

**Methane  
Edition**

# **Emissions Impossible:**

How emissions from big meat and dairy  
are heating up the planet



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This report was written and researched by the Changing Markets Foundation and Institute for Agricultural and Trade Policy, in collaboration with independent researchers.

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## Executive summary

*This report for the first time estimates the methane emissions of five of the largest meat corporations and ten of the largest dairy corporations. Their combined methane emissions are roughly 12.8 million tonnes, which equates to over 80% of the European Union's entire methane footprint. These companies' emissions represent around 3.4% of all global anthropogenic methane emissions and 11.1% of the world's livestock-related methane. The report also provides the latest estimates for the overall greenhouse gas (GHG) emissions of the same companies, which amount to around 734 million tonnes of CO<sub>2</sub> equivalent – higher than the emissions of Germany. The report calls for urgent and ambitious legislation to address the significant climate impacts of global meat and dairy corporations and for governments to support a just transition for the transformation of industrial animal agriculture towards agroecology.*

Climate change is wreaking havoc globally through more frequent and extreme weather events (floods, wildfires) and the slow-onset climate processes, such as droughts, desertification and sea level rise. Climate disruption is already affecting farmers everywhere, as our agricultural systems are uniquely dependent on stable climatic conditions. The higher global temperatures rise, the more alarming the disruptions to food production will become. Rapid emissions cuts this decade are critical in preventing catastrophic climate change, according to the Intergovernmental Panel on Climate Change (IPCC).<sup>1</sup>

Methane emissions cuts have been identified in particular as key levers to avert both temperature overshoot and dangerous tipping points. Methane is a short-lived but extremely potent gas: it has around 80 times more warming potential than CO<sub>2</sub> over a 20-year timespan, but only lives in the atmosphere for around a decade.<sup>2</sup> According to the United Nations Environment Programme's Global Methane Assessment, methane emissions should be reduced by at least 40-45% in this critical decade of climate action.<sup>3</sup> Livestock agriculture is the single

largest source of methane, responsible for around 32% of anthropogenic methane emissions.<sup>4</sup> In this report we investigate the emissions of some of the biggest meat and dairy companies.

### Key findings:

- Our estimates show that the combined methane emissions of these 15 companies far exceed the entire methane footprint of many countries, including Russia, Canada, Australia and Germany. Their methane emissions are 52% higher than the livestock-related methane emissions of the EU and 47% higher than those of the US.
- Individual companies' methane emissions are also comparable to countries' livestock-related methane emissions. For instance, Marfrig's methane emissions rival those of Australia's entire livestock sector, Tyson's are comparable to the Russian Federation's, and Dairy Farmers of America's to the livestock methane of the UK.
- JBS's methane emissions far outpace all other companies. Its methane emissions exceed the combined livestock methane emissions of France, Germany, Canada and New Zealand or compare to 55% of US livestock methane.
- When calculated over a 20-year timescale, the more relevant scale for climate action, these emissions are even more significant, comprising anywhere from nearly half to three-quarters of these companies' entire livestock-related GHG footprint, highlighting the urgent need for action on methane.
- Their total overall GHG emissions are also significant, slightly higher than the emissions of Germany. If these 15 companies were treated as a country, they would be the tenth largest GHG-emitting jurisdiction in the world.<sup>5</sup> Their combined emissions also exceed those of oil companies such as ExxonMobil, BP and Shell.
- In spite of their massive climate impact, the majority of companies fail to report either total GHGs or methane-specific emissions. Nine out of 15 companies (60%) either do not report their emissions or do not report their total supply chain (scope 3) emissions. None of the companies reported their supply chain methane emissions.

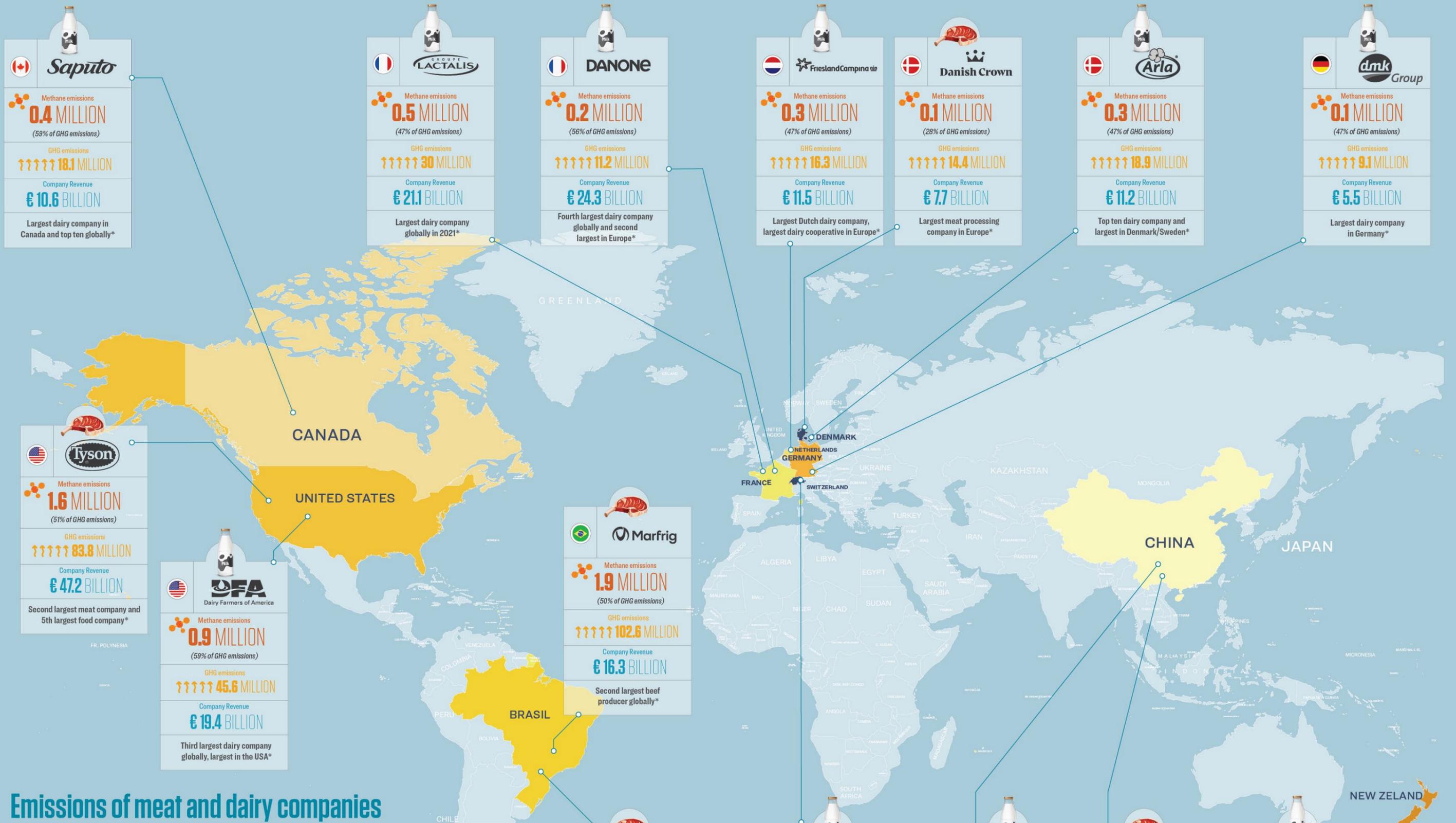
### Governments dragging their feet on livestock methane emissions

At COP26 in Glasgow, more than 110 countries committed to the Global Methane Pledge ('the Pledge'), with the collective goal of reducing global methane emissions by 30% by 2030. The 15 companies analysed in this report are headquartered in ten countries around the world. All of them, with the exception of China, are signatories to the Pledge. Five of these countries have increased their livestock methane emissions over the last ten years as reported to the UN Framework Convention on Climate Change: US (over 5%), Brazil (over 6%), China (over 17%), New Zealand (over 3%) and the Netherlands (almost 2%). Five countries (Canada, Germany, Denmark, Switzerland and France) have achieved small reductions of livestock methane, but the pace of reductions is not in line with the Pledge. The only country with a reported decrease of more than 5% over the last decade is France, the biggest livestock methane emitter in the EU. Effective regulation of industrial livestock production is key to achieving required methane cuts and embarking on the transformation of the food system needed to meet global climate goals.

### The way forward

Four years after the release of the first report in the Emissions Impossible series, publicly available data on corporate emissions remains incomplete, not comparable between companies or years and, in the majority of cases, absent. Basic information for independent emissions calculations like companies' annual production figures for meat and milk per region are either not published by companies or inconsistently reported over time. In the absence of strong disclosure rules, voluntary climate targets and reporting are leading to pervasive levels of greenwashing. Mandatory reporting and independent verification are essential to gauge whether corporate net zero and other climate targets are even in the ballpark of limiting warming to 1.5°C. Potential new rules in the US and the EU for disclosure of emissions, climate risk and the prevention of greenwashing climate claims may be opportunities for change.

Time is of the essence in cutting back methane this decade. Yet policymakers have identified solutions that tinker around the edges of this extractive system of animal agriculture. Governments are limiting action to techno fixes without serious consideration of systemic transformations needed in the production, trade and consumption of livestock products. Acting on livestock methane requires a holistic understanding of the drivers of mass industrial animal production and multiple policy interventions to reduce the number of animals used for meat and dairy production. A comprehensive set of regulations is needed to ensure that the burden for emissions reduction rests on corporations that shape and drive the supply chain. Farmers within and outside these corporate supply chains must be supported to play a critical role in a sequenced, deliberate and just transition out of mass industrial livestock production towards agroecological systems that are healthy for the planet and people.



## Emissions of meat and dairy companies

REVENUE**		OVERALL GHG COMPANY EMISSIONS***	
<b>BILLION EURO</b>	REVENUE PER YEAR IN BILLION (IN EURO)	↑↑↑↑	GHG emissions GWP100 basis, in tonnes CO2e
<b>COMPANY TYPE</b>	 MEAT	 DAIRY	 Methane (CH4) emissions, in tonnes of CH4

\* Referenced at the end of report  
 \*\* Revenues converted to EUR used the conversion rate for 31 October 2022  
 \*\*\* See Annex 2 for companies emissions  
 \*\*\*\* Emissions only relate to their dairy operations

**Tyson**

Methane emissions  
**1.6 MILLION**  
(51% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **83.8 MILLION**

Company Revenue  
**€ 47.2 BILLION**

Second largest meat company and 5th largest food company\*

**DFA**  
Dairy Farmers of America

Methane emissions  
**0.9 MILLION**  
(59% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **45.6 MILLION**

Company Revenue  
**€ 19.4 BILLION**

Third largest dairy company globally, largest in the USA\*

**Saputo**

Methane emissions  
**0.4 MILLION**  
(59% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **18.1 MILLION**

Company Revenue  
**€ 10.6 BILLION**

Largest dairy company in Canada and top ten globally\*

**GRUPE LACTALIS**

Methane emissions  
**0.5 MILLION**  
(47% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **30 MILLION**

Company Revenue  
**€ 21.1 BILLION**

Largest dairy company globally in 2021\*

**DANONE**

Methane emissions  
**0.2 MILLION**  
(56% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **11.2 MILLION**

Company Revenue  
**€ 24.3 BILLION**

Fourth largest dairy company globally and second largest in Europe\*

**Marfrig**

Methane emissions  
**1.9 MILLION**  
(50% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **102.6 MILLION**

Company Revenue  
**€ 16.3 BILLION**

Second largest beef producer globally\*

**JBS**

Methane emissions  
**4.8 MILLION**  
(45% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **287.9 MILLION**

Company Revenue  
**€ 65.3 BILLION**

World's largest meat company and third largest food company\*

**FrieslandCampina**

Methane emissions  
**0.3 MILLION**  
(47% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **16.3 MILLION**

Company Revenue  
**€ 11.5 BILLION**

Largest Dutch dairy company, largest dairy cooperative in Europe\*

**Nestlé**

Methane emissions  
**0.3 MILLION**  
(47% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **18.8 MILLION**

Company Revenue  
**€ 87.8 BILLION**

World's largest processed food company and second largest dairy company\*

**Danish Crown**

Methane emissions  
**0.1 MILLION**  
(28% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **14.4 MILLION**

Company Revenue  
**€ 7.7 BILLION**

Largest meat processing company in Europe\*

**Yili**

Methane emissions  
**0.4 MILLION**  
(51% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **22.2 MILLION**

Company Revenue  
**€ 15.3 BILLION**

Fifth largest dairy company globally and largest in China\*

**Arla**

Methane emissions  
**0.3 MILLION**  
(47% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **18.9 MILLION**

Company Revenue  
**€ 11.2 BILLION**

Top ten dairy company and largest in Denmark/Sweden\*

**萬洲國際 WH GROUP**

Methane emissions  
**0.3 MILLION**  
(29% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **23.9 MILLION**

Company Revenue  
**€ 26.4 BILLION**

World's largest pork company\*

**dmk Group**

Methane emissions  
**0.1 MILLION**  
(47% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **9.1 MILLION**

Company Revenue  
**€ 5.5 BILLION**

Largest dairy company in Germany\*

**Fonterra**

Methane emissions  
**0.5 MILLION**  
(43% of GHG emissions)

GHG emissions  
↑↑↑↑↑ **30.9 MILLION**

Company Revenue  
**€ 12.3 BILLION**

Accounts for 30% of world dairy product trade. Largest company in New Zealand\*

## **IATP and Changing Markets' recommendations for governments:**

- *Set binding GHG and methane reduction targets for the agriculture sector in line with the global goal of limiting temperature increase to 1.5°C.*
- *Require companies to consistently and comprehensively report their GHG emissions, including scope 3, and set emission-reduction targets in line with science, including a system of independent third-party verification. Methane, nitrous oxide and carbon dioxide emissions must be reported separately.*
- *Enact a phased and bottom-up transition for farms to reduce animal numbers in line with a just transition policy for the transformation of the animal agriculture sector.*
- *Regulate all pollutants (besides methane) from mass industrial livestock production to facilitate a transition from this model of animal agriculture towards agroecology.*
- *Reform agriculture policy (the EU's Common Agricultural Policy, the US' Farm Bill, etc.) to support higher environmental and social outcomes and drive an agroecological transformation of the sector, away from mass industrial livestock production towards livestock systems that are healthy for the planet and people. This includes removing subsidies for mass production of feed grains and making farm support dependent on positive environmental and social outcomes.*

## **Recommendations for companies:**

- *Set emissions reduction targets and action plans in line with the global goal of limiting temperature increase to 1.5°C. The focus must be on reducing the company's absolute emissions, rather than emissions intensity, including scope 3 emissions. Companies should also include transparent reporting, including slaughter numbers and milk intake, to enable independent verification of their climate-related disclosures.*
- *Establish separate methane reduction targets and action plans to meet them, including separate reporting of methane emissions. Reporting should also include disclosure of investments in climate mitigation and adaptation measures.*
- *Reduce the number of animals in global supply chains and create a bottom-up just transition plan with farmers and workers in your global supply chains.*
- *Support progressive climate, environmental and health policies that will drive a shift to healthier and more environmentally sustainable diets.*

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