

# Climate misinformation

as a systemic risk  
to information integrity  
in German media

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## About

This report is produced by the NGOs QuotaClimat, Science Feedback and Data For Good, as part of a collaboration aimed at semi-automatically detecting climate misinformation in the audiovisual media, through algorithmic pre-detection and manual validation. The project's ambition is to produce reliable, benchmark and open-source data on the presence of misinformation in the news media of the countries studied. The methodology is designed to be replicable, in collaboration with fact-checking organisations specialising in the national context under study. In this report, the accuracy of the data was verified through fact-checking by Klimafakten. This analysis focuses solely on mis- and disinformation regarding climate science and climate action, and does not cover all environmental issues, notably the crises relating to biodiversity or natural resources.

It covers news programmes on the following channels: Sat.1, ZDF, ProSieben, RTL, Das Erste, and Kabel Eins.

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Journalism**Ai**



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# Glossary

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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<sup>1</sup>.

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, several terms 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<sup>2</sup>.

**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<sup>3</sup>.

**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.<sup>4</sup>

# Key takeaways

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## Climate coverage

- The analysis reveals **an intra-year upward trend in climate coverage**: from April to December 2025, it averaged between 2.5% and 5%, whereas from January 2026 onward, coverage rose to a range of 5% to 7.5%, excluding peaks.
  - An episodic coverage of climate-related information, with five peaks identified (beginning of November 2025; mid-December 2025; beginning of January 2026; beginning of March 2026; and mid-April 2026).
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## Distribution of climate misinformation cases

**A total of 47 unchallenged cases** were detected on the 6 German TV channels during the analysed period (April 2025 to April 2026).

**4 temporal clusters** of unchallenged misinformation cases emerge:

- The last two weeks of May and first two weeks of June 2025, following the federal elections and coalition agreement;
- The first two weeks of July 2025, during Germany's first large-scale heatwave of the year;
- The first week of October 2025, amid federal budget negotiations and the release of the Energy Transition Monitoring Report by the Federal Ministry for Economic Affairs and Energy (known in German as Monitoring-Bericht, "Die Energie der Zukunft");
- In March and April 2026, following the adoption of Germany's 2026 Climate Action Programme (Klimaschutzprogramm 2026).

## Energy and climate are the most targeted topics

Most of the cases treat the energy topic, and more specifically, the Energiewende's, and climate policy as a whole, economic and technical reliability. The rest fall into the topics of deflection of responsibility and climate science denial.

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Recommendations include:

- **Media practices**: Improving media coverage of climate issues requires targeted journalist training, more balanced panel composition with live fact-checking mechanisms, and stronger editorial standards for environmental reporting.
  - **Independent oversight**: A robust oversight framework should include stronger protections for journalists through the Anti-SLAPPs directive. Systematic monitoring of climate disinformation risks remains a critical gap to address.
  - **Funding and sustainability**: Public press subsidies should be redirected toward supporting high-quality, independent media outlets to ensure the viability of trustworthy climate journalism.
  - **Strengthening societal resilience**: Broader structural reforms are needed across several areas, and notably stricter lobbying scrutiny, tighter advertising regulation, media literacy initiatives and more effective oversight of big tech platforms, whose algorithmic systems significantly shape the public's exposure to climate information.
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## Private and public media are equally exposed

**Sat.1 and ZDF emerge as the most exposed channels to climate misinformation.** It is important to note precisely because they represent different cases within the German broadcasting spectrum: one a commercial private channel, the other the country's first public broadcaster. Their shared vulnerability reflects two distinct mechanisms through which misleading climate claims gain access to mainstream primetime audiences.

## Distribution of speakers

The breakdown of speakers' identities is as follows:

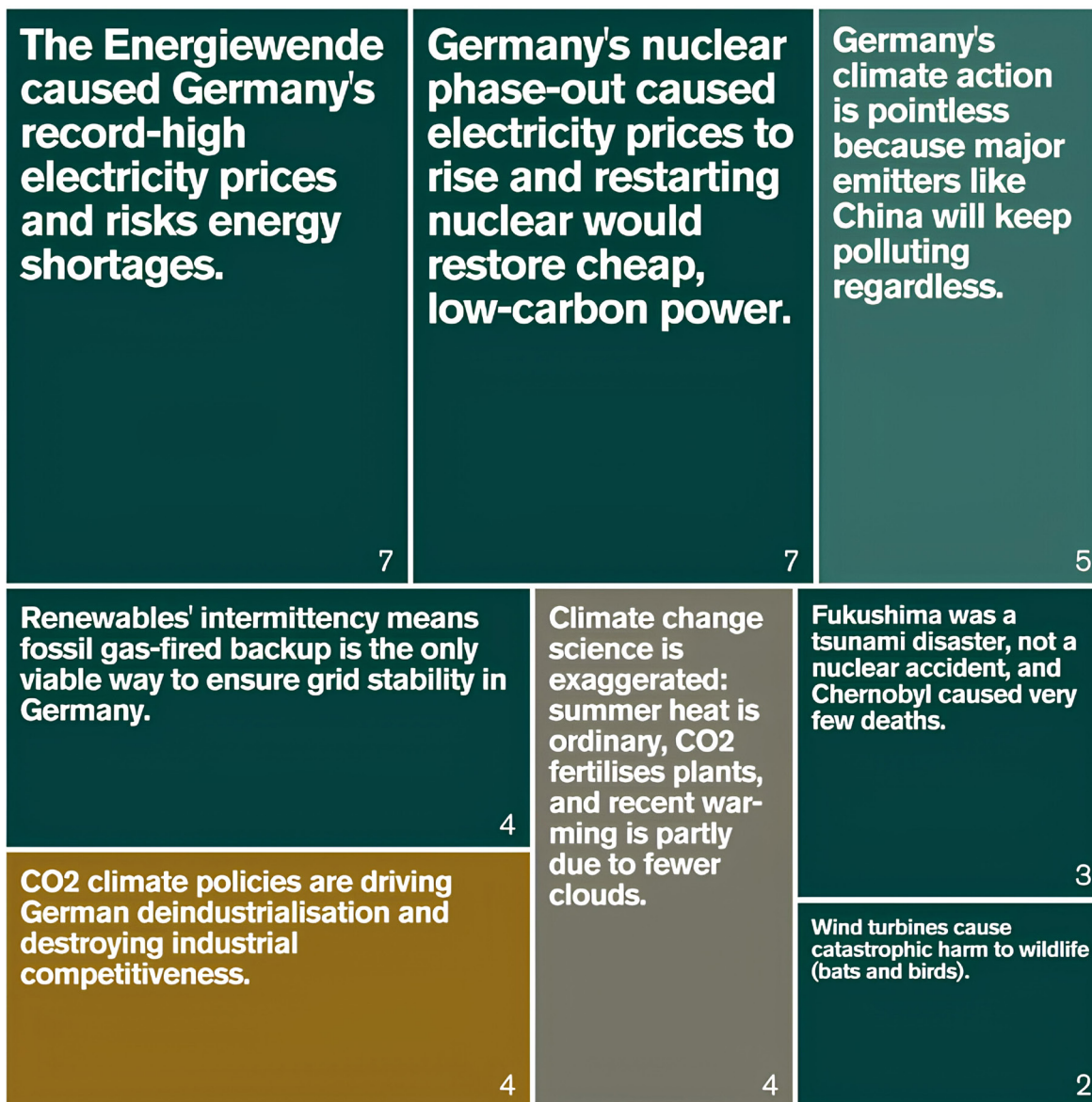
- **Politicians** account for more than a third of the cases identified (39,5%),
- **Journalists and commentators** account for more than 30% of all cases,
- **Guests** represent 30,2% of this share,

In sum, external speakers remain the most active vectors of misinformation, with politicians and guests spreading 70% of misinformation cases. However, journalists and commentators rank high, representing almost 30% of cases spread, equally spread between public and private media.

# Key takeaways

## Main disinformation narratives

Study conducted on television news programs in Germany, from April 2025 to April 2026.



- Solutions - Energy
- Solutions - National contribution / multilateralism
- Solutions - General
- Climate science

### Note on the perimeter and methodological limits:

- The analysis covers a 1-year period, spanning from April 2025 to April 2026. 6 German TV channels were analysed between April 2025 and April 2026: Sat.1, ZDF, ProSieben, RTL, Das Erste, and Kabel Eins. The perimeter does not include German 24-hour news channels (such as Welt, n-tv, and Tagesschau24).
- For methodological purposes, journalists and commentators have been grouped under a single speaker category, though we acknowledge that these two functions do not carry the same level of professional responsibility and ethical obligation; this grouping instead reflects the broader presence of media practitioners and their varying degrees of exposure to, and potential spreading of misinformation.

### Limits of the analysis:

- The scope of this report does not include disinformation specifically relating to biodiversity
- Data collection relies on a network of partners, which can result in minor losses in the acquisition pipeline. The November 2025 — January 2026 period experienced a significant data loss (-80% of incoming flow). For this reason, that period could not be adequately analyzed, and no results for it are presented.

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# Introduction

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# Introduction

**Climate disinformation today rarely takes the form of outright denial alone.**

**In Germany, as across Europe,** it increasingly operates through “delay” and “strategic scepticism”: vested economic and political interests shifted from denying climate science to reframing climate action and net-zero alternatives as socially unfair, economically unrealistic, or culturally threatening<sup>5</sup>.

**This way, climate misinformation has evolved into an effective political strategy** exploiting everyday anxieties and broader identity-based conflicts. Public debates around heating systems, cars, food prices, agricultural regulation, or energy bills become vehicles for broader political arguments about defence of economic freedom, national identity, loss of control, declining living standards, and distrust in political elites<sup>67</sup>.

**This is why misinformation rarely works through rational persuasion.** People do not adhere to misleading narratives on “climate lockdowns” for instance simply because they lack access to correct information, but also because these narratives give meaning to feelings of insecurity, distrust, or social and cultural decline.

As Naomi Klein summarised it, *“the feelings are right and the facts are wrong”*<sup>8</sup>.

**On the other hand, disinformation is often discussed as if it were primarily a problem of online platforms,** while traditional media are seen mainly as the corrective force<sup>9</sup>.

This view is incomplete, for two reasons:

— **First because the scale of online misinformation exposure should not be overstated.** Research shows that misinformation represents only a small share of overall online consumption. Estimates generally range between 1% and 10% of civic and news content, rising for contentious topics such as climate, health, or geopolitical conflict. In Germany, untrustworthy sources represented less than 1% of the population’s online news diets between 2017 and 2024. Since only around 5% of time spent online is dedicated to news consumption, misinformation accounts for an even smaller share of people’s total media diet<sup>10</sup>.

*As Naomi Klein summarised it, “the feelings are right and the facts are wrong.”*

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— **The second relates to “political effectiveness” of disinformation narratives.** Research shows that misinformation becomes politically consequential when it circulates through high-reach, mainstream actors: television, radio, newspapers, and the public voices they amplify<sup>11</sup>.

**In the media debate, climate misinformation often enters public discussions** through familiar journalistic formats, controversy panels, false balance between established science and marginal doubt, repeated focus on anecdotal failures of climate policy, or the uncritical repetition of misleading narratives. The issue is often less the publication of false facts than the normalisation of misleading frames.

**In this context, traditional media** can therefore become, sometimes unintentionally, a central link in what researchers describe as the “disinformation cycle”: fringe narratives gain visibility and legitimacy, therefore get “laundered” once they are relayed by trusted outlets with large audiences.

**In Germany, research shows that it is reinforced by a feedback loop:** belief in misinformation predicts lower trust in traditional media over time, while declining trust in media also predicts greater exposure to misinformation<sup>12</sup>.

**The issue, therefore, is not simply volume, but concentration and amplification.**

**In fact, recent studies point to a growing concentration of climate denial in certain media outlets,** observable for instance in the UK and in France. A Carbon Brief analysis found that, for the first time since 2011, opposition to climate action in UK newspaper editorials has exceeded support, with criticism of net-zero policies originating almost exclusively from right-leaning titles such as the Sun, the Daily Mail, and the Daily Telegraph<sup>13</sup>. In France,

*By 2023, 25 % of respondents in eastern Germany and 21 % in western Germany said they did not believe in human-caused climate change, while many others expressed uncertainty.*

(Zandt, F. 2023 — Klimawandelskepsis in Deutschland)

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the QuotaClimat report reveals a comparable dynamic in broadcast media, with private channels (i.a. SudRadio, Europe 1, and RMC) being the most concentrated vectors of climate misinformation cases<sup>14</sup>.

**In Germany, the phenomenon of "Rechtsruck"** or the rightward shift in Germany's political landscape plays a crucial role in shaping the discourse around climate change, reinforcing the amplification dynamic. While political parties such as the AfD have made opposition to climate regulation and the Energiewende central to their political strategy, these narratives increasingly spill into mainstream conservative discourse, where calls for a "more balanced" or slower transition can blur the boundary between legitimate policy debate and the normalisation of climate delay frames<sup>15</sup>.

**The emergence of climate delay discourses in German public debate** seems to correlate with weaker support for ambitious public policy and rising climate scepticism among the population. In 2015, 92% of respondents in Germany recognised that climate change was human-induced<sup>16</sup>. By 2023, 25% of respondents in eastern Germany and 21% in western Germany said they did not believe in human-caused climate change, while many others expressed uncertainty<sup>17</sup>. It can also fuel hostility toward scientists, journalists, and public officials promoting climate action.

**Yet misinformation should not be understood only as a cause of distrust**, but also a consequence of deeper social, geographical and political divides. Rising inequalities along declining trust in journalism, institutions, and political representation creates fertile ground for misleading narratives. At the same time, local journalism, often the most trusted form of media, has been structurally weakened, increasing the distance between institutions and citizens<sup>18</sup>.

**For this reason, the response to climate misinformation cannot rely only on fact-checking or media literacy campaigns.** Citizens are already sceptical, as shown by declining trust in media across most countries, while news avoidance continues to rise. This is why strengthe-

ning information ecosystems, supporting independent journalism, and ensuring that mainstream media is significant to ensure they do not become vectors of false balance or amplification.

**This is particularly true for audiovisual media.** In the EU, public broadcasters and major television networks still play a central role in shaping collective understanding of the climate transition<sup>19,20</sup>. Their editorial choices influence what becomes controversial, what appears consensual, and whose voices are considered legitimate.

This report, written by QuotaClimat in collaboration with Data4Good and ScienceFeedback, investigates the presence and forms of climate misinformation in German audiovisual media outlets.

**It does not assume that misinformation is everywhere, nor that all disagreement on climate policy is disinformation.** Rather, it seeks to understand how misleading frames, delay narratives, false balance, and the normalisation of inaccurate claims circulate within mainstream broadcast media. Because the democratic risk lies less in isolated falsehoods than in the gradual erosion of information integrity, identifying these mechanisms is a prerequisite for effective climate journalism and informed public decision-making.

# An overview of the climate information landscape in Germany

## A growing exposure to disinformation

Despite widespread concern about disinformation, actual exposure to untrustworthy sources remains low in Germany:

- Untrustworthy sources made up less than 1% of the news diets of the German population between 2017 and 2024 (Oswald and Munzert, 2025)<sup>21</sup>.
- Yet 81% of Germans believe that disinformation jeopardizes democracy and social cohesion, and more than half (54%) say the topic receives too little attention (Bertelsmann Stiftung, October 2023)<sup>22</sup>.

## Historically strong public attitudes towards climate change

- 83% of Germans believe the country should do everything in its power to combat climate change now (ECONtribute Policy Brief, 2023)<sup>23</sup>.

## Scarce and skewed media coverage of climate change

Yet, climate change remains underrepresented in German mainstream media.

- An analysis across 20 German television channels in 2022 found that only 2.2% of total broadcast content addressed climate-related topics, and nearly 80% of that coverage was concentrated in news formats (Hoppe et al., 2026)<sup>24</sup>.
- In Tagesschau<sup>25</sup>, climate constituted 4% of total news coverage between 2015 and 2023, with 80% of it focused on climate policy, and only 10% addressed climate impacts like weather extremes. The latter tend to be covered in later news slots, indicating lower news value (Schirmag, 2025)<sup>26</sup>.

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(Bertelsmann Stiftung, October 2023)

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2,2 %  
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(Hoppe et al., 2026)

83 %  
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(ECONtribute Policy Brief, 2023)

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# I. Findings

# Disinformation narratives targeting climate and energy issues

## Preamble

### Media coverage of climate issues

**Media coverage of climate issues** forms the basis for analysing the potential prevalence of misinformation. It enables exposure to disinformation narratives to be compared with overall exposure to information.

**For the purpose of this study, 6 German TV channels** were analysed between April 2025 and April 2026: Sat.1, ZDF, ProSieben, RTL, Das Erste, and Kabel Eins.

**The perimeter does not include German 24-hour news channels** (such as Welt, n-tv, and Tagesschau24), and therefore does not allow for the identification of potential proactive channels.

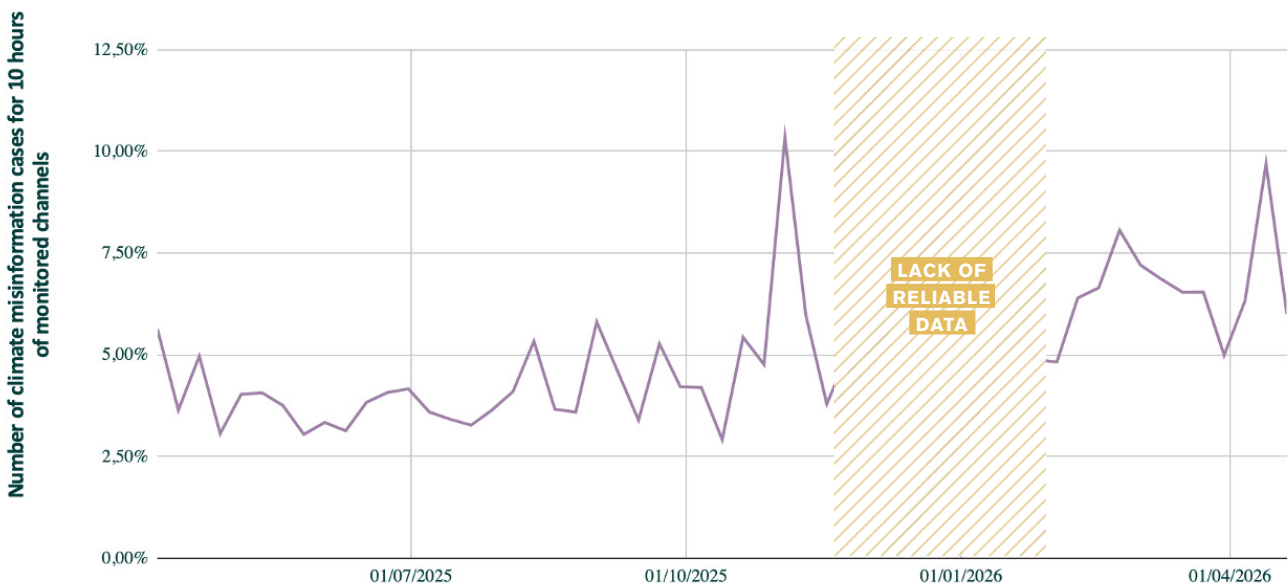
**Extending monitoring to news channels represents a natural next step for a more comprehensive analysis:** in France, for instance, continuous news channels have proven to be structurally more prone to climate misinformation than generalist ones<sup>27</sup>. Whether a similar dynamic exists in Germany remains an open empirical question, and one that a permanent monitoring observatory would be operationally well-placed to answer.

**The analysis reveals an intra-year upward trend in climate coverage:** from April to December 2025, it averaged between 2.5% and 5%, whereas from January 2026 onward, coverage rose to a range of 5% to 7.5% — excluding peaks. Yet, the figure varies quite significantly during the one-year period, with a difference of up to 5 percentage points between certain months (eg. between the beginning of November 2025 and beginning of December 2025).

These overall findings effectively shed light on the following points:

- **An episodic coverage of climate-related information, with five peaks identified** (beginning of November 2025; mid-December 2025; beginning of January 2026; beginning of March 2026; and mid-April 2026).
- **Distribution of climate-related news in Germany appears sensitive to on-going events**, although not corresponding with the distribution of climate disinformation.

**Climate coverage in Germany**  
April 2025–April 2026



# Distribution of climate misinformation cases

## Peaks

During the analysed period, April 2025 to April 2026, a total of 47 unchallenged cases of misinformation were detected on the 6 German TV channels.

The following graph details the number of unchallenged climate misinformation cases per week across all monitored channels.

### Looking at the dataset, 4 temporal clusters of unchallenged misinformation cases emerge:

- The last two weeks of May and first two weeks of June 2025, following the federal elections and coalition agreement;
- The first two weeks of July 2025, during Germany's first large-scale heatwave of the year;
- The first week of October 2025, amid federal budget negotiations and the release of the Energy Transition Monitoring Report (known in German as Monitoring-Bericht „Energie der Zukunft“);
- In March and April 2026, following the adoption of Germany's 2026 Climate Action Programme (Klimaschutzprogramm 2026).

**A chronological reading demonstrates that disinformation appears like a reactive phenomenon** rather than a natural one — disinformation strikes and sweeps more favorably into public debate due to thematic media spotlights:

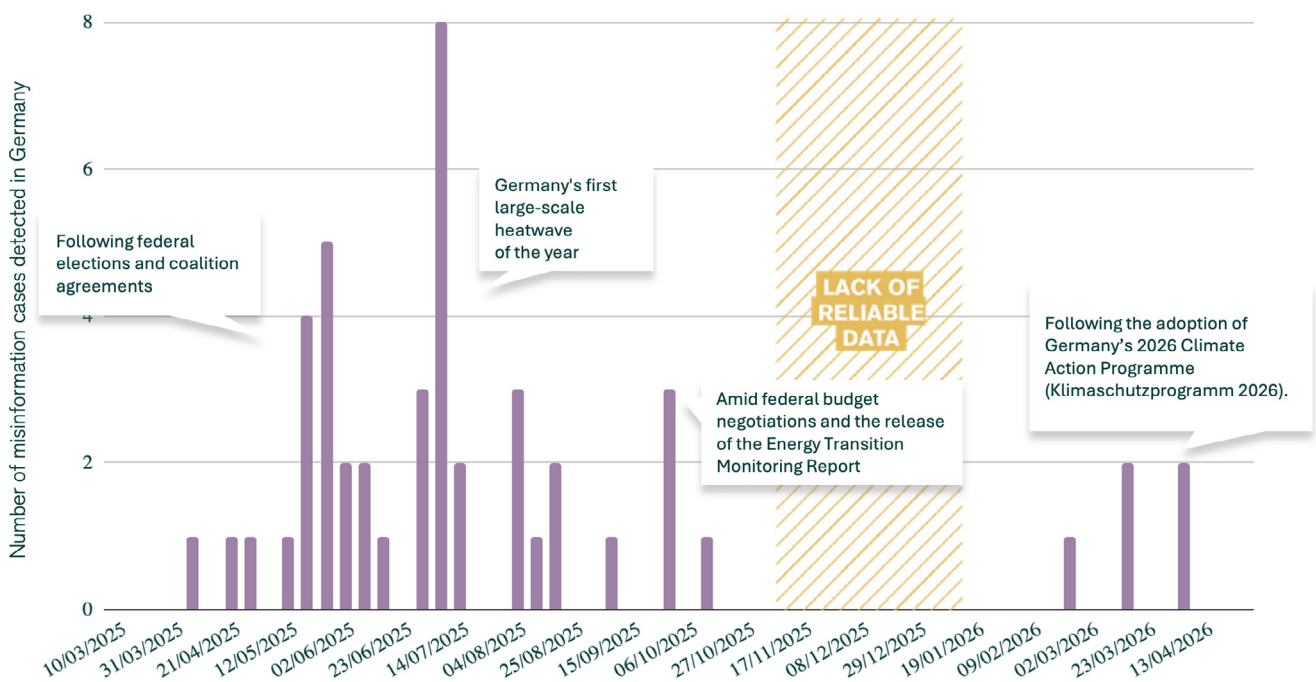
- Public policy debates regarding the EnergieWeinde
- Extreme weather events such as heatwaves and floods
- Political struggles and partisan negotiations
- Geopolitical and energy crises

To a similar extent as in France, German media outlets of all kinds — both public and private — are permeable to disinformation narratives and are exposed to waves of misinformation cases.

**Germany shows structurally similar event-driven porosity to disinformation as France**, with comparable peak intensities during the monitored overlap period. The vulnerability does not lie in country-specific factors but rather in something more structural about how mainstream media processes climate and energy issues under pressure.

**This has a counterintuitive implication:** the upward trend in climate coverage observed in the final months of the study period in Germany may, if driven by similar triggers, carry with it a renewed risk of misinformation spikes.

Climate misinformation cases in German media



Climate Safeguards: QuotaClimat, Data For Good, Science Feedback

## Narratives

The 8 recurring disinformation narratives detected are detailed on the following page.

By compiling cases of unchallenged misinformation, it is possible to identify patterns and similarities, and thus to infer the existence of disinformation campaigns. To this end, all detected cases of misinformation have been grouped into statistically representative clusters of similar claims.

**Most of the cases treat the Energy topic, and more specifically, the *Energiewende*'s** — and climate policy as a whole — economic and technical reliability. The rest fall into the topics of deflection of responsibility and climate science denial.

The scope of this report does not include disinformation specifically relating to biodiversity.

### 1 ► Energy topics as an opportunity for contesting the *Energiewende*'s and climate policy as a whole

It is the dominant cluster by volume, grouping narratives that attack the energy transition on cost, reliability, and industrial grounds.

**The *Energiewende* caused Germany's record-high electricity prices and risks energy shortages**

**Renewables' intermittency means fossil gas-fired backup is the only viable way to ensure grid stability in Germany**

**CO<sub>2</sub> climate policies are driving German deindustrialisation and destroying industrial competitiveness**

**Wind turbines cause catastrophic harm to wildlife (bats and birds)**

The heaviest and most sustained misinformation cluster in the dataset — 13 cases in the last two weeks of May and first two weeks of June 2025 — was triggered not by a political event: the signing of the coalition agreement on May 5 and Friedrich Merz's election as Chancellor on May 6. This peak reflects how policy moments function as amplification infrastructure for pre-existing disinformation narratives.

**The coalition agreement<sup>28</sup> itself provided the discursive raw material.** Its commitment to up to 20 gigawatts of new gas-fired power plants, framed as a "bridge tech-

nology," legitimized narratives about renewable unreliability. The separation of the climate and energy ministries — ending the integrated structure of the previous BMWK "super ministry" under Robert Habeck — sparked debates about a "de-prioritization" of climate goals<sup>29</sup>. More specifically, environmental NGOs and think tanks warned that the new government was poised to deprioritize climate policy across the board; whereas the energy industry and CDU/CSU-aligned voices, by contrast, framed the restructuring as a pragmatic shift toward economic competitiveness and energy security. These institutional developments gave existing narratives a credible political anchor.

The claims that followed touched different aspects of the *Energiewende*:

- "In Germany, we don't get very far with energy generated from wind, water and the sun because it's unreliable."
- "The noise and altered air currents caused by wind turbines pose an incredible danger to animals."
- "During the Scholz Cabinet, electricity and gas prices reached levels that were the highest in the world."
- "The higher the proportion of renewable energy in the power system, the higher the total system costs."

**The October 2025 peak follows the same logic at a smaller scale.** The release of the Energy Transition Monitoring Report<sup>30,31</sup> (Monitoring-Bericht „Energie der Zukunft“), provided an official acknowledgment of gaps in the *Energiewende* that was immediately instrumentalized. The institutional legitimacy of the report fueled the claim that "previous energy policy has resulted in Germany being unable to meet the base load" a great credibility.

**Similarly, the Klimaschutzprogramm 2026<sup>32</sup>** (Climate Action Programme) released in March 2026, a package of 67 measures to close the emissions gap, fueled claims about the "high costs of renewables" and "energy shortages". This programme was a legal necessity following a Federal Administrative Court ruling in January that had deemed previous plans insufficient. The package included, among other measures, a rising CO<sub>2</sub> surcharge on domestic flights (starting at €35/segment) and the restriction of tax benefits for company cars to zero-emission vehicles only (effective 2027).

## Main disinformation narratives

Study conducted on television news programs in Germany, from April 2025 to April 2026.

<p><b>The Energiewende caused Germany's record-high electricity prices and risks energy shortages.</b></p> <p>7</p>	<p><b>Germany's nuclear phase-out caused electricity prices to rise and restarting nuclear would restore cheap, low-carbon power.</b></p> <p>7</p>	<p><b>Germany's climate action is pointless because major emitters like China will keep polluting regardless.</b></p> <p>5</p>
<p><b>Renewables' intermittency means fossil gas-fired backup is the only viable way to ensure grid stability in Germany.</b></p> <p>4</p>	<p><b>Climate change science is exaggerated: summer heat is ordinary, CO2 fertilises plants, and recent warming is partly due to fewer clouds.</b></p> <p>4</p>	<p><b>Fukushima was a tsunami disaster, not a nuclear accident, and Chernobyl caused very few deaths.</b></p> <p>3</p>
<p><b>CO2 climate policies are driving German deindustrialisation and destroying industrial competitiveness.</b></p> <p>4</p>		<p><b>Wind turbines cause catastrophic harm to wildlife (bats and birds).</b></p> <p>2</p>

- Solutions - Energy
- Solutions - National contribution / multilateralism
- Solutions - General
- Climate science



## Focus Factual inaccuracies in the German nuclear debate in a sensitive political context

**Germany's nuclear phase-out caused electricity prices to rise and restarting nuclear would restore cheap, low-carbon power**

**Fukushima was a tsunami disaster, not a nuclear accident, and Chernobyl caused very few deaths**

Nuclear energy holds a uniquely contested space in German public life. The 2023 phase-out concluded a decades-long political process, but the debate did not close with it. Instead, it shifted terrain, from policy to retrospective judgment. Within this sensitive context, a number of claims were monitored that, regardless of where one stands on nuclear policy, contain factual inaccuracies.

- "Nuclear energy is completely carbon-free; globally, nuclear power stations have prevented the emission of 270 million tonnes of CO<sub>2</sub>."
- "Electricity generated by nuclear power plants was unacceptably cheap. If we were to provide a one-time subsidy in Germany by rebuilding nuclear power plants, we would then have CO<sub>2</sub>-free and very affordable electricity for 30 to 40 years."
- "(The catastrophe that happened in) Fukushima was a tsunami. It was not a nuclear accident; There haven't been many deaths caused by the Chernobyl disaster"

**These claims surfaced at two distinct moments.** The June 2025 cluster followed the coalition agreement, in which the new government's energy framing reopened public debate about Germany's electricity mix. Whereas the March-April 2026 cluster coincided with the 15th anniversary of the Fukushima disaster, an occasion that was used by some contributors on mainstream channels to argue that the decision itself was driven by irrational fear rather than sound policy reasoning.

**It is worth being precise about what is being flagged here.** The political question of whether Germany's nuclear phase-out was the right decision is genuinely contested and falls outside the scope of this analysis. What is captured here is narrower: specific factual claims — about the full lifecycle carbon footprint of nuclear energy or about its cost structure relative to other sources — that are imprecise or misleading as stated, and that circulated on mainstream broadcast channels without correction or challenge. In a debate as politically charged as this one, the absence of factual pushback is in itself significant.

## 2 ► National climate responsibility questioned through deflection

Extreme weather creates a moment of heightened public attention to climate causality, which deflection narratives exploit by shifting the frame from domestic responsibility to global inaction or natural variability.

**Germany's climate action is pointless because major emitters like China will keep polluting regardless**

Deflection of national responsibility stands as a strong strategy for minimizing Germany's impact on global warming in German mainstream media. This was particularly flagrant during extreme weather episodes in 2025. When a heatwave or wildfire<sup>33</sup> makes climate change impossible to ignore, the misinformation response shifts responsibility rather than explaining the science.

**The July 2025 heatwave is the clearest illustration.** On July 2, Germany recorded its hottest day of the year: 39.3°C. Rather than denying the heat, claims in the days that followed systematically redirected its political meaning:

- "It doesn't matter what you do in Germany in terms of climate protection measures, if China continues to pollute the planet."
- "Natural disasters would not be prevented even if Germany was climate neutral."
- "The global climate doesn't really care whether Germany stops producing any CO<sub>2</sub> emissions tomorrow."

The same mechanism operated during the August heatwave, when temperatures exceeded 40°C in multiple cities in Nordrhein-Westfalen. In fact, August 2025 was the third-warmest August on record globally, 1.29°C above pre-industrial baseline, and southwestern Europe experienced its third major heatwave of the summer<sup>34</sup>.

Rather than contesting whether the heat was unusual, a claim asserted that "temperatures of 38°C are usual in a German summer", a factual minimization that performs the same deflecting function without engaging climate science directly.

### 3 ► Climate science denial as an additional way of discrediting the Energiewende in the debates

Claims minimizing the severity of climate science appear at lower frequency but remain present.

**Climate change science is exaggerated: summer heat is ordinary, CO2 fertilises plants, and recent warming is partly due to fewer clouds**

Unlike the other typologies, these claims surface opportunistically during periods of general climate salience, attaching themselves to broader debates without being generated by them. Their presence is significant for a different reason: hard denial claims of this type are usually associated with fringe or online ecosystems. Their appearance on public broadcasters like ZDF and Das Erste points to a baseline permeability that operates independently of any particular event, reflecting a structural feature of the media ecosystem rather than a situational response.

— *"The Earth has become greener because there is more CO2 in the atmosphere. To some extent, CO2 acts as a fertiliser for plants."*

— *"The dramatic rise in temperature that we have seen in recent years is not only related to climate change, but also to the fact that there have been fewer clouds."*

### 4 ► Residual cases

A small number of claims monitored do not map onto the typologies described above, but are worth acknowledging because of what they suggest about the breadth of the misinformation landscape beyond the core patterns.

**The first concerns the political misrepresentation of government commitments.** Two claims framed a "return to nuclear power" as a concrete election promise of the Merz government. This presentation was misleading: the possibility of reversing the phase-out was debated within the new coalition, but it was never a firm commitment, and Merz himself acknowledged in 2026 that doing so was technically unfeasible.

**The second concerns the political legitimacy of environmental activism.** A specific claim alleged that European Commission officials had coordinated with and financially rewarded environmental organisations to run campaigns against German companies, thus framing climate advocacy itself as a form of institutional corruption. This does not link to any specific trigger event, and the claim points to a narrative type absent from the main typology: one that targets the credibility of the actors pushing for climate action<sup>35</sup>.

**The third concerns corporate greenwashing.** Two claims — one presenting Ryanair as an environmentally friendly airline on the grounds of the number of passengers per flight, and another framing denim production as no longer environmentally problematic — circulated on mainstream channels without challenge. These claims are industry narratives that passed through editorial filters uncorrected. Their presence is a reminder that the misinformation landscape extends beyond the politically charged debates that generate the most visible peaks.

None of these clusters is large enough to constitute a typology in its own right within the monitored cases. All three, however, point to directions worth monitoring in future research.

## Speakers

The breakdown of speakers' identities is as follows:

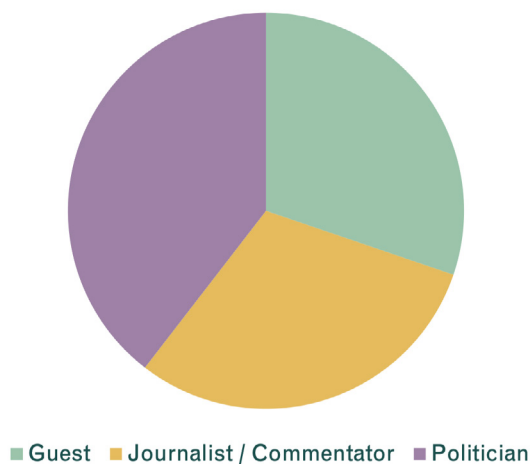
- **Politicians** account for more than a third of the cases identified (39,5%),
- **Journalists and commentators** account for nearly 30,2% of all cases,
- **Guests** represent 30,2% of this share.

External speakers remain the most active vectors of misinformation, with politicians and guests spreading 70% of misinformation cases. Yet, perhaps the most striking finding is that over a quarter of misleading claims are made by journalists and/or commentators.

This sheds light on several elements:

- **Climate-skepticism and techno-solutionism delayism are used as a political strategy.** In fact, over the past few years, the AfD's "anti-ecology" stance has successfully forced mainstream politicians (CDU/CSU) into a defensive "Climate realism" posture to avoid losing voters
- **Economic and technical doubts are injected into the mainstream mostly through guests.** Invited onto programs as experts, they carry implicit credibility that makes them particularly effective vehicles for delayist narratives
- **Lobbyist narratives and greenwashing advocacy have an evident influence on journalists** (e.g., "Ryanair is environmentally friendly because of high occupancy"), suggesting insufficient resources and a lack of technical depth from journalists to challenge misleading economic frames

### Speakers' distribution



## Channels

### Climate coverage

There is a significant difference in the average of climate coverage across the 6 channels, ranging between 4,17% (RTL) and 6,70% (Kabel Eins).

This difference matters since channels with lower climate coverage may offer less context for climate claims, potentially making audiences more susceptible to misleading framing when it does appear.

### Climate misinformation

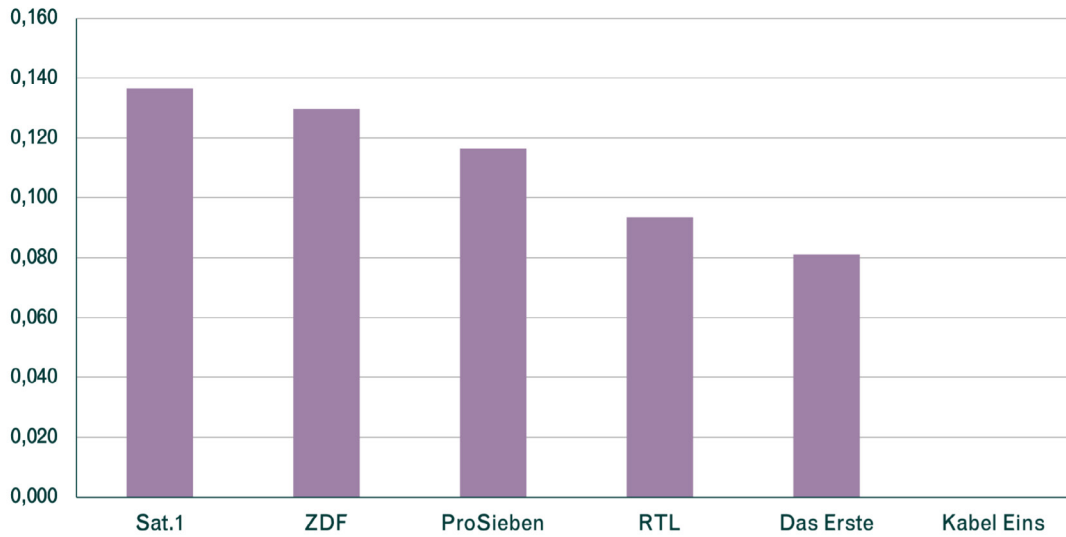
**That Sat.1 and ZDF emerge as the most exposed channels to climate misinformation** is important to note precisely because they represent opposite ends of the German broadcasting spectrum: one a commercial private channel, the other the country's first public broadcaster.

**Their shared vulnerability reflects two distinct mechanisms** through which misleading climate claims gain access to mainstream primetime audiences.

**Sat.1's exposure to climate misinformation is best understood through the lens of its dominant format:** the Frühstücksfernsehen, a daily live morning show broadcast from 5:30 to 10:00, which mixes news, current affairs, celebrity interviews, and lifestyle segments in a fast-paced, loosely structured format. The speaker distribution data is revealing: at Sat.1, guests are the primary source of misleading claims (4 out of 7), ahead of journalists (2) and politicians (1). This is consistent with the Frühstücksfernsehen's format logic: the show's reliance on a rotating cast of external contributors (experts, commentators, authors, health professionals) who address a wide range of topics at speed, with limited fact-checking capacity, creates a structural opening for misleading claims to enter unchallenged.

**ZDF's vulnerability follows a different logic.** Here, politicians are the dominant source of misleading claims, accounting for 9 out of 17 identified cases, with guests (2), journalists (2), and unknown speakers (4) playing secondary roles. ZDF hosts several prominent political talk shows which regularly tackle on-going topics in German politics and attract large primetime audiences. These formats are precisely the arena where politicians advance and contest narratives about the Energiewende, nuclear energy, and climate science — and where, as this analysis shows, those narratives most frequently veer into misleading territory.

### Number of cases per hour dedicated to climate change and per channels



**ZDF’s high exposure to disinformation may, if unchallenged, entail long-term consequences on trust in public broadcasting.** Public broadcast television in Germany is widely trusted across political and demographic lines (Pfaudler, 2023) and consistently ranks as the most trusted information source, surpassing (regional) newspapers, private television, and tabloids (Quiring et al., 2024). In 2023, 64% of respondents trusted public broadcast television, compared to just 2% for social media and 4% for alternative news sites (Quiring et al., 2024)<sup>36</sup>

**This observation can be explained by the way news is produced<sup>37</sup>:** live television debates favour “fast-thinkers”, controversy and sensational stories, dramatisation and the fragmentation of information in order to attract viewers. Rolling news programmes feature a large range of guests who change frequently throughout the day, increasing the likelihood both of inviting a figure who spreads misinformation and of being unable to verify their claims live on air.”

**There is no significant difference between private (RTL, Sat.1, ProSieben) and public (ZDF, Das Erste) media** when it comes to climate disinformation, in contrast with other European countries. In most European media landscapes, public broadcasters act as a “firewall” against disinformation, whereas private rolling news channels serve as the primary conduits. In Germany, that firewall appears surprisingly porous.

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# II. Recommendations

# Recommendations

**An analysis of the penetration of climate disinformation narratives in the German broadcast media reveals a structural vulnerability.** Disinformation is no longer limited to the denial of science, but directly attacks climate action by exploiting the associated costs. Whilst much of the transition is a matter of legitimate debate, it is the duty of journalists to put the factual elements into context, so as to allow opinions to be freely expressed.

**This analysis reveals that the broadcast media’s countervailing power is crumbling in the face of the rise of climate disinformation.** Their role as ‘gatekeepers’ is giving way to a broad platform that risks amplifying the performative effect of disinformation — that is, allowing it to influence decision-making.

**Six possible solutions are therefore proposed to address this.**

## A — Training for journalists

### Deconstructing the new narratives of obstruction

**Initial and continuing training for journalists**, along with the incentives and disincentives that support it (common training framework, self-regulation, regulation, public funding), must incorporate a new dimension: **an understanding of the mechanisms of obstruction.**

Inspired by the model of the Clean Energy Wire Summer Academy on Climate Journalism and Energy Transition<sup>38</sup>, Germany has demonstrated the value of structured, high-level training programmes for journalists covering climate and energy issues. Whilst journalists should be familiar with the fundamentals of climate physics, training in the most common forms of climate disinformation is essential.

Therefore, two aspects should be highlighted:

- 1. Anticipating narratives on solutions:** Renewable energies, first and foremost, and decarbonisation technologies to a large extent, have become the focal points of disinformation. This is easily explained: they embody the visible and costly side of the transition. Training modules must enable newsrooms to identify classic fallacies (e.g., exaggeration of the intermittency of renewables and associated harms) and to encourage comparison with the status quo (e.g., the costs and harms associated with fossil fuels).
- 2. Mastering the technical and economic dimension:** Climate disinformation is shifting towards citizens’ wallets. Academic literature highlights that “discursive contamination” is particularly successful when it pits ecology against purchasing power. Training must include modules on the cost of inaction and the redistributive mechanisms of European policies to avoid, through a lack of context, merely relaying punitive visions of the transition.

## B — Panel composition

### Escaping the “contradictory trap”

One of the key findings of the analysis is that **disinformation frequently originates from guests on live television programmes.**

This leads to two recommendations:

- 1. Prioritising legitimacy:** It is urgent to encourage newsrooms to adopt guest selection protocols based on genuine expertise. Without barring anyone from speaking in the media, these protocols allow the expertise of contributors to be situated within a broader context, and make it easy to highlight the marginal nature of their viewpoint where appropriate.
- 2. Editorial support for live broadcasts:** To counter ‘regulars’ / ‘know-it-alls’ / ‘fast-thinkers’ who use controversy to saturate the media landscape, studios must be equipped with real-time fact-checking mechanisms. Inspired by the mabb (Media Authority of Berlin-Brandenburg) initiatives, the presence of mediators, experts or specialist journalists on set, capable of placing a statement in its scientific context, appears essential in certain circumstances — particularly during political interviews in election periods.

## C — Covering the environment over the long term Moving away from controversy

Misinformation thrives during “peaks” linked to breaking news (extreme weather events, electoral moments, climate policy debates), capitalising on the public’s limited background knowledge of the topics covered.

Two recommendations follow from this:

- 1. Moving beyond avoidance:** Setting aside dedicated coverage time and promoting cross-cutting coverage of environmental issues (across health, politics, economics, geopolitics and other sections) ensures a minimum level of coverage and prevents transition issues from being treated solely through an event-driven lens.
- 2. Document processes, not just crises:** By focusing solely on shocks (extreme weather events), the news media leave the field open to opportunism. Structural coverage allows us to explain planning, demonstrate long-term benefits and establish the facts before the emotion of a crisis takes hold.

## D — Protection of journalists, communicators, and environmentalists Safeguarding the production of quality information

**Ensuring protection from internal and external interferences with editorial work for journalists, communicators, and environmental advocates is essential to maintaining the production of high-quality, evidence-based information.** Without such safeguards, the risk of legal intimidation can undermine investigative work, weaken editorial independence, and ultimately degrade the quality of public debate. The current evolution of Germany’s anti-SLAPP framework represents a strategic opportunity to strengthen the resilience of the information ecosystem in Germany. In June 2025, the Federal Ministry of Justice of Germany published a draft bill to implement the EU Anti-SLAPP Directive through amendments to the German Code of Civil Procedure. Rather than treating this reform solely as a defensive legal instrument, it should be approached as a proactive policy lever to rebalance power between those producing public-interest information and those seeking to suppress it.

**Finalising and operationalising early dismissal mechanisms:** Germany should move swiftly to adopt and implement the proposed amendments to the ZPO, ensuring that early dismissal procedures are accessible, efficient, and widely understood by both legal professionals and potential targets of SLAPPs. Their effectiveness will depend not only on legal design but also on practical usability.

## E — Deter disinformation Leveraging existing journalistic standards

**The ethical groundwork for better climate coverage in German broadcast media does not need to be invented, it needs to be activated.** The Pressekodex, the voluntary code of conduct enforced by Germany’s self-regulatory Press Council, already mandates accuracy and contextualisation of unconfirmed claims; the Medienstaatsvertrag, the interstate treaty governing broadcast media across all sixteen Länder, binds national broadcasters to editorial standards that are, in principle, incompatible with false balance on settled science<sup>39</sup>.

**German journalism experts have themselves noted that platforming contrarian voices on climate science in the name of objectivity does not achieve neutrality, it endorses disinformation.** At the practitioner level, the Netzwerk Klimajournalismus Deutschland, which since 2021 has connected and trained over 500 journalists across German-speaking media to promote science-based climate reporting, and the Clean Energy Wire, which provides specialist sourcing on the energy transition, offer ready-made support structures that television newsrooms currently underuse<sup>40</sup>.

## F — Monitor the specific risk of climate disinformation Creating an independent media observatory

**It is possible to know that something exists only once it is measured.** By producing granular and longitudinal data on how climate topics are covered and what claims circulate, media observatories create an objective and independent foundation for informed public debate, editorial self-reflection, and policy engagement. This report intends to inspire a German initiative on the model of the French Observatoire des Médias sur l’Écologie (OME) and the Belgian Environmental Information Barometer (BBIE), and to show that it is feasible.

**Automated, large-scale hybrid evidence production:** Germany could establish a data-driven Observatory to monitor the quality and quantity of environmental reporting in the media. It would integrate AI-based climate disinformation detection, drawing on the model developed within the French Observatory framework. Based on keyword classification and narrative clustering, machine-learning systems flag potentially misleading environmental claims, which are then verified by certified fact-checkers. This hybrid architecture, combining automated detection with human validation, ensures scalability while preserving methodological safeguards and editorial independence.

## — Disinformation as a structural problem, requiring a systemic response

**The recommendations outlined above are necessary.** Yet, it is important to stress that addressing climate disinformation — and disinformation more broadly — only at the level of individual editorial decisions or journalistic practice is not sufficient. The evidence presented in this report points to a problem that is structural in nature and demands a response of equivalent ambition.

**Tackling the issue of disinformation also means looking beyond the media and building the structural conditions for accurate climate information to circulate.**

**Climate misinformation claims do not circulate in a vacuum.** They are produced, amplified, and monetized within an information ecosystem shaped by advertising markets that reward engagement over accuracy, by digital platforms whose recommendation algorithms structurally favour controversy, and by lobbying ecosystems in which fossil fuel and energy-intensive industries hold significant influence over both political discourse and media financing. Greenwashing further blurs the information environment, making it harder for audiences and journalists to distinguish credible climate communication from interested messaging. Each of these forces operates upstream of the television screen, shaping which narratives become available, which voices are amplified, which claims achieve the political salience that eventually lands them in a primetime talk show.

**A systemic response means acting across all of these levers simultaneously, at national and EU levels.** It means extending and enforcing greenwashing regulation so that misleading environmental claims face legal consequences in public communications more broadly. It means tightening lobbying transparency rules so that the interests behind climate narratives are visible

to journalists, regulators, and citizens. It means holding VLOPs platforms accountable for the role their recommendation systems play in normalising climate scepticism before it reaches broadcast media. It means robust public governance integrity standards that limit the revolving door between fossil fuel industries and political office. It means supporting and investing in media literacy so that citizens are equipped to evaluate climate claims critically, regardless of the channel or speaker. And it means ensuring that public press subsidies reward journalistic quality and independence rather than audience size alone, so that the economic pressures driving sensationalism and false balance do not systematically disadvantage responsible climate journalism.

**None of these measures falls within the remit of a single institution, regulator, or newsroom.** That is precisely the point. Climate disinformation is not a media problem with a media solution, but a governance issue that requires coordinated action across editorial, regulatory, financial, and civic domains.

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# Appendix

# Methodology

## A unique alliance of organisations to detect climate disinformation on television and radio

**This report is produced by the NGOs QuotaClimat, Science Feedback and Data For Good**, as part of a collaboration aimed at semi-automatically detecting climate misinformation in the audiovisual media, through algorithmic pre-detection and manual validation. The project's ambition is to produce reliable, benchmark and open-source data on the presence of misinformation in the news media of the countries studied. The methodology is designed to be replicable, in collaboration with fact-checking organisations specialising in the national context under study.

In France, the results are available on the Observatoire des Médias sur l'Écologie <sup>(41)</sup> to enable users to interact with and explore the data.

This analysis focuses solely on disinformation regarding climate science and climate action, and does not cover all environmental issues, notably the crises relating to biodiversity or natural resources.

**It covers news programmes on the following channels:** Das Erste, Kabel Eins, ProSieben, RTL, Sat.1, ZDF, ZDFneo

The full scope is available in Appendix 1.

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

- **Climate disinformation** is defined as false or misleading discourse that carries a high risk of misleading the public regarding facts established by the current state of scientific knowledge on climate change and climate action concerning mitigation and adaptation measures as set out by the IPCC.
- **Climate misinformation** is distinguished by the speaker's lack of demonstrated intent to cause harm, and may therefore stem from error or from exposure to misleading narratives<sup>42,43</sup>.

**This report adopts an operational approach, focusing primarily on:**

- The falsity of the content,
- Its potential negative impact on the public 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 as significant if more than a significant number of occurrences (8 in France, 4 for other countries) are detected. Repetition is considered a sufficiently strong indicator of the probable existence of a certain intent to mislead public opinion<sup>44</sup>.

### Definition: climate disinformation

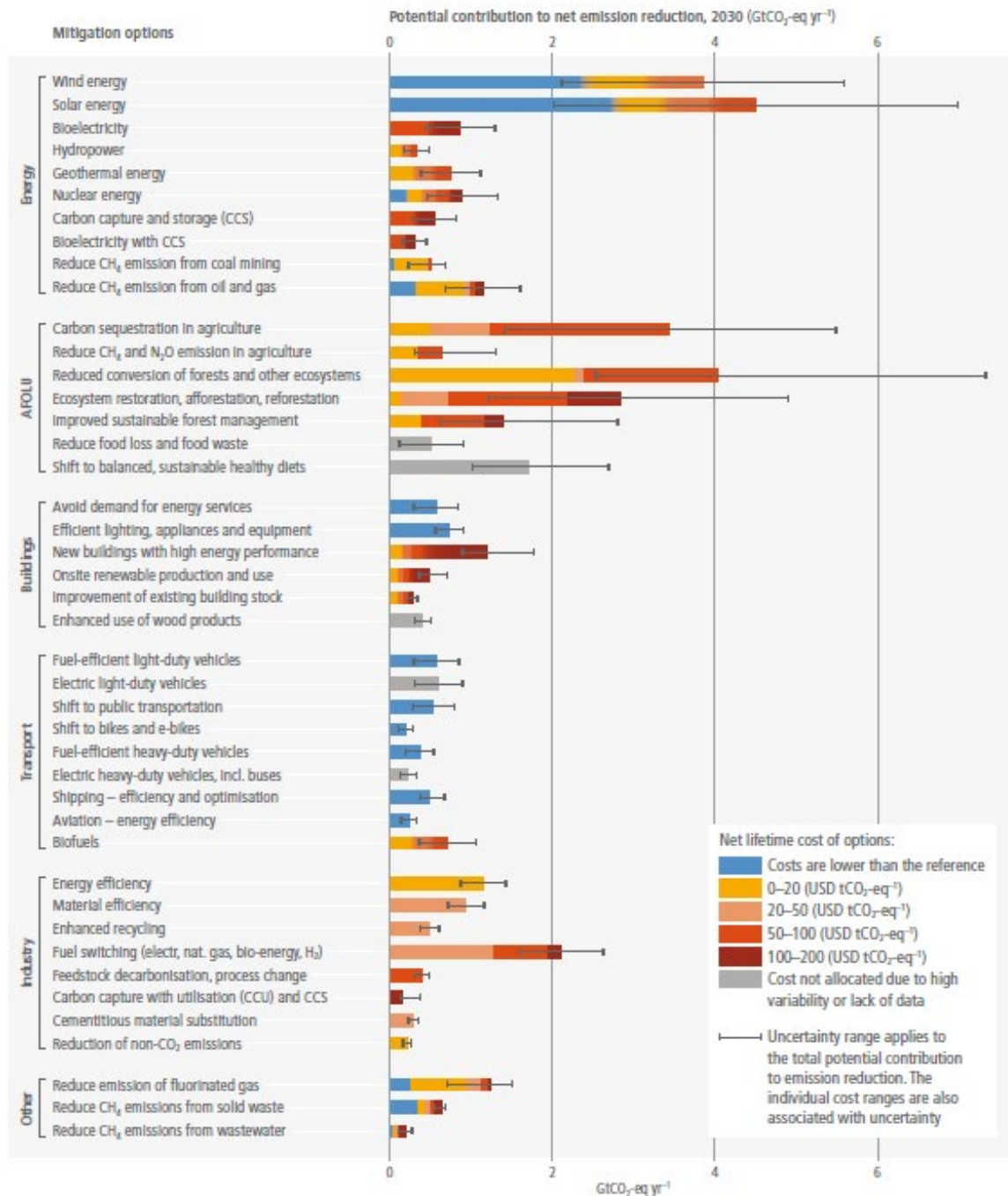
Topics falling within the scope of climate misinformation include, in particular, scientific knowledge on climate change and its human origins, as well as misinformation and disinformation regarding solutions enabling the climate transition.

All the solutions examined by the IPCC's Working Group III fall within the scope of our study (see graph opposite<sup>45</sup>). This broad definition of climate misinformation/disinformation allows us to incorporate the concept of 'new climate denial' (misinformation/disinformation concerning climate action) as recommended by the scientific literature on the subject<sup>46</sup>.

### Characterising misinformation

The characterisation of misinformation is in line with international standards provided by the International Fact-Checking Network<sup>47</sup> and the European Fact-Checking Standards Network<sup>48</sup>. These two networks promote standards recognised as the highest in the field of fact-checking while upholding the principles of freedom of expression

Summary of Mitigation Solutions – IPCC Sixth Assessment Report



The veracity of a piece of information is determined using the scale developed by Science Feedback<sup>49</sup>:

<p>Cases where the credibility of a statement is <b>“Very high”</b></p>	<p>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.</p>
<p>Cases where the credibility of a statement is <b>“High”</b></p>	<p>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.</p>
<p>Cases where the credibility of a statement is <b>“Neutral”</b></p>	<p>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...)</p>
<p>Cases where the credibility of a statement is <b>“Low”</b></p>	<p>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 <b>“Unfounded”</b>). 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 <b>“Misleading”</b></p>
<p>Cases where the credibility of a claim is <b>“Very low”</b></p>	<p>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 <b>“Inaccurate”</b>), or if it provides an explanation or theory whose predictions have been invalidated (labeled as <b>“Erroneous”</b>).</p>

The classification of a segment as disinformation corresponds to the categories of claims with very low credibility (Inaccurate or Erroneous), or low credibility (Misleading), where the claim has a high potential to mislead the public regarding established facts. These categories do not apply to mere inaccuracies or debates over 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 the ethical practices of fact-checking<sup>50</sup>, 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-sceptic political speech, are not classified as misinformation. Finally, statements contradicted within the observed sequence are also not taken into account.

### Identification of speakers

In order to examine the identified cases in detail, the fact-checkers then set about identifying, for each claim, the speaker who made it. To limit selection bias and ensure methodological rigour, the following categories were selected:

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.

Individuals are considered political if they are explicitly affiliated with a political party. For the purposes of this study, no research was carried out to verify political affiliation. The fact-checking team categorised 100% of the speakers manually.

### Automated construction of disinformation narratives

In order to distinguish isolated cases from disinformation strategies, this study focused on developing a method for statistically grouping false or misleading claims into narratives. It should be noted that a sequence (segment) of misinformation may contain several false claims, and thus contribute to several disinformation narratives.

The method used to distinguish between individual cases and narratives lies halfway between automated analysis and manual verification – the aim being to identify patterns of recurrence. The grouping of data points into categories is known as clustering.

Several clustering tests were carried out, notably the frugal ‘K-Means’ approach, which focuses on the semantic proximity between instances of disinformation. This semantic proximity was also used when testing different embeddings (all-MiniLM-L6-v2, camemBERT, Qwen3-0.6B)<sup>51</sup>.

Whilst this approach was effective at grouping together cases dealing with the same subject (renewable energy, electric mobility, etc.), it did not allow for the identification of similar angles within these themes (renewable energy has led to a doubling of energy prices, etc.).

Consequently, following these testing phases, this study ultimately opted to use an LLM to perform the clustering task. This use of the LLM is based on a residual number of tokens, compared to the initial scope of the project. This semi-automatic clustering serves as a working basis, and all clusters are then verified, corrected, improved and renamed manually by scientific verifiers.

### Complete protocol for the detection and characterisation of climate disinformation

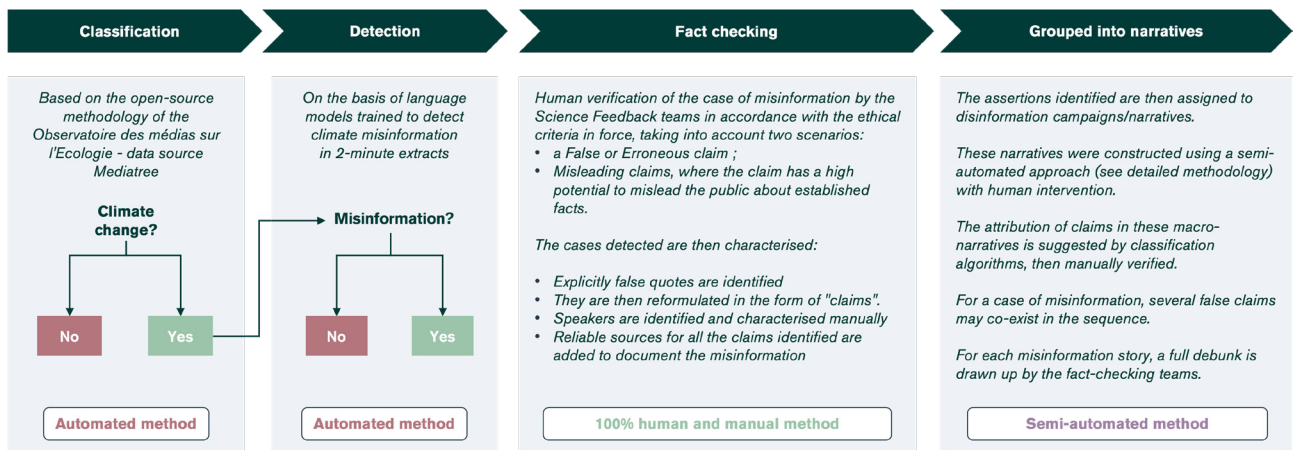
For the entire analysis protocol, an extract is defined as a sequence of two consecutive minutes (for example: 18:00 – 18:02). A segment dealing with climate change is defined as containing at least one keyword relating to climate change, according to the open-source methodology developed by the Observatoire des Médias sur l'Écologie<sup>52</sup>.

Each segment dealing with climate change is then run through a disinformation detection model, which assesses whether a segment is at risk of containing disinformation or not.

Once cases have been identified by the model as “at risk of climate misinformation”, annotators view the entire sequence and classify the case:

- Confirmed misinformation or not
- Speakers identified
- Sources and justifications for verifying the cases

Finally, these cases are assigned to disinformation narratives to facilitate analysis and the drafting of more comprehensive debunking articles by specialist fact-checkers.



### Model selection and training

Although a relatively comprehensive benchmark was carried out throughout the project, the balance between impact and efficiency led the teams to the following technical choice:

- The final model is a gpt-4o-mini-2024-07-18
- The French model is fine-tuned using an SFT<sup>(53)</sup> approach, with human labelling carried out by our fact-checkers between 2024 and 2025
- For Germany, the model is fine-tuned using an SFT approach on French claims translated into the corresponding language.

All of this work (see Open Source) is available online<sup>54</sup>.

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

### Inter-annotator bias and measurement stability

In order to assess the stability of the fact-checking and thus of the data annotation, a double-check was carried out. Thus, on 200 random samples from those labelled by the first annotator as “confirmed misinformation”, a second annotation was performed.

Cohen’s Kappa coefficient, defined as follows, where  $P_o$  is the agreement between annotators, and  $P_e$  is the agreement between annotators annotating at random according to the proportions of the annotated classes (in this case, misinformation or not).

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

$$\kappa = \frac{(P_o - P_e)}{(1 - P_e)}$$

These annotations are therefore considered reliable.

### Precision, recall and risk of underestimation in detection

The entire climate misinformation detection project is carried out using an artificial intelligence layer designed to automatically detect climate misinformation. It has been designed to minimise its use.

The results of the model enable fact-checkers to focus their efforts on cases at risk of containing misinformation. As these results are merely an aid to fact-checkers, achieving an accuracy close to 100% was never an objective for the technical teams involved in training the model.

At the time of publication of the results, the model trained in France to detect climate misinformation achieved an accuracy of 40%, with a recall of around 80% (see methodological box below). In the interests of comprehensiveness, the trade-off between precision and recall has generally been made in favour of recall, even if this means slightly increasing the workload involved in annotation and fact-checking.

Germany currently have an accuracy rate of around 15%, making fact-checking work slightly too time-consuming. If tools for detecting disinformation are to be deployed on a larger scale, the models will need to be retrained using the cases detected within the scope of the analysis. Recall cannot be estimated by now. A potential underestimation of climate misinformation still exists.

It should also be noted that the “relatively low” accuracy also depends heavily on the narratives and topics addressed. Whilst the model is particularly robust when it comes to misinformation regarding the scientific consensus on the existence of climate change, it requires further fine-tuning when it comes to claims relating to climate action.

#### Methodological note

Accuracy: measures how often our positive predictions are correct. An accuracy of 40% means that out of 10 cases detected by the model, 4 are actually climate misinformation.

Recall: measures how well we manage to identify all genuinely documented cases. A recall of 80% means that out of 10 actual cases of misinformation in the wild, we manage to identify 8.

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