

16:35-17:00 Presentation:

The climate opportunity that no one knows about – the challenge of communicating contrails

**COPENHAGEN
CONTRAILS
CONFERENCE**
25-26 March 2025 • Scandic Copenhagen



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Communicating about contrails

Tapping into what is visible

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Joachim Majholm, Founder, Blue Lines



BLUE — LINES

Agenda

- State of play
- How to best communicate about contrails - lessons learned
- Tools

Agenda

- **State of play**
- How to best communicate about contrails - lessons learned
- Tools

Taking stock of communicating about contrails

Communicating contrails – or is it chemtrails?

Some interest in contrails from the media

Reducing contrails could be a surprisingly effective climate solution

Ian McKay, Guest Author · Ken Caldeira, Guest Author · Nov 18, 2024

T&E joins aviation and climate scientists in urging action to reduce warming contrails

✍ Tony Harrington · © 16 December 2024 · 4 min read

Cheap fix floated for plane vapour's climate damage

12 November 2024

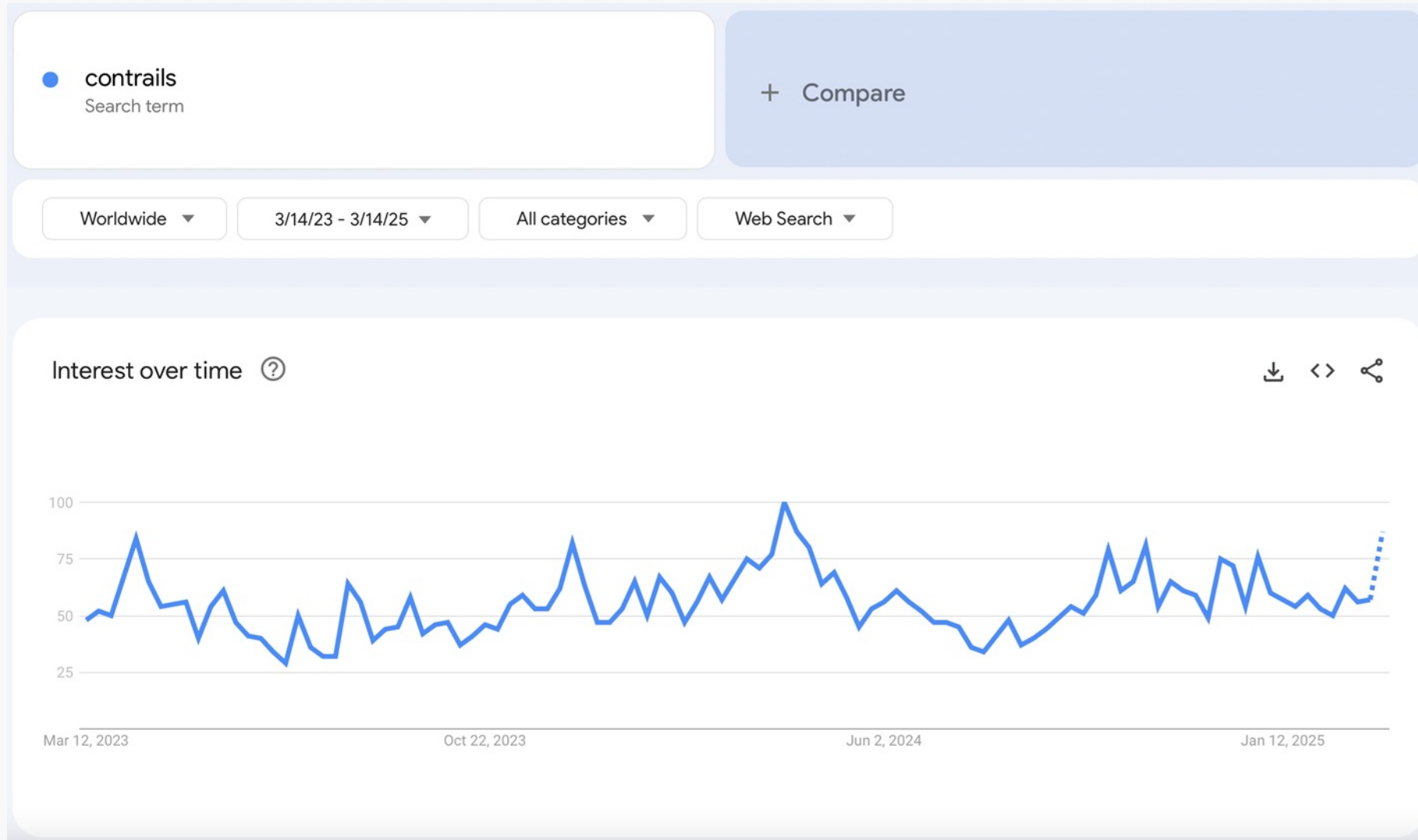
Matt McGrath
Environment Correspondent

Share ↗

Airplanes fly higher and make contrails that last longer now. A study says that's bad for the climate.

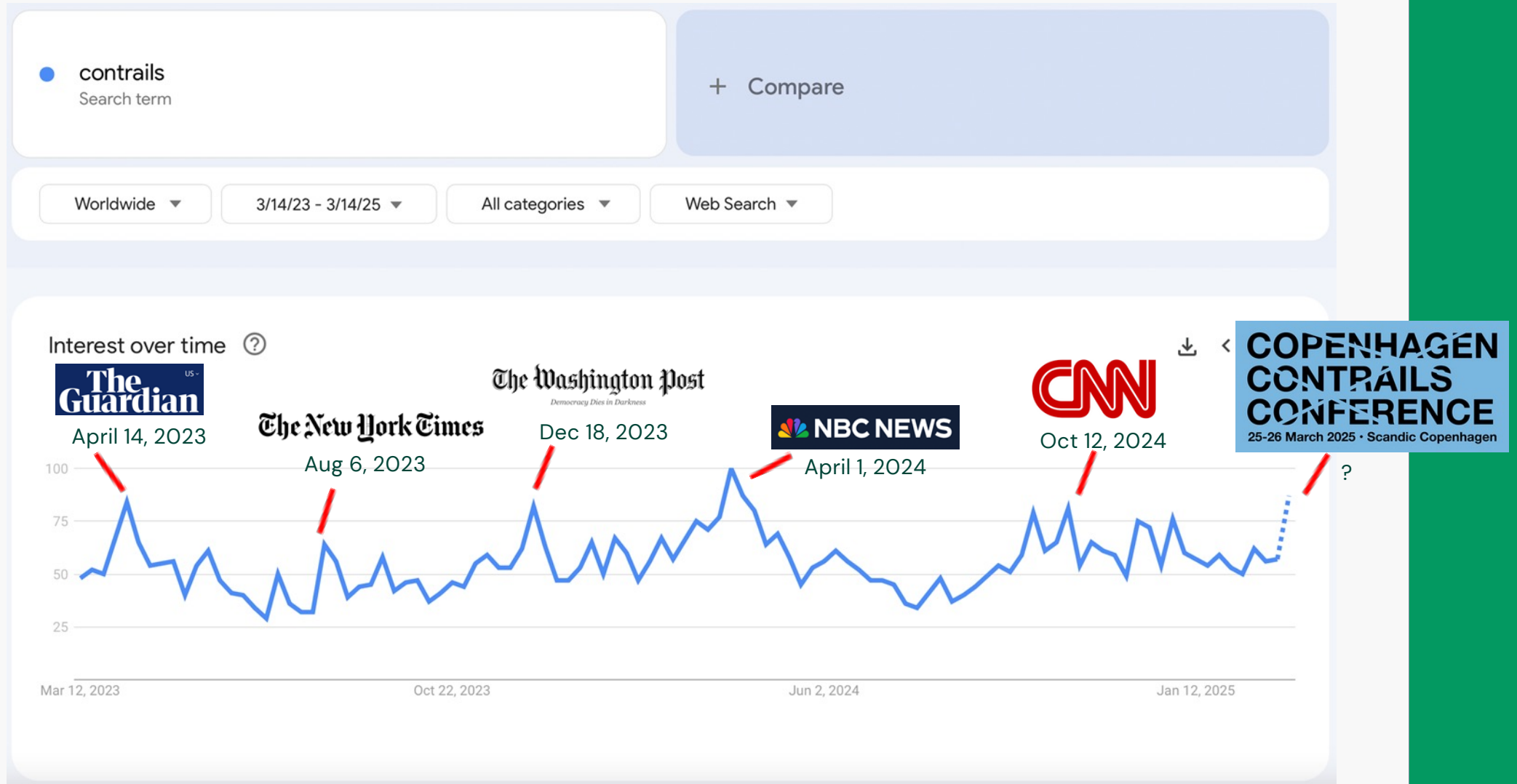
By **Mary Cunningham**
August 7, 2024 / 3:13 PM EDT / CBS News

Google Trends interest for the search term “Contrails” over the past two years



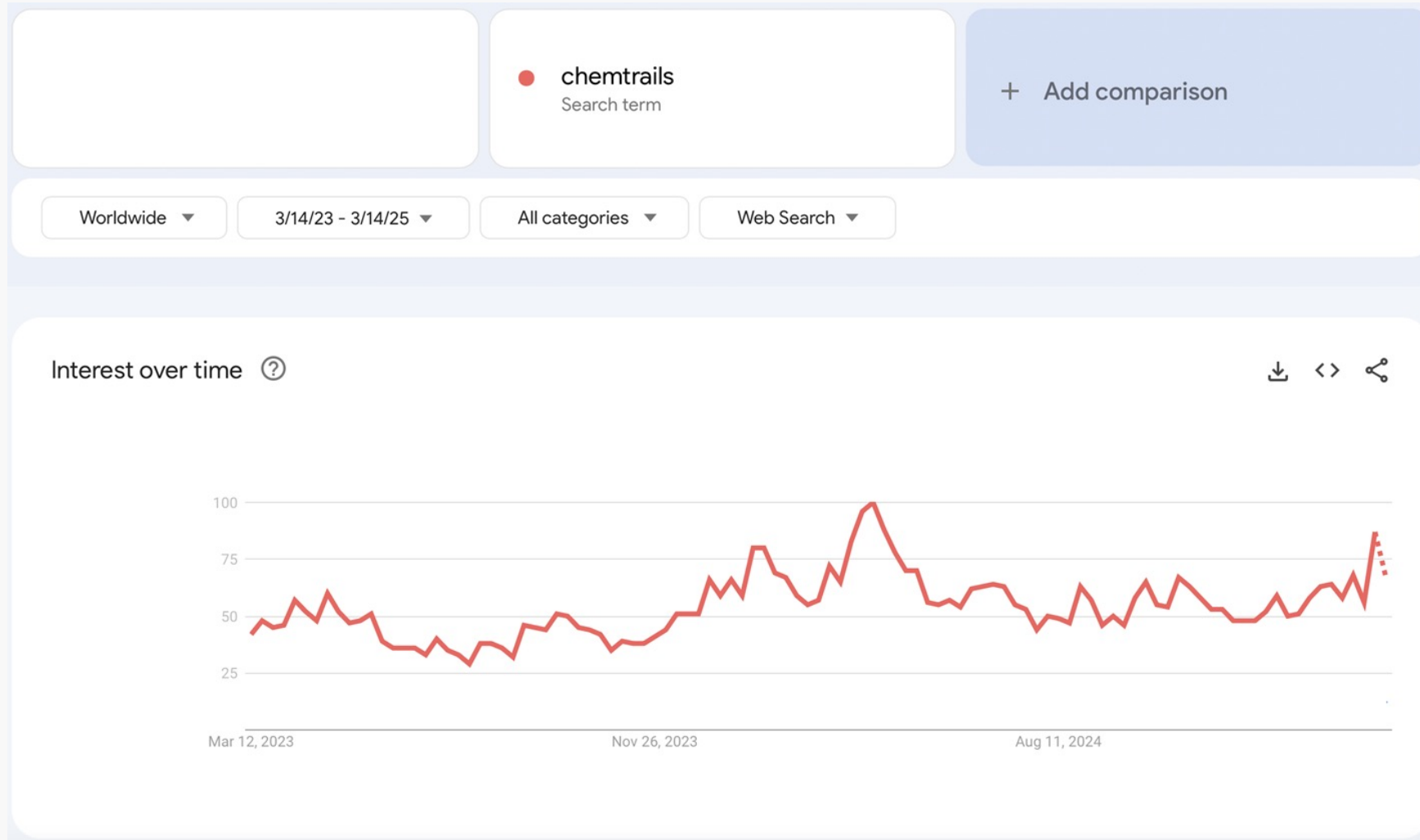
Source: Google Trends interest of time in web search for “contrails”, March 14, 2023, to March 14, 2025.

Google Trends interest for the search term “Contrails” over the past two years



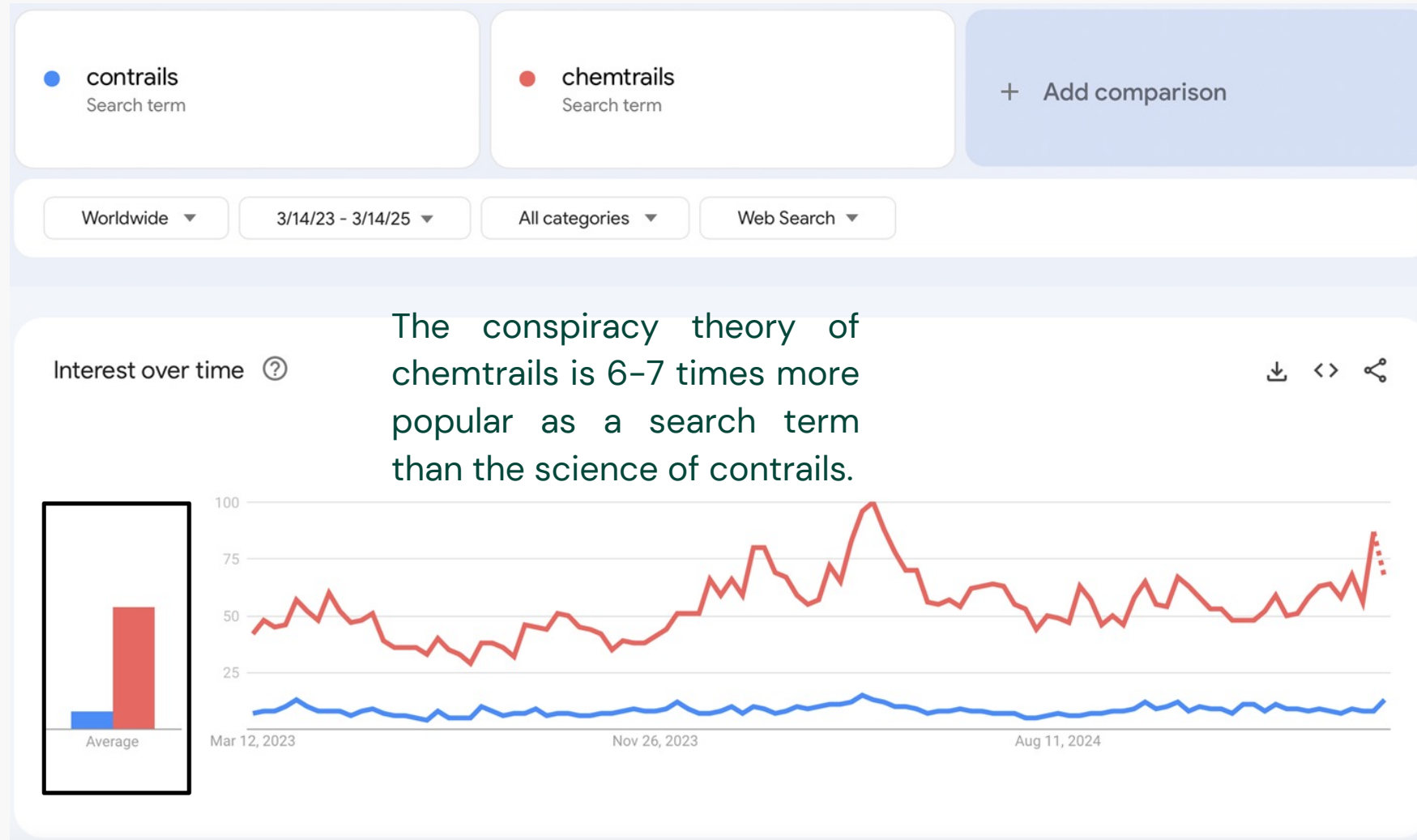
Source: Google Trends interest of time in web search for “contrails”, March 14, 2023, to March 14, 2025.

Google Trends interest for the search term “Chemtrails” over the past two years



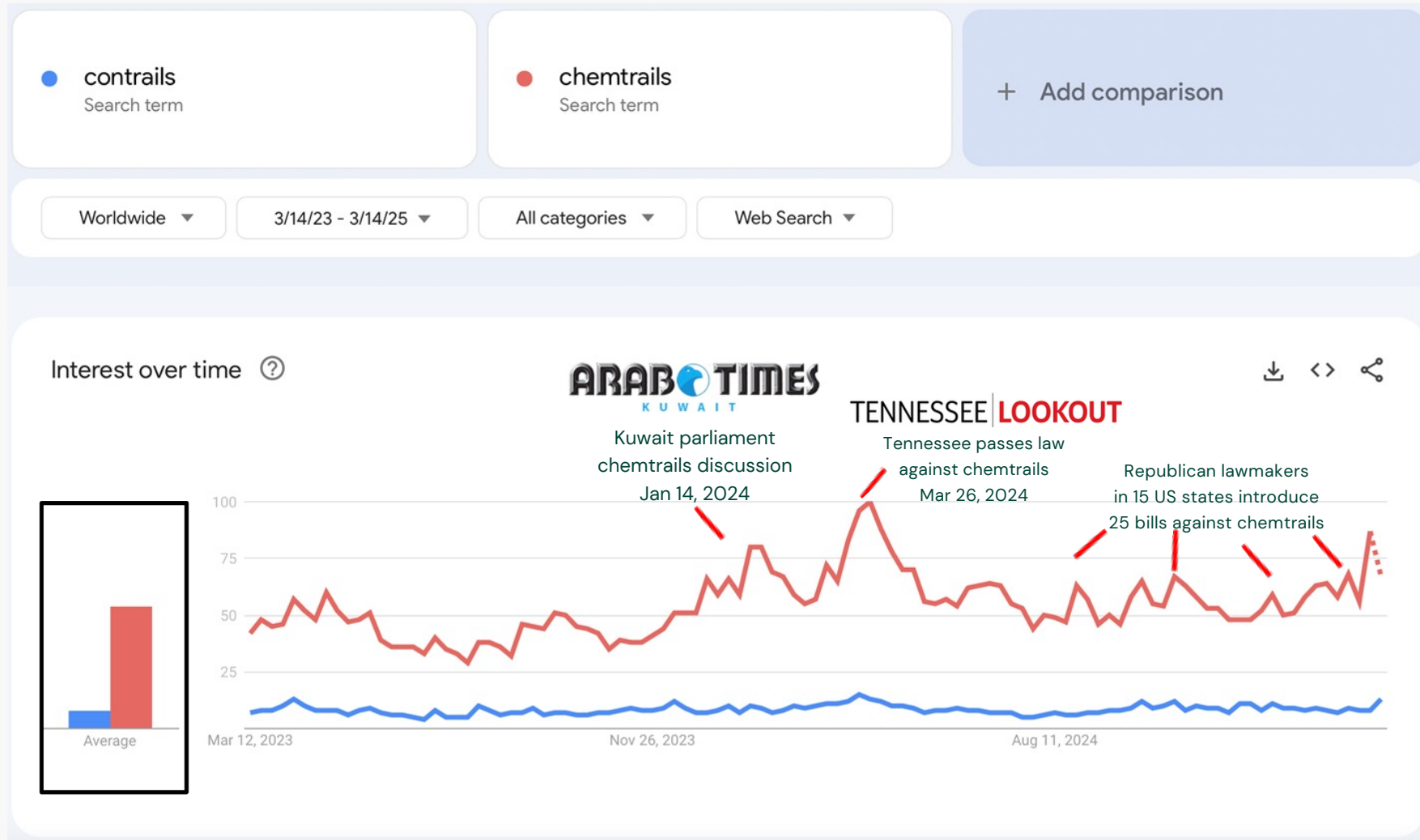
Source: Google Trends interest of time in web search for “chemtrails”, March 14, 2023, to March 14, 2025.

Google Trends interest for the search terms “Contraails” (BLUE) vs “Chemtrails” (RED) over the past two years



Source: Google Trends interest of time in web search for “contraails” vs “chemtrails”, March 14, 2023, to March 14, 2025.

Google Trends interest for the search terms “Contraails” (BLUE) vs “Chemtrails” (RED) over the past two years



Source: Google Trends interest of time in web search for “contraails” vs “chemtrails”, March 14, 2023, to March 14, 2025.

Chemtrails

- Conspiracy theory
- Created by “them”
- Do not exist
- Popular Google search
- Secret, dark, exciting
- No proof
- But easy to communicate

Contrails

- Science
- Created by physics
- Exist and have a climate impact
- 85% less searched for
- Needs to be explained
- Plenty of proof
- But harder to communicate

What do people know?

Contrails still poorly understood but with the right messaging, goodwill exists

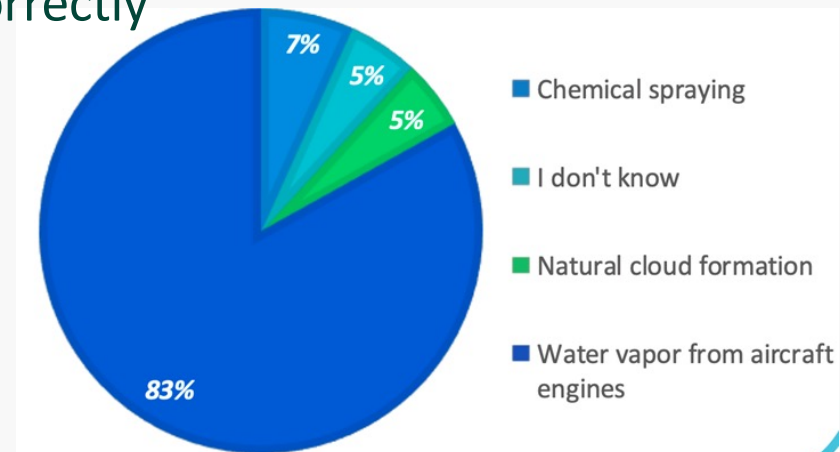


Note: Rounding errors
Source: KPMG mass survey, 2023

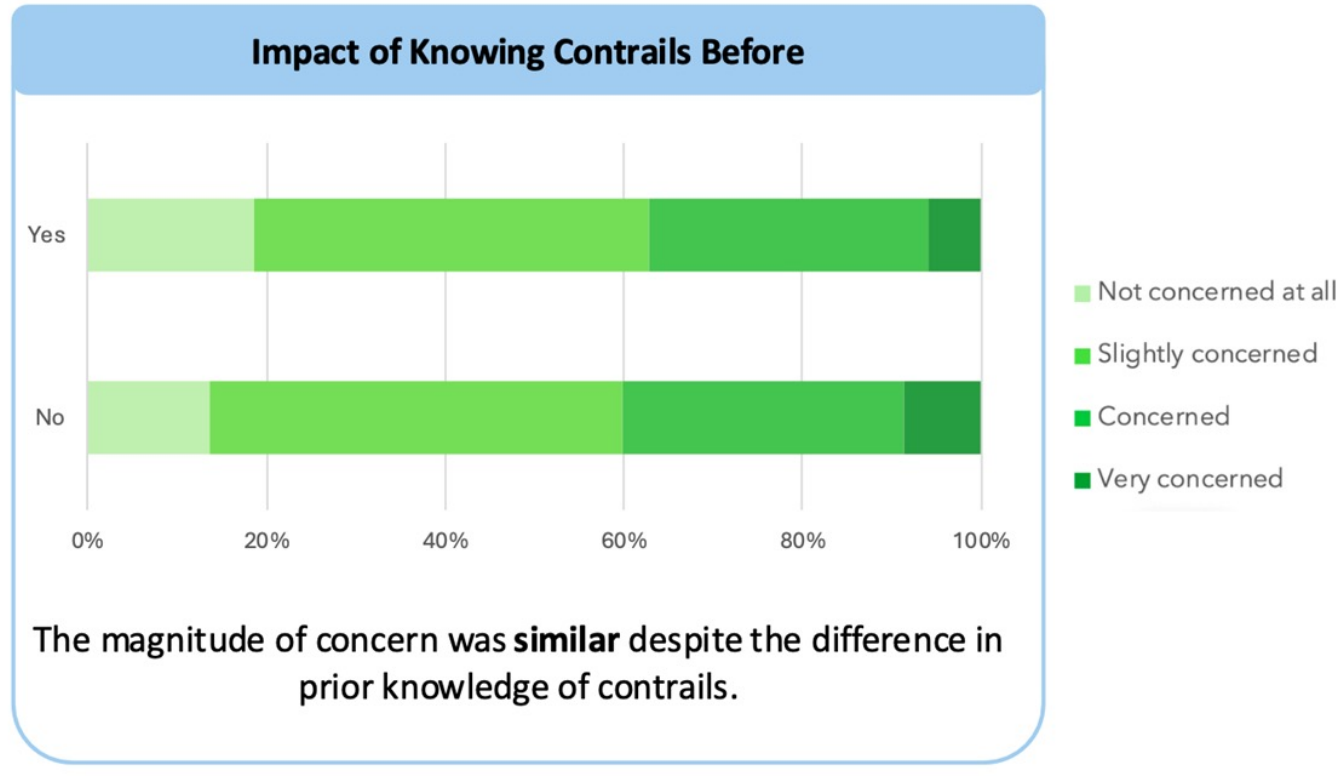
- 2/3 are not really familiar with contrails
- But when given more information about contrails and their climate impact, 2/3 are now positive towards airlines adopting contrails mitigation

What do people know?

- UC Berkeley consultancy, 180 DC, conducted a survey, commissioned by Contrails.org
- 317 respondents, mainly younger, mainly from the US West Coast, mainly in higher education
- Only 1 of 3 (37%) knew what contrails are
- 97% of respondents reported having seen a contrails
- When guessing why contrails form, 83% guessed correctly



What do people know?

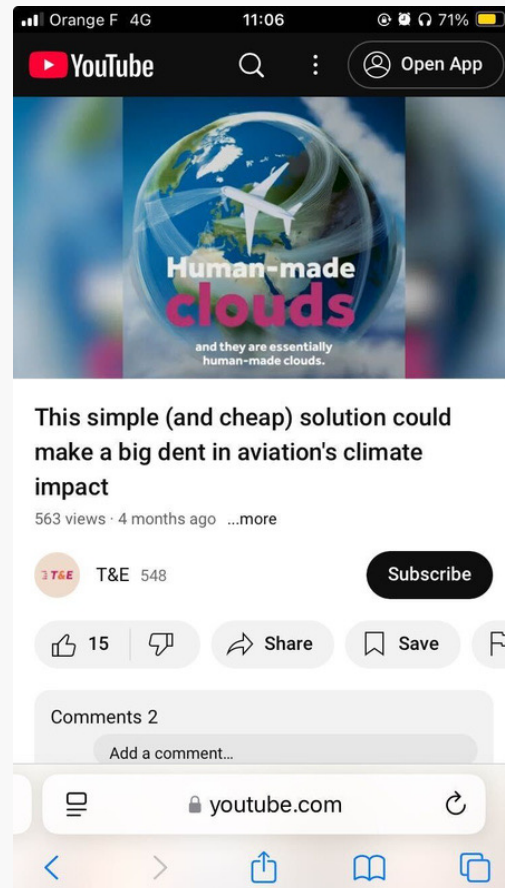
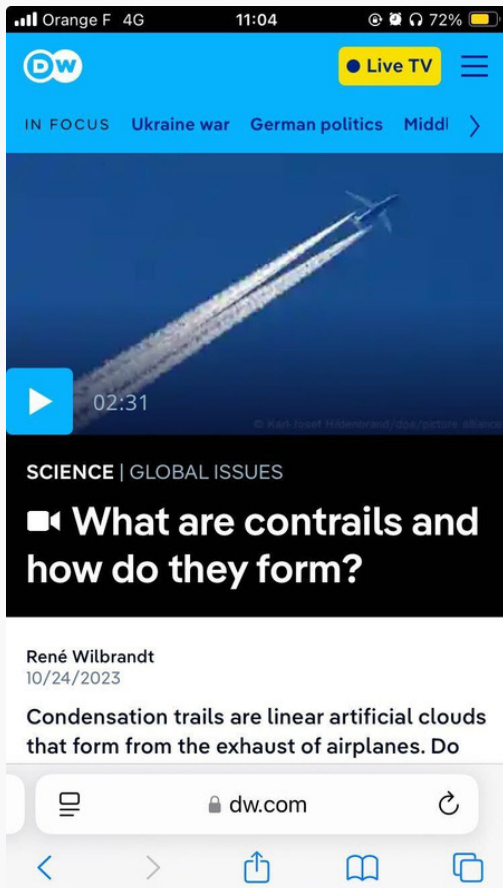


- Similar levels of concern from people who knew about contrails beforehand and people who did not know.

Agenda

- State of play
- **How to best communicate about contrails - lessons learned**
- Tools

Lesson 1: Don't be scared of talking about contrails



- **What do you see?**
 - White lines in the sky
 - Human made or artificial clouds
- **Are they bad?**
 - At least as bad as CO2
- **How do they form?**
 - Atmospheric conditions
 - Particles + water = crystals.
 - Cooling vs warming effect
- **What can we do and when?**
 - Targeted problem
 - Adjust flight path
 - CO2 penalty vs climate benefits
- **How much does it cost?**
 - Cheap

Lesson 1: Don't be scared of talking about contrails



Blanket of
contrails

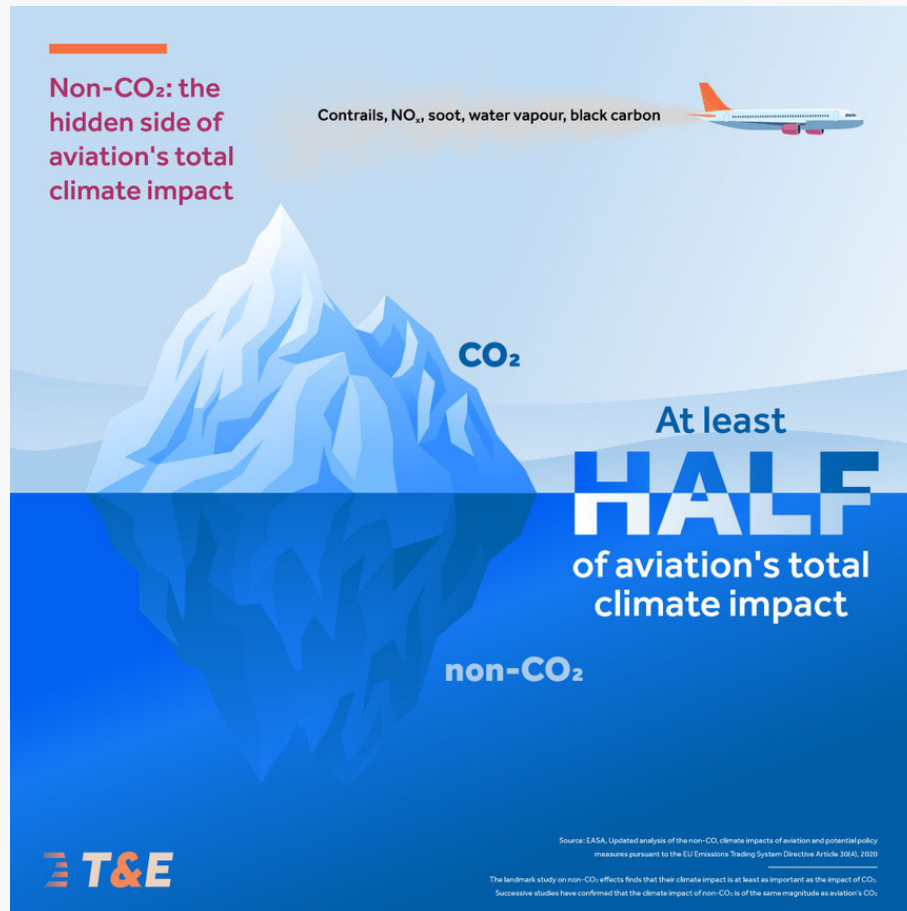


Cobweb of
contrails



Suffering planet wrapped by contrails

Lesson 1: Don't be scared of talking about contrails



Lesson 2: Focus on the positive

DW

Why we should care about airplane contrails

Condensation trails or contrails — the white, feathery lines behind airplanes — could have as big an impact on the climate as the aviation...

18 Oct 2024

DW

Cutting down on contrails is good for the environment

Flying is one of the most climate-damaging ways to travel. Not only due to high emissions per kilometer traveled, but also because of the...

BBC

Reducing plane clouds can help climate, says Cambridge University

Experts warn contrails can act as a "blanket" contributing to raised temperatures at ground level.

24 Sept 2024

BBC

Cheap fix floated for contrail plane vapour's climate impact

Jet condensation trails, or contrails, have spawned wild conspiracy theories alleging mind control and the spreading of disease, but scientists...

12 Nov 2024

Sustainability Magazine

Has Thales Solved the Climate Contrails Problem?

Thales, in collaboration with airline Amelia and Bill Gates' Breakthrough Energy Contrails, has announced the large-scale deployment of an...

1 month ago

Travel Radar

Contrail avoidance offers solution to climate-harming flights, experts say

With harmful aviation emissions on the agenda at this week's COP29 conference in Azerbaijan, contrail avoidance could provide an alternative to...

15 Nov 2024

FT Financial Times

Cutting aeroplane contrails is an easy climate win

Considered over a 100-year timeframe, 35-50 per cent of aviation's total (CO₂ and non-CO₂) emissions can be attributed to contrails. But because...

FC Fast Company

The clever way Google is using AI to make flying greener

The thin clouds that streak behind airplanes, called contrails, are a sizable source of global warming, responsible for more than a third of...

14 May 2024

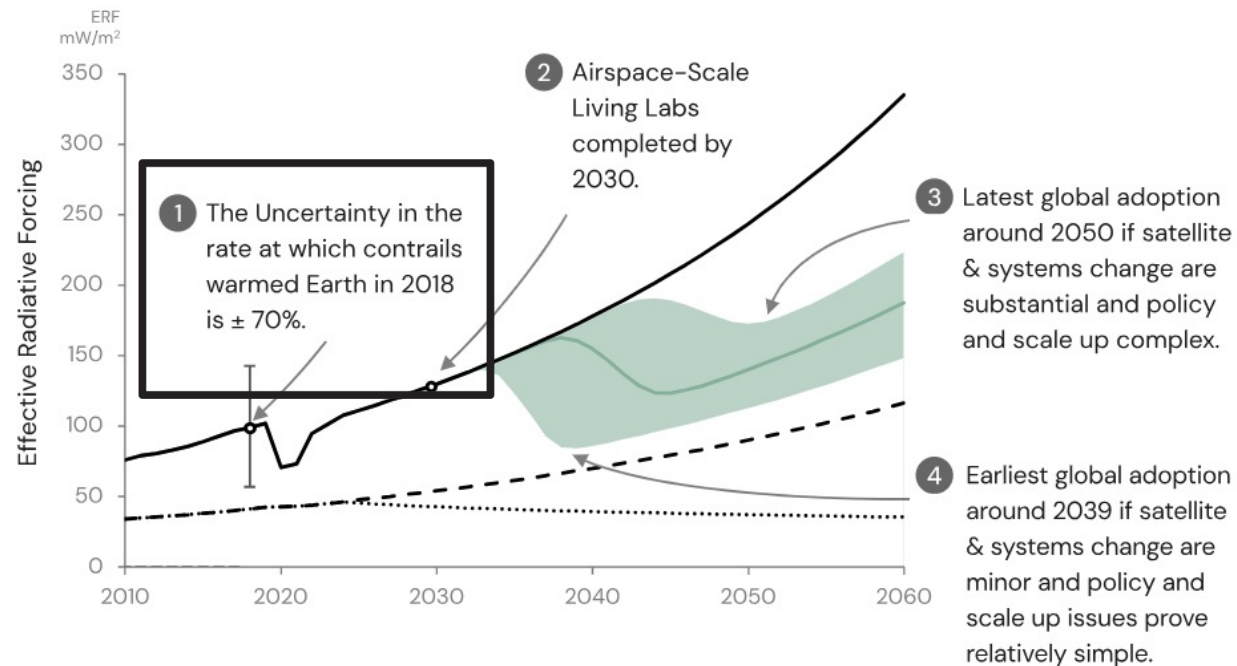
Lesson 3: Reframing uncertainty

Outcome: Operation Blue Skies

The timeline to deploy contrail avoidance is highly uncertain. To ensure global operation by 2050, Airspace-Scale Living Labs must be completed by 2030.



■ Global deployment of contrail avoidance — Aviation CO₂ & Contrails - - - Aviation CO₂ (historic & future) Aviation CO₂ (historic only)

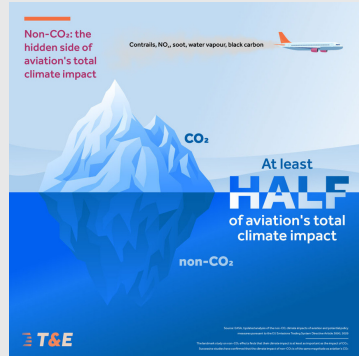


- The climate impact of contrails carries a high degree of uncertainty ($\pm 70\%$).
- Despite these uncertainties, there is a scientific consensus that **contrail warming has a significant net-warming climate impact.**
- Reframe to: “It is certain that contrails are warming, the question is by **how much**”.
- Action is therefore beneficial: worst case, we burn 1% more fuel. Best case, we reduce global warming by 2%.

Should we tap into chemtrails to give more visibility to contrails?

Combo	↑	Subject line	Open rate	Click rate
Multivariate Report for Alert: contrails scrolly Mailchimp				
✓	1	Aviation's dirty, highly visible secret	24.5% ± 2.6%	4.8% ± 1.8%
	2	Let's talk about chemtrails contrails	21.7% ± 2.5%	3.8% ± 1.8%

Lessons learned



Don't be scared

- 2-minutes is all you need
- Make it visible
- Use metaphors

FT Financial Times

Cutting aeroplane contrails is an easy climate win

••• BBC

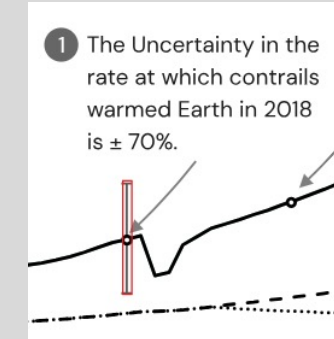
Cheap fix floated for contrail plane vapour's climate impact

S Sustainability Magazine

Has Thales Solved the Climate Contrails Problem?

Focus on the positive

- Low hanging fruit
- Solution-oriented communication



Reframe the uncertainty

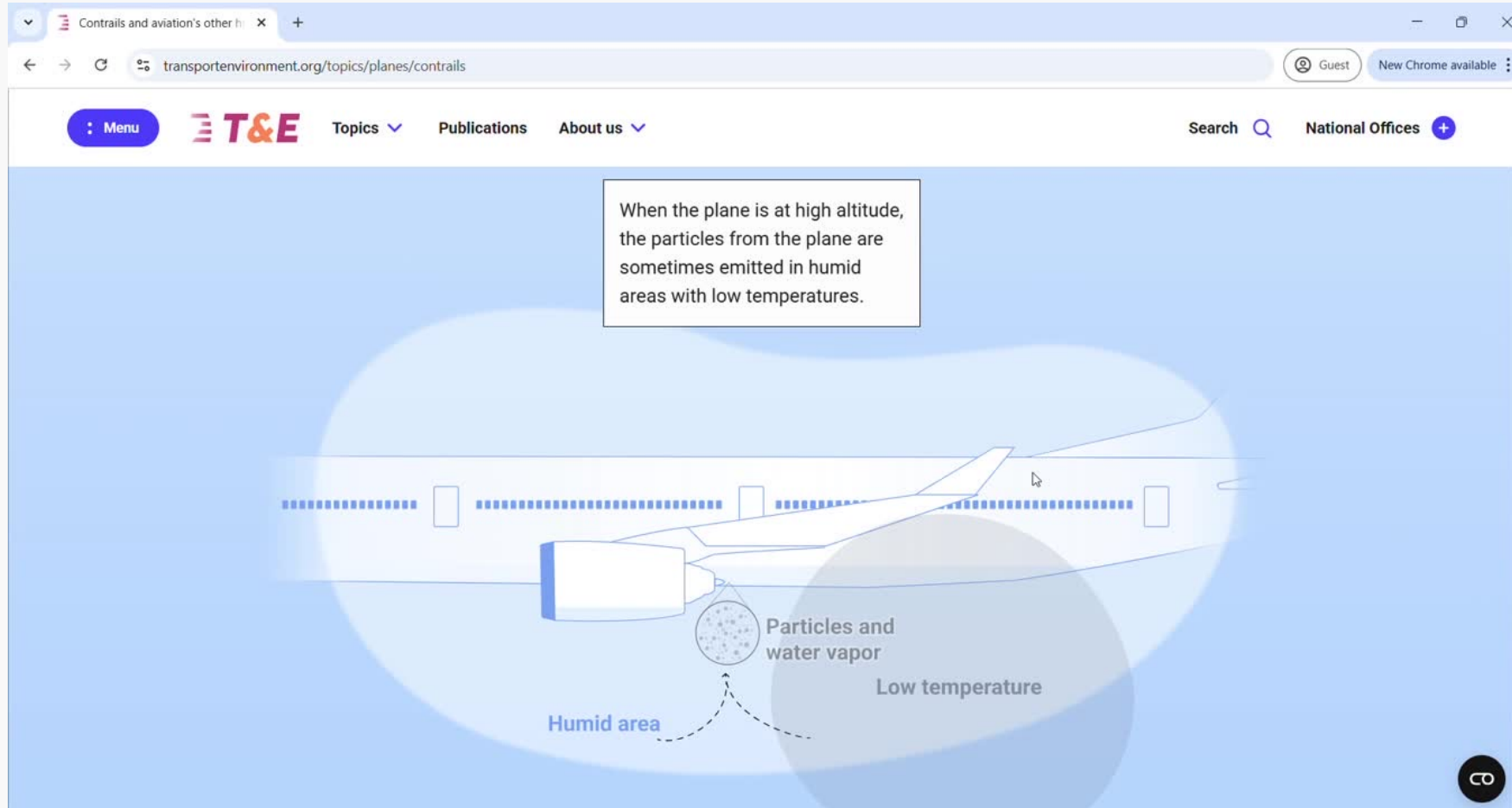
- Contrails are warming. By how much?

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- **Tools**

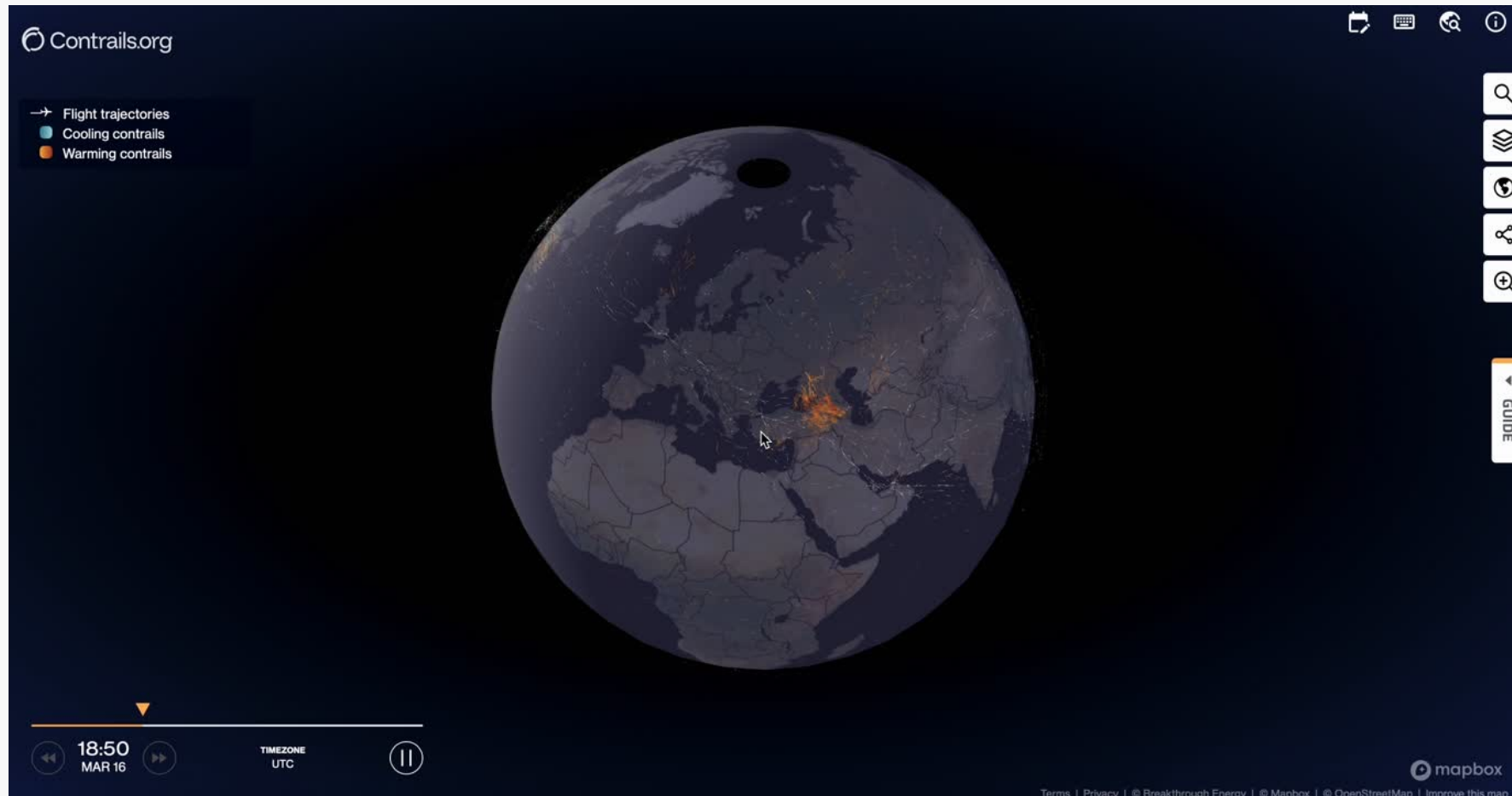
Tools

Want to understand the science behind contrail formation and non-CO2 effects?



Tools

Want to know where contrails form around the world?



Tools

Want to understand contrail impact per airline?

The Contrail Opportunity Index

Opportunity Ranking	Concentration (% of flights generating 80% of contrail impact)	Airline	# Flights	Tailpipe CO2 (Mtons)	Contrail CO2e (Mtons)	Contrail Impact as % of total
1	0.59%	Air Wisconsin Airlines	62013	0.23	0.03	11%
2	1.27%	Porter Airlines	56636	0.46	0.06	11%
3	1.32%	Azul	245582	2.81	0.36	11%
4	1.39%	Air New Zealand	170539	2.97	0.36	11%
5	1.79%	Hawaiian Airlines	84212	2.54	0.67	21%
6	1.98%	JetSuiteX	33963	0.17	0.02	10%
7	2.13%	Aeronaes Tsm	18272	0.24	0.03	13%
8	2.24%	Jetstar Airways	112318	2.60	0.45	15%
9	2.47%	Scandinavian Airlines System	112901	2.31	0.51	18%
10	2.58%	LATAM Brazil AOC	240749	4.67	0.61	11%

Tools

Want to understand which airlines are acting on contrails?

Airline Contrail Index

PLATINUM	GOLD	SILVER	BRONZE
Contrail reduction targets, participating in trials, and collaborating with scientists	Participating in trials at scale, and collaborating with scientists	Participating in trials and/or collaborating with scientists	Acknowledging the climate impact from contrails
DELTA AIR LINES	AIR CANADA AIR FRANCE AMELIA AMERICAN AIRLINES CATHAY PACIFIC CHINA AIRLINES DISCOVER AIRLINES EASY JET ETIHAD AIRWAYS HAWAIIAN AIRLINES IBERIA ICELANDAIR KLM LUFTHANSA SOUTHWEST AIRLINES SWISS AIR TUI UNITED AIRLINES	ALASKA AIRLINES BRITISH AIRWAYS CONDOR DHL EUROPEAN AIR TRANSPORT KENYA AIRWAYS SUNEXPRESS VIRGIN ATLANTIC VUELING	ATLAS AIR FEDEX JETBLUE AIRWAYS RYANAIR SCANDINAVIAN AIRLINES UPS WIZZ AIR

Source: bluelines.org/airline-index, visited March 14, 2025.

Tools

March 2025: Of the thousands of airlines worldwide, **THIRTYFIVE** airlines have made it into the index.

The Airline Contrail Index is divided into four tiers - Platinum, Gold, Silver, and Bronze - reflecting the airlines' level of engagement in contrail management. Please note that the index reflects what has been publicly communicated and does not include airline contrail activities that are not (yet) public. Also, note that the overall climate goal is to get aviation to net zero as fast as possible, and while contrail management is a cheap and easy way to get rid of a lot of warming, it must never be at the expense of decarbonization. Aviation's CO2 emissions and non-CO2 emissions (including contrails) must always be addressed in parallel.

Airline Contrail Index

PLATINUM	GOLD	SILVER	BRONZE
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Thank you

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