



## Examples and Case Studies

**Do you represent a government, company, or other institution interested in using Climate TRACE data for a project that is likely to significantly reduce emissions?**

You may be eligible for free technical support and analytical help from Climate TRACE. Please [contact us.](#)

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### Example Use Cases

What are other governments, companies, and institutions using Climate TRACE data for? A lot! We are currently tracking 31 known use cases and learning more all the time. Below are three examples of the most common, high-impact use cases happening right now.

## Supply Chain Decarbonization

EXAMPLE USER



Polestar

APPLICABLE SUBSECTORS

Cement

Steel

Aluminum

Petrochemicals

Rice cultivation

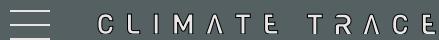
Synthetic fertilizer application

International shipping

Domestic shipping

Companies that buy large amounts of raw materials from highly-emitting sectors have begun using Climate TRACE data to verify self-reporting emissions from their suppliers and potential

suppliers, as well as to see cases where even lower-emitting potential suppliers might exist and



# Data-Driven Policymaking At All Levels

EXAMPLE USER



APPLICABLE SUBSECTORS

All

Policymakers in all levels of government, but particularly sub-national governments, often lack detailed, up-to-date emissions data of their own territory. Several have begun using Climate TRACE data to develop ambitious, data-driven decarbonization plans that start with a clear understanding of the largest sources and sinks of emissions in their own area.

# Bringing Transparency To Financed Emissions

EXAMPLE USER



APPLICABLE SUBSECTORS

All

Financial organizations such as development banks and investors are using Climate TRACE data to help count greenhouse gas emissions embedded in their portfolios, verify self-reported data from emissions source owners, and prioritize lower-emitting investments.

## CASE STUDY: The States and Regions Remote Sensing Project (STARRS)

The States and Regions Remote Sensing Project (STARRS) illustrates the value of collaboration in generating independent greenhouse gas emissions data.

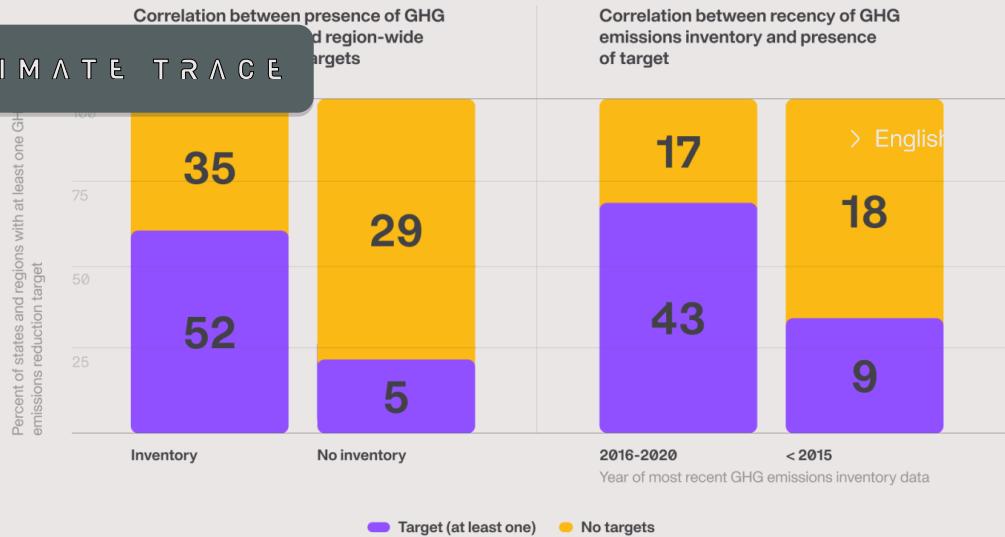


#### Did You Know?

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**Research by Climate Group, as Secretariat to the Under2 Coalition, shows that states and regions with a recent inventory of emissions data are more likely to set emissions reduction targets.**

What's more, having access to a detailed breakdown of region-wide greenhouse gas emissions allows states and regions to identify their highest-emitting sectors and design and implement targeted mitigation strategies.



## Our Approach

**STARRS brings together Climate TRACE, Climate Group, and six states around the world to develop detailed, up-to-date, regional emissions data.**

All of the states participating in this project previously had access to varying levels of emissions data, but many reported that it was difficult to source and generate their own inventories. As a result, their data were incomplete and often only updated every few years.

Climate TRACE is able to fill in these gaps and generate independent emissions estimates that don't primarily rely on self-reported data. Climate TRACE pairs satellite and remote sensing data with artificial intelligence to identify emitting activities and calculate greenhouse gas emissions.

Through the STARRS collaboration, six regional governments shared data and provided feedback to improve the accuracy and relevance of Climate TRACE data.

## About The Data

**Climate TRACE's technologically-advanced approach offers an independent look at emissions, providing**

# states and regions with both complementary and new CLIMATE TRACE support their monitoring efforts.

Climate TRACE also aims to provide emissions data updates on an annual basis going forward.

To help our partners act decisively, we go beyond emissions estimates by sector or industry and break down aggregated data to detect emissions from individual sources such as power plants and oil fields. With this information, regional governments can take data-informed actions such as incentivizing efficiency improvements by major emitters, or introducing measures to help farmers switch to regenerative farming practices.

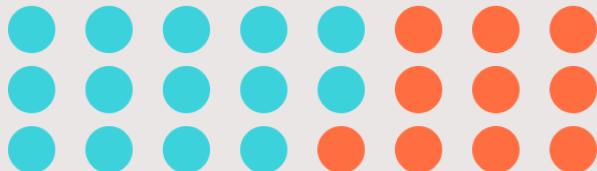
Review [our methodology](#) to learn more about how Climate TRACE estimates emissions and how it's different from the states' methodologies.

## Latest Projects

### Abruzzo Italy

01

**Abruzzo, Italy all measured  
emissions (2015-2021):  
12,321,003 TONNES CO2E-100YR**



All other sectors

Oil Refining

5,023,451 tonnes  
of CO2E-100YR

● = 50,000 tonnes of CO2E-100YR

Located in central Italy, the Abruzzo region's main economic activities are manufacturing and agriculture. Abruzzo's last emissions inventory dates back to 2012. Climate TRACE provided updated data covering emissions from 2015 to 2021 for major sectors.

**The pandemic effect on emissions:** In Abruzzo, cement production decreased in 2020 due to the COVID-19 pandemic, but it rebounded significantly in 2021. Emissions reduction gains due to the pandemic were found to be only temporary.

[Explore Region](#)

↓ Download data



Emissions  
2021

Big companies' emissions data for Basque Country is provided by the European Union's Emission Trading Scheme (ETS). Climate TRACE methods incorporate satellite data and estimate emissions per road segment. This allows for comparison across different spatial scales.

**A more granular view of urban road transport:** The GHG emissions inventory measures emissions based on fuel sales and does not provide emissions estimates at the city level, but municipalities can take meaningful action with this level of granularity.

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## Jalisco Mexico



+8%

Production  
2016-2020

+7%

Emissions  
2016-2020

One benefit of collaborating with states and regions is that we can establish an emissions baseline and improve on it together. Using Jalisco's baseline data from 2019, Climate TRACE created comparisons using AI and machine learning to see how emissions are changing in the region.

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**This project strengthened all the work we had been doing.**  
Project partner for Jalisco

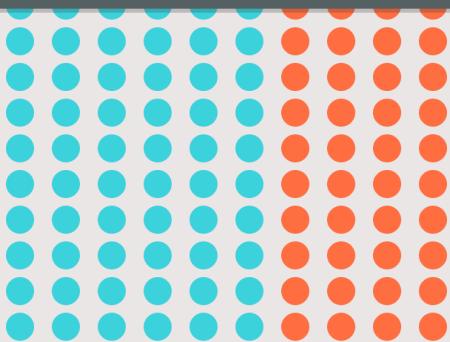
**The impact of fertilizer:** Modeling emissions from synthetic fertilizer, Climate TRACE found that our regional and crop-specific approach provides novel insight into how economic conditions affect emissions derived from agricultural staples like corn. As changes in the corn market shifted global production away from the USA and toward Latin America between 2016-2020, fertilizer emissions per unit of corn production declined in these regions. Climate TRACE data from Iowa and Jalisco shows how this global trend affected local GHG emissions.

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## Pernambuco Brazil

04



All other sectors

**Oil Refining**  
20,496,847 tonnes  
of CO<sub>2</sub>E-100YR

● = 50,000 tonnes of CO<sub>2</sub>E-100YR

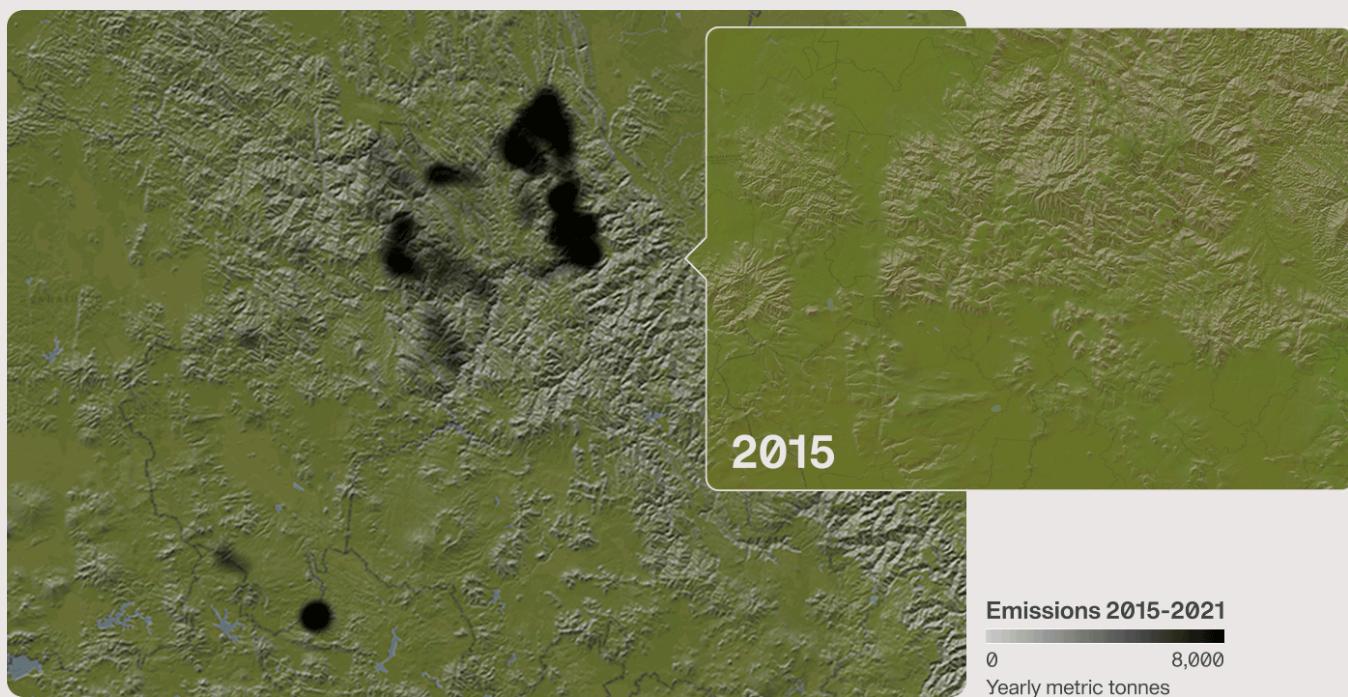
Regional and state trends often differ from national trends across various sectors. That's one of many reasons why states need their own data inventories and, in some cases, their own policies separate from national policies.

**Big oil:** In Pernambuco, oil and gas refining is a large local industry, and as a result, contributes to a large percentage of the state's emissions, unlike the national inventory of Brazil where oil refining accounts for a small percentage of the total. The state can use Climate TRACE data to mitigate emissions from this sector.

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## Querétaro Mexico

05



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This project complemented our methods. It allowed us to have more precise data.

Project partner for Querétaro

**How deforestation affects GHG emissions:** Between 2015 and 2021, forest, mangrove, and shrub-grassland areas have lost biomass, resulting in increased emissions. A potential driver of biomass loss is drought conditions in the region and throughout Mexico, which are considered the worst in 30 years.

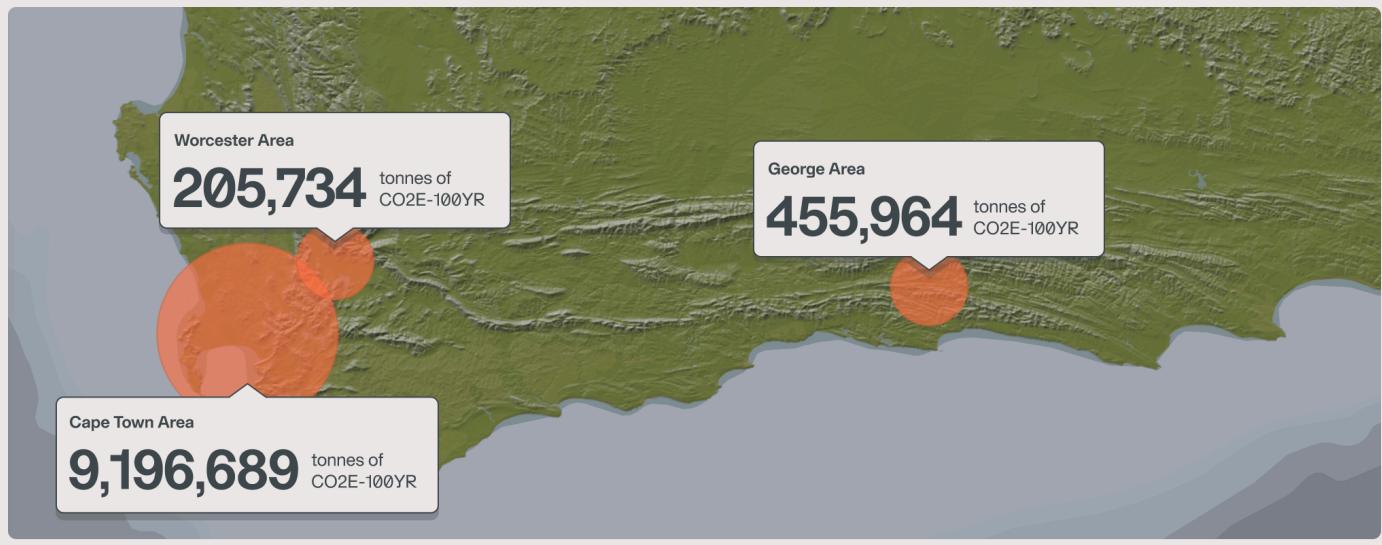
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## Western Cape South Africa



Western Cape has the third largest economy out of South Africa's nine provinces. TRACE data on large, intensive emissions sources such as livestock feedlots unlock opportunities to target policies aimed at the biggest emitters in the state.

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This adds to our understanding of emissions. It allows us to check our emissions, compare to other regions, and fight emissions on a national scale.

Project partner for Western Cape

**Beef and dairy feedlots:** We located 42 beef and dairy feedlots concentrated in the western part of the province, near Cape Town. Of the 42, 5 are beef, 34 are dairy, and 3 may be a mix of beef and dairy, all of which accounted

for around 80,000 heads of cattle. Identifying the location and the type of feedlots is important for designing  
methane and nitrous oxide emissions can differ in total emissions.

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## Use timely and granular emissions data and insights to inform your work to create emissions reduction plans and policies.

While our ultimate goal is to create emissions inventories for every state around the world, we prioritize projects based on opportunities for direct collaboration. If you're interested in partnering, please contact us.

Climate Group through its role as Secretariat of the Under2 Coalition, brings together states, regions, provinces and other subnational governments committed to achieving net zero emissions by 2050 at the latest. Find out why states and regions are so important for climate action:  
<https://www.theclimategroup.org/under2-coalition>.

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