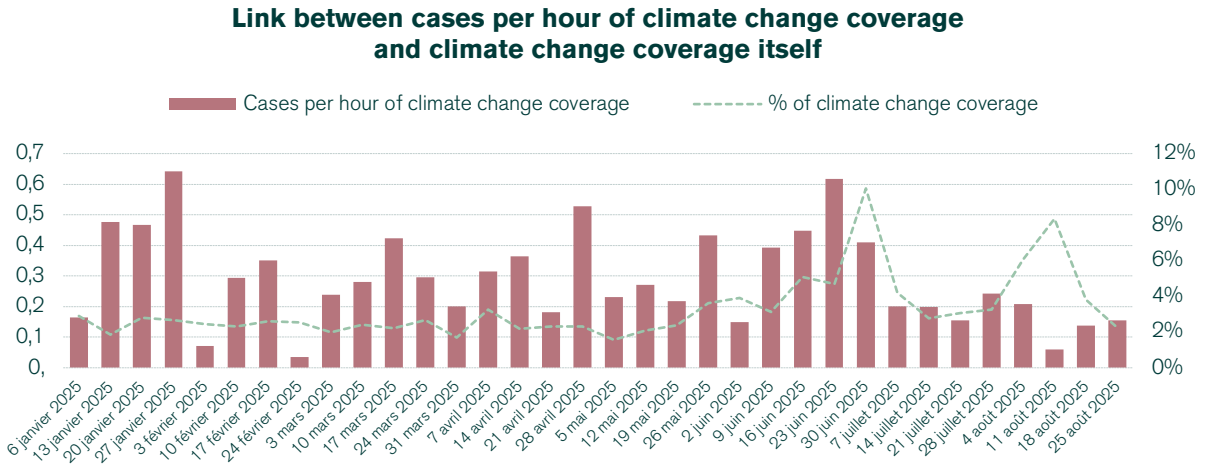


Figure Comparison of the proportion of climate misinformation cases per hour of climate news and the average coverage of climate topics in French generalist television news programs over the period analyzed [Jan. 25 – Aug. 25]. Source: Media Observatory on Ecology.

A sharp increase in climate misinformation cases around key political and geopolitical moments

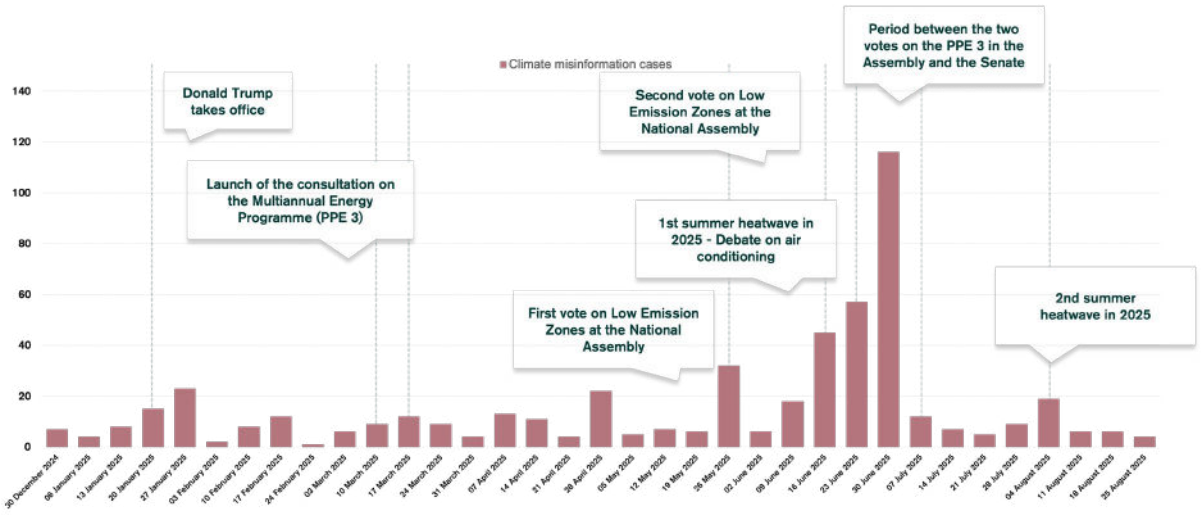


Figure Comparison of the number of validated cases of misinformation and political momentum in France in 2025. Source: Media Observatory on Ecology.

Thus, Donald Trump's inauguration, the two political phases of the Multi-Year Energy Program, and the debates on Low Emission Zones saw a significant increase in the number of cases of misinformation.

It should be noted that **40% of the cases observed in eight months of analysis occurred in the three weeks preceding the vote on the PPE3 in Parliament.**

Specific analysis by media outlets

Cases of misinformation, reported in relation to media coverage of climate change, highlight different trends depending on the type of media, which should be studied separately.

Regarding 24-7 news channels: the more a channel reports on climate issues, the less it is vulnerable to cases of misinformation.
Specifically:
— CNews stands out for its particularly low media coverage of climate change, while broadcasting nearly twice as many misinformation cases as its media counterparts.
— FranceInfo Radio stands out for its low prevalence of misinformation, while maintaining a high level of information compared to the market.

Misinformation cases per hour of climate change coverage

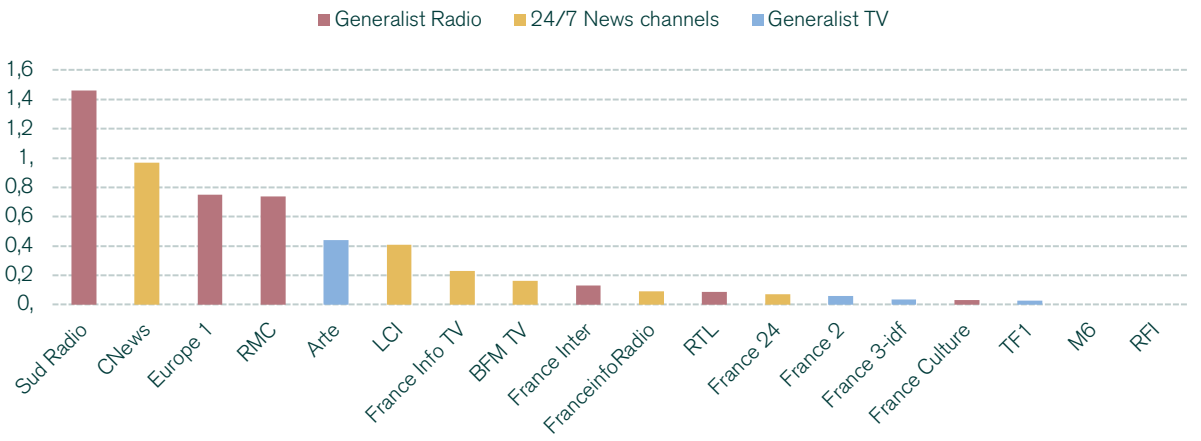
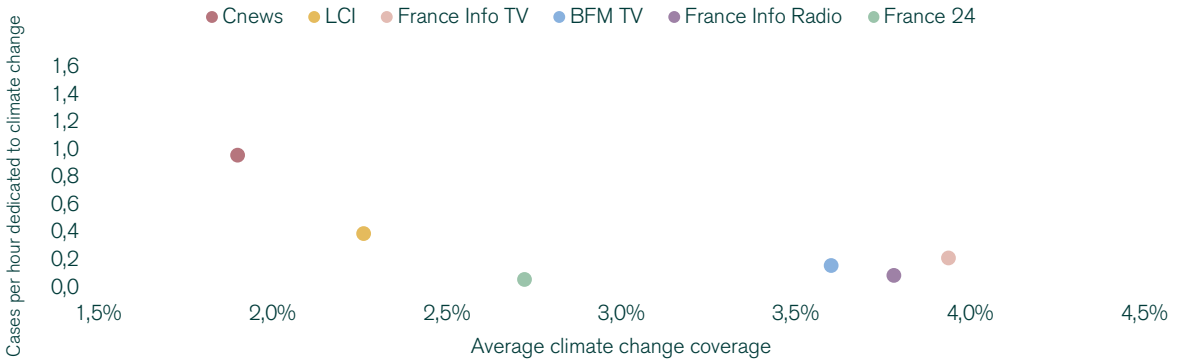
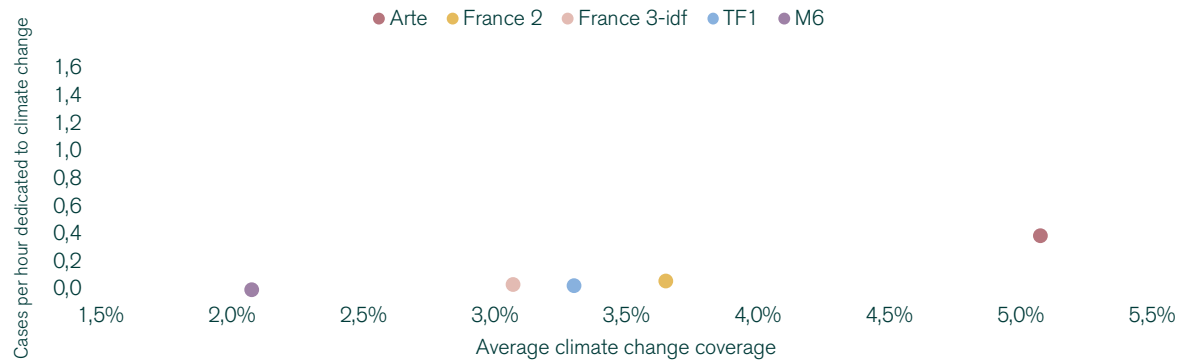


Figure Distribution of the number of confirmed cases of misinformation per hour of climate change news coverage over the period analyzed [Jan. 25 – Aug. 25]. Source: Media Observatory on Ecology.

1 — Comparison between misinformation cases and climate change coverage



2 — Comparison between misinformation cases and climate change coverage



3 — Comparison between misinformation cases and climate change coverage

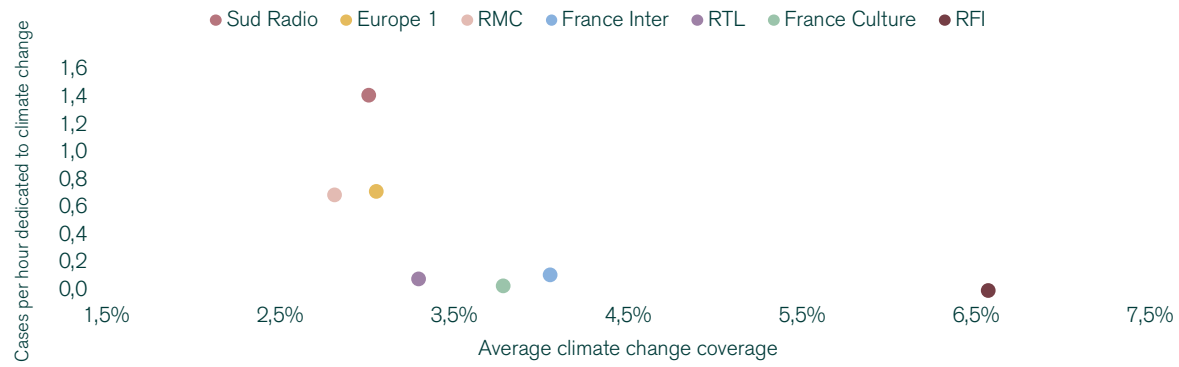


Figure 1, 2 and 3 Comparison between the prevalence of climate misinformation cases per hour dedicated to climate change and climate change coverage in French rolling news channels' news programs over the period analyzed [Jan. 25 – Aug. 25]. Source: Observatoire des Médias sur l'Écologie (Media Observatory on Ecology).
Reading the Figure For BFM TV, climate change accounted for 3.5% of airtime, and there were approximately 0.1 cases of climate misinformation for every 10 hours of news coverage.
Methodological note As the scope analyzed for Arte is significantly lower than for the other channels in the scope, the impact of a case of misinformation on standard ratios such as "number of cases/amount of time dedicated to climate issues" is very high. Therefore, while the results remain valid, they should be interpreted with caution.

The phenomenon appears to be more pronounced on generalist radio stations. The stations that broadcast the most cases of climate misinformation — such as Sud Radio, RMC, and Europe 1 — are also those that devote the least airtime to climate issues, thus maintaining their audience at a level of information that is both insufficient and biased.

SudRadio requires special analysis. While cases of misinformation are present on several channels, SudRadio is an exception in terms of the scale of the phenomenon. With 1.4 cases of climate misinformation per hour of climate news, one misinformation case is detected every 40 minutes of climate news. [111]Beyond its direct audience, SudRadio claims to have had nearly 86 million views on YouTube in 2024, with almost 1 million subscribers.

For generalist television channels, it seems that the more they cover environmental issues, the more they are exposed to climate misinformation in terms of volume, with relatively similar proportions.

Overall, whether a channel covers environmental issues extensively or minimally, almost none are fully immune to misinformation, and their vulnerability appears similar. This pattern can be explained by differences in editorial practices and programming between generalist channels and 24-hour news channels.

In light of these observations, generalist television channels are more effective bulwarks against climate misinformation cases than rolling news channels and some private radio stations.

From isolated cases of climate misinformation to structured disinformation narratives

Reviewing cases of misinformation allows us to identify repetitions and similarities, and thus deduce the existence of deliberate disinformation narratives.

To this end, all cases of misinformation detected were grouped into statistically representative groups of similar statements. **63% of the cases identified relate to the energy sector, specifically renewable energies, 9% to electric mobility, 8% to climate science, and 8% to France's role in global climate action.**

The scope of this report does not include misinformation specifically related to biodiversity. For example, the cases identified relating to agriculture only concern statements directly related to climate change.

The temporal distribution of these narratives highlights a key observation: with the exception of the topic on air conditioning (which emerged in the summer of 2025), all of the narratives observed over the year appeared no later than March 2025.

Distribution of disinformation narratives

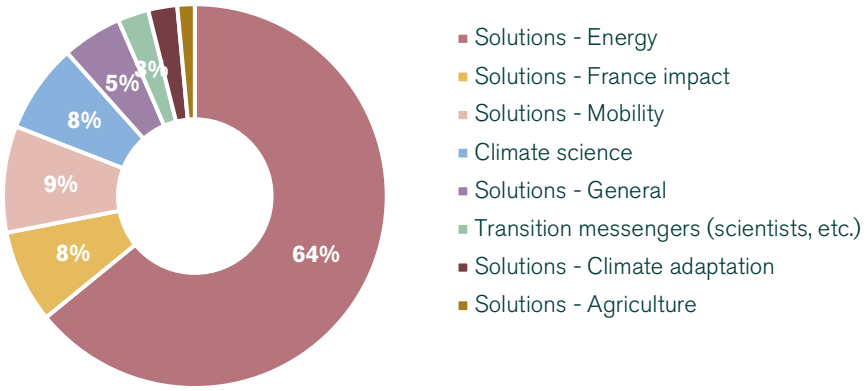


Figure Thematic breakdown of disinformation narratives observed in French audiovisual news programs during the period analyzed [Jan. 25 - Aug. 25]. Source: Media Observatory on Ecology.

Main disinformation narratives
Study conducted on television and radio news programs in France,
between January and August 2025

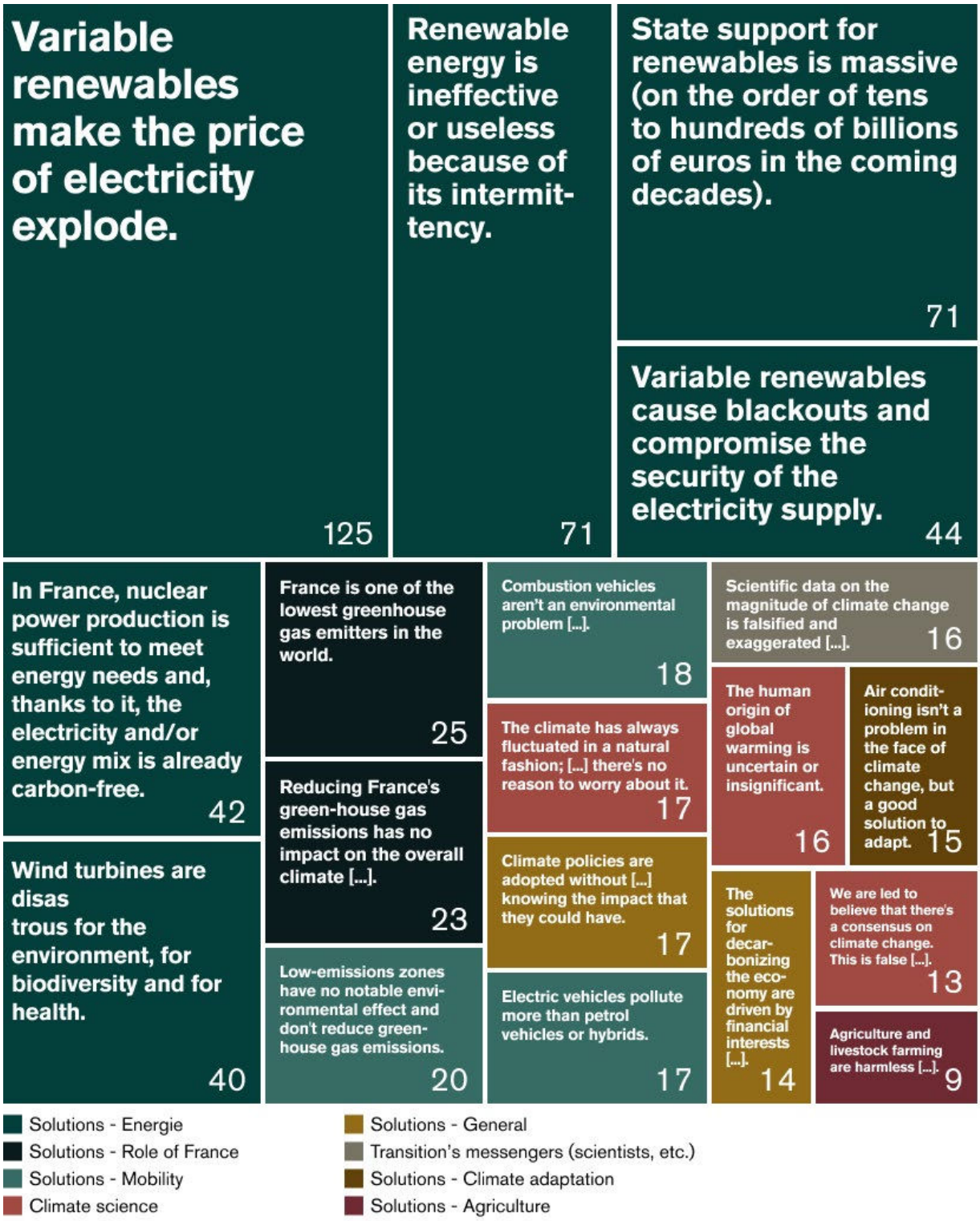


Figure Thematic breakdown of disinformation narratives observed in French audiovisual news programs during the period analyzed [Jan. 25 – Aug. 25].
Source: Media Observatory on Ecology.

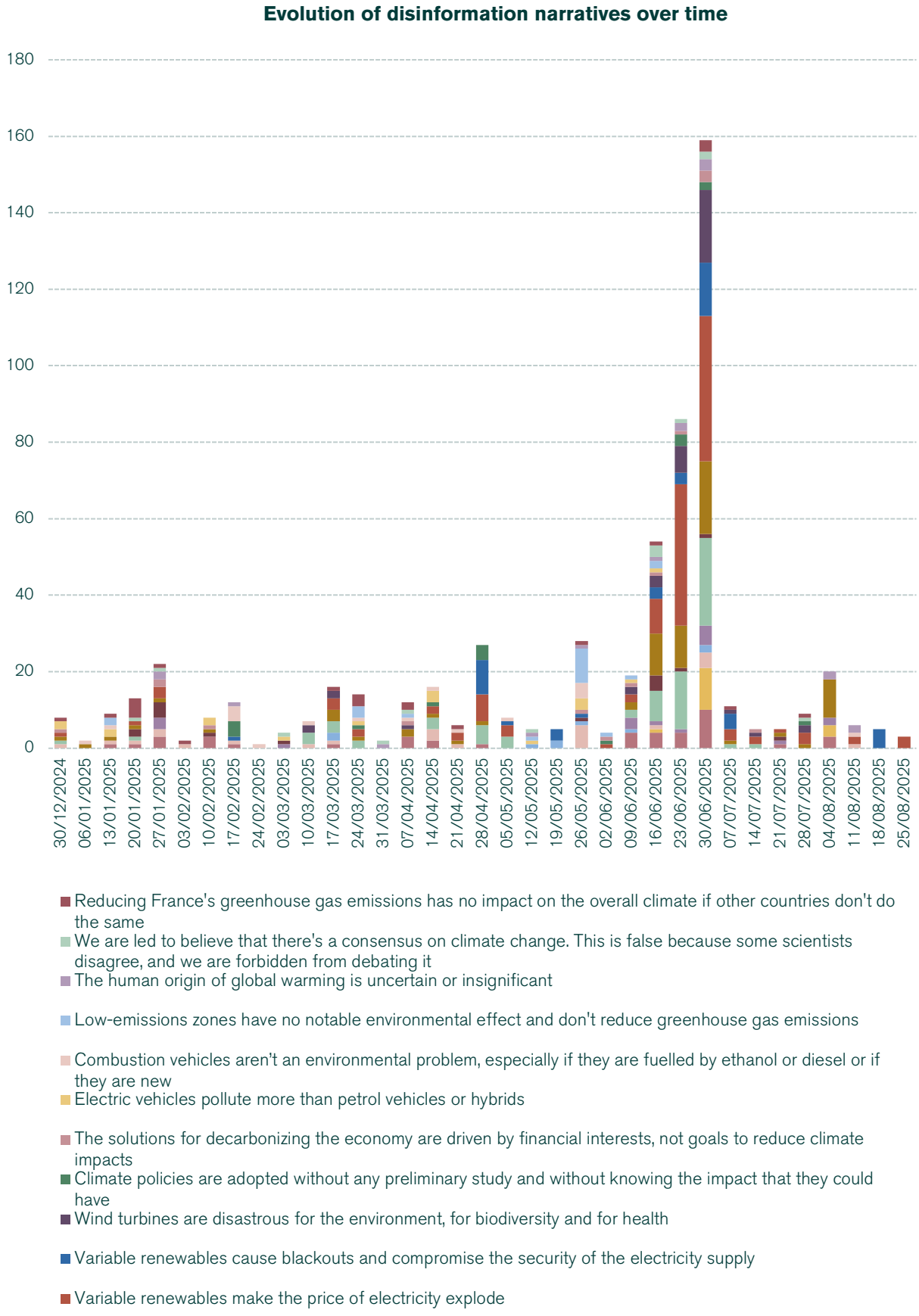


Figure Temporal distribution of disinformation campaigns observed in French audiovisual news programs over the period analyzed [Jan. 25 – Aug. 25]. Source: Observatoire des Médias sur l'Écologie.

Analysis of speakers: journalists, editorialists, guests, politicians

Cases of misinformation can be spread by a variety of speakers: guests, politicians, journalists, editorialists, and listeners.

As shown by the Figure, slightly more than 20% of cases are expressed directly by journalists, while guests account for 32% of the misinformation detected. Political guests account for 24% of detected cases, and columnists for 19%.

The distribution of speakers by type of media (public/private), or even by specific media outlet, allows for a more detailed analysis of the findings.

In the public sector, 92% of detected cases of misinformation come from guests (including politicians). In contrast, 46% of cases of misinformation on private channels are uttered by journalists or editorialists.

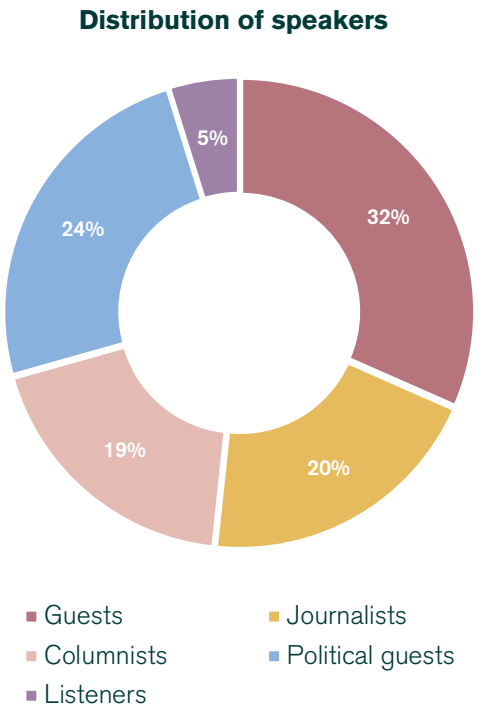


Figure Breakdown of speakers who made misinformation statements observed in French audiovisual news programs during the period analyzed [Jan. 25 – Aug. 25].
Source: Media Observatory on Ecology.

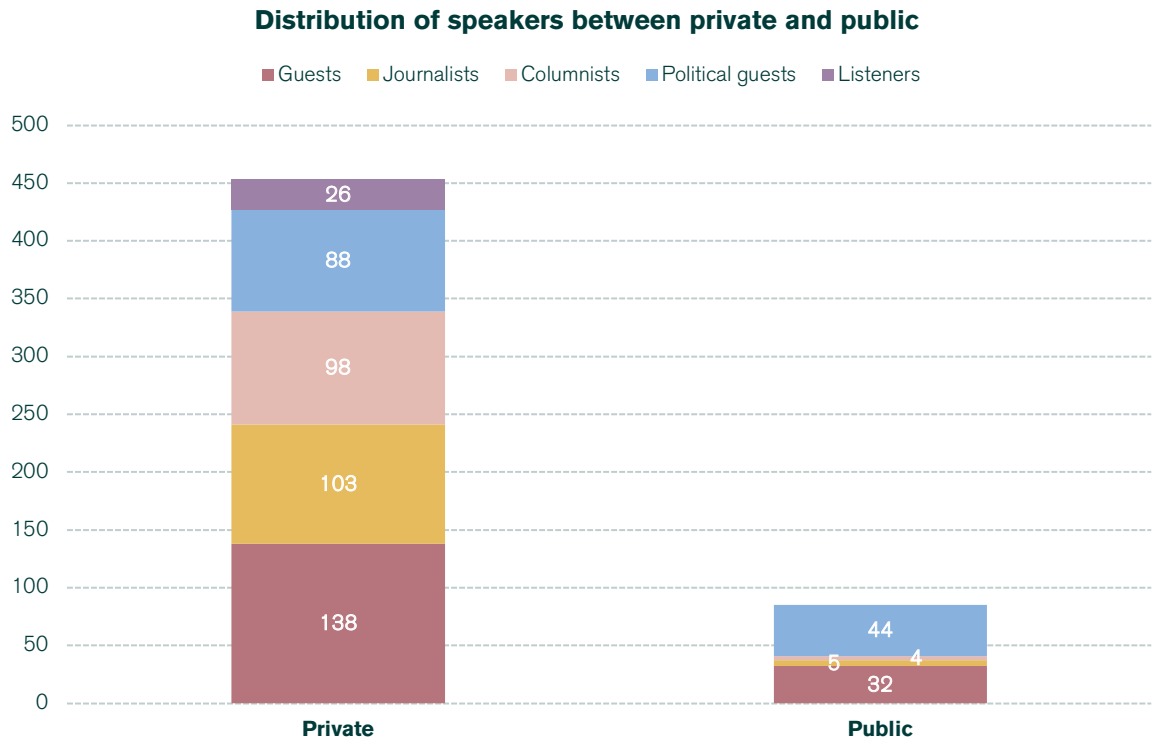


Figure Breakdown of speakers in cases of misinformation detected in French audiovisual news programs over the period analyzed, comparison between the private and public sectors [Jan. 25 – Aug. 25].

Analysis by media outlet reveals the following specificities:

— CNews and Europe 1 stand out for the significant number of cases of misinformation reported directly by journalists — 35% and 38% of cases, respectively.
— LCI stands out with a significant number (53%) of cases issued by the channel's editorialists.
— BFMTV stands out with a significant number (50%) of cases issued by political guests.
— SudRadio stands out with a significant number (53%) of cases issued by its guests.

This analysis of speakers, combined with that of the volume of cases per hour of news coverage, allows for the identification of different levels of exposure and conclusions about the associated level of intentionality.

From climate science to climate action: focus on the new climate denial

While climate disinformation strategies have historically targeted knowledge about the existence and origin of climate change[112], they have since evolved. So much so that the emergence of a new climate denial[113] was theorized in 2020 — and now conceptualized in the CARDS academic framework below.

The CARDS (Computer Assisted Recognition of Denial & Skepticism) framework[114] distinguishes three main categories of discourse: misleading narratives about climate science, disinformation about messengers, and disinformation about solutions and climate action.

The detected disinformation narratives were recategorized according to this taxonomy. One conclusion emerges: false narratives about climate science are now in the minority.

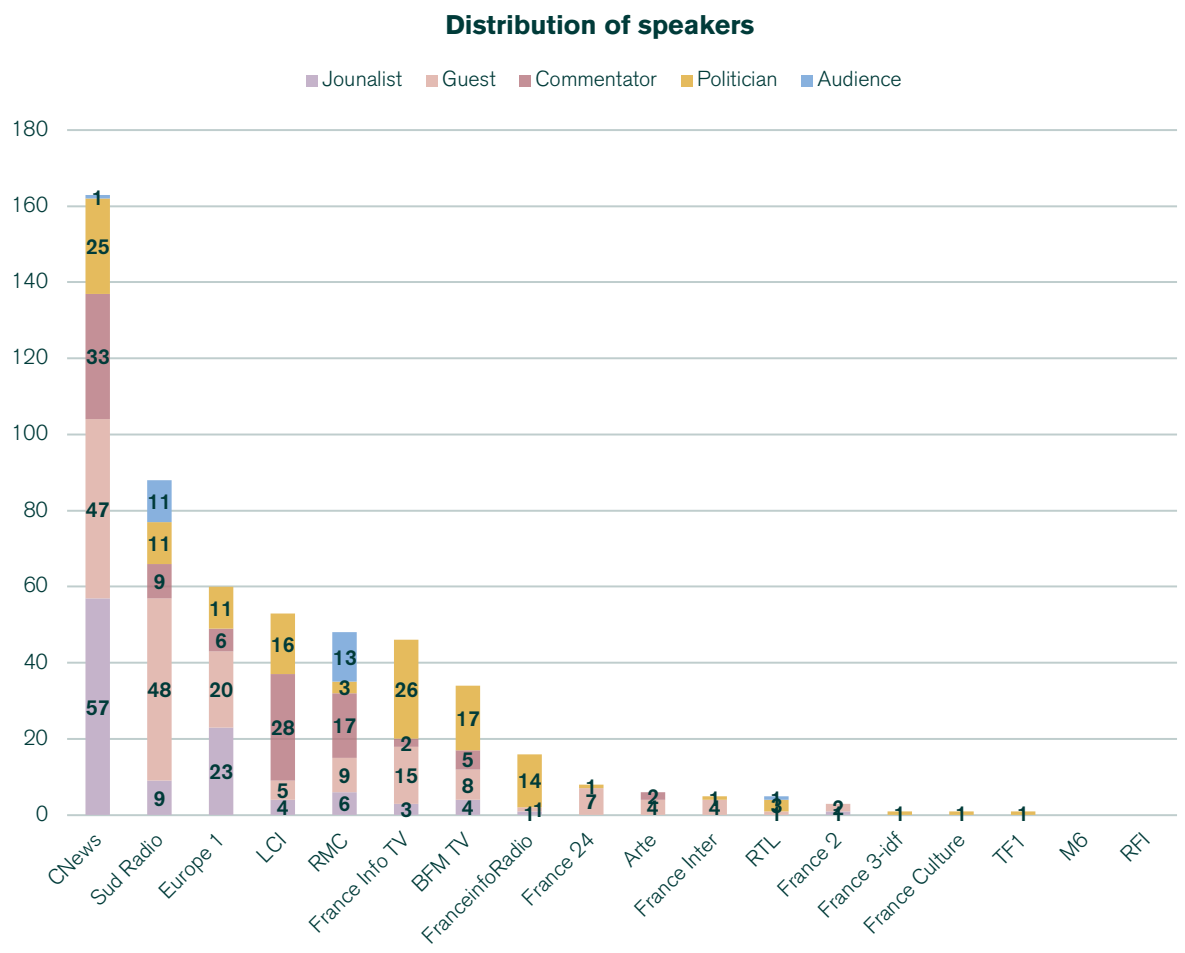


Figure Distribution of speakers who made misinformation statements for each media outlet observed in French audiovisual news programs during the period analyzed [Jan. 25 – Aug. 25]. Source: Media Observatory on Ecology.

The above mentioned false narratives about climate science were particularly visible when Donald Trump took office (mid-February), whose climate-skeptical positions helped normalize this discourse in the French mainstream media[115].

The sharp rise in attacks on the messengers of the transition — scientists, environmentalists, civil society, and others — becomes especially clear during certain events, framed by a false opposition between climate action and social issues: Trump's inauguration, debates over the PPE, the Duplomb law, and periods of extreme heat.

Misinformation cases about solutions accounts for more than 85% of cases of misinformation detected since the beginning of the year. This share is unevenly distributed among the media. SudRadio, RMC, Europe 1 are particularly exposed, as well as almost all 24-hour news channels.

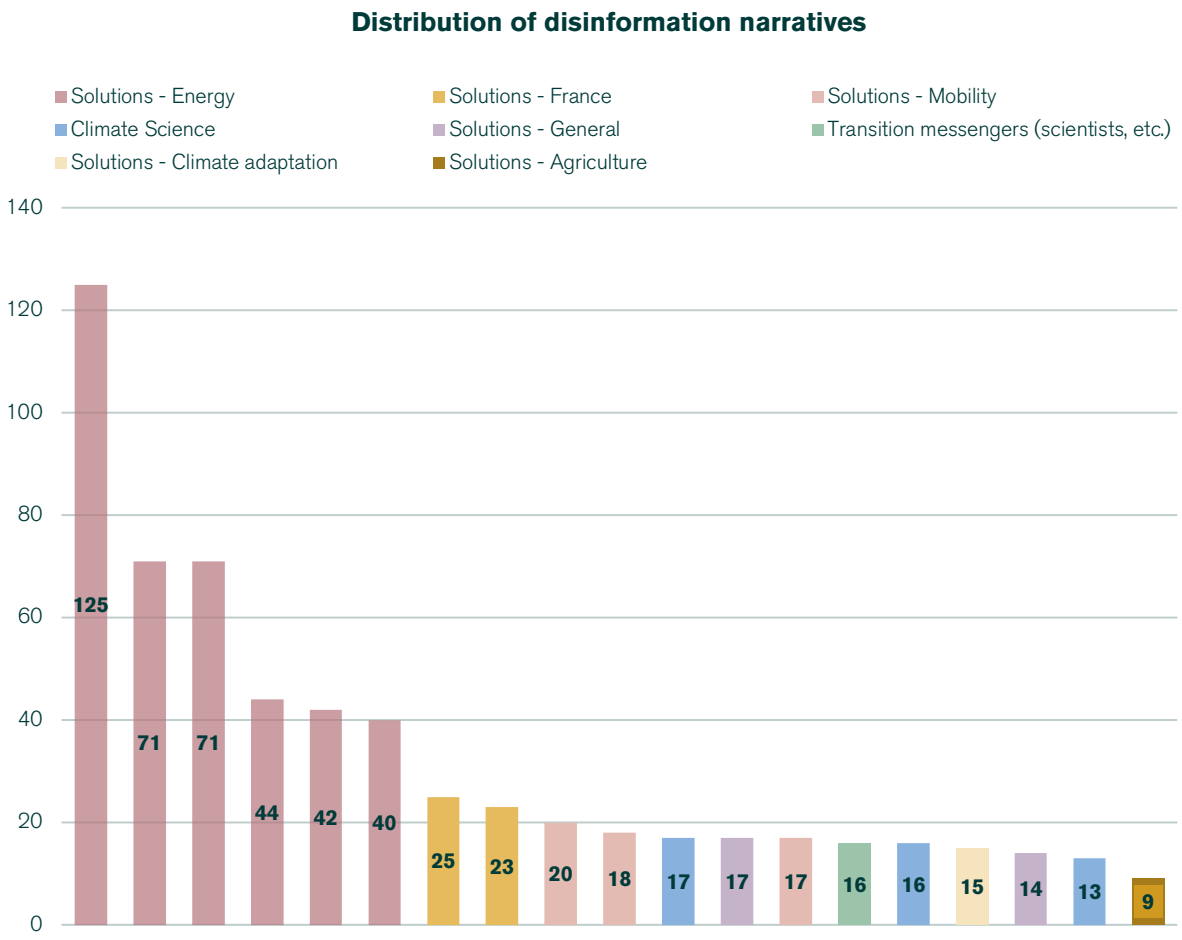


Figure Distribution of the various disinformation narratives detected in the mainstream media during the period analyzed [Jan. 25 – Aug. 25]. Source: Media Observatory on Ecology.

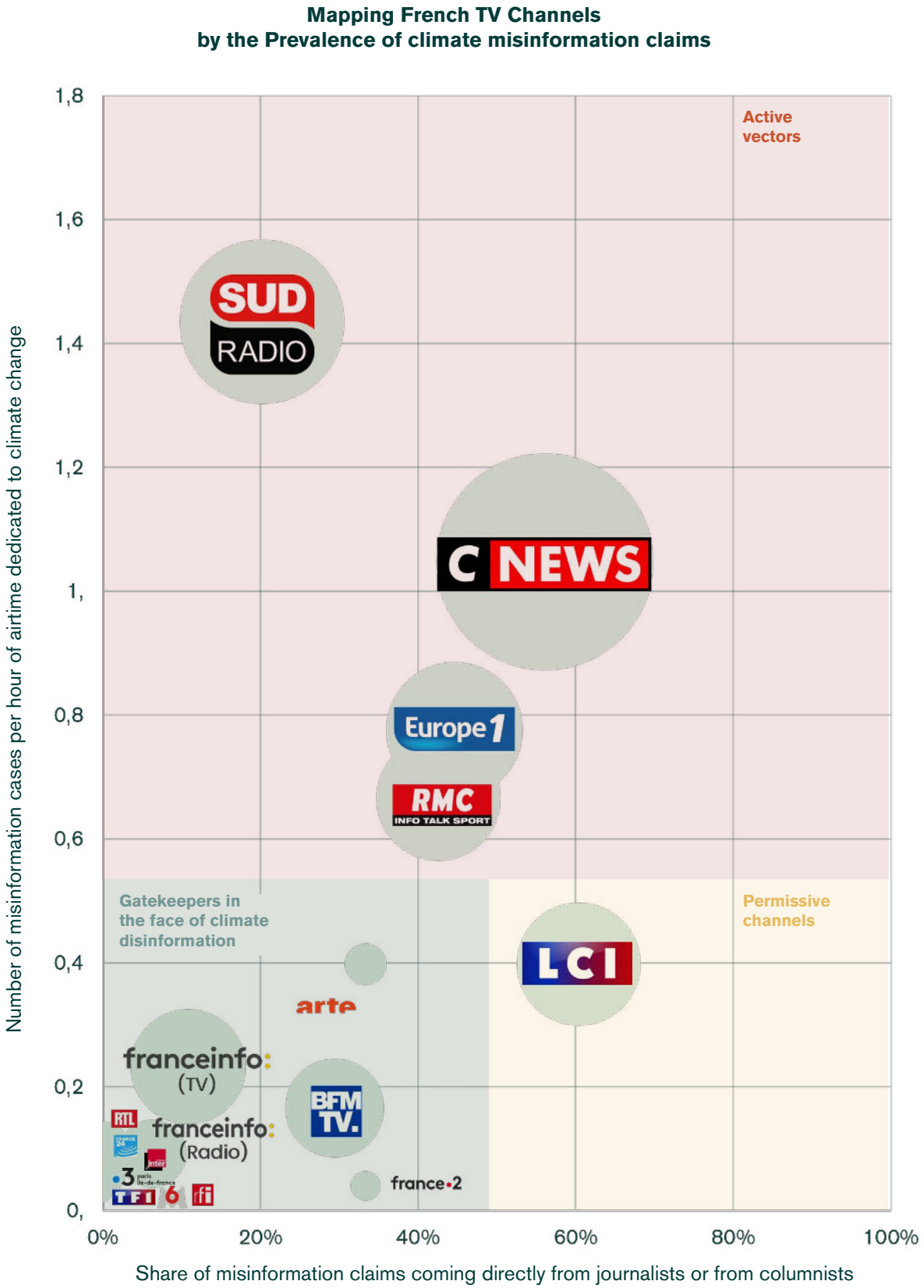


Figure Comparison between the prevalence of misinformation per hour of climate change news coverage and the proportion of misinformation cases reported by journalists or commentators in the media during the period analyzed [Jan. 25 - Aug. 25]. Source: Media Observatory on Ecology.
Key Circles: number of cases identified from January 25 to August 25
Scale Arte (6 cases); CNews (164 cases)

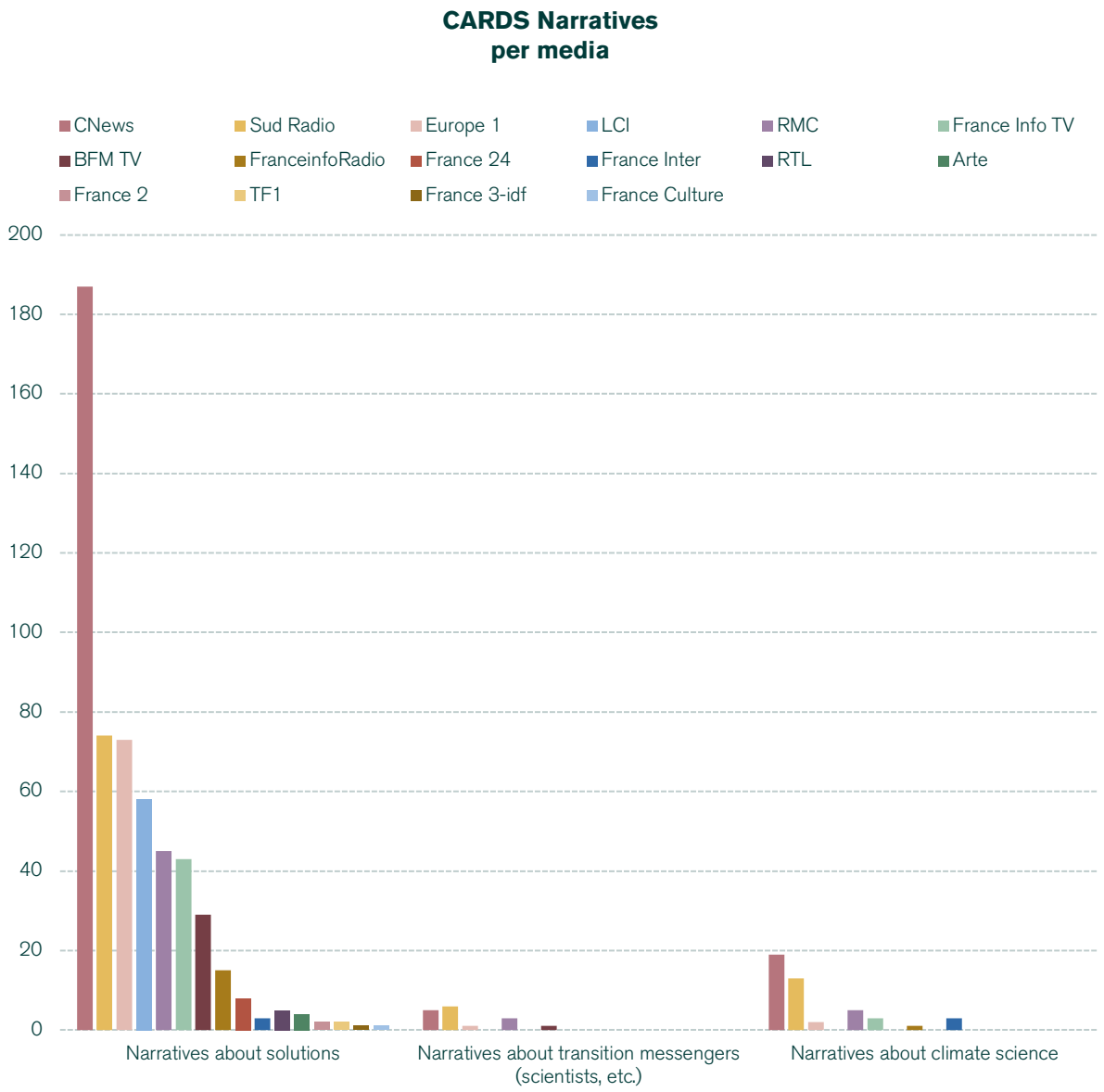


Figure Distribution of the various disinformation narratives detected in the media during the period analyzed [Jan. 25 – Aug. 25]. Source: Media Observatory on Ecology.

D. Zoom: public broadcasting, a gatekeeper against climate disinformation

France's public broadcasters are a powerful tool for preserving a shared understanding of environmental issues, especially as climate misinformation cases rises in mainstream media.

While TF1 is the leader channels in terms of audience and the leading private audiovisual media outlet in France in terms of media coverage of environmental issues, public audiovisual media dominate coverage of environmental issues in France, according to figures from the Observatoire des Médias sur l'Écologie ([116]): In the analyzed period, eight of the ten audiovisual outlets covering these issues the most have been public broadcasters. These figures reflect only news program coverage, excluding specialized shows such as magazines and documentaries for methodological reasons.

A majority of French people consider the existence of France Télévisions and Radio France to be "a good thing for the independence of editorial teams and journalists," as well as for the plurality of opinions and diversity of the media landscape[117]. These outlets have enjoyed rising audiences in recent years, as have the generalist radio stations France Inter and France 2.

France Télévisions, Radio France, Arte, France Médias Monde, and the Institut national de l'audiovisuel sign contracts with the government setting out their objectives and resources (also called COMs), within the framework of their missions as defined by the Léotard Law of 1986. The COMs thus make it possible to set priority areas for the development of public broadcasting over a multi-year period and emphasize the requirement for exemplary behavior.

In pursuing these missions, companies must offer "the public, in all its diversity, a range of programs and services characterized by their diversity and pluralism, their high standards of quality and innovation, and their respect for human rights and constitutionally defined democratic principles," including education on the environment and sustainable development[118].

Public broadcasting shall therefore act as a bulwark against attempts to manipulate public opinion and spread disinformation. However, the exemplary effort expected of public media should not exempt private media from transforming their practices, nor should it delay the need for political actors to contribute to the development of new shared standards for environmental information. In the face of climate disinformation, there is an urgent need to change the rules of media regulation.

Environmental crisis coverage per media

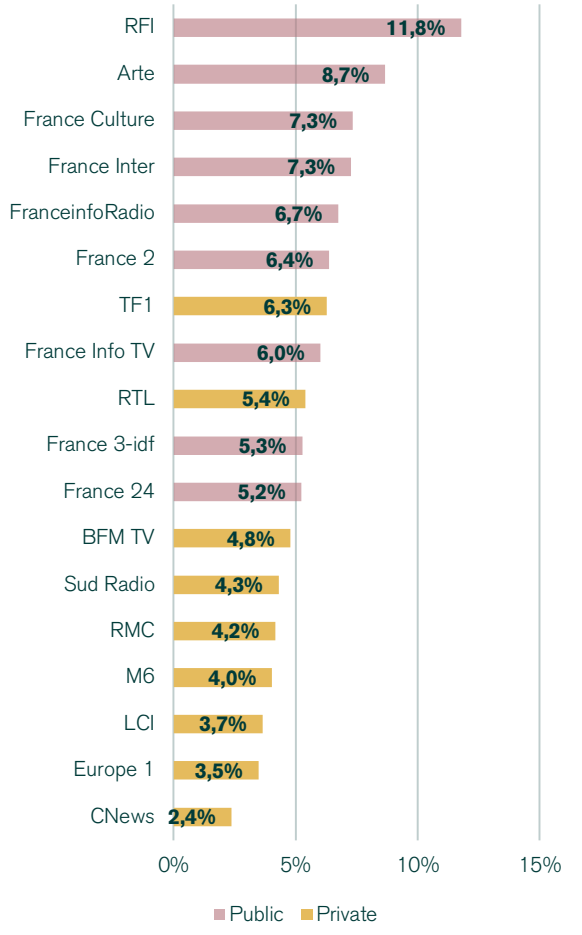


Figure Distribution of the number of claims for each of the different disinformation campaigns detected in the media during the analyzed period.
Source: Media Observatory on Ecology.

Case studies

Fact-checking of the main disinformation narratives identified in France

NARRATIVE

"Variable renewables make the price of electricity explode."

MISLEADING

Takeaway Solar and wind electricity are now cheaper to generate than electricity from fossil fuel or nuclear plants. More solar and wind doesn't necessarily result in more expensive electricity bills.

Summary Adding more solar and wind to the grid doesn't necessarily result in more expensive electricity bills[119].

Let's look at U.S. states where we have reliable and comparable data. We might expect to see that households in states with more solar and wind pay more for electricity, but we don't see any such correlation[120]. In fact, we'll find some of the cheapest electricity in states that have recently built large numbers of wind turbines.

Electrical bills are structured differently from place to place, and they do generally include taxes and grid fees, but the largest expense comes from the cost of generating electricity itself. Solar panels and wind turbines are now generally cheaper to build and operate than fossil fuel or nuclear plants[121], but most grids have a mix of sources, and the most expensive source sets the cost. So, in much of Europe, fossil fuels play an outsized role in setting that cost. In particular, in 2022, gas prices surged following the Russian invasion of Ukraine, and electricity markets felt the fallout[122].

There are many indications that the increase in the share of solar and wind power in the electricity grid is reducing electricity prices on the European market. Due to the investments required in the electricity transmission network, the increase in renewables could raise electricity bills in France by around 15% in the future[123]. These investments meet the needs to update aging infrastructure, adapt to climate change, install new connections related to industry and low-carbon production and strengthen grid structure – and not just the deployment of renewables.

Read more in these articles

— Les EnR sont-elles responsables de l'évolution de la facture ? CRE. 2025. Débats sur l'énergie : Démêler le vrai du faux. https://www.cre.fr/fileadmin/Documents/Rapports_et_etudes/2025/DemelerleVraiduFaux.pdf
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NARRATIVE

"Scientific data on the magnitude of climate change is falsified and exaggerated by scientists, NGOs, and institutions, with the goal of manipulating public opinion and serving their personal interests."

UNSUPPORTED

Takeaway There is no evidence of mass 'data falsification' and 'fraud' in climate science – claims to the contrary rely on conspiracy theories, not evidence. Leading climate reports – like the most recent IPCC Sixth Assessment Report – are rigorously checked by hundreds of scientific experts around the world and transparently assign confidence levels to their findings[124].

Summary Claims of 'mass fraud' in climate science rely on conspiracy theories, not evidence. Scientists around the world independently conduct research into Earth's climate. When their key findings agree across studies, this strengthens their conclusions – it doesn't prove scientists are 'conspiring'.

Leading climate organizations, like the Intergovernmental Panel on Climate Change (IPCC), transparently explain their processes. The 2021 IPCC Sixth Assessment Report, for example, is a summary of findings from scientists' assessments of thousands of scientific papers[125]. These assessment reports are rigorously reviewed by hundreds of experts around the world. The IPCC is transparent about confidence levels for different findings and its authors are the first to explain their uncertainties.

The procedures above show why these reports aren't just 'following a narrative'; the urgency and magnitude of climate change outlined in these reports stems from expert review of an extensive body of scientific evidence.

On a smaller scale, individual scientific papers are also reviewed by fellow experts in a process called 'peer review'. Despite the thousands of peer-reviewed papers and several large climate reports published over the years, conspiracy theorists have yet to present any credible evidence of 'mass fraud'.

Read more in these articles

— IPCC. Comment fonctionne le processus d'examen du GIEC ? 2015. https://www.ipcc.ch/site/assets/uploads/2018/04/FS_review_process_fr.pdf
— Rosen, Debbie. "Guest post: Tracking the unprecedented impact of humans on the climate — Carbon Brief". 2024. https://www.carbonbrief.org/guest-post-tracking-the-unprecedented-impact-of-humans-on-the-climate/
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NARRATIVE

“France is one of the lowest greenhouse gas emitters in the world.”

LACKS CONTEXT

Takeaway Both overall and per person (per capita), France emits significantly less greenhouse gases than large emitters like the U.S. or China. But France is certainly not the lowest emitter in the world. Overall, France ranks around 20th in the world for greenhouse gas emissions, with roughly 180 countries emitting less than them. France’s relatively lower per capita emissions are largely thanks to significant use of nuclear energy.

Summary While it is true that France emits significantly less greenhouse gases[126] than the largest emitters like the U.S. or China, France is not one of the lowest emitters in the world. France ranks around 20th[127] in the world (varying by year) for annual greenhouse gas emissions; there are roughly 180 countries who emit less than France[128].

France’s relatively low emissions compared to top emitting countries are thanks to a larger share of France’s energy coming from nuclear[129], rather than fossil fuels (which emit far more greenhouse gas[130]). In 2024, 44% of France’s total energy supply came from nuclear[131]; in the same year, that share in the U.S.[132] was only 9.8%, and in China, 3%[133]. Instead, the U.S. and China rely mainly on fossil fuels for energy.

But France’s emissions are far from zero (369 millions of tonnes of CO2e[134]), with roughly 41.8% of its total energy supply coming from fossil fuels[135]. Every tonne of greenhouse gas added to our atmosphere contributes to global warming – it doesn’t matter which country emits it, nor their ‘emissions rank’. Additionally, all countries emitting less than 2% of global emissions[136] (France included) represent 37.6% of the total[137] – far from negligible.

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NARRATIVE

"Variable renewables cause blackouts and compromise the security of the electricity supply."

UNSUPPORTED

Takeaway There's no evidence that adding solar and wind to the grid causes blackouts. We do need to adapt the grid to handle solar and wind, but electrical engineers are well aware of this problem and know how to address it.

Summary There's no consistent evidence that more solar and wind make blackouts more likely. When grids properly add solar panels and wind turbines to their network, they don't increase the risk of a blackout[138]. For example, in 2024, California's electric grid ran entirely on solar, wind, and hydro for parts of more than 90 days, and suffered no blackouts[139].

It is true that solar panels and wind turbines aren't like other power sources. Instead of one central power plant, solar and wind generate the same amount of electricity with many smaller decentralized sources; they generate direct current (DC)[140], as opposed to the alternating current (AC) that's standard for the grid[141]. Adding solar and wind to the grid needs special adjustments and equipment like inverters. However, as we've said, engineers and grid operators are well aware of this, and the adjustments are standard practice[142].

People are often quick to blame renewables for blackouts – in Spain earlier this year, for example – but it's misleading to blame a blackout on any single cause[143]. Electrical grids are quite complex, and a well-designed grid has numerous systems intended to prevent failure. If a blackout does happen, it usually means that multiple things have gone wrong[144].

Read more in these articles

— Le black-out espagnol a été provoqué par un trop plein d'énergie solaire que le réseau n'a pas su absorber ? CRE. 2025. Débats sur l'énergie : Démêler le vrai du faux. https://www.cre.fr/fileadmin/Documents/Rapports_et_etudes/2025/DemelerleVraiduFaux.pdf
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NARRATIVE

"Renewable energy is ineffective or useless because of its intermittency."

UNSUPPORTED

Takeaway Many countries are able to generate large parts of their electricity from intermittent renewables. There are numerous solutions to solar and wind's intermittency, such as grid energy storage, that do not rely on fossil fuel power plants.

Summary If intermittent renewables – solar panels and wind turbines – were 'ineffective' or 'useless', then we couldn't use them as the backbone of an electric grid. Yet many countries do just that[145]. In 2024, Germany generated 43% of its electricity from solar and wind alone, the Netherlands generated 46%, and Denmark generated 69%[146]. Generating half of a country's electricity from solar and wind would be far more difficult if intermittency made them unworkable.

There are solutions that can provide electricity where there is no sun or wind. Many countries today rely on fossil fuel or nuclear power plants to provide a backstop to intermittent renewables, but these are not the only options. For example, grids may combine solar and wind with hydroelectric dams – hydro is actually a form of non-intermittent renewable energy[147].

Grids may also combine solar and wind with storage systems. These include pumped-storage dams[148], which store energy as water in a reservoir that can be released to generate electricity later, and grid-storage batteries. These are not hypothetical systems. The world held 189 gigawatts[149] of pumped-storage capacity and 110 gigawatts[150] of battery capacity by the end of 2024 – each more than the total grid capacities of many small countries[151].

Read more in these articles

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— IEA. "How Rapidly Will the Global Electricity Storage Market Grow by 2026? – Analysis". IEA, 1 décembre 2021. https://www.iea.org/articles/how-rapidly-will-the-global-electricity-storage-market-grow-by-2026.

NARRATIVE

"Electric vehicles pollute more than petrol vehicles or hybrids."

INACCURATE

Takeaway Across its entire life, a petrol vehicle is almost always responsible for more greenhouse gas emissions than a comparable electric vehicle. While electric vehicle batteries do include ecologically sensitive metals like lithium and nickel, experts don't think their impacts outweigh those from the petroleum needed to power a combustion vehicle.

Summary When we look at greenhouse gas emissions from across a car's entire life – from raw materials to retirement – we find that a combustion vehicle* (ICEV) almost always has higher emissions than a similarly sized electric vehicle (EV). Although the EV may be more emissions-intensive to manufacture than the ICEV, the EV will more than make up that difference on the road, since it doesn't rely on petroleum to operate.

Multiple studies have shown that EVs are less emissions-intensive than their ICEV counterparts in most of the world; another study has shown that EVs have a similar advantage over hybrids too[152][153][154]. This is particularly true in France thanks to its largely decarbonized electricity production.

What about other forms of pollution? Due to its battery, an EV does contain more sensitive metals like lithium, nickel, and rare earths than an equivalent ICEV. However, a typical EV will only use a few kilograms of each, once, when it's manufactured[155].

Meanwhile, nearly all ICEVs continually rely on petroleum over their entire lifetimes. Every step of petroleum's lifecycle, from the oil well to the engine, damages both the environment and human health[156]. It's difficult to directly compare the footprints of battery metals and petroleum, but experts generally don't think EVs' environmental costs outweigh the benefits of moving away from oil[157].

**Note: in this summary, 'vehicle' refers to a 'car' (passenger vehicle).*

Read more in these articles

— ScienceFeedback. "Les impacts environnementaux des combustibles fossiles surpassent ceux liés à l'extraction des métaux nécessaires aux véhicules électriques — Science Feedback". https://science.feedback.org/, 9 janvier 2025. https://science.feedback.org/fr/impacts-environnementaux-combustibles-fossiles-surpassent-extraction-metaux-necessaires-vehicules-electriques/
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NARRATIVE

"Low-emissions zones have no notable environmental effect and don't reduce greenhouse gas emissions."

INACCURATE

Takeaway Low-emissions zones have reduced their cities' levels of air pollution by discouraging or prohibiting certain vehicles from entering certain zones. These air pollution decreases have led to observed health improvements, like reduced cases of respiratory illness. LEZs implementation does not aim to reduce greenhouse gas emissions.

Summary When cities discourage or prohibit certain vehicles[158] from entering certain zones, they're usually trying to cut down on cars' air pollution that directly impact the health of those who live and work in these zones. So, are these low-emissions zones (LEZs) successful?

The answer is yes, according to independent studies of LEZs. Studies from cities like Lisbon[159], London[160], and Madrid[161] have found that an LEZ reduced its respective city's levels of nitrous oxide and fine particulates (PM), both of which are common air pollutants. The result? Clearly observed health improvements[162], such as reduced cases of respiratory illness in London[163] and better cardiovascular health in German cities with LEZs[164]. LEZs don't erase air pollution entirely, but they do lead to notable improvements on the local level.

LEZs are local policies intended to reduce local pollution, not to reduce greenhouse gas emissions. People claiming that LEZs don't reduce greenhouse gas emissions use misleading language. However, the Intergovernmental Panel on Climate Change (IPCC) notes[165] that LEZs encourage motorists to drive cleaner cars, like electric vehicles, which can ultimately reduce global greenhouse gas emissions.

Read more in these articles

— ScienceFeedback. "Les voitures sont une source de pollution de l'air, particulièrement en ville — Science Feedback". https://science.feedback.org/, 7 mai 2025. https://science.feedback.org/fr/voitures-sont-source-de-pollution-air-particulierement-ville/
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NARRATIVE

"The climate has always fluctuated in a natural fashion; the same is true today, and there's no reason to worry about it."

MISLEADING

Takeaway Evidence shows that recent climate changes are driven by human activity – not natural factors – and are resulting in a rise in certain extreme weather events, especially extreme heat, which can negatively impact humans. Climate conditions – and their fluctuations – in Earth's deeper past are not necessarily the ideal conditions for humans to thrive in (Earth's ice ages were 'natural fluctuations', for example).

Summary Scientific evidence clearly shows that recent climate change is being driven by emissions of greenhouse gases – primarily carbon dioxide (CO2) – from human activities[166]. These greenhouse gases trap heat on Earth and warm the planet. Earth's climate does naturally fluctuate, because of volcanic, solar activity, and Earth orbit variations. But scientists explain that natural fluctuations cannot explain current changes.

One way they discovered this was by modelling how different factors could reproduce temperatures that we've observed in recent history. In their simulations, scientists found that natural variables (solar and volcanic) alone were unable to match observed global temperature trends over the period of 1850-2020[167]. The models could only achieve a close match when human factors, like CO2 emissions, were included. These observations rule out the idea that fluctuations are due to natural factors alone, and it solidifies human influence.

Regarding claims of 'not needing to worry' about these changes: climate experts would disagree[168]. Natural fluctuations and climate conditions of Earth's deeper past aren't necessarily ideal for human life[169] (e.g., harsh ice ages). Climate change has several impacts that affect human life: lower crop yields, higher human death because of hot temperatures, more frequent and severe extreme weather events[170], etc. Scientists expect this to worsen in the future.

Read more in these articles

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NARRATIVE

"State support for renewables is massive (on the order of tens to hundreds of billions of euros in the coming decades)."

LACKS CONTEXT

Takeaway In 2020, around the world only around a third of investment in renewables came from governments. The amount of support for renewables is lower than the amount of support for fossil fuels, and building renewables comes at much lesser cost to the environment than building fossil fuels. In France, the PPE3 proposal plans for €3 billion of that per year[171].

Summary Only a minority of funding for renewables comes from the government. For example, as Science Feedback has covered[172], it's estimated that the French energy sector will need €17 billion of investment per year by 2030; a proposal (which, as of this writing, has not been[173] voted upon or approved) calls for €3 billion of that per year to come from the government.

Numbers in the billions only reflect the size of the world's energy sector. Between 2015 and 2022, total global investment in fossil fuels ranged from US$800 billion to 1.2 trillion per year[174]. Over the same time period, total global investment in renewables ranged from US$200 billion to 500 billion per year[175], with about a third coming from public financing.

In fact, estimates suggest that governments spend at least US$500 billion[176] per year subsidizing fossil fuels. (France has spent[177] about €10 billion to 15 billion per year in recent years.)

In that context, the amount of government support for renewables may not seem as massive. Far from being propped up by government support, solar panels and wind turbines have gained traction precisely because they're now cheaper to build[178] than fossil fuel power plants.

Read more in these articles

— ScienceFeedback. "La hausse des renouvelables dans le mix électrique diminue le prix de vente de l'électricité, et augmente les coûts d'acheminement — Science Feedback". https://science.feedback.org/, 24 juin 2025. https://science.feedback.org/fr/blog/hausse-renouvelables-mix-electrique-diminue-prix-vente-electricite-augmente-couts-acheminement/
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NARRATIVE

"In France, nuclear power production is sufficient to meet energy needs and, thanks to it, the electricity and/or energy mix is already carbon-free."

INACCURATE

Takeaway Nuclear power is a source of low-carbon electricity, but it is not the only source of clean electricity – renewables like solar and wind are just as low-carbon. While France has relatively very clean electricity thanks to its fleet of nuclear power plants, electricity isn't the only form of energy. Due to vehicle fuels and home heating, fossil fuels still account for more than 60% of France's energy consumption.

Summary Nuclear power is low-carbon[179] (though it's not renewable, as it relies on a limited supply of fuel[180]). Nuclear plants emit very little greenhouse gas[181] compared to fossil fuels – gas is responsible for 60 to 100 times higher emissions, and coal 120 to 210 times, according to UNECE data[182]. France generates[183] more than two-thirds of its electricity from nuclear, so this source is not sufficient to meet all electricity needs.

Moreover, electricity is only part of a country's total energy mix. When we include other sorts of energy like petroleum for vehicle fuel and gas for heating, about 60% of France's energy[184] consumption still comes from greenhouse-gas-generating fossil fuels. Decarbonization also means reducing fossil fuel use, and therefore emissions, in these areas. In France in 2023, 269 million tons of CO2e (a unit measuring the global warming potential of all greenhouse gases) were emitted from fossil fuel combustion, according to the International Energy Agency. This represents nearly three-quarters of the greenhouse gas emissions recorded in France.

The government's strategy for 2050[185] aims to reduce final energy consumption but increase the share of electricity in the energy consumed. As a consequence, all prospective scenarios include a significant deployment of renewable energies. Some are planning a complete phase-out of nuclear power, while others are proposing the development of new nuclear power plants.

The IPCC's scenarios often show that the share of electricity in total energy use increases over time. Therefore, even if today's low-carbon supply is "enough" for current demand, much more clean electricity will be needed in the future to replace fossil fuels elsewhere in the economy. Additional renewables (or other low-carbon sources like nuclear) remain one of the most climate-friendly options to meet this growing demand, even if current demand is met.

Read more in these articles

— ScienceFeedback. "Wind Turbines and Solar Panels Are Lower-Emissions than Fossil Fuels Overall — Science Feedback". Https://Science.Feedback.Org/, 28 novembre 2024. https://science.feedback.org/wind-turbines-solar-panels-lower-emissions-than-fossil-fuels-overall/
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NARRATIVE

“Reducing France’s greenhouse gas emissions has no impact on the overall climate if other countries don’t do the same.”

INACCURATE

Takeaway Reducing emissions in any country can help lower the total input of greenhouse gases to our atmosphere – our atmosphere doesn’t respond differently to one country’s emissions cuts over another. All countries emitting less than 2% of global emissions (France included) represent 37.6% of the total; so, even small emitters, like France, can help cut total emissions.

Summary Focusing only on countries with the largest share of greenhouse gas emissions is misleading as it implies that only top emitters can make an impact. In reality, Earth’s atmosphere doesn’t ‘care’ where emissions come from – it is the total greenhouse gas accumulation[186] in our atmosphere that matters for global warming[187][188].

While reducing emissions indeed requires a global effort, France can make an impact by reducing its contribution to the world’s total emissions. In 2023, France accounted for 0.73% of global greenhouse gas emissions[189]. And if we take into account emissions from imported goods, France's carbon footprint[190] represents 1.6% of GHG emissions caused by human activities. While this is significantly less than large emitters[191] like the U.S. or China[192], reductions from many smaller emitters can add up. Combined, all countries emitting less than 2%[193] of global emissions represent 37.6% of the total[194].

France reducing its emissions does not imply the country is ‘solely responsible’ for fixing climate change. Instead, it shows that the country is contributing to – what is necessarily – a global effort. Both large and small emitters play a role in reducing greenhouse gas emissions.

Read more in these articles

— Science Feedback. “Jordan Bardella minimise la responsabilité de la France dans les émissions mondiales de CO ”. 2025. science.feedback.org/fr/review/jordan-bardella-minimise-la-responsabilite-de-la-france-dans-les-emissions-mondiales-de-co2/
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— Science Feedback. Il est crucial de réduire les émissions de gaz à effet de serre de tous les États pour limiter le réchauffement climatique. 2024. science.feedback.org/fr/review/il-est-crucial-de-reduire-les-emissions-de-gaz-a-effet-de-serre-de-tous-les-etats-pour-limiter-le-rechauffement-climatique/

NARRATIVE

"Wind turbines are disastrous for the environment, for biodiversity and for health."

UNSUPPORTED

Takeaway The evidence doesn't suggest that wind turbines can be characterized as 'disastrous'. In fact, their impacts on the environment and human health are very small compared to those from fossil fuel power plants.

Summary Wind energy's material footprint is relatively small. About 90% of a turbine's mass can be recycled today[195]. Even if the rest can't be recycled, wind turbines' total mass estimated to go to waste by 2050 is less than the amount of waste ash that the world's coal power plants currently produce in a single year[196][197][198].

While wind turbines do affect surrounding wildlife, the data doesn't suggest they are more harmful to wildlife than other human activities. Offshore turbines are no louder[199] than passing ships or heavy winds[200], except during the installation phase. In the air, U.S. estimates[201] suggest[202] that the number of birds killed by wind turbines is a tiny fraction of the number of birds individually killed by cars, feral cats, building windows, or fossil fuel power plants[203].

Moreover, there's no evidence[204] that wind turbines' sound waves harm humans, and research suggests[205] that their electromagnetic field[206] is comparable to that from household appliances[207], well within safety guidelines. Meanwhile, the air pollution[208] from fossil fuel power plants is responsible for hundreds of thousands of deaths each year[209].

It's only meaningful to compare wind energy's footprint to other energy sources – and we find it's far less harmful than fossil fuels[210].

Read more in these articles

- Science Feedback. "Les renouvelables limitent fortement les rejets de gaz à effet de serre, même si le recours aux énergies fossiles est parfois nécessaire pendant les pics de consommation". 2024. https://science.feedback.org/fr/review/renouvelables-limitent-fortement-rejets-gaz-a-effet-de-serre-meme-si-recours-energies-fossiles-par-fois-necessaire-pendant-pics-consommation/
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NARRATIVE

"Combustion vehicles aren't an environmental problem, especially if they are fuelled by ethanol or diesel or if they are new."

MISLEADING

Takeaway Although gasoline cars have become lower-emissions over time, regarding both CO2 and other air pollutants, their emissions are usually still higher than EVs. Diesel cars haven't seen the same emissions reductions, and new diesel cars now have higher emissions than comparable gasoline cars. Ethanol is less polluting than gasoline or diesel, but many scientists are concerned about land use from ethanol production (from crop vegetables), making this fuel problematic for the environment.

Summary Gasoline car emissions have decreased over time, thanks in part to stricter government standards. The average U.S. gasoline car's tailpipe[211] emits 24% less CO2 on the road in 2025 than in 2000, 85% less carbon monoxide (CO), and 94% less nitric oxide and nitrogen dioxide (NOx).

Many diesel cars had lower emissions[212] than their gasoline equivalents several decades ago, but they haven't seen the same emissions reductions. Some new diesel cars have higher CO and NOx emissions[213] and CO2 emissions[214] than new gasoline cars.

There's evidence[215] that blending ethanol with gasoline reduces CO and NOx emissions[216]. Ethanol emits less CO2[217] than gasoline or diesel, though exact numbers depend on the plants used to produce it. But there are serious questions about ethanol's sustainability – ethanol is made from crops that use loads of land, and there's some evidence[218] this results in land-use-change emissions[219] that cancel out any savings from gasoline[220].

EVs don't emit CO or NOx from the tailpipe while on the road at all. Even accounting for the lifecycle CO2 emissions accumulated while manufacturing cars or while generating their electricity, an EV has lower emissions than a combustion car in most cases[221222223]. Electricity and EVs are far less land-intensive[224] than ethanol.

Read more in these articles

— "IEEFA: Solar Recharging of Electric Vehicles Is a Far More Efficient Use of Land than Ethanol Crops for Blended Fuel in India". 2025. https://ieefa.org/articles/ieefa-solar-recharging-electric-vehicles-far-more-efficient-use-land-ethanol-crops-blended.

— Scafidi, Angela, et Haley Leslie-Bole. Increased Biofuel Production in the US Midwest May Harm Farmers and the Climate. 2025. https://www.wri.org/insights/increased-biofuel-production-impacts-climate-change-farmers.

NARRATIVE

"We are led to believe that there's a consensus on climate change. This is false because some scientists disagree, and we are forbidden from debating it."

MISLEADING

Takeaway Consensus arises when an overwhelming majority of scientists draw the same or similar conclusions when looking at scientific evidence. Nearly all (97-99%) climate scientists agree that Earth's climate is changing, warming for several decades due to human greenhouse gas emissions. Only an extremely small minority of scientists 'disagree', but they have offered no credible scientific counter evidence.

Summary Several independent studies have found that roughly 97-99% of climate scientists agree that climate change is happening and, in recent decades, has been driven by greenhouse gas emissions from human activities[225][226]. This is a key finding in all IPCC Assessment reports, from the first one in 1990[227] to the most recent IPCC Assessment Report[228], written and reviewed by hundreds of experts who looked at findings from thousands of scientific papers[229].

Even with this broad agreement and decades of evidence, consensus does not mean that 'climate science is settled', as people will sometimes claim. Climate science – like any science – continues to be tested using the scientific method. Scientists don't just 'hang up their hats' – they continue studying the climate to understand how it is changing. But when scientific evidence continues stacking up over many decades, all pointing to the same conclusion, scientists become more and more confident of that conclusion. This is how consensus starts to form – by strong evidence, not by 'blind agreement'.

Contrary to what some people claim, scientists are not forbidden from debating about climate change. They are free to do so. Despite this, no credible/scientific body of evidence has been presented that overturns the overwhelming consensus that humans are changing Earth's climate.

Read more in these articles

— Science Feedback. "Climate scientists agree that human-caused greenhouse gas emissions are primarily responsible for climate change, contrary to claims in Clear Energy Alliance video". 2020. https://science.feedback.org/review/climate-scientists-agree-that-human-caused-greenhouse-gas-emissions-are-primarily-responsible-for-climate-change-contrary-to-claims-in-clear-energy-alliance-video/

NARRATIVE

"Climate policies are adopted without any preliminary study and without knowing the impact that they could have."

INACCURATE

Takeaway Preliminary studies are common practice for many climate policies. These studies help planners understand a policy's impacts, benefits, and drawbacks before it is implemented. Independent think tanks and academic researchers are also very active in simulating things like renewable energy.

Summary It's common practice to study the impacts of a climate policy before implementing it. For example, London only launched its Ultra Low Emission Zone (ULEZ)[230] after a detailed assessment that predicted its effects on numerous factors ranging from air quality to the economy. Other cities like Paris[231], Madrid[232], and Barcelona[233] conducted similar assessments when they launched or expanded their low-emission zones.

These are often backed by the government proposing them; for example, when the European Green Deal was first proposed in 2019, researchers associated with the European Commission studied[234] how the Green Deal's goals could be achieved. But many independent researchers[235] analyzed the Green Deal and its feasibility before any of its planks entered official policy.

Likewise, researchers often study policies still years in the future. For example, many engineers have modelled (example[236]) how electrical grids running entirely on renewable energy would operate. By doing so, they can inform future decision-makers.

Predictive studies are not perfect, and not all policies are equally studied[237], but we have other ways of understanding a policy's impact[238]. As more climate policies play out in the real world, our knowledge of them improves[239], as we understand which policies have been more successful than others[240].

Read more in these articles

— Matters, Transport for London | Every Journey. "Ultra Low Emission Zone". Transport for London. 2020. https://www.tfl.gov.uk/corporate/publications-and-reports/ultra-low-emission-zone.
— Gaventa, Jonathan. HOW THE EUROPEAN GREEN DEAL WILL SUCCEED OR FAIL. 2019. 5_12_19_E3G__How_the_European_Green_Deal_will_succeed_or_fail.pdf.

NARRATIVE

"The human origin of global warming is uncertain or insignificant."

INACCURATE

Takeaway In climate reports, scientists assign confidence levels to different findings based on the strength and certainty of the supporting evidence. The world's leading climate report describes human contribution to recent global warming as unequivocal – a word reserved for when evidence leaves virtually zero doubt. Specifically, evidence shows that humans have caused almost all of the warming since 1950.

Summary It's a well-established fact that greenhouse gases cause the Earth to warm by trapping heat on our planet[241,242]. Human activities – like burning fossil fuels – emit these greenhouse gases in large quantities across the globe, causing them to accumulate in our atmosphere over time.

The world's leading climate report[243] describes human contribution to recent global warming (since ~1850) as unequivocal – a word scientists reserve for when evidence leaves virtually zero doubt. In this case, evidence[244] shows that humans have warmed Earth's atmosphere, land, and oceans for almost two centuries[245]. And more recently (since 1950), humans have not only contributed to this warming, but driven it[246].

There are many lines of evidence that point towards these conclusions; one of the strongest is what climate models[247] show if human factors are excluded. In short, when scientists only include natural factors (like volcanic and solar activity), models show that Earth would have cooled in recent decades. But when human factors (like greenhouse gas emissions) are included, the models closely match the temperature trends of the recent past.

Read more in these articles

— Science Feedback. Faut-il s'interroger sur le rôle des humains dans le réchauffement, comme l'affirme Pascal Praud ? Les scientifiques connaissent déjà la réponse. 2025. https://science.feedback.org/fr/review/interroger-role-humains-rechauffement-climatique-pascal-praud-scientifiques-connaissent-deja-reponse/ Science Feedback
— Science Feedback. Natural variability can not explain modern global warming, as Heartland Institute report claims. 2017. https://science.feedback.org/review/natural-variability-can-not-explain-modern-global-warming-heartland-institute-report-claims/ Science Feedback
— Science Feedback. The Sun cannot explain recent global warming, contrary to what Heartland Institute report claims (Data shows temperatures rising in Greenland and around the world; current global warming is driven by CO2, not solar activity). 2017. https://science.feedback.org/review/the-sun-cannot-explain-recent-global-warming-contrary-to-what-heartland-institute-report-claims/ Science Feedback
— Science Feedback. No evidence for a significant influence of volcanoes or solar variability on recent climate change contrary to Judith Curry's claims in PragerU video. 2024. https://science.feedback.org/review/no-evidence-significant-influence-volcanoes-solar-variability-on-recent-climate-change-contrary-judith-curry-claims-prageru-video/ Science Feedback
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NARRATIVE

"The solutions for decarbonizing the economy are driven by financial interests, not goals to reduce climate impacts."

UNSUPPORTED

Takeaway Many people who support decarbonization and the energy transition primarily do so because it will reduce our fossil fuel emissions. We know that the greenhouse gas emissions from fossil fuels change the climate, but we also know that reducing the emissions from our energy sources can reduce the future impacts of climate change. Furthermore, renewable energy is now cheaper to generate than other sources of electricity.

Summary Virtually all climate scientists agree[248] that burning fossil fuels produces greenhouse gases that warm Earth's climate, causing sea levels to rise, making weather more extreme, and damaging ecosystems all over the planet[249]. This agreement isn't due to a conspiracy, but rather because decades of science-based evidence have convincingly demonstrated this beyond any doubt[250].

The evidence also agrees[251] that, since energy is the largest source of CO2 emissions, reducing energy-related emissions will help reduce global greenhouse gas emissions[252]. We know an energy transition can do this – for example, there's clear evidence[253] that building renewable electricity reduces a country's greenhouse gas emissions[254]. So, people who support decarbonization do so because it will reduce our harms to the environment and the future harms caused by the environment on humans.

There are other benefits, too – if you want to generate more electricity, it's now generally cheaper[255] to build new renewables than other power sources.

This claim also fails to mention the powerful forces fighting against decarbonization, all over the world: fossil fuel interests, who fund anti-renewables campaigns[256] and lobby governments[257] across the world to fight policies that reduce the globe's reliance on fossil fuels.

Read more in these articles

— Science Feedback. "Wind turbines and solar panels are lower-emissions than fossil fuels overall — Science Feedback". 2024.. https://science.feedback.org/wind-turbines-solar-panels-lower-emissions-than-fossil-fuels-overall/

NARRATIVE

“Air conditioning has no negative impact on climate change; it is a good adaptation solution.”

LACKS CONTEXT

Takeaway Air conditioning has great benefits in the face of hot weather, but it’s not a solution without consequences. Air conditioning can effectively reduce deaths from extreme heat, but it also dramatically increases energy use and can lead to local heating.

Summary Air conditioning can certainly keep humans healthier and more comfortable when the weather is hot. It’s estimated that air conditioning prevented about 200,000 premature deaths in 2019 alone[258]; air conditioning improves students' exam performance[259] and increases office workers' productivity[260].

However, air conditioning isn’t a perfect solution. For one, it’s energy-intensive – it uses about 7%[261] of the world’s electricity alone, and as more people in hot climates install their first air conditioners, cooling is the fastest-growing use of energy[262] in buildings. For another, as air conditioners cool building interiors, they warm up the air outside and can contribute[263] to the urban heat island effect. In tropical Singapore, for instance, air conditioners alone warm the air by up to 1.4°C (2.5°F)[264]. This can cause a feedback effect as air conditioners must use even more energy to maintain a stable temperature.

Furthermore, many of today’s air conditioners contain potent greenhouse gases called hydrofluorocarbons (HFCs). If HFCs leak into the atmosphere, they can cause[265] 150 to 5,000 times more warming than the same amount of CO2 (depending on the HFC). That said, most countries have pledged[266] to phase out HFCs, so future air conditioners may not have this issue.

NARRATIVE

"Agriculture and livestock farming are harmless and even good for the environment grasslands are carbon sinks)."

INACCURATE

Takeaway There is clear evidence of agriculture and livestock farming practices harming the environment. Evidence shows that climate warming from managed grasslands cancels out the cooling effect[267] of the carbon stored by natural or sparsely-grazed grasslands. And the roughly 1.5 billion cows/cattle that humans raise emit[268] over 100 million metric tonnes of methane[269] – a potent planet-warming greenhouse gas[270] – each year. Several farming practices are also tied to deforestation[271] and land degradation[272].

Summary Agricultural and livestock farming practices impact the environment in a number of ways – both directly through land degradation and deforestation[273274275], and over time through emissions[276] of planet-warming greenhouse gases[277].

Unlike burning fossil fuels – which only emits greenhouse gas, and does not store or remove it – agricultural practices involve biological systems, like grasslands, that do both. For example, there are over 1.5 billion cattle on Earth which together emit 100 million metric tonnes of methane[278] – a potent planet-warming greenhouse gas – each year[279].

Grasslands can also help capture and store carbon, helping remove carbon dioxide (CO2) from our atmosphere[280]. However, in a 2021 paper, scientists analyzed grasslands emissions and found that, for the period of 1750-2012, climate warming from managed grasslands canceled out the cooling effect[281] of the carbon stored by natural or sparsely-grazed grasslands[282].

Although suitably designed pasture systems have a lower impact on Earth's climate than factory farms when farming cattle, for example, some pastures are worse[283] because of land use practices (e.g., deforestation and land degradation). Finally, most livestock aren't raised on grasslands/pastures; global estimates[284] tell us that roughly 74% of the world's livestock are raised on factory farms.

Read more in these articles

— "Cattle Have Numerous Impacts on Earth's Climate and Natural Environments, despite Misconceptions — Science Feedback". Featured. Https://Science.Feedback.Org/, 7 février 2025. https://science.feedback.org/cattle-have-numerous-impacts-on-earths-climate-and-natural-environments-despite-misconceptions/
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Part 2

Climate disinformation in Brazilian media

A. Brazilian context: media invisibility of environmental issues, coupled with a falsely deconflicted representation

Methodological foreword

Several interviews were conducted for the writing of this section:
— Patricia Blanco, CEO of the Palavra Aberta Institute
— Leticia Capone, Doctor of Social Communication at the Pontifical Catholic University of Rio de Janeiro
— Rafael de Pino, Journalist and Project Manager at Fala
— Thais Lazzeri, Founder and Director of Fala
— Mariana Mandelli, Journalist and Anthropologist at the Palavra Aberta Institute
— Carlos Milani, Professor of International Relations at the Institute of Social and Political Studies at the University of Rio de Janeiro
— Janaina Pinto, Associate Researcher at OIMC and Labmundo, and doctoral student in political science at the Institute of Social and Political Studies at the University of Rio de Janeiro
— Renan William dos Santos, PhD student in Sociology at the University of São Paulo

The growing influence of agribusiness

Over the past ten years, Brazil has undergone major political upheavals: the impeachment of Dilma Rousseff (2016), Michel Temer's takeover, the election of Jair Bolsonaro (2018), a figure of the extreme right and climate skeptic, and then President Lula's return to power for a third term (2023).

During this period, Brazil has witnessed an alignment of interests and narratives[285] with regard to the debate on environmental issues.

Over the last decade, agribusiness has established itself as a pillar of the Brazilian economy and a central player in its politics. The sector accounts for 23.5% of GDP in 2024[286] and provides nearly half of the country's exports[287], giving it decisive bargaining power over Brazil's macroeconomic direction and foreign trade policy. This central role has translated into strong parliamentary influence through the Frente Parlamentar da Agropecuária (FPA), which has become one of the most powerful cross-party groups (known as caucuses) in Congress. Created in 1988, the FPA's influence has grown considerably over the last 10 years: it currently includes 324 of the 513 members of the Chamber of Deputies and 50 of the 81 senators in the Federal Senate[288]. As a sign of its growing influence, since 2012 the FPA has established its own think tank (Instituto Pensar Agropecuária, or IPA[289]) as well as a press agency, Agência FPA[290].

This political and parliamentary influence has enabled agribusiness to influence recent elections (the impeachment of Dilma Rousseff and Bolsonaro's rise to power), but also to structure a more focused opposition to environmental regulation, which it perceives as a threat to its economic interests and way of life. Two-thirds of national greenhouse gas emissions come from agriculture, forestry, and land use, making the sector's participation in any credible transition policy essential.

This influence has repeatedly manifested itself in the defense of certain views on sensitive environmental issues (as well as health and human rights issues), shaping entire sections of Brazil's economic policy.

Thus, with the explicit support of agribusiness, the Bolsonaro government has dismantled the country's environmental governance system (cutting funding to environmental institutions, notably IBAMA, the environmental protection agency; freezing inspections; freezing the Amazon fund; freezing the Foresta+ program; introducing the principle of impunity for environmental law violations; reducing protection for protected areas, etc.)[291] and curtailed the land rights of indigenous peoples.

The FPA has also played a major role in defining the terms of Brazilian foreign policy[292], notably by chairing the Foreign Affairs Committees of the Chamber of Deputies and the Federal Senate and by being very active legislatively in this area [293].

More broadly, the rise of the FPA has manifested itself through a political "agenda-setting" effect, including in the trade-off between climate objectives and productivist expansion.

The intertwining of the media and national politics: a Brazilian specificity

Brazilian media have historically been deeply intertwined with national political life, a legacy of decades of military dictatorship during which political power controlled and owned communication channels. This entanglement is so strong that it is considered a national peculiarity.

In a country of continental proportions and significant socio-economic disparities, the mainstream media, particularly television, have played a significant role in informing the population, including in areas with poor internet coverage. Their influence in shaping the public debate is undeniable, even though the democratization of social media is now challenging their monopoly over information[294].

They have therefore played a central role in the growing influence of agribusiness in Brazil, through their economic and shareholding ties with the agricultural sector and through the content they broadcast.

The Marinho family, owners of the Organizaçoes Globo empire (which accounts for nearly half of the country's TV and radio audiences[295]), has a history of political collusion with the military dictatorship as well as with agribusiness interests. The television network Rede Globo is a member of the Brazilian Agribusiness Association[296], and the Marinho family itself owns several rice, wheat, and banana farms across the country[297].

In particular, the iconic campaign broadcast by Rede Globo from 2016 onwards and over several years ("Agro é tech, agro é pop, agro é tudo," meaning "agribusiness is technology, agribusiness is pop, agribusiness is everything") has been analyzed and documented as a branding operation that normalizes the image of an innovative sector that is indispensable to the economy and the population and relatively uncontroversial, while marginalizing certain controversies (pesticides, land conflicts, deforestation)[298]. This type of media campaign is considered to have

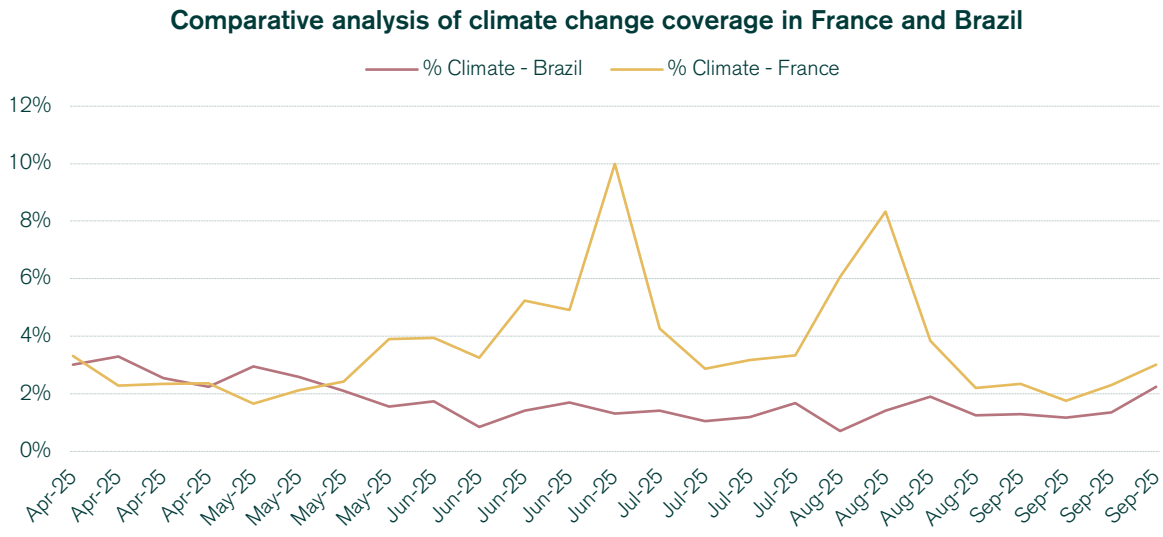


Figure Change in the average percentage of airtime devoted to climate change for all programs and channels in France and Brazil during the period analyzed.

contributed significantly to the construction of a hegemonic discourse[299], erasing the real conflicts of the rural world and rendering environmental issues largely invisible.

This invisibility is reflected in the data collected for this report: in the summer of 2025, media coverage of climate change accounted for barely 1% of the airtime monitored.

More recently, the FPA has extended these strategies to social media through paid advertisements that have been accused of spreading environmental misinformation[300].

It is important to note that "claims for land rights are the main focus of social struggles in Brazil"[301]. The Landless Movement, wich operates under precarious conditions, is active across a wide geoFigureical area and has a national reach. The low media visibility of these struggles further reinforces the media monopoly of agribusiness.

A discursive alignment with the evangelical sphere

This political and media interest group associated with agribusiness, which portrays environmental issues in a peripheral and negative light, is combined with the growing influence of the evangelical movement on Brazilian opinion. Since the Earth Summit in Rio in 1992, the movement has been structuring a rhetoric opposed to environmental issues[302]. The main narrative is that ecological transition is a Trojan horse[303] used by opposing political movements to promote a "leftist, socialist, miserabilist, totalitarian, and communist" worldview[304]. According to evangelicals, Christian teachings are capable of preventing both the excessive exploitation of natural resources and the anxious paralysis that hinders economic development. Ecological cosmologies would like to turn Man, the "king of nature," into a "lackey among lackeys."

The rhetoric employed frames science as merely one worldview among many, treating scientific knowledge as a matter of subjective interpretation in order to legitimize alternative perspectives as equally valid.

The Evangelical movement does not deny the existence of climate change; rather, it spiritualizes the phenomenon and its consequences, such as extreme weather events. It portrays environmental activism as a threat to Christian values and structures its environmental obstruction through political quid pro quos—for instance, by forming alliances with the FPA.

The semantics employed by these religious movements opposed to environmentalism—such as describing environmental crises as a “psychosis” or referring to a “green dragon”—have gradually seeped into mainstream and political environmental discourse, as exemplified by statements from Bolsonaro..

Furthermore, the majority of pastors are themselves landowners and involved in the agricultural sector. Wealth is perceived as a divine reward for religious devotion. Thus, rhetorical convergences between the Evangelical movement and agribusiness coincide, driven by both economic and ideological interests.

These converging interests rely on a common narrative: that the ecological transition is anti-social, as it would impinge upon the country’s economic growth, which depends on the prosperity of the agricultural sector and the extractive economy.

Like agribusiness, the evangelical movement also wields media influence. Evangelical Christian pastor Edir Macedo Bezerra, founder of the Universal Church of the Kingdom of God, owns the Record Group and RecordTV, Brazil’s second-largest television broadcaster. The channel is known for presenting incomplete or biased coverage of environmental issues and airs very few programs dedicated to these topics.

As Brazil is a federal country, a number of stories are broadcast by local media networks. The "Amazon Free of Fake News" project ("Projeto Amazônia Livre de Fake"[305]) has documented a total of 70 recurring disinformation profiles in the six states covered by the project (Pará, Amapá, Amazonas, Mato Grosso, Roraima, Tocantins, and Acre), grouped into three main categories: right-wing activists, online media, and public figures. Three online media outlets in particular were identified as being particularly active in spreading disinformation about environmental activists: Portal Novo Norte, Vista Pátria, and Terra Brasil Notícias. The interests associated with these active disinformers are agribusiness, mining, and fossil fuels.

Regional branches of national media outlets also have their own specific characteristics and adapt their representations to the dominant local economic actors[306].

A low profile fossil and mining industry

The Brazilian fossil fuel industry has significant political and economic influence. After the discovery of the first onshore oil deposits in the late 1930s, Brazil

implemented a policy of nationalized exploitation through the creation of Petrobras, a company with a monopoly on national production.

This nationalization was part of the broader institutional reforms carried out under the authoritarian government of Getulio Vargas. This period saw the emergence of several large national companies, created with the aim of serving as a foundation for other industries: Petrobras (oil and derivatives), Companhia Vale do Rio Doce (mining), Companhia Siderúrgica Nacional (steel), Sociedade Nacional de Alcalá (chemicals), and Eletrobras (electricity)[307].

Despite a wave of privatizations linked to the financial difficulties of the 1990s, oil and mining resources remain central to the country's economy. Today, Brazil is the world's second-largest exporter of iron and a major producer of aluminum[308], and at the end of 2024, extractive exports (particularly oil) were the country's top export products.[309].

This undeniable influence means that the energy debate is highly susceptible to misinformation. Between 2024 and 2025, nearly one-fifth of articles covering environmental issues contained misinformation about energy issues[310], according to the University of Sao Paulo and the organization Climate News Tracker.

However, this media representation remains, much like agricultural issues, non-confrontational. It tends more to render the subject invisible and downplay its implications rather than openly deny the associated problems. This strategy is referred to "gaslighting" by journalist Maximiliano Manzoni[311]. A recent example of this circumvention strategy is the controversy surrounding oil exploration at the mouth of the Amazon[312], which led Petrobras to issue a press release[313] promising to channel the profits from this exploitation into the energy transition. This constitutes a form of interpretive denial (decoupling facts from their causality), according to the taxonomy of sociologist Stanley Cohen[314].

This strategy explains the lower media visibility.

B. Consequences of climate disinformation in Brazil

The recent Brazilian public debate has therefore been marked by a lack of visibility for environmental issues, as well as by a deliberately deconflicted media representation. Added to this dual dynamic is a surge in political disinformation, fueled by the algorithmic and human amplification of these online narratives.

The consequences of this peripheral and misleading narrative are numerous.

A moderate effect on public opinion

When it comes to climate skepticism, Brazilian public opinion is well below the global average. According to the latest results from the International Observatory on Climate and Public Opinion, 24% of the Brazilian population is climate-skeptical (including 5% who doubt the existence of climate change and 19% who doubt its human origin), compared to 38% of the global population[315]. This rate was 25% in 2020 and 28% in 2019[316].

Brazil is among the countries most concerned about climate change, behind Colombia, with 66% of the population very concerned. This concern has been on the rise recently[317].

Furthermore, 53% of the population is convinced of the importance of making significant lifestyle changes to curb the threat—one of the highest rates in the world. This rate is down 6 points from 2020[318]. This notably reflects a high awareness of the need to change one's place of residence (40%) and to accommodate a large wave of climate migrants (71%).

At the same time, the rate of acceptance of individual actions related to the ecological transition is among the lowest. 62% of the population would like to eat meat more often (41% globally), 81% would like to fly more often (72% globally), and 10% would like to buy an electric car (15% globally).

Finally, even though 68% of Brazilians believe that the government must take action on climate change, confidence in the ability of public authorities to implement measures to prepare the country for the consequences of climate change is among the lowest in the world: 31%, compared to 45% globally.

In 2020, Brazilians were among those reporting the least knowledge of what they could do individually to address climate change (6 points below the global average), suggesting a lack of information[319].

The acceptability of transition policies appears lower than the global average, particularly the taxation of airline tickets, which in Brazil has the second-lowest level of support in the world (12% of the population is very favorable),as well as the taxation of polluting vehicles, restricting entry of combustion-engine cars into cities, household waste taxes, and increases in fossil fuel prices[320].

Regarding the representation of greenhouse gas emission sources, Brazilians overestimate the CO2 emissions generated by renewable energies and underestimate the emissions generated by coal. On the other hand, they are the first in the world to believe that gas-fired power plants emit CO2. In 2020, 37% of Brazilians said that coal-fired power plants emit a lot of CO2, 39% said the same about gas-fired power plants, 35% about nuclear power plants, 11% about hydroelectric power plants, 10% about wind turbines, and 7% about solar panels.

They are more likely than the global population to consider agriculture, livestock farming, and deforestation to be sources of emissions (4 points above the global average in 2024 for agriculture and livestock farming, and 6 points above for deforestation[321]).

Furthermore, only 14% say they produce electricity from renewable energies, when the electricity mix is 58% hydroelectric and 21% from other renewable energies[322]. However, the acceptability of renewable energies is significantly higher than the global average, by around 9 points in 2020[323].

Finally, when it comes to environmentalists, average support for their actions is half the regional average: while in Colombia and Mexico it rises to 21% and 19% support in 2024, it is only 9% in Brazil[324].

These opinion polls reflect significant public concern and support for environmental issues, varying degrees of accurate representation of sectoral environmental impacts, and lower than average global acceptability, particularly with regard to economically costly public policies and civil society mobilization.

Strengthened political opposition to certain environmental regulations

While the FPA's negative stance towards environmental regulation seems to be expected, it is reflected in a specific narrative, relying on disinformation, generally centered around the idea that environmental protection is the enemy of progress.

Several recent examples attest to this. In 2021, former Senator Acir Gurgacz, representative of the state of Rondônia in the Amazon (a region marked by strong pressure from agribusiness, timber, and hydroelectric power), presented the "Geral de Licenciamento Ambiental" bill (PL nº 2.159/2021), also known as the "devastation bill." This bill aimed to radically reform Brazil's environmental licensing system by loosening or removing certain obligations. It was strongly supported by the "banc ruralista" (the agribusiness and extraction lobby).

After several years of political maneuvering, this bill was adopted by the Senate in May 2025, then approved by the Chamber of Deputies on the night of July 17, 2025. One factor in particular facilitated its adoption: the circulation of viral misinformation claiming that 5,000 projects were being blocked by environmental permits[325]. This false claim was first made by the Senate rapporteur for the bill, then amplified by politicians, the media, and social networks—without any source. Yet its widespread circulation tipped the balance in favor of a law suddenly deemed indispensable by a Chamber that was otherwise divided.

Alongside national regulations, disinformation specifically seeks to discredit major political and geopolitical events whose success determines collective climate targets, particularly the COPs. In this regard, COP 30 is particularly targeted in Brazil—in August and September 2025, climate disinformation reached record levels, with a 267% increase compared to July[326]. This targeting reflects a specific interest in discrediting the negotiations and thereby undermining their outcomes.

Promoting acceptance of new extractive and agricultural projects

The developmentalist culture and collective imagination associating extractivism with progress facilitates the emergence of fallacious discourse aimed at maintaining support for new extractive projects.

The fossil fuel industry uses this strategy, as seen recently in the case of the fossil extraction project for which Petrobras recently obtained authorization at the mouth of the Amazon: false information was disseminated to the public to justify the project's benefits and downplay the associated risks.

At a meeting on February 13, 2023[327], company representatives informed local native leaders that Petrobras had never had an accident during offshore oil drilling. But the data shows otherwise: in 2022, nine oil spills were reported, and seven in 2023. At another meeting on November 8, 2022, they also claimed that emissions of environmentally harmful gases

Disinformation about COP 30 hits record levels on social media
Average post reach

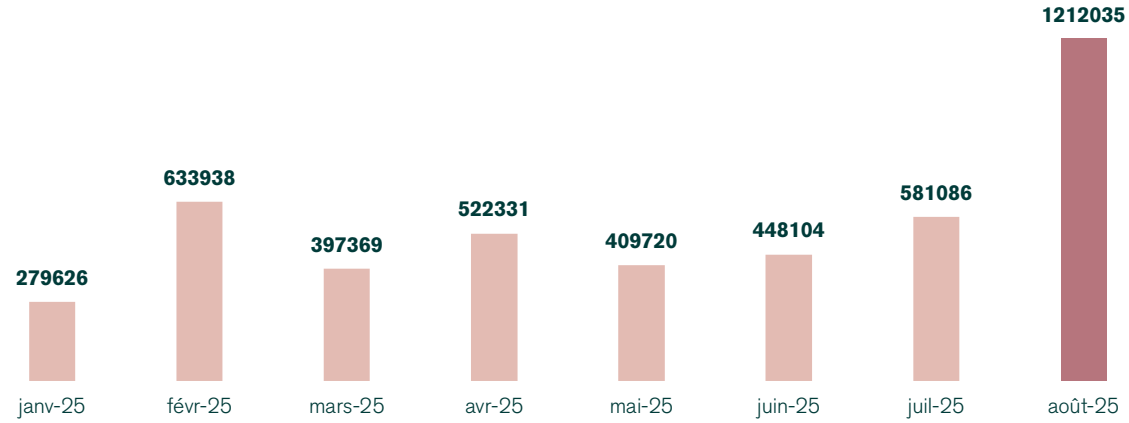


Figure Study including X, Instagram, Facebook, YouTube, Reddit, and LinkedIn. Reach: estimated number of people who saw a post. Source: Observatory for Information Integrity — Climate and Environment / Fala / Climate Action Against Disinformation, based on Brandwatch data

were limited to the short period of drilling activity[328]. However, the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) warns that the impacts could last "more than 30 years"[329]. The company stated that there were "no biological formations of interest." However, recent studies have identified living reefs that would be directly affected in the event of an oil spill. According to the study, Petrobras claims to discuss everything in meetings with "broad participation from representative entities." However, the federal prosecutors' offices in Amapá and Pará, as well as the Attorney General's Office, have had to intervene to try to ensure this participation, so far without success. The company also conceals the carbon emissions associated with its Scope 3, admitting that they account for 90% of the project's impact

It has also been shown that agribusiness uses greenwashing and disinformation in its commercial and digital communication strategy, particularly in support of agricultural projects. A study conducted in 2023 analyzed 158 advertisements from the FPA and found that 39% of the content involved either greenwashing or disinformation, with 17% greenwashing and 22% disinformation[330]. Among the most common narratives were: portraying projects as having "zero environmental impact" and depicting agricultural progress as a corollary of ecological transition; suggesting that the Landless Workers' Movement (MST) was invading properties (40% of advertisements mentioned the MST and 81% of these mentions were associated with the notion of invasion); and invoking the "Milestone Thesis" (referring to the usufruct of native populations on lands occupied before 1988 — 55% of the advertisements analyzed mention native populations and 81% of these advertisements link them to this thesis).

Here, disinformation in advertising contributes to a broader movement to criminalize social movements, particularly targeting the MST and native communities.

Growing threats to environmental defenders

The United Nations High Commissioner for Human Rights has confirmed that Brazil is one of the countries where human rights and environmental defenders are most at risk. Some murders have made a strong impression on public opinion, such as that of Dilma Ferreira Silva, coordinator of the movement of people affected by dams in Brazil, and her husband Claudionor Costa da Silva in 2019[331], that of Paulo Paulino Guajajara[332] in 2019, a forest ranger in the Amazon, and that of Zezico Rodrigues Guajajara, a native leader from the Araribóia indigenous territory in the Amazonian state of Maranhão[333].

This violence intensified notably under Bolsonaro's presidency and is especially pronounced in states subjected to large-scale extractive and agricultural projects. In 2022, Global Witness reported that several major global agribusiness companies sourced palm oil connected to human rights abuses in Pará.[334].

Moreover, ranks among the countries with the highest number of journalist murders globally (55 recorded to date[335]), with environmental journalists particularly at risk.

The depoliticization of the environmental debate, its invisibilization, and the disinformation affecting environmental defenders produce several effects:

— **Delegitimization and stigmatization:** by portraying them as "enemies of progress," "foreign agents," or "obstacles to economic development." These narratives undermine their credibility, isolate them socially, and reduce the public support they might otherwise receive.
— **Normalization of violence:** by minimizing or denying the reality of the climate crisis and the damage associated with large-scale agricultural and extractive projects, disinformation justifies the illegal expansion of agribusiness, mining, and land grabbing. This fosters a climate of impunity in which threats, intimidation, and violence against activists, journalists, and native communities are tolerated or even encouraged.

Fragmentation of social and institutional support: by sowing confusion about the causes and consequences of environmental crises, disinformation divides public opinion. This reduces social and political pressure to protect environmental defenders, weakening the ability of institutions to intervene effectively.

Strengthening of illegal economic interests: disinformation campaigns are often orchestrated by groups that benefit from the illegal exploitation of natural resources. This disinformation creates a protective shield for these actors, leaving environmental defenders even more exposed.

Increased vulnerability of native and local communities: these populations, who are on the front line of protecting forests and territories, become direct targets. Disinformation delegitimizes their claims and can serve as a pretext for attacks or evictions.

C. Preliminary results of climate disinformation detection in Brazil since April 2025

The Brazilian results presented in this report are preliminary. They will be updated as COP30 approaches.

Twenty-four cases of climate misinformation have been identified in Brazil. Among these, 70% (17/24) were identified on the Jovem Pam channel, which is considered a right-wing conservative and partisan media, supporting Jair Bolsonaro[336].

In addition, nearly 30% of the cases of misinformation detected since April are concentrated in the month of September.

This increase, while preliminary, is consistent with the observations of the Information Integrity Observatory, which monitors climate misinformation on social media[337] and has observed an alarming rise in the phenomenon as COP30 approaches.

Among the identified cases, three main narratives stand out:
— Narratives relating to deforestation and intensive agriculture, particularly concerning the law aimed at simplifying environmental regulations for projects considered strategic[338]
— Narratives relating to COP30, climate mobilization, and NGO transparency, including claims about NGO funding or construction projects falsely attributed to COP30 in the Amazon[339]
— Narratives relating to ethanol-powered cars and the decarbonization of the automotive sector, misleadingly downplaying the efficiency of electric vehicles.

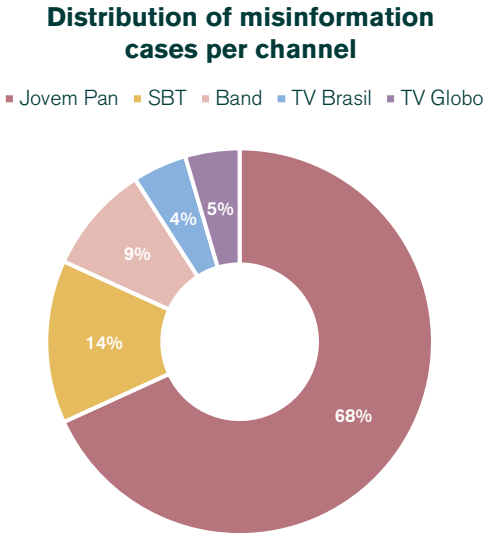


Figure Misinformation cases since January 2025 across observed media channels

Topics related to COP30 are clearly on the rise, suggesting an increase in climate misinformation as the event approaches. Among the keywords measured in this study covering climate change, COP30 accounts for 12% of mentions.

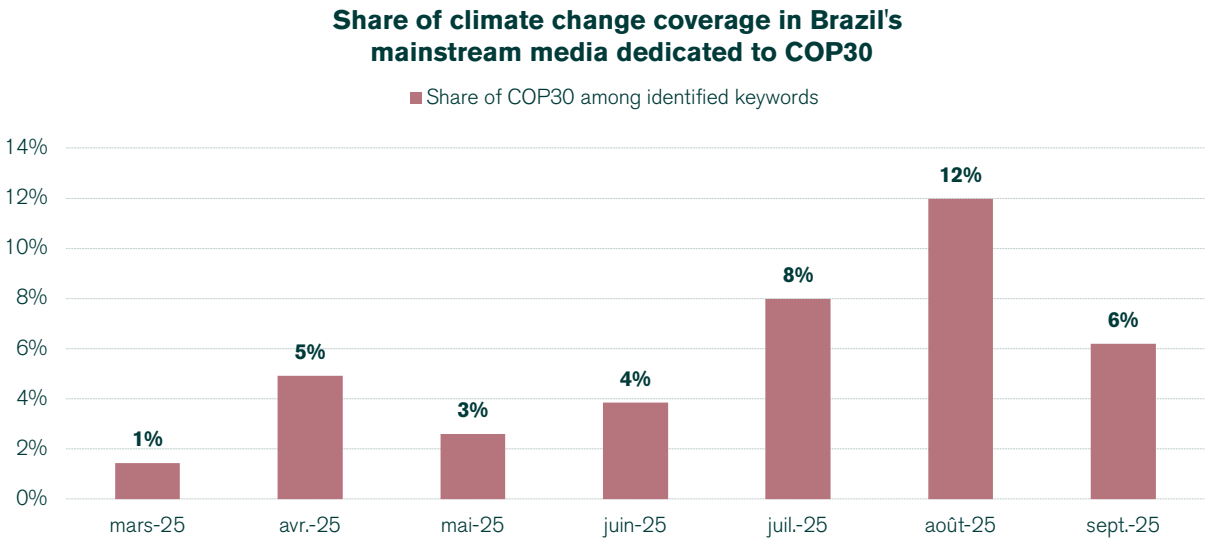


Figure Change in the proportion of "COP30" among all keywords monitored in Brazil

Part 3

Conclusion and Actionable Recommendations

A. France's Regulatory Framework

The pillars of French media regulation are increasingly ill-suited to the rise of climate disinformation

Despite a framework considered exemplary at the international level, media regulation in France exhibits numerous informational vulnerabilities, starting with its lack of enforcement.

Legal mechanisms and industry self-regulation, to date, have been insufficient to address the growing threat of climate disinformation.

The 1881 law

Freedom of the press has been historically guaranteed in France since the law of July 29, 1881. This text, along with the Declaration of the Rights of Man and of the Citizen of 1789, is considered the reference framework[340] for freedom of expression in France, establishing a presumption of press freedom alongside sanctions applied afterward. Sanctions for the dissemination of false news have existed since the law's creation, but this provision has been rarely enforced[341]. In light of technological developments, a 2016 Senate report calls for a "better balance" in the application of the law, given "an increasingly inadequate legal framework"[342].

The 1881 law has undergone several adaptations: the creation of offenses against racism, insult, or discrimination (the Pleven Law of 1972), and recent amendments aimed at strengthening the fight against fake news and information manipulation, particularly during electoral periods (laws of 2018) — amendments also deemed "inappropriate for an issue considered major by the profession". [343]

The 1986 law

Law No. 86-1067 on freedom of communication of September 30, 1986 (known as the "Léotard Law") is the other pillar of media law in France. It ended the state monopoly and established a new framework for proactive regulation. While the law enshrines freedom of audiovisual communication, it is subject to various limitations, including the "pluralistic nature of the expression of currents of thought and opinion" — a "constitutional value objective" that embodies "one of the conditions of democracy," according to a decision by the Constitutional Council[344].

While the 1986 law is the cornerstone of audiovisual and digital regulation in France, several recent parliamentary reports have pointed out that it has become obsolete[345]. The États généraux de l'information (Information Forum) has highlighted the shortcomings of the 1986 law, calling for "the introduction of new regulations"[346].

To guarantee freedom of communication, the 1986 law established a regulatory authority. This authority has evolved into its current form since 2022: the Autorité de régulation de la communication audiovisuelle et numérique (Arcom), resulting from the merger of the Conseil supérieur de l'audiovisuel (CSA) and the Haute Autorité pour la diffusion des œuvres et la protection des droits sur Internet (Hadopi). Arcom serves also as the national coordinator for digital services with the European Commission under the Digital Services Act (DSA), and contributes to the implementation of the EMFA (European Media Freedom Act) and the DMA (Digital Markets Act).

The Arcom has a nine-member board that operates collegially, with members appointed by five separate authorities. The president of Arcom is appointed after consultation with Parliament, in accordance with Article 13 of the Constitution.

By delegating terrestrial frequencies to private operators for the broadcasting of audiovisual services, the Arcom is responsible for ensuring compliance with the principles guaranteed by law to which media publishers commit themselves in agreements (Article 3-1 of the Léotard Law). Public service audiovisual companies (France Télévisions, Radio France, France Médias Monde, France 24, INA, TV5 Monde[347]) do not sign agreements with Arcom, but their missions are defined in specific charters.

To ensure compliance with legal and contractual obligations, the Arcom has a range of graduated tools at its disposal, provided for by the 1986 law:
- Deliberations establish general rules applicable to all publishers (quotas, advertising, protection of minors, political pluralism).
- Preventive measures allow publishers to be reminded of their obligations before any sanctions are imposed: reminders of regulations (informal warning), official warnings, and formal notices (legally binding injunctions)..
- Repressive measures apply in cases of persistent or serious breaches: financial penalties, partial or total suspension of services, reduction of the agreement's duration, or, in extreme cases, revocation of authorization or termination of the agreement[348].

A lack of effective and proportionate response to the threat of climate disinformation

Despite this legal framework, Arcom's practical regulation of media coverage of environmental issues reveals significant limitations. The Authority favors a "graduated" approach[349] focused on prevention. This results in the rare application of punitive sanctions, which could serve as a strong deterrent. "The Arcom currently promotes a model of self-regulation in the audiovisual sector that is supposed to encourage actors to take responsibility"[350], but this model lacks effectiveness due to "minimal oversight." This opinion is shared by a parliamentary information report produced in 2024, which points to "unsatisfactory control by the regulator, which could lead to mistrust and ultimately undermine the proper conduct of public debate" and "sanctioning powers that are ultimately implemented very timidly."

The Arcom's decisions regarding the regulation of media coverage of environmental issues reflect, in this respect, the development of a body of case law consistent with the Authority's identity—focused on prevention rather than sanction—but struggling to provide proportionate responses to the rise of climate disinformation.

The disproportion between the number of cases of climate misinformation observed in 2025 and the number of decisions rendered following referrals to the Arcom is striking: to date, only three audiovisual media outlets have so far been warned or sanctioned by Arcom.

In an ambitious decision issued in July 2024,the Authority sanctioned CNews with a historic fine of €20,000 for failing to maintain accuracy and rigor in information (Article 3-1 of the Léotard Law) following remarks made by a guest on the channel on July 8, 2023, who described climate change as a "conspiracy""[351]. However, the fine was negligible compared to the channel's advertising revenue. This level of sanction, the highest ever applied by the Authority to date, also remains the only one of its kind.

Despite several clear breaches by Sud Radio, the Authority issued a double warning in June 2024, following on-air remarks that downplayed the scientific consensus on global warming[352]. Additionally, after a segment last February in which a guest defended climate variability and denied the anthropogenic origin of global warming without any contradiction, Radio Classique received a reminder of its obligations from the Authority this summer[353]. All other complaints filed by the NGO QuotaClimat have either been dismissed or are still under review.

Fragile common standards undermining professional self-regulation

Beyond the regulation of media coverage of environmental issues through law, self-regulatory mechanisms have emerged in France over the past decade, but they struggle to address the challenges effectively. In 2016, Law No. 2016-1524 of November 14, 2016 (the "Bloche" law) aimed to complement the 1986 law by strengthening media freedom, independence, and pluralism

It aimed in particular to better safeguard journalists' independence through the drafting of ethical charters for all press organizations and, for audiovisual media broadcasting general news and political programs (IPG), the establishment of committees on the honesty, independence, and pluralism of information and programming (Chipip). A parliamentary evaluation report carried out in 2024 indicates that, eight years after the law was enacted, "the effectiveness of the codes of ethics continues to be questioned"[354], with a persistent difficulty in "verifying their existence and application"[355]. The Chipips, for their part, have had "mixed results"[356]. The absence of sanctions for failing to implement an ethical charter or a Chipip is highlighted as a concern by the authors of the report.

While a "Bloche effect" has been observed in the creation of ethical charters after 2016, the effort has been uneven across different types of media[357]. Few media outlets include environmental issues in their charters: these were only taken into account later, from 2022 onwards, following the mobilization prompted by the Charter for Journalism that Meets the Ecological Emergency, now signed by more than 2,000 journalists[358]. eyond this initiative from part of the profession, several media groups made numerous commitments at the start of the 2022 season to give environmental issues a more prominent place in their programming schedules and team management. This is notably the case for Radio France and Ouest-France, which made commitments through initiatives such as "Le Tournant"[359] or by drafting an internal charter for the group[360].

Beyond the Bloche law, self-regulation in the sector underwent a structural change in 2019 with the creation of the Journalism Ethics and Mediation Council (CDJM). This professional self-regulatory body, composed of representatives of journalists, publishers, and the public, is independent of the state. It has three objectives: to defend the production of quality information, to improve trust between the media and citizens, and to advance journalistic ethics. It can be called upon or take up issues relating to ethics on its own initiative, and since its creation has produced guidelines on various topics related to ethics (arti-

ficial intelligence, crime reporting, scientific facts), basing its actions on three charters defining journalistic ethics:
— The Charter of Professional Ethics for Journalists of 1918, revised in 1938 and 2011;
— The Declaration of the Rights and Duties of Journalists, known as the "Munich Declaration" of 1971;
— The Global Charter of Ethics for Journalists of the International Federation of Journalists (IFJ), adopted in 2019 in Tunis.

While the creation of this body is an innovation, its influence is limited by a lack of recognition by the profession. Non-binding opinions contribute to a better understanding of ethical mechanisms, but do not allow for structural correction of persistent deficiencies in environmental reporting. The guide on scientific facts mentions climate change, but does not detail best practices for improving media coverage, allowing shortcomings to flourish that are only partially addressed by the body's non-binding opinions: these may recognize publishers' failures, but do not prompt substantive changes on the part of influential players in the media landscape.

The consideration of environmental issues within ethical and self-regulatory mechanisms remains, for the time being, confined to individual professional conviction. While initiatives are multiplying in journalism schools and media groups (press, television, radio), there is currently no common standard for the entire profession, hindering the creation of a common ethical culture capable of guaranteeing the principles set out in the various ethical codes.

These disparities hinder the creation of a common ethical culture and provide fertile ground for climate disinformation. The ethical commitment to producing high-quality environmental information, based on facts and taking climate science into account, can indeed be undermined by economic considerations that give greater weight to polarized debates rather than maintaining a common foundation of reality. The defense of editorial freedom, at the heart of the social contract between media and citizens, is thus weakened by biases that blur the line between facts and opinions, exacerbating confusion around scientific issues and contributing to widespread mistrust.

B. Brazil's Regulatory Framework

The legal system for regulating content in Brazil is based on a balance between freedom of expression, which is strongly protected by the 1988 Constitution, the fight against disinformation, and specific legal instruments targeting the media, the internet, and digital platforms.

Freedom of expression, freedom of the press, and free circulation of ideas

Today, anyone can work as a journalist in Brazil. This situation dates back to 2009, when the Federal Supreme Court repealed several decree-laws requiring a university degree in journalism as a prerequisite for practicing the profession[361]. To date, this lack of minimum skill requirements is contested by the Brazilian National Union of Journalists and the International Federation of Journalists[362].

Articles 5 and 220 to 224 of the 1988 Constitution guarantee freedom of expression, freedom of the press, and free circulation of ideas without prior censorship, prohibit any monopoly or oligopoly in the media, and provide for ex post facto judicial review in cases of abuse (defamation, incitement to hatred, etc.). The guiding principle is that the State cannot impose ex-ante censorship but may apply ex-post sanctions.

The 1962 Brazilian Broadcasting Code governs the regulation of radio and television, which operate under licenses granted by the federal government. Broadcast content must comply with criteria such as the protection of minors, the promotion of national culture, and the principle of pluralism.

Media governance

Since 1997, the General Telecommunications Law has established the Agência Nacional de Telecomunicações (ANATEL), a federal public administration under the supervision of the Ministry of Communications, with technical, administrative, and financial autonomy. Among other powers, ANATEL applies administrative sanctions.

In parallel, the Conselho de Comunicação Social, an advisory body to the National Congress, oversees public policies related to the media. Its members are appointed by Congress and come from civil society, journalism and the media sector. The Council provides opinions, studies, and recommendations on communication-related public policies, reviews bills concerning press freedom, media regulation, broad-

casting, and freedom of expression, and serves as a forum for dialogue between Congress, civil society, and actors in the media ecosystem.

Fighting misinformation

With disinformation recognized as a matter of national concern, the regulation of digital content became a priority under President Dilma Rousseff. In 2014, following revelations that the Brazilian president had been spied on by the NSA (Snowden affair), Law No. 12.965/2014 ("Marco Civil da Internet"), considered a "Constitution of the Internet," was enacted. It enshrines several principles, including the State's responsibility for media literacy and the universal right to comprehensive information. The Marco Civil has been described as a model of democratic internet governance, particularly regarding the judiciary's role in the removal of online content.

However, during the 2018 and 2023 presidential elections, the rise of political disinformation and its use by the far right exposed the shortcomings of the existing legal framework. This was further compounded by the increase in health-related misinformation during the COVID-19 pandemic. These debates ultimately led to the drafting of the "Lei Brasileira de Liberdade, Responsabilidade e Transparência na Internet" (Brazilian Law on Freedom, Responsibility, and Transparency on the Internet), commonly referred to as the Fake News Bill (PL 2630/2020).

The measures contained in the text quickly sparked national controversy, particularly with regard to content moderation on digital platforms, algorithm transparency, political advertising, and the penalties proposed for non-compliance. The text was approved by the Senate in 2020, but it was not passed by the Chamber of Deputies.

The judiciary thus stepped in to address the country's growing disinformation problem, through both the Supreme Court and the Superior Court of Justice. In 2019, Justice Alexandre de Moraes initiated Investigation No. 4781 on Fake News at the Supreme Court. This investigation led successively to: in 2020, searches and account suspensions of pro-Bolsonaro bloggers accused of spreading fake news; in 2022, the suspension of Telegram in Brazil due to the platform's failure to comply with judicial orders to remove content related to electoral disinformation; and in 2023, the removal of content inciting attacks against democracy.

The Superior Court of Justice, presided over by the same judge from 2022, adopted special rules to combat electoral disinformation: urgent removal of false content, obligations for platforms to act quickly in taking down fake news, and the creation of partnerships with platforms to flag problematic content. In October 2023, Bolsonaro was declared ineligible to run for office until 2030 for abuse of power and the dissemination of disinformation against the electronic voting system.

Since 2020, the judiciary has largely taken over from the executive and legislative branches in taking action to combat disinformation on platforms.

C. Case study: Assessing the effectiveness of rapid response systems in the face of disinformation during extreme weather

Disinformation as a systemic risk multiplier

Extreme weather events are critical indicators of societal resilience and the effectiveness of crisis management. Simultaneously, exposure to disinformation—both online and in mainstream media—increases and interacts with other risk factors, such as energy disruptions. This dynamic can exacerbate public panic and polarization, impede emergency response mechanisms, and, over the long term, weaken the perceived legitimacy of public institutions in issuing official guidance.

Under these conditions, approaches focused solely on post-crisis communication or ad hoc fact-checking seem insufficient. Information integrity must be integrated as a core component of preparedness and strategic planning, on the same level as protective infrastructure or emergency services.

Such an approach requires a three-stage governance process:
— preparation, focused on early detection, media literacy, and trust-building;
— shock management, based on rapid response mechanisms that ensure reliable information to prevail over informational chaos;
— resilience, aimed at leveraging lessons learned from each crisis to strengthen institutions and consolidate public trust ahead of the next event.

A dual objective is pursued:
1 – Strengthening critical thinking towards all types of information,
2 – Ensuring a foundation of trust in verified sources of information (public interest media, local agencies, scientists, etc.)
because "trust is the most critical infrastructure for disaster preparedness," as noted by the 2024 winner of the UN DRR Prize, Dr. Nairwita Bandyopadhyay[363].

Analysis of existing rapid response systems: effectiveness and limitations in addressing climate disinformation

Extreme weather events are now among the most tangible manifestations of global warming. According to the World Meteorological Organization (WMO), the number of climate disasters increased fivefold between 1970 and 2019[364]. In 2024 alone, the United States recorded 24 major climate disasters, each causing economic losses exceeding of $1 billion and resulting in 418 deaths[365]. In the European Union, more than 450,000 hectares have burned since the beginning of 2025, more than twice the area affected during the same period last year[366]. Globally, countries in the Global South remain the most vulnerable: Dominica, China, and Honduras are among those that have suffered the most losses from floods, storms, and heat waves since 1993[367].

Progress in early warning systems and disaster preparedness has helped reduce mortality rates by about two-thirds. However, the International Federation of Red Cross and Red Crescent Societies (IFRC) report that[368] :
— **One-third of extreme weather events still occur without adequate public warning**
— **60% of governments issue emergency alerts, 26% of which are limited to weather information without practical instructions**
— **Only 52% are broadcast in multiple languages, leaving particularly vulnerable communities marginalized.**

In Europe, the management of the 2021 floods in Germany highlighted serious communication failures: the European Flood Alert System (EFAS) had issued warnings several days before the event, but local misinterpretation and the lack of evacuation plans led to 184 deaths and damages estimated at several billion euros[369]. This failure was less a matter of scientific forecasting than of the communication chain and local capacity to act. Post-disaster surveys found that 85% of affected residents did not anticipate floods of this intensity, and 46% reported being unaware of appropriate protective measures[370].

In addition to issues related to fragmented institutional responsibilities, obstacles to data sharing, and a lack of public awareness, misinformation is now an aggravating factor in climate crisis preparedness and management.

Recent examples illustrate this point:
— In the United States, rumors blaming the fires on "antifa" activists led armed civilians to set up roadblocks, directly disrupting the work of firefighters and rescue workers during the 2020 California fires. [371]. In 2024, conspiracy theories about government "manipulation" of the climate circulated during Hurricane Helen in the United States[372] ;

— In Spain, fake news claiming that dams had been deliberately destroyed to worsen the 2024 floods spread while rescue operations were underway[373,374] ;
— In Valencia in 2024, false emergency numbers circulated during flash floods[375] ;

Disinformation, amplified by the spread of AI-generated fake content and the algorithmic choices of online platforms[376], directly threatens the effectiveness of emergency response, according to the Climate Action Against Disinformation (CAAD) network[377] and the United Nations Office for Disaster Risk Reduction (UNDRR)[378].

Existing initiatives and limitations

At the European level, the Copernicus Emergency Management Service (CEMS) serves as a regional benchmark in the field of emergency mapping and alert systems[379]. It includes Rapid Mapping, risk mapping and post-crisis recovery, the European and Global Flood Warning System, the European Forest Fire Information System, and the European Drought Observatory.

At the international level, the Early Warnings for All (EW4All) initiative[380], led by the World Meteorological Organization (WMO) and the United Nations International Strategy for Disaster Reduction (UNDRR), aims to ensure universal coverage through multi-hazard warning systems by 2027. For emergency communication, the reference protocol is the Common Alerting Protocol (CAP) established by UNDRR[381]. At the Global Platform for Disaster Risk Reduction in May 2025, strengthening risk communication was explicitly recognized as a strategic priority, on a par with the development of forecasting and warning infrastructure, emphasizing that effective warning depends as much on the quality of the message and its dissemination as on the accuracy of meteorological or climate data[382].

Disinformation

However, these mechanisms do not officially recognize disinformation as a systemic threat. For example, at the EU level, the CEMS is not directly linked to the European Union's Rapid Alert System, which facilitates the exchange of information on disinformation campaigns, nor is it formally linked to preparedness frameworks and emergency communication protocols.

The role of mainstream and local media actors

Finally, early warning systems underutilize the strategic role of the media as trusted channels and local information relays[383]. According to the World Risk Poll 2024, 53% of people affected by a disaster reported receiving alerts via radio, television, or print media, compared to 47% via local authorities and 46% via the internet or social media (up from 36% in 2021)[384]. Local media, community radio stations, and messaging groups remain essential for reaching the most vulnerable populations[385]. Finally, few disaster risk reduction frameworks provide for institutionalized and regular cooperation between public authorities and media actors.

These lessons demonstrate the need for innovative warning systems based on local needs rather than a strictly centralized approach, according to Bapon Fakhruddin, designer of the Indian Ocean tsunami warning system after 2004[386]. This highlights the importance of transparent communication channels tailored to the needs of different regions, and the establishment of innovative partnerships between public authorities and media actors, capable of withstanding information overload and targeted disinformation campaigns.

D. Recommendations

Integrating climate disinformation as a key factor in rapid response systems

To strengthen disaster preparedness, we recommend a three-pronged approach to better integrate the risk posed by disinformation:

Invest in semi-automated detection of disinformation

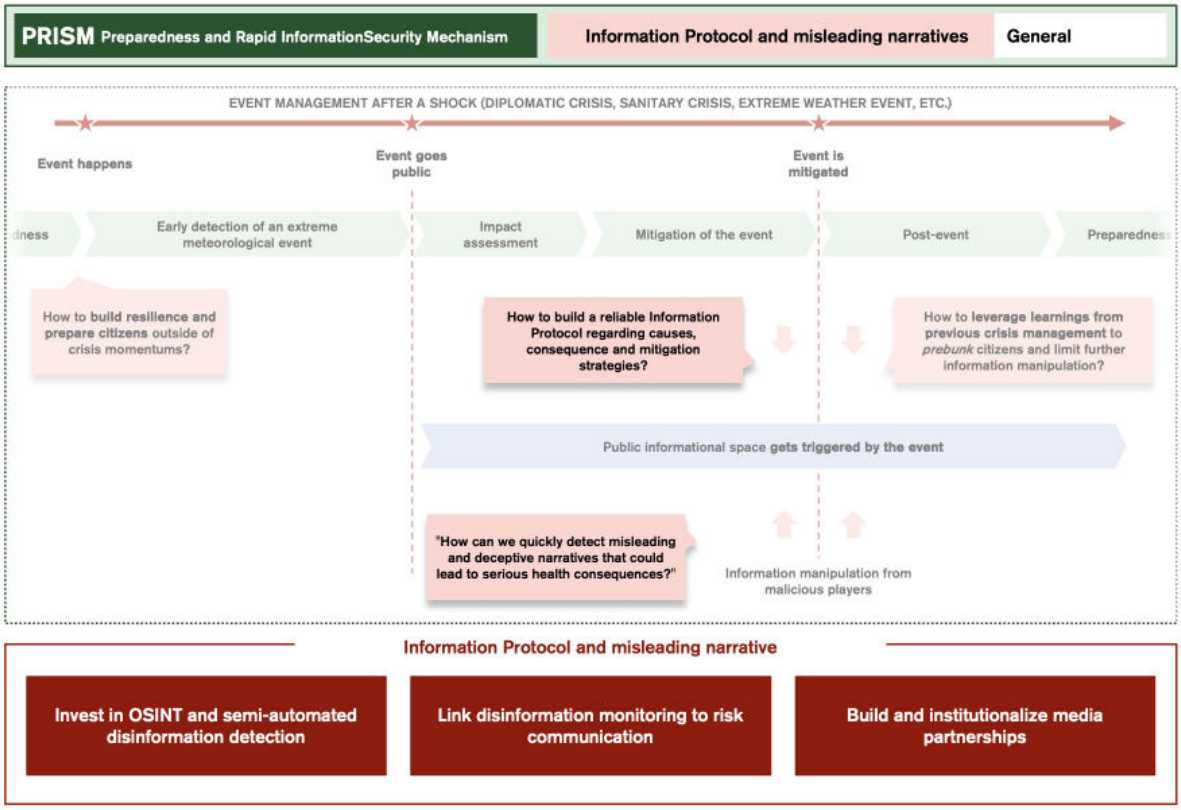
— Develop semi-automated (human-certified) early warning systems dedicated to disinformation (e.g., Climate Safeguards), operating in parallel with weather alerts.
— Use semi-automated tools to monitor "TTPs" (tactics, techniques, procedures), deepfakes, and prevalent disinformation narratives in real time.
— Consider disinformation as a standalone risk and institutionalize coordination between information monitoring bodies, civil society, and disaster management agencies.
— Assign this system to an independent agency with a clear mandate and attached to strategic government bodies such as the Ministy of the Interior, to ensure its authority, neutrality, and operational capacity in emergency situations.

Link the monitoring of disinformation to risk communication protocols

— Integrate data from disinformation monitoring into communication protocols (e.g., CAP) and emergency response strategies.
— Establish clear and transparent protocols for validating and disseminating information, ensuring scientific independence and message credibility.

Consolidate and institutionalize partnerships with the media

— Formalize partnerships between disaster management agencies, national meteorological services, and local media through semiannual coordination meetings.
— Ensure effective, innovative, multilingual, inclusive, and actionable alerts (e.g., with sign language interpretation, audio, or Braille formats).
— Develop community-level awareness programs and trust-building campaigns ahead of disasters to ensure that authoritative voices are recognized and credible when a crisis occurs.



This effort takes place in a global context characterized by a growing deficit of trust in institutions, the media, and climate science. Any effective response must therefore pay particular attention to three governance pillars:

— the independence of information sources;
— the capacity and training of journalists to operate in manipulated environments;
— the mobilization of local communities for data collection and validation.

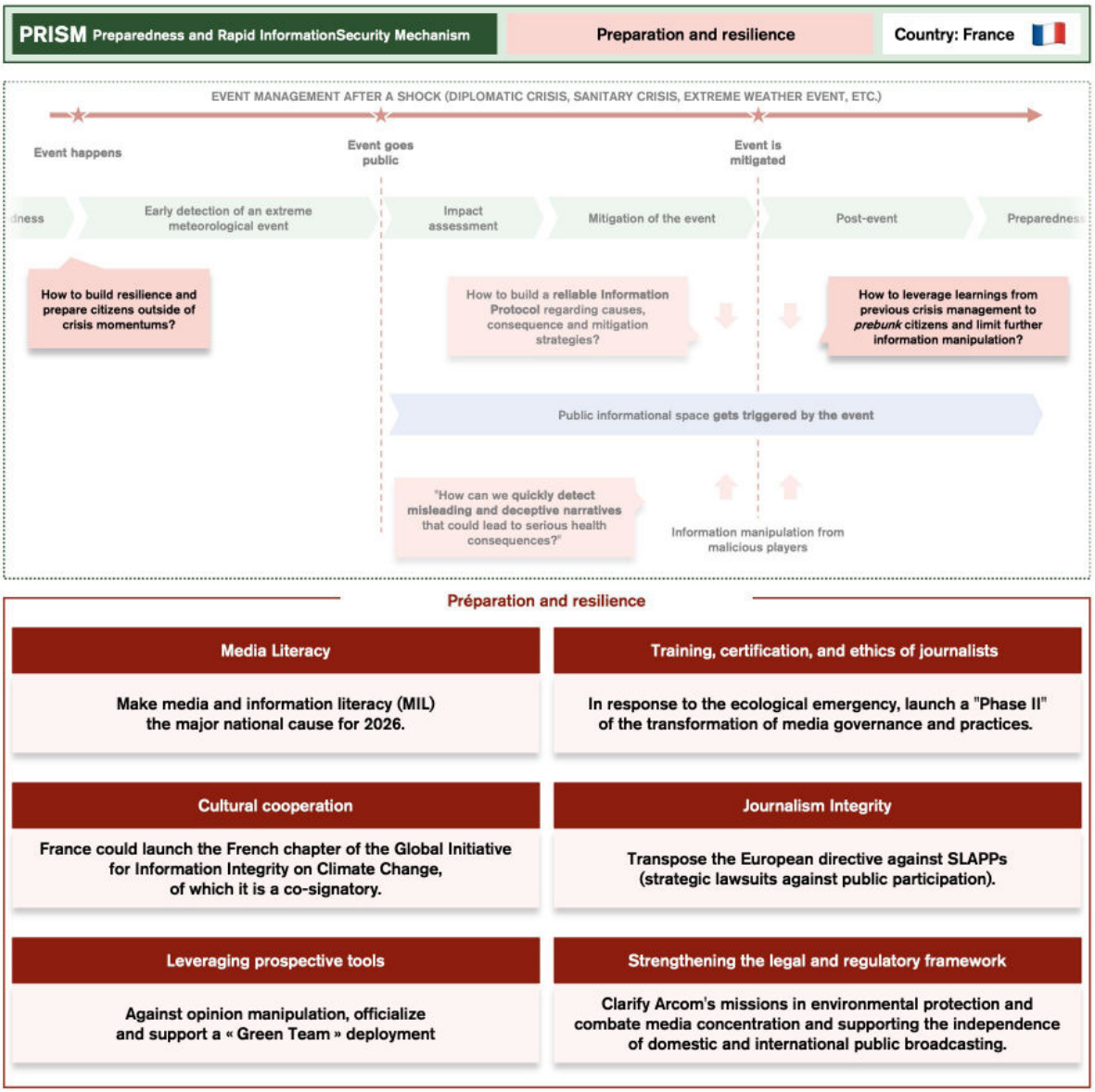
"*Collaboration between the media, technology companies, civil society organizations, and researchers, centered on the transparent development and deployment of common standards and machine-readable signals to identify credible and reliable content, is essential, keeping in mind that technological solutions alone cannot solve social and political problems, and that ultimate responsibility for their design and operation rests with individuals and organizations.*"[387]

France: preparedness and resilience against climate misinformation

Media literacy

Make media and information literacy (MIL) the major national cause for 2026.

Long awaited by civil society, this would provide the momentum needed to strengthen society's informational resilience. Two priorities have been identified: the recognition of MIL as a fully-fledged school subject and the creation of a public policy targeted the entire population, particularly senior citizens, who are highly exposed to misleading narratives[388]. The creation of an interministerial unit dedicated to media and information literacy, reporting to the Prime Minister, would enable a coordinated approach to a system currently fragmented across multiple ministries (National Education, Culture, Higher Education



and Research, Agriculture, Health). These two measures would put into action the strategic priority of combating disinformation in the fields of science, health, and climate, as announced by the President during the Choose Europe for Science summit on May 5.

Training, certification, and ethics of journalists

In response to the ecological emergency, launch a "Phase II" of the transformation of media governance and practices.

More than three years after numerous commitments were made by a large part of the profession, structural shortcomings and deficiencies persist.

To address the rise of climate misinformation, the media's coverage of environmental issues must be improved through:
— Continuing education for program planners,
— Enhanced training on environmental issues for presenters and interviewers, who are exposed live to false narratives, in order to safeguard both the integrity of information during election periods and the integrity of the ballot process.

This "enhanced awareness" should encourage public debate gatekeepers to systematically refute false claims on programs, particularly in debate and political shows.

The role of science in the media must be strengthened in three ways:
— Appointing *of* a scientific advisor in newsrooms,
— Appointing of a scientific advisor within governing bodies,
— Ensuring guest panels include scientific voices on topics most vulnerable to disinformation.

The widespread use of ombudspersons between broadcast and audiovisual media as well as general news outlets should be prioritized to reinforce public trust in the media and strengthen the relationship between journalists and citizens.

Support for the certification of reliable and rigorous information should continue through the development and wider adoption by the media of the Journalism Trust Initiative led by Reporters Without Borders—currently, only Radio France, France Télévisions, TF1, and the Ebra press group are members in France.

The role of the Journalism Ethics and Mediation Council (CDJM) is essential in disseminating best practices: previous guides for the profession, whose quality has been widely praised, should be supplemented with a new guide dedicated to environmental reporting. Its limited recognition within the journalism profession weakens its capacity to act and the impact of its recommendations. Accordingly, membership in the CDJM should become mandatory by 2029, ten years after its establishment, to support the development of a shared culture of journalistic ethics.

Failure to comply with ethical standards in news production should become one of the criteria for the allocation of press subsidies—a recommendation put forward by a parliamentary report last year[389]. Experimenting with enhanced subsidies for audiovisual media, which play a leading role in ensuring newsroom independence and media pluralism, could also promote the adoption of best practices through economic incentives.

Cultural cooperation

France could launch the French chapter of the Global Initiative for Information Integrity on Climate Change, of which it is a co-signatory. This initiative, launched by Brazil, UNESCO, and the G20 in November 2024, could become a strategic pillar of French climate diplomacy and would enable the implementation of bilateral and multilateral commitments recently made with Brazil and Germany in the fight against disinformation..

The fight against climate disinformation has been identified by the Quai d'Orsay as a strategic focus of its response to information warfare. In this regard, the resources of Canal France International, the Ministry's operational arm, should be strengthened to reinforce media pluralism and the overall integrity of environmental information.

Leveraging prospective tools

It is recommended to formalize and support the establishment of the "Green Team", a measure included in the National Climate Change Adaptation Plan (PNACC) under the axis "Mobilizing French citizens around the importance of adaptation and its short- and medium-term benefits."

Inspired by the "Red Team Defense" initiative, this project aims to create a positive narrative for France by 2100, drawing on fiction, foresight, and science to imagine desirable and ecological futures. By informing public policies and promoting meaningful narratives, the "Green Team" would strengthen collective resilience and counter climate disinformation by highlighting the tangible opportunities and benefits of adaptation.

Strengthening the legal and regulatory framework

1 – Clarify Arcom's missions in environmental protection

In the face of the ecological crisis, the environment can no longer be the adjustment variable in media debate and a blind spot in regulation. While the Environmental Charter guarantees a constitutionally protected right of access to environmental information, in practice this right remains insufficiently safeguarded.

Strengthening Arcom's "social cohesion" mandate regarding sustainable development in the 1986 law should help eliminate legal ambiguity and grant the Authority genuine authority to assess media coverage of environmental issues—both in quantity and quality—particularly during election campaigns.

2 – Deter climate misinformation by overhauling Arcom's sanctions regime through three levels: formal notice, financial penalties of up to 10% of turnover, and withdrawal of broadcasting licenses.

Warnings, formal notices, financial penalties: the existing graduated system is currently insufficient to curb the growing number of breaches by publishers regarding environmental information and to change practices. Financial penalties, currently capped at 5% of revenue, are not very deterrent. Despite their symbolic power, license revocations are rare: the last decisions date back to the cancellation of RT France's frequencies in 2022. Arcom's sanctions regime must therefore be overhauled. The formal notice stage should become an essential stage of consultation and adversarial discussion between the regulatory authority and the publisher before imposing deterrent sanctions. Strengthened financial penalties, up to 10% of revenue for repeated breaches of legal or contractual obligations, should discourage economic incentives to misinform, while revocation of broadcasting licenses should deter ideological attempts to misinform and become the tool through which Arcom protects the information space in cases of systemic breaches.

3 – Combating media concentration and supporting independent public broadcasting are effective yet often overlooked ways to defend media pluralism and information integrity

Amending the organic law on finance laws to allow for multi-year, autonomous, and dynamic funding of public broadcasting, as recommended by the Economic, Social, and Environmental Council, represents one possible avenue.

Journalism Integrity

Transpose the European directive against SLAPPs (strategic lawsuits against public participation). This recommendation, originating from the États généraux de l'information (National Information Forum), remains unimplemented pending the draft legislation designed to translate its objectives into reality. The next government must also work to safeguard press freedom within the framework of the new National Plan for Urban Violence, which seriously threatens the conditions under which journalists cover these events.

Focus: the Delautrette bill, an unprecedented cross-party initiative to protect the audiovisual media and environmental reporting

Faced with a structural lack of media coverage of environmental issues, the QuotaClimat association initiated legislative work with the Institut Rousseau, resulting in the submission of a bill in April 2023. This led, in September 2023, to the launch of a cross-party working group at the National Assembly, coordinated by Stéphane Delautrette, Deputy for Haute-Vienne (Socialists and allies), bringing together representatives from eight parliamentary groups ranging from La France Insoumise to Horizons.

At the end of this working group, a bill was officially submitted in November 2024. Pending a comprehensive overhaul of audiovisual regulation and to remedy the current shortcomings in media coverage of environmental issues, the bill aims to:

I. Clarify and strengthen Arcom's mission to protect the environment (Article 1).
- › The legislative provisions currently in force do not provide Arcom with a sufficient framework to encourage audiovisual media to deliver quality information on ecological issues, even though this is guaranteed by Article 7 of the Environmental Charter.
- › Article 1 of the bill grants Arcom responsibility to protect the environment in audiovisual and digital communication sectors, ensuring in particular "that programming reflects the state of scientific knowledge regarding environmental issues." This consolidation of the legal framework can strengthen the Authority's mandate, notably in identifying and sanctioning breaches by publishers.

II. Establish a "National Observatory of Media Coverage of Environmental Issues" within Arcom (Article 2).
- › Since its creation, the Regulatory Authority has established various Observatories to better equip enhancing its capacity to act and fostering shared analyses and exchanges, such as the Diversity Observatory created in 2008, which has been submitting recommendations for action to Parliament every year since then. Arcom has also been working with INA since 2016 to measure the representation of women on air, assessing women's speaking time, their visual exposure rate, and the proportion of female and male first names mentioned on air.
- › The Media Observatory on Ecology (OMÉ), launched in November 2024, could be the ad hoc tool to be protected. This initiative, led by a consortium of civil society partners (including QuotaClimat), is already operational and supported by Arcom, as well as Ademe and the Banque des Territoires.

III. Grant Arcom the authority to establish temporary rules for content production, programming, and broadcasting on ecological issues exclusively during election periods (Article 3).
- › French media regulation already adopts a quantitative approach consistent with the rule of law to promote the representation of overseas and regional dimensions of French society, as well as gender equality (Arcom - then CSA - deliberation no. 2015-2 of February 4, 2015 on respect for women's rights).
- › This provision would provide Arcom with a proportional tool to address quantitative shortcomings. Regulation would be supported by data from the Media Observatory on Ecology, enabling the Authority's decisions to be based on reliable and quantified sources.

The text also provides for:

IV. Define the mission of public broadcasting regarding coverage of the ecological crisis in law (Article 4)

V. Making "climate contracts" mandatory (Article 5). Provided for in the Climate and Resilience Law, climate contracts are currently voluntary mechanisms designed to reduce the volume of commercial communications for products or services with a negative impact on the environment, while promoting transparency in advertising and encouraging the commitment of advertisers, media, platforms, agencies, and advertising agencies to the ecological transition (combating greenwashing). In a recent report, Arcom itself pointed to "the need for significant adjustments to the climate contract mechanism in order to improve its effectiveness"[390]

VI. Building on the progress enabled by the "Bloche" Law of 2016, require the addition or updating of ethical charters for press or audiovisual companies to ensure balanced and consistent coverage of ecological issues across all media (Article 6).

VII. Strengthening the investigative powers of the Audiovisual and Digital Communication Regulatory Authority to monitor the provisions applicable to online platforms under their duty to cooperate in combating the spread of false information, building on recent developments in European law (Digital Services Act) and incorporating ecological issues.

In September 2025, the text was supported by 90 deputies and eight parliamentary groups, including three committee chairs in the National Assembly:
- — Sandrine Le Feur (Ensemble pour la République), chair of the Committee on Sustainable Development and Regional Planning;
- — Fatiha Keloua Hachi (Socialists), chair of the Committee on Cultural Affairs and Education;
- — Frédéric Valletoux (Horizons), chair of the Social Affairs Committee.

The association aims to have the bill placed on the agenda in November 2025 and adopted by the National Assembly in early December 2025, during a week dedicated to the work of the National Assembly. This would be a world first and could make France a pioneer in the regulation of environmental information.

Brazil: Preparedness and Resilience Against Climate Disinformation

Media literacy

Integrate environmental issues into the national media literacy program EducaMídia, and equip the media literacy department of the Secretariat for Social Communication with the necessary skills and resources.

Training, certification, and ethics of journalists

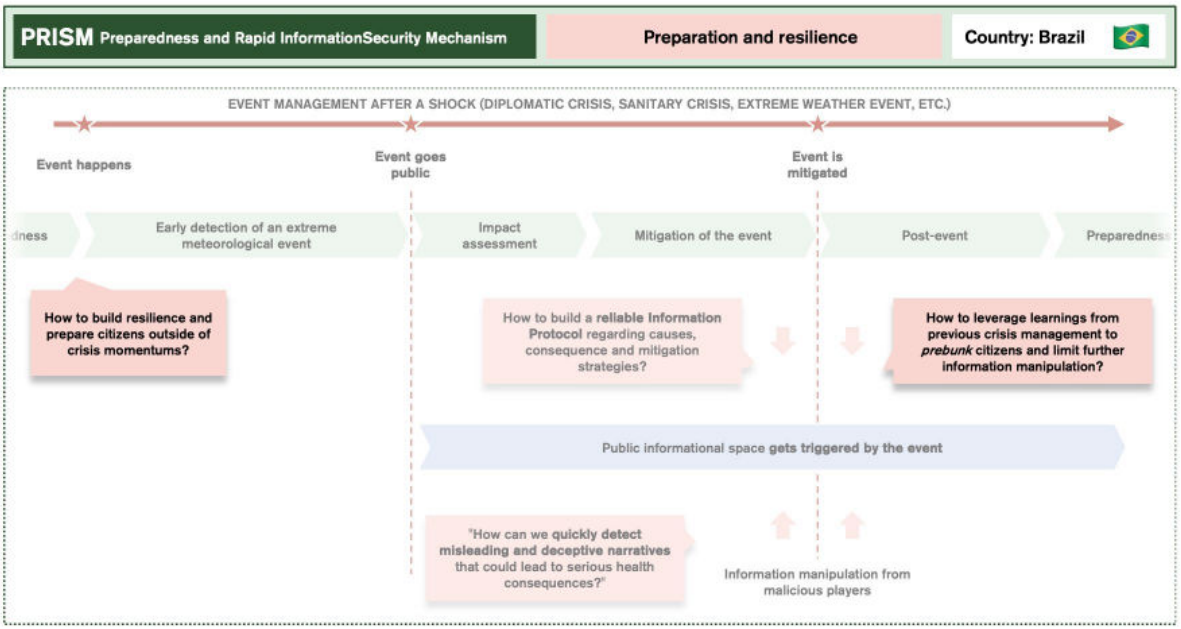
Re-establish a minimum degree requirement to practice as a journalist, while ensuring financial accessibility, and include a core module dedicated to environmental issues and climate disinformation.

Cultural cooperation

The example of the MídiaCOP project, where a cultural partnership enabled the French CLEMI to train 18 Amazonian teachers in COP coverage, represents a best practice to scale up. This training should include awareness of false information, which emerges massively during high-visibility geopolitical events.

Empowering civil society and scientific experts

The Brazilian chapter of the Global Initiative for Environmental Information Integrity brings together, for the first time, a diverse network of stakeholders united in the fight against climate disinformation. This network must be regularly coordinated, equipped with an action plan with clear



objectives and monitoring, financially supported, and provided with a rapid communication channel to ensure responsiveness in times of crisis. It represents a valuable early-warning resource that should be fully leveraged.

Strengthening the legal and regulatory framework

Strengthening the regulation and penalization of disinformation and greenwashing in the media through an ambitious judicial effort and the establishment of dedicated competencies within ANATEL and the National Council for Advertising Self-Regulation.

Brazilian consumer law already allows the National Consumer Secretariat to initiate public investigations into misleading environmental claims. When deemed criminal, this consumer deception can even lead to lawsuits and be judged as a violation of competition law. In practice, the law in place has made it possible to fine a company €2.3 million in 2022 for greenwashing. It is therefore functional, but deserves to be deployed, particularly in light of the green taxonomy that has just come into force. One promising avenue lies in improving the accessibility and visibility of reporting channels to enable citizens to quickly flag misleading content, and in appointing trusted third parties from civil society, recognized as experts in detecting deceptive information.

Journalistic Integrity

Networks of investigative journalists and civil society organizations mobilized against climate disinformation have long existed and been active, but they continue to suffer from violence, judicial harassment, and marginalization. Building on the good practice established in 2023, which created a direct communication channel between journalist networks, the Federal Prosecutor's Office for Citizens' Rights, and the Federal Ministry of Public Affairs[390], this mechanism should be made permanent and accessible to all journalists. Its scope should also be broadened to include cases of disinformation targeting individuals or groups, causing harm to their reputation or physical integrity. Impunity must be addressed: of the 139 journalists murdered between 2011 and 2020 in Mexico, Honduras, Brazil, and Colombia, only 7% received government protection[391]. Yet 63 of them had already received threats. To ensure comprehensive geoFigureical coverage, this protection mechanism must be decentralized.

Appendix

Methodology and Scope

A. Scope

This report is framed within a dual context: a review of the political and economic dynamics that contributed to the rise of climate disinformation between 2015 and 2025, and an analysis of advanced data generated through a unique collaboration between the Climate Safeguards project and the Media Observatory on Ecology. The findings for France are available on the Media Observatory on Ecology platform, allowing readers to interact with and explore the data in detail.

This analysis focuses solely on climate misinformation and does not cover all environmental issues, in particular the biodiversity and natural resource crises (see b. Study methodology).

Within the French audiovisual information landscape, the analysis focuses on news programs on public and DTT channels, as well as publicly accessible radio stations.

The statistical analyses carried out in this report are limited to the television and radio channels monitored by the Observatoire des Médias sur l'Écologie[392], i.e., 18 television and radio channels. As such, all programs classified as "news" by Arcom are monitored, for public and historic DTT television channels, as well as category E radio stations.

The channels monitored are:
— TF1
— France 2
— France 3 Ile de France
— M6, France 24
— France Info Télévision
— CNews
— LCI
— BFM TV
— Arte

Radio stations monitored:
— France Info Radio
— France Inter
— France Culture
— RFI
— Europe 1
— RMC
— RTL
— Sud Radio

It should be noted that limiting the scope to news does not allow for exhaustive coverage of programs "contributing to information". These programs are however subject to “particular attention in assessing any potential manifest and lasting imbalance in the expression of currents of thought and opinion, based on a set of indicators such as the diversity of partici-

Complete list of available program:

Périmètre Brésil

Tme Zone : Sao Paulo, BR

	lund - vend			samedi			dimanche				
Média	Début programı	Fin programme	Durée	Début programı	Fin programme	Durée	Début programı	Fin programme	Durée	Heures / semaiı	Moyenne Heures / jour
TV Globo	04:00:00	09:00:00	05:00:00	06:00:00	06:50:00	00:50:00	06:45:00	11:10:00	04:25:00		
	11:45:00	13:45:00	02:00:00	08:30:00	13:00:00	04:30:00	20:40:00	23:10:00	02:30:00		
	13:25:00	14:45:00	01:20:00	19:25:00	19:45:00	00:20:00					
	19:10:00	19:40:00	00:30:00	20:30:00	21:20:00	00:50:00					
	20:30:00	21:20:00	00:50:00								
	00:20:00	01:25:00	01:05:00								
			10:45:00			**06:30:00**			**06:55:00**	**67:10:00**	**09:35:43**
TV Record	05:00:00	11:50:00	06:50:00	07:00:00	12:00:00	05:00:00	09:00:00	11:00:00	02:00:00		
	16:30:00	21:00:00	04:30:00	13:00:00	15:00:00	02:00:00	20:30:00	23:00:00	02:30:00		
				17:00:00	23:00:00	06:00:00					
			11:20:00			**13:00:00**			**04:30:00**	**74:10:00**	**10:35:43**
SBT	07:30:00	13:00:00	05:30:00	19:45:00	20:45:00	01:00:00	07:00:00	08:00:00	01:00:00		
	15:30:00	20:45:00	05:15:00				09:00:00	11:00:00	02:00:00		
			10:45:00			**01:00:00**			**03:00:00**	**57:45:00**	**08:15:00**
Band	06:45:00	08:00:00	01:15:00	09:30:00	11:30:00	02:00:00	05:30:00	06:00:00	00:30:00		
	08:00:00	08:15:00	00:15:00	12:30:00	13:00:00	00:30:00					
	08:15:00	11:00:00	02:45:00	17:15:00	20:30:00	03:15:00					
	12:50:00	22:15:00	09:25:00								
	23:45:00	00:45:00	01:00:00								
			14:40:00			**05:45:00**			**00:30:00**	**79:35:00**	**11:22:09**
Jovem Pan	04:30:00	06:00:00	01:30:00	04:30:00	06:00:00	01:30:00	07:00:00	08:00:00	01:00:00		
	12:00:00	14:00:00	02:00:00	12:00:00	14:00:00	02:00:00					
	16:00:00	18:00:00	02:00:00	16:00:00	18:00:00	02:00:00					
	18:00:00	20:00:00	02:00:00	18:00:00	20:00:00	02:00:00					
			07:30:00			**07:30:00**			**01:00:00**	**46:00:00**	**06:34:17**
CNN	20:00:00	21:00:00	01:00:00	16:00:00	17:00:00	01:00:00	18:45:00	19:15:00	00:30:00		
	21:00:00	23:00:00	02:00:00	17:30:00	19:30:00	02:00:00	22:00:00	22:45:00	00:45:00		
				20:00:00	21:00:00	01:00:00					
			03:00:00			**04:00:00**			**01:15:00**	**20:15:00**	**02:53:34**
TV Brazil	12:45:00	13:30:00	00:45:00	19:00:00	20:00:00	01:00:00					
	19:00:00	20:00:00	01:00:00								
			01:45:00			**01:00:00**				**02:45:00**	**00:23:34**

pants, topics, and viewpoints expressed", according to the deliberation on compliance with the principle of pluralism published on July 18, 2024, by Arcom[393], following the decision of the Council of State on February 13, 2024[394].

Regarding the Brazilian scope, the analysis focused on the main national television channels in terms of audience share.

The channels monitored were:
— TV Globo (67 hours/week)
— TV Record (74 hours/week)
— SBT (57 hours/week)
— Band (79 hours/week)
— Jovem Pam (46 hours/week)
— CNN Brazil (20 hours/week)
— since September 2025, TV Brazil has also been monitored (3 hours/week)

B. Study Methodology

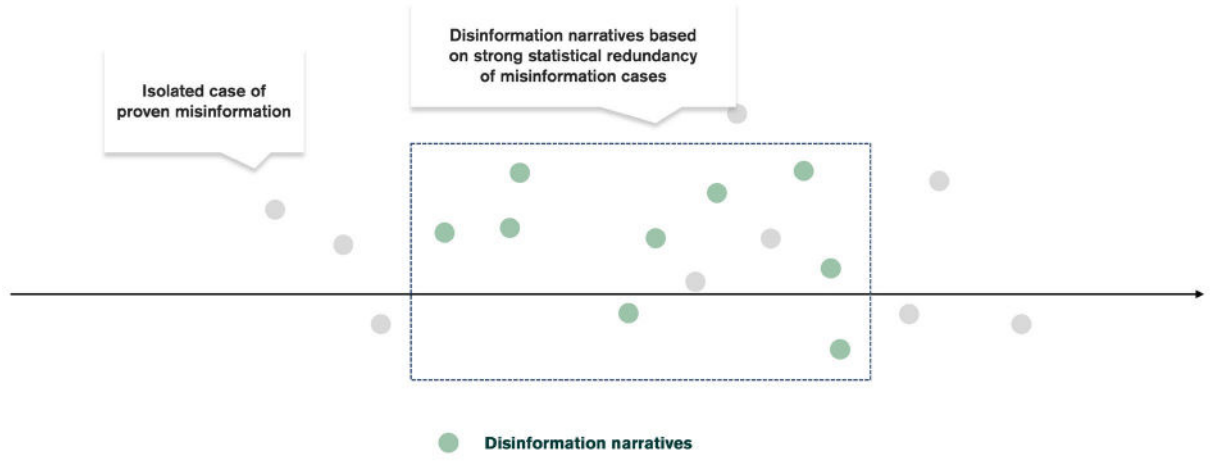
Definition: disinformation and misinformation

In the academic literature, climate disinformation is generally defined as follows:
— **Climate disinformation** refers to false or deceptive discourse that carries a high risk of misinforming the public about facts established by the current state of scientific knowledge regarding climate change and climate action, including mitigation and adaptation measures as defined by the IPCC.
— **Climate misinformation**, by contrast, is characterized by the absence of demonstrable intent to deceive and may therefore stem from error or from exposure to misleading narratives.[395][396].

This report adopts an operational approach, focusing primarily on:
— The false nature of the content,
— Its potential negative impact on audiences or public policy, rather than on the intent or awareness of producers and disseminators.

In this context, two additional terms are used to refine the analysis:
— False claim: an unsubstantiated claim that is either scientifically contradicted, manipulative by omission, or based on invalidated theories (see below).
— Disinformation narrative: among the cases of misinformation detected, a recurring narrative emerges in a significant way (> 8 occurrences). Repetition is considered a strong enough indicator to suggest the existence of intent aimed at misleading public opinion[397].

Identify climate disinformation campaigns among all cases of misinformation



Definition: climate disinformation

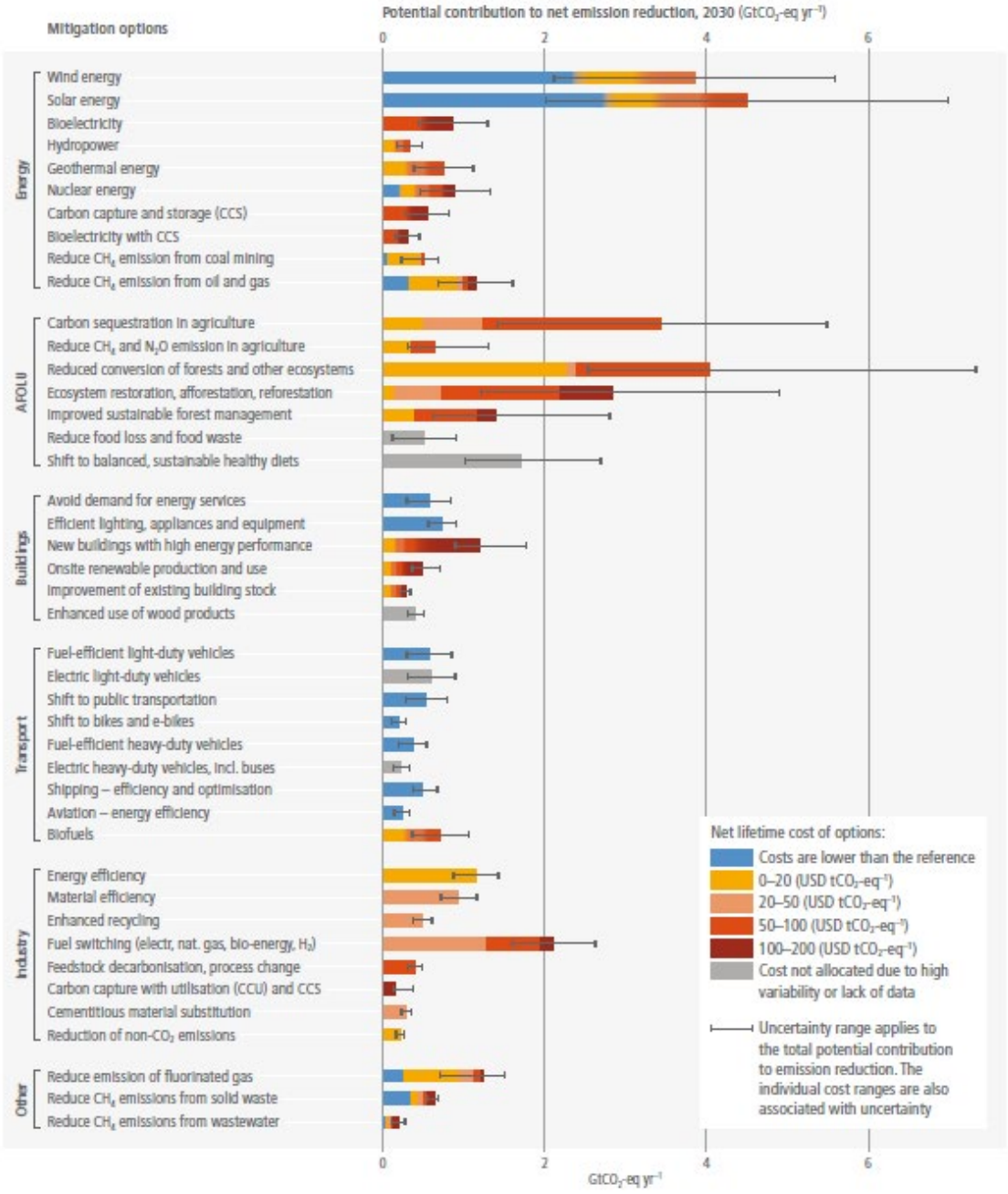
Topics covered under climate misinformation include, in particular, scientific knowledge about climate change, its human origin, as well as mis- and disinformation regarding solutions for climate transition.

All solutions studied by the IPCC's 3rd Working Group fall within the scope of our study (see adjacent Figureic[398]). This broad definition of climate mis/disinformation, while not entirely consistent with the proposed legislative frameworks, allows for the inclusion of the concept of New Climate Denial as recommended by the scientific literature on the subject[399].

Characterizing misinformation

The characterization of misinformation is carried out in accordance with international standards, in particular those provided by the International Fact-Checking Network[400] and the European Fact Checking Standards Network[401]. These two standards promote the highest ethical norms in fact-checking to combat disinformation campaigns while uphol-

Summary of Mitigation Solutions — IPCC Sixth Assessment Report



The veracity of a piece of information is established based on a scale developed by Science Feedback[415] :

Cases where the credibility of a statement is **"Very high"**	Little to no inaccuracies, fairly represents the state of scientific knowledge, contains appropriate references or links. The article provides insights to the reader about relevant science, mechanisms and implications, as well as limitations and important unknowns surrounding the evidence.
Cases where the credibility of a statement is **"High"**	The article does not contain major scientific inaccuracies and its conclusion follows from the evidence provided. While more detail would have been useful, readers are still accurately informed of the science.
Cases where the credibility of a statement is **"Neutral"**	The article contains no significant errors, but not enough insight either to inform the reader. (Ex: Article does not misstate findings from observational study but does not point out experimental research is needed to confirm findings; article doesn't point out that unpublished research findings aren't peer-reviewed…)
Cases where the credibility of a statement is **"Low"**	A statement is considered to have "low" credibility when it is not supported by an adequate reference or when the available evidence does not corroborate it (labeled as **"Unfounded"**). If a claim contains an element of truth but leads the reader to misinterpret the facts, for example by omitting fundamental contextual elements, it will be labeled as **"Misleading"**
Cases where the credibility of a claim is **"Very low"**	A claim is considered to have "very low" credibility when it is clearly false, for example, if it states a fact that directly contradicts available scientific data (labeled as **"Inaccurate"**), or if it provides an explanation or theory whose predictions have been invalidated (labeled as **"Erroneous"**).

ding the principles of freedom of expression.
The classification of a segment as misinformation corresponds to statements with very low credibility (Inaccurate or Erroneous), or low credibility (Misleading) when the statement has a high potential to mislead the public about established facts. These categories do not cover minor inaccuracies or debates of interpretation: they refer to unsubstantiated claims that are either scientifically contradicted, manipulative by omission, or based on invalidated theories. A segment classified as misinformation may contain several different false claims.

The classification is also based on ethical fact-checking practices[416], which include:

Importance and public interest	The statement must be relevant and have an impact on public opinion, policy, health, or finance.
Virality and reach	It should be widely shared on social media, reported by the media, or disseminated by influential figures.
Potential for harm	The statement must pose real risks or dangers to the population (e.g., discouraging efforts to mitigate climate change).
Falsifiability and verifiability	The statement must be specific and verifiable using credible data or scientific consensus.
Authority and influence of the source	Statements from public figures, officials, or major media outlets are prioritized.
Clarity and context	The statement must be sufficiently clear for analysis and not taken out of context or derived from satire.
Recurrence and persistence	False statements that reappear regularly in public debate are more likely to be fact-checked.

Furthermore, it should be noted that reported statements, such as those from a climate-skeptical political speech, are not characterized as misinformation segments. Finally, statements that are contradicted within the observed sequence are also not taken into account.

Example of a segment classified as misinformation

They are not acting in bad faith, they are of bad faith. They are mistaken. It is not convincing, forgive me. If it were 10% of people, really, but 97%? No. That number is made up. That figure is based on nothing. Listen, I would like to respond on something else. One last thing. Is CO_2 dangerous? Is it dangerous, for example? I will explain why CO_2 is dangerous. I will give you an answer you have never heard before. It is the black curtain effect. What is the black curtain effect? You will understand right away. You have a window. You put a black curtain in front of it, the light barely passes. You add a second black curtain, a third, a fourth, what changes? Nothing, since it already barely passes. CO_2 is the same. A very small amount of CO_2 blocks the radiation emitted by the Earth, and that causes global warming. ***Wait, let me finish. You add two times, ten times, twenty times more CO_2, what changes? Nothing. It is already blocked with very little. CO_2 works like a black curtain. The best proof is that in the past, there was sometimes twenty times more CO_2 than today. And if we believed the IPCC and all their equations, the sea would have boiled, the fish would have been cooked.*** *When was there twenty times more CO_2? In the time of the dinosaurs, there was four times more. That is why there was such lush vegetation, because CO_2 contributes to plant growth. And further back in time, there was even twenty times more. These are curves that are in my book. No, but that is what you are saying. I cannot verify what you are saying. It is valid. It is in all the scientific publications. And why was there more CO_2 than today? At the origin of the Earth, there was even more, four billion years ago. CO_2 decreases over time. Fine, but in that case, why are these scientists lying? I do not understand.*

Identification of speakers

In order to study the typology of misinformation, our fact-checkers then identify the type of speaker responsible for each statement. To minimize selection bias and ensure methodological rigor, the following categories were used:

Journalists	News professionals who report and analyze current events.
Columnists	Regular contributors who give their opinions, interpret or comment on topics.
Political guests	Official political leaders or representatives.
Non-political guests	Individuals invited occasionally to share their expertise or personal experience.
Listeners	Members of the public who react, ask questions, or share their experiences.

Political figures are those with an immediate affiliation to a political party, speaking openly on its behalf. However, this work is not intended to identify whether each stakeholder, particularly guests or listeners, is affiliated with a particular party. The fact-checking team categorized 100% of these speakers manually.

Automated construction of disinformation narratives

In order to distinguish isolated incidents (cases of misinformation) from more proactive disinformation strategies, a statistical method is required to group false or misleading claims together. It should be noted that a misinformation segment may also contain several false claims, and therefore contribute to multiple disinformation narratives.

To this end, a hybrid methodology combining automated analysis and manual verification has been developed. The objective is to establish a process for moving from individual cases to recurring disinformation narratives. This grouping of a set of data points into categories is referred to as clustering.

Several tests were carried out for this clustering, including a very frugal approach known as "K-Means," which focuses on the semantic proximity between cases of misinformation. This semantic proximity was also used when testing different embeddings (all-MiniLM-L6-v2, camemBERT, Qwen3-0.6B)[402].

While this approach was effective in bringing together cases dealing with the same subject (renewable energy, electric mobility, etc.), it did not adequately identify cases with the same angle or the same type of narrative (renewable energy has led to a doubling of energy prices, etc.).

Thus, after multiple testing phases, we ultimately opted to use an LLM to transform the clustering task into a classification task[403]. This use of the LLM involves an extremely small number of tokens compared to the project's initial scale. Therefore, although imperfect, this approach remains consistent with the standards and ambitions of the project.

This entire process therefore follows three sequences:
— For groups (batches) of 15 cases of misinformation, generate potentially relevant categories using an LLM;
— Group together all the categories identified that are redundant with each other;

Classify all cases of misinformation within the finalized list.

Note: the third sequence, which consists of classifying claims within macro narratives of misinformation, could in the future be carried out using a more frugal approach such as K-Nearest Neighbors.

By following this process and adapting the prompts to our specific domain of use, as well as providing a few examples of how a macro narrative should be formulated, we are able to obtain the desired type of grouping. This also allows us to come up with an initial naming system that facilitates the following steps.

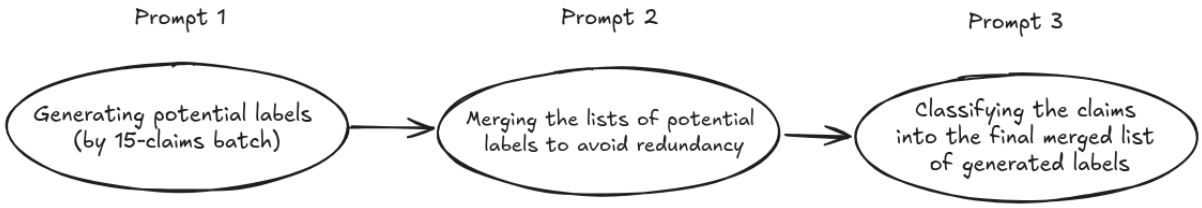


Figure Schematic Representation of the Semi-Automated Construction of Narratives

It should be noted that this semi-automatic clustering serves as a working basis, and all clusters are then verified, corrected, improved, and renamed manually by scientific fact-checkers.

Complete protocol for detecting and characterizing climate misinformation

For the entire analysis protocol, a segment is defined as a sequence of two consecutive minutes (e.g., 6:00 p.m. – 6:02 p.m.). A segment dealing with climate change is defined as containing at least one keyword related to climate change, according to the open-source methodology developed by the Media Observatory on Ecology[404].

Each segment dealing with climate change then goes through a misinformation detection model, which estimates whether or not a segment is at risk of misinformation.

Once cases have been identified by the model as "at risk of climate misinformation," fact-checkers characterize the case as:
— Confirmed misinformation or not
— Speakers identified
— Sources and justifications for case verification

Finally, these cases are assigned to narratives of disinformation to facilitate analysis and writing by specialized fact checkers of more comprehensive debunking articles.

Model selection and training

Although a relatively comprehensive benchmark was conducted throughout the project, the balance between impact and efficiency led the teams to adopt the following technical choice:
— The final model is a gpt-4o-mini-2024-07-18
— The French model is fine-tuned using an SFT ([405]) approach with human labeling carried out by our fact-checkers over the period 2024-2025.
— The Brazilian model also applies a few-shot learning approach to facilitate preliminary detection in the absence of an annotated dataset[406]

This body of work (see Open Source) is available here: dataforgoodfr/climateguard: Detect misinformation.

The model used is fine-tuned on 150 transcripts annotated from the 2024 period, randomly selected from samples of television channels within the scope. In this dataset, 67 segments contained misinformation, while 83 did not.

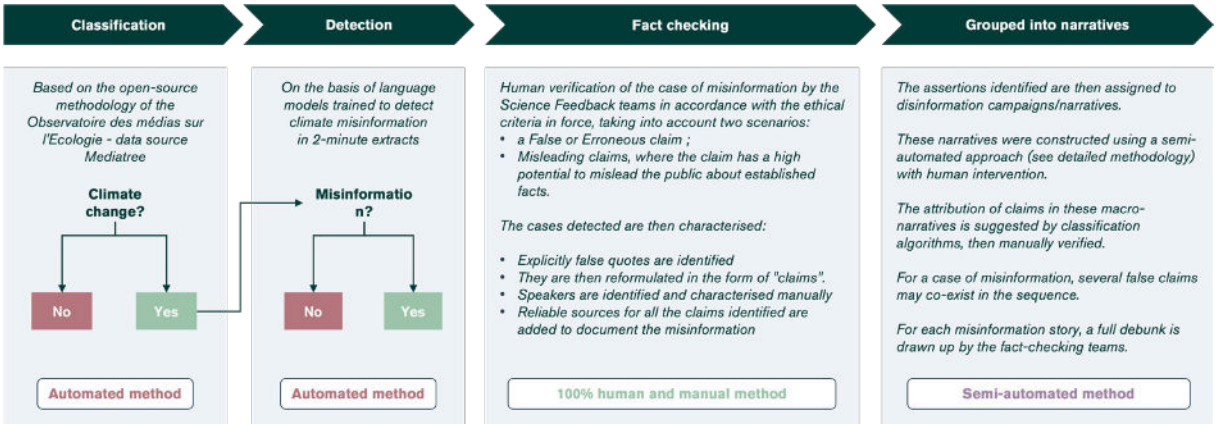


Figure Detecting climate misinformation by combining state-of-the-art technology with the methodological and ethical rigour of fact-checking

Inter-annotator bias and measurement stability

In order to estimate the stability of fact-checking and therefore of data annotation, a double verification was conducted. Thus, out of 200 random samples from among those labeled by the first annotator as "proven misinformation", a second annotation was performed.

Cohen's Kappa coefficient, defined as follows, with Po being the agreement between annotators, and Pe being the agreement between annotators annotating randomly according to the proportions of the annotated classes (in this case, misinformation or not).

$$\kappa = \frac{(Po - Pe)}{(1 - Pe)}$$

The Cohen's Kappa coefficient obtained is 0.9, a score considered almost perfect according to the Landis & Koch scale.

These annotations are therefore considered reliable.

Precision, recall, and risk of underestimation of detection

The entire climate misinformation detection project is carried out using a layer of artificial intelligence designed to automatically detect climate misinformation. It has been designed to minimize the use of artificial intelligence.

The model's results allow fact-checkers to focus their efforts on cases at risk of misinformation. As these results are only an aid to fact-checkers, achieving near 100% accuracy was never a goal for the technical teams involved in training the model.

At the time of publication of the results, the models trained at French level to detect climate misinformation achieve a precision of 40%, with a recall of around 80% (see methodology box below). In order to ensure comprehensiveness, the balance between precision and recall has generally been titled in favor of recall, even if this means slightly increasing the amount of annotation and fact-checking work.
It should also be noted that the "relatively low" accuracy also depends greatly on the narratives and topics covered. While the model is particularly stable when it comes to misinformation about the scientific consensus on the existence of climate change, it requires a little more fine-tuning when it comes to detecting false claims about air conditioning.

Methodological note

Precision: measures how accurate our positive predictions are. An precision of 40% means that out of 10 cases detected by the model, 4 are actually climate misinformation.

Recall: measures how well we are able to find all the truly positive cases. A recall of 80% means that out of 10 real cases of misinformation in the wild, we are able to identify 8.

In the context of this study, there are three sources of underestimation of climate misinformation:
— The first building block of the entire climate misinformation detection protocol is based on the classification of segments into Climate/Non-Climate by the Observatoire des Médias sur l'Ecologie (Ecology Media Observatory). While this classification is fairly comprehensive for France[407], it is less exhaustive for Brazil[408].
— The 80% recall rate means that at least 20% of climate misinformation is missed by the models.
— The scope is limited to news programs, as well as to a specific set of relevant programs in Brazil. It is therefore highly likely that climate misinformation is also present in other programs not observed in this study.

Finally, an element regarding the potential drift[409] of the detection model must be mentioned. Taking a step back, automated climate misinformation detection models can work for three complementary reasons:
— Because false claims may already be known to the training data of large language models: IPCC reports and the scientific consensus on the origin of climate change, for example, are an integral part of the training data of modern LLMs, due to their presence in online literature, on Wikipedia for example[410].
— Because false statements are made with a tone, wording, or semantics that lead the model to classify the segment as at risk of misinformation: typical cases include misleading statements, sophistry, or rhetorical manipulation.
— Because the detected narratives have been integrated into the training data.

This third component necessarily requires anticipating phases of model retraining to ensure that the production model is enriched with new narratives that may emerge in public debates and of which it would not have been previously aware.

This approach is inseparable from the monitoring and human expertise of public and media debate.

Estimating media coverage of climate change in Brazil

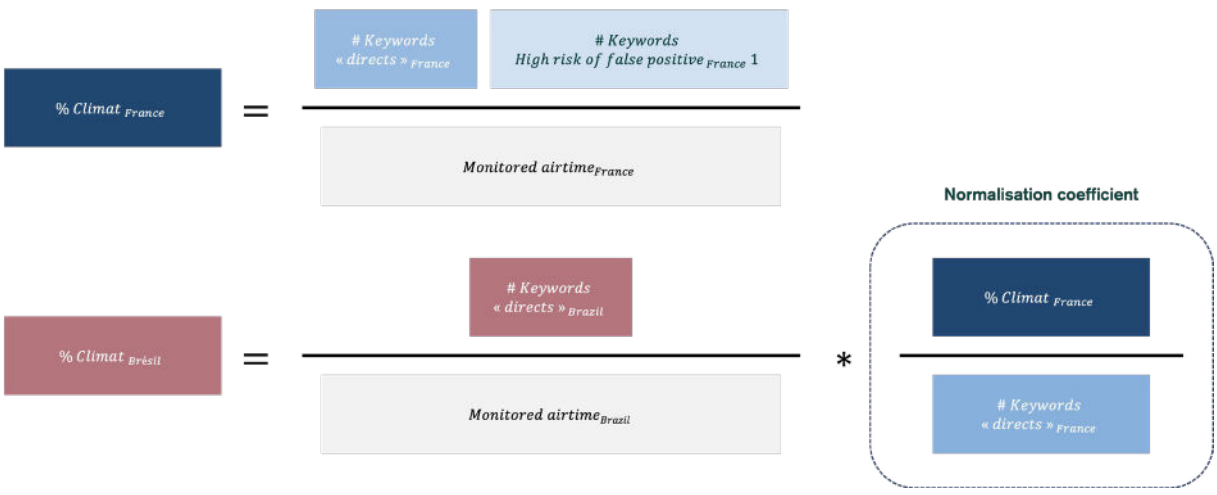
In order to measure the prevalence of climate disinformation in Brazil, it was first necessary to construct an indicator of media coverage of the topic. As a reminder, the percentage of media coverage of climate change is constructed using a dual approach: direct keywords (heatwave, climate, etc.) and keywords considered to be at high risk of false positives (ocean, train, etc.), which are only taken into account when they are used in an environmental context.

This dual approach, and the translation of this process into a percentage of media coverage, required extensive back-and-forth communication with citizen monitors, the media themselves, and the committee of experts from the Media Observatory on Ecology.

We therefore propose a simpler approach for this analysis, in order to reconstruct a media coverage indicator in Brazil, as shown in the diagram below[411].

The construction of this normalization coefficient is made particularly credible by the very high correlation (Pearson_Coefficient = 0.96) between the percentage of climate coverage and the number of direct keywords, with keywords at high risk of false positives being essential only for more detailed sectoral analyses.

Methodology for estimating media coverage of climate change in other countries: the case of Brazil



C. Artificial Intelligence and impacts

Limiting the use of Artificial Intelligence

We chose to use AI to compensate for the impossibility of monitoring the entirety of media content. However, this use is minimized and serves only to simplify the work of fact-checkers by performing an initial filtering, never replacing them: as mentioned above, each case is annotated, sourced, and validated by a human expert.

In order to minimize the use of AI, the data are first filtered using a simple keyword search to identify excerpts dealing with climate. This considerably reduces the number of transcriptions analyzed by the AI: 20,000 to 25,000 transcriptions per month out of 115,000 to 125,000 monitored segments. The detected excerpts (approximately 400 per month) are then retranscribed because their initial quality is poor, in order to facilitate the reading and annotation work of the fact-checkers. Regarding the environmental assessment of the model, OpenAI has been notoriously opaque about publishing energy estimates for its models: we have very little information on its environmental impact. We therefore attempted to estimate it using three methods:

1 – Estimates by researcher Sacha Luccioni
The model used in our project can probably be compared to the smaller variant of GPT-OSS, which has 20 billion parameters (with the difference that gpt-4o-mini is multimodal while GPT-OSS is text-only), whose environmental impacts have been analyzed by Dr. Sasha Luccioni and which we use to estimate the energy consumption associated with the project[412]: According to the study, the 20B model consumes 0.49 Wh for 25 tokens generated (on a dataset with a median input length of 85 characters).

2 – Estimates from the Ecologits tool
Another credible source for estimating the consumption and emissions of proprietary AI models is the EcoLogits project[413]. The project estimates the environmental costs associated with the inference of proprietary models based on disclosed information and assumptions about model size derived from costs. This provides another credible reference for the project's consumption.

3 – Code Carbon estimates for transcription
To estimate the transcription step using the OpenAI Whisper Large V2 tool, for which even less data exists, we used a study using CodeCarbon[414] to estimate the energy cost of whisper-base transcription on approximately 22.2 hours of audio, or approximately 500 Wh.

Estimation of the project's CO2 emissions

By applying the Ecologits module to a subset of 715 segments, we estimate the energy consumption of a classification at 0.008 Wh and its global warming potential at 0.005 gCO2eq. Considering the major edge case of 25,000 classifications per month, the impact of the system is estimated at 200 Wh and 125 gCO2eq.

Using Dr. Luccioni's work to estimate our energy consumption, assuming that gpt-4o-mini has a similar size and architecture to GPT-OSS 20B, we can assess the energy impact of our system by analyzing the median size of prompts. Our prompt and transcription (median value) have 635 tokens in input, with one predicted token, which corresponds to 0.132 Wh per transcription. Considering an average month in which the system analyzes 25,000 transcripts, the emissions associated with classification are 3.30 kWh (equivalent to a Paris-Berlin trip by high-speed train). Converting this figure using Ecologits' energy/PRG scale, we obtain 2.06 kgCO2eq.

Regarding emissions related to audio conversion, 22.2 hours of audio corresponds to 1,322 minutes of audio, which puts energy consumption at 0.38 Wh per minute with Whisper Base. As Whisper Large V2 is 20 times larger than Base, an initial estimate would put the energy consumption of transcription at 7.50 Wh per minute. However, we can assume an efficiency improvement of between 2 and 8, which brings our low estimate down to 0.94 Wh per minute and our high estimate to 3.75 Wh.

400 two-minute segments are transcribed every month, so we estimate the energy consumption of the transcriptions to be between 752 Wh and 3 kWh: corresponding to emissions between 470 gCO2eq and 1.88 kgCO2eq, again using the Ecologits scale.

Table of AI-related emissions

AI use cases	Energy Low estimate (kWh)	Energy High Estimate (kWh)	Emissions Low Estimate (kgCO2eq)	Emissions High Estimate (kgCO2eq)
Classification	0.200	3.300	0.125	2.060
Transcription	0.752	3.000	0.470	1.880
Total	**0.952**	**6.300**	**0.595**	**3.940**

Experimentation with open source models

For several months, we have been working on experimenting with and developing open source models, focusing on small, specialized language models such as Qwen3, as well as models with more ethical and reproducible training data, such as the PleIAs and EuroLLM families.

Models based solely on encoders, such as ModernBERT and CamemBERTaV2, are also being tested because they offer a stable and frugal approach to classification (they can be trained to generate a binary output to classify data).

We adapt these models using a dataset from our annotations on the French scope, comprising 715 examples.

Preliminary data show high recall for cases of disinformation, reaching 78% with the adjusted ModernBERT-large models (395 million parameters). Small decoder models encounter difficulties and tend to classify all texts as disinformation. Additional online testing is needed.

Current developments towards an ethical open-source model, easily monitorable on the deployed infrastructure, are promising. Although this model has not yet been deployed in production, it is a priority for the future.

Open Source and Access to Data

To make the entire media ecosystem—civil society, media outlets, journalists, institutions, as well as research actors—able to benefit, all analyses, methodologies, and results produced for the French scope are accessible in open-source under an ODBL license.

Readers can find all the Figures used to compile this report, as well as many others, at the following address: https://observatoiremediaecologie.fr/mesinformation-climatique.

Furthermore, these data will now be updated in real time by the Media Observatory on Ecology teams, in order to dynamically monitor the prevalence of climate misinformation in mainstream media.

All of the code produced within the project can be found at:
— For the Media Observatory on Ecology: https://github.com/dataforgoodfr/quotaclimat
— For the misinformation detection project specifically: https://github.com/dataforgoodfr/climateguard

The Observatory provides elements for interpreting and quantitatively tracking the evolution of climate disinformation. However, it does not produce editorialized analyses, leaving each actor in the ecosystem free to draw their own conclusions or to use the data for more advanced investigations or analyses.

For transparency, the Observatory team also shares a significant share of identified cases of misinformation with the corresponding media outlets before any online publication.

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404. ifcncodeofprinciples.poynter.org/the-commitments
405. An embedding is a vector/mathematical representation of a text sequence. Thus, choosing to represent text using one embedding rather than another can greatly alter the clustering results.
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412. The drift of a machine learning model is characterized by the decline in the model's performance once in production when compared to observed reality and its difference from the training data.
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414. (1) These keywords, known as "HRFP," are validated for France using a "cascade" methodology.
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