



## About the Coalition

### Did You Know?

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**Climate TRACE is a non-profit coalition of organizations building a timely, open, and accessible inventory of exactly where greenhouse gas emissions are coming from.**

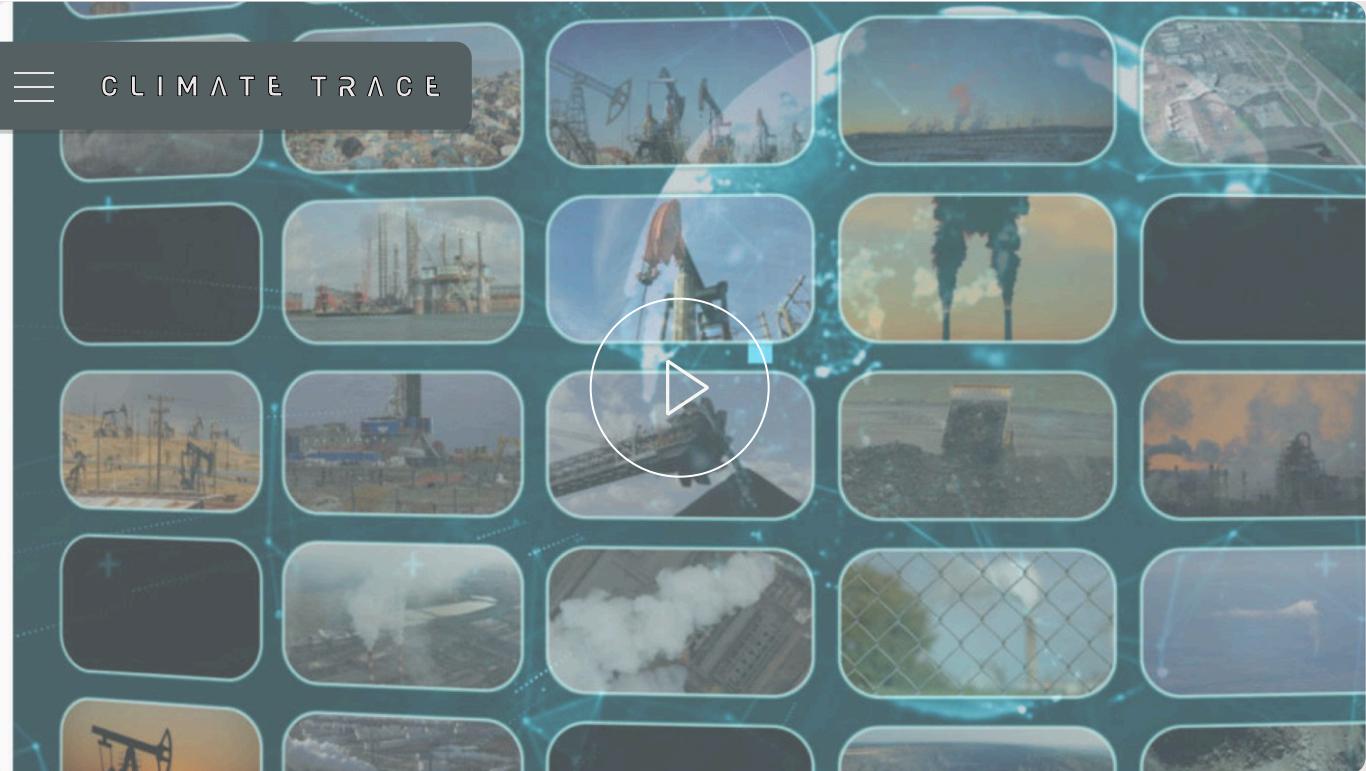
### Our Goal

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We make meaningful climate action faster and easier by harnessing technology to track greenhouse gas (GHG) emissions with unprecedented detail and speed, delivering information that is relevant to all parties working to achieve net-zero global emissions.



CLIMATE TRACE



## Our Purpose

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For decades, measurements such as the Keeling Curve have given us the big-picture view of how much carbon dioxide is in the Earth's atmosphere. We know emissions are on the rise, and we know it's a result of our continued use of fossil fuels.

But we need additional information about exactly where and when greenhouse gas emissions are occurring in order to set actionable goals to reduce them and to track our progress toward these emissions reduction goals. Climate TRACE was formed in order to provide this insight on a comprehensive basis across all countries, major emitting industries, and major individual sources of emissions, enabling a new era of radical transparency that will help facilitate concrete climate action.

Until now, most emissions inventories have been based on self-reported, often years-late data that often had to rely on rough estimates, opaque methods, and inaccessible reporting. Government officials, scientists, investors, executives, and activists need better data to support the creation of policies, programs, and campaigns aimed at limiting global temperature rise to 1.5°C as agreed to under the Paris Climate Agreement.

That's where Climate TRACE comes in. We're harnessing technologies like artificial intelligence (AI) and machine learning (ML) to analyze over 90 trillion bytes of data from more than 300 satellites, more than 11,000 sensors, and numerous additional sources of emissions information from all over

the world. The result is a groundbreaking approach to emissions monitoring... one that is

### ☰ CLIMATE TRACE

The journey began in 2019 when two of our founding coalition members, WattTime and TransitionZero, teamed up to receive a Google.org grant to monitor emissions from power plants from space using satellites. At the urging of former US Vice President Al Gore, the project opened conversations with many researchers and advocates around the world, who started asking: if even more of us joined together, how far could this approach go? With enough collaboration and data sharing, could we together extend such techniques to collectively monitor nearly all human-caused greenhouse gas (GHG) emissions globally?

The project was so ambitious we initially viewed it as a high-risk, high-reward moonshot. But to our surprise and delight, over time it has become clear that the answer is yes, it can be done. And so Climate TRACE launched in July 2020 and has now gathered over 100 collaborating nonprofits, tech companies, universities, researchers, and climate expert.

Climate TRACE's global emissions inventory, released in September 2021, provided the first comprehensive accounting of GHG emissions based primarily on direct, independent observation. In November 2022, the coalition began monitoring the largest 500 emitting assets in each emitting sector worldwide. In December 2023, we released a nearly comprehensive global analysis of over 350 million emitting assets worldwide.

Together, we're making GHG emissions visible. Are you interested in helping to trace the roots of the climate crisis, and use those data to help reduce emissions faster and more accurately? If so, join us! Only by working together will we be able to solve the climate crisis in time.

## Our Roadmap

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Our work builds upon recent advances in satellite observation and artificial intelligence that are enabling breakthroughs in emissions monitoring across sectors. Our work is based on cooperation and collaboration and we aim to work with and learn from researchers and technologists around the globe.

That means Climate TRACE is constantly evolving and improving. We aim to harness the latest improvements in technologies and methodologies to provide the most accurate picture of global emissions possible.

Three nonprofits receive funding from Google.org to use AI to

# 2019

May

monitor power plant emissions from space.

# 2020

January

The vision expands to cover all global emissions; additional partners identified.

# 2020

July

# 2020

December

Climate TRACE co-hosts Remote Sensing Technology Forum with UN Race to Zero and adds new partners and collaborators.

# 2021

June

# 2021

September

Release of first Climate TRACE emissions inventory.

Launch data validation effort by external scientists and emissions experts.

# 2021

October

Coalition member Gavin McCormick gives a TED Talk on Climate TRACE.

# 2022

March

Climate TRACE and The Climate Group launch the “States and Regions Remote Sensing” (STARRS) project to deliver emissions inventories for sub-national governments.

Climate TRACE adds granularity to its emissions inventory, with data on emissions by individual

2022

July

Climate TRACE releases its first facility-level inventory, covering more than 72,000 individual sources of emissions, representing the biggest known sources of greenhouse gas emissions from more than two dozen industries.

2022

November

2023

December

In 2024, Climate TRACE will begin releasing updated inventories multiple times per year, including increasingly up-to-date estimated emissions; even closer to 100% global coverage of all assets; and additional detailed information such as crosswalks with other datasets.

#### Now Recruiting

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Climate TRACE member teams are now providing detailed asset-level estimates for sectors making up 83% of global emissions. We still only have national-level estimates for many of the smaller emitting sectors, such as railroads and glass manufacturing. Interested in helping the world get to 100% global asset-level coverage? [Contact us](#) about joining the coalition or supporting our work!

greenhouse gases (carbon dioxide, methane, and nitrous oxide) and the ability to compare emissions potential over 20 or 100 years.

Coming soon



CLIMATE TRACE

Fossil fuel  
operations

Production 6%

Manufacturing 2%

Solid fuel transformation 2%

Manufacturing

Cement 4%

Steel 4%

Chemicals 1%

Aluminium 1%

Waste

Solid waste  
disposal 3%Waste water  
treatment and  
discharge 3%

Fluorinated gases

Fluorinated gases 2%

**Power**

Electricity generation 23%

**Transportation**

Road transportation 11%  
International shipping 1%  
International aviation 1%  
Domestic aviation 1%  
Domestic shipping 0.4%

**Buildings**

Residential  
and commercial  
onsite fuel  
usage 6%

**Forestry  
and land use**

Enteric fermentation  
cattle pasture 2%  
Enteric fermentation  
cattle feedlot 2%  
Rice cultivation 1%  
Synthetic fertilizer  
application 1%  
Manure management  
pasture cattle 1%  
Manure management  
cattle feedlot 0.45%

**Uncovered**

Other energy use 4%  
Other manufacturing 4%  
Enteric fermentation other 3%  
Other agricultural soil emissions 2%  
Fluorinated gases 2%  
Solid fuel transformation 2%  
Other fossil fuel operations 2%  
Other transport 0.322%  
Railways 0.196%

**News & Insights**

FEB 26, 2024

# As Arctic Ice Thaws, Questions Around Arctic Shipping Heat Up

Ocean shipping could climb significantly in the years ahead, with maritime trade expected to triple by 2050. But there are concerns that the changing climate will open up previously unnavigable or unviable trade routes — especially in the Arctic.



CLIMATE TRACE



**Nick Wise**

OceanMind



DEC 27, 2023

## Conversations With The Coalition: Nick Wise

We recently caught up with Nick Wise, CEO & Founder of OceanMind, about emissions estimates for the shipping industry.



DEC 02, 2023

## Climate TRACE Unveils Open Emissions Database Of More Than 352 Million Assets

The Climate TRACE inventory includes every country and territory in the world, every major sector of the global economy, and nearly every major source of greenhouse gas emissions. Tesla, Polestar, Boeing, and others have already moved swiftly to leverage the new dataset to pinpoint decarbonization opportunities in their supply chains.



## Stay up-to-date

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