



Why fashion needs to think about methane

While fashion has been laser-focused on carbon emissions, another greenhouse gas has been steadily rising.

By Bella Webb



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By now, most brands are tracking or at least attempting to reduce their carbon emissions. But a new report has raised the alarm on another type of greenhouse gas, which is more potent (at least in the short term) and has been flying under the radar.

Today, Australian charity Collective Fashion Justice (CFJ) has published fashion's first methane footprint, calculated in partnership with scientists from Cornell University and New York University. The results are concerning, but there is already a blueprint for change, says CFJ founder and *Vogue Business* 100 Innovators alum Emma Håkansson.

This interview has been edited for brevity and clarity.

***Vogue:* Why is it so important for the fashion industry to measure its methane footprint?**

Carbon dioxide and methane are both greenhouse gases, but they function very differently in our atmosphere. Methane is 86 times more potent than carbon dioxide in the short term, meaning it can trap heat that warms our atmosphere much more than CO₂ can. While this is a big problem for the environment, the good news is that while methane has an outsized climate impact at first, it doesn't last nearly as long as carbon dioxide in the atmosphere — about 12 years compared to centuries.

This means that if we reduce methane emissions now, we will quickly see global temperatures drop. However, if we only focus on CO₂, the change in global temperatures will take much longer because these emissions last so much longer. Think of it this way: we have a marathon ahead of us before CO₂ emissions are far reduced in our atmosphere, but methane mitigation is a sprint that we can manage relatively quickly, if we get to work and prioritise this essential change.

***Vogue:* Where are fashion's methane emissions concentrated?**

The largest single source of human-induced methane emissions is agriculture, and specifically animal agriculture. The food industry is largely responsible for this, but the fashion industry plays an important





and problematic role as well, through its continued reliance on animal-derived materials like leather and wool. The methane from these materials makes up most of their overall climate impact.

Normally, when we talk about the climate impact of a material, we are talking about 'carbon equivalent emissions'. CO₂e is a measurement that normalises different emissions types like methane, nitrogen and carbon dioxide into one measurement, but it's important to understand how each of these greenhouse gases contribute individually, because they function differently. The methane associated with rearing cattle and sheep in fashion supply chains for leather and wool is caused by enteric fermentation, the process where these 'ruminant' animals digest food through multiple stomachs. As a result, they breathe out, pass and belch methane into the atmosphere.

Vogue: How much does fashion need to reduce its methane footprint by, and how much time does it have to do so?

According to Nasa, 30 per cent of global warming since the Industrial Revolution is due to methane emissions specifically. Our calculations show that the fashion industry's current estimated methane footprint is 8.3 million tonnes per year. The Global Methane Pledge, which has been endorsed by over 150 countries as well as the United Nations, states that we must cut methane emissions by 30 per cent before 2030 in order to curb the worst of the climate crisis and align with the Paris Agreement. That's compared to a 2020 emissions baseline, so we are five years in.

However, until now, there has been no estimated methane footprint of the fashion industry. That means that, as the fashion industry has grown, it is likely that its methane footprint has too, so we may need to reduce methane by even more than a third, but we simply don't have the data to support that. At an absolute minimum though, we need a 30 per cent reduction within the next five years to meet this target. That's very little time to make such a big change, but science isn't interested in what is practical for businesses. What we can say is that every brand has an obligation to put every effort into aligning with the Global Methane Pledge.

Methane mitigation is an emergency brake against the climate crisis that we must pull now, so that we give ourselves more time to continue slashing carbon dioxide emissions, reducing water inefficiencies and so on.

Vogue: This is fashion's first methane footprint. How did you go about calculating it, and were there any challenges or limitations?

The first-ever methane footprint estimate for the fashion industry followed a PRISMA (preferred reporting items for systematic reviews and meta-analyses) method of systematic review, identifying all existing literature related to the fashion industry and methane, from cradle to grave. This meta-analysis assessed 21,377 peer-reviewed articles, of which 274 papers were fully reviewed, and additional data was extracted from white papers. This was combined with information about global material production volumes from the Textile Exchange 2024 Materials Market report. Where there were gaps in the existing literature and data on methane emissions, we produced lifecycle inventories with Simapro, a leading lifecycle assessment (LCA) software. For people who want to get really nerdy, our white paper has a full methodology section.

There were significant gaps, which is why we had to make use of the LCA software, and there are still some gaps, such as a lack of sufficient data on transport emissions across fashion and how that relates to methane. The fact that a small charity has commissioned scientists to produce the first methane footprint of the fashion industry in 2025 is a huge problem. We needed this data a long time ago. And we need further research to fill these gaps and extend our knowledge, as is the case with all contributions to science.

For a brand to assess their methane footprint specifically, they will need to break methane out of the common 'carbon equivalent emissions' calculations that many receive from LCA softwares and





consultancies. This is completely possible with the right data, which we have collated and assessed in this work. That's why we will soon launch the Methane Reduction Programme, so that we can support brands to do just that. The waitlist is now open.

***Vogue:* CFJ campaigns heavily on animal rights and welfare, and has worked with numerous fashion brands and fashion councils to eliminate or reduce animal-derived products. How does that work connect to methane?**

Animal-derived materials have an immense impact on methane. Seventy-five per cent of the fashion industry's total methane footprint (from cradle to grave) is tied to less than 4 per cent of materials used (animal-derived leather, wool and cashmere). The amount of animal-derived materials used compared to their impact on total methane emissions is wildly disproportionate, showing these materials to be inefficient and irresponsible choices to continue to rely on. They collectively cause 6.2 million tonnes of methane each year, making fashion's total annual methane footprint almost fourfold France's methane footprint.

This means the industry must rely far less on animal-derived products, instead using recycled and bio-based materials made without new animal or fossil fuel sources. That last part is really important — while synthetic materials may not have such a large methane footprint, we need to consider all environmental factors holistically, and we know that synthetics made from fossil fuels are not a part of an environmentally responsible fashion future, at all.

***Vogue:* How else can the fashion industry effectively mitigate its methane footprint?**

If brands are intent on sticking with virgin animal-derived products, they need to focus on the enteric fermentation process, rather than elements like manure management, because that is where the vast majority of methane comes from. There is ongoing research and agricultural practice transformation occurring to minimise the methane footprint of animal-derived products and materials — but these won't be enough to make the change required. Similarly, regenerative agriculture principles can be useful for restoring land, but they do not stop methane emissions whatsoever. Carbon sequestration tied to these more holistic land management practices also cannot counteract these methane emissions long term, as soil can only draw down so much carbon and store it before it reaches a soil-carbon equilibrium and is 'full'. That often occurs within a decade.

One emerging technological method of methane mitigation is attempting to feed seaweed to cattle or sheep, but these trials have also underperformed in studies and face barriers. This solution relies on animals being confined to feedlots rather than reared free range, which results in animal welfare issues, pollution, zoonotic disease and other issues that stand in opposition to holistic land management practices.

Recycled leather and wool are ready and waiting to be used. Bio-material innovations helping to replace animal-derived leather also exist, and they need investment to scale. Also, 20 per cent of fashion's methane footprint is associated with material processing and fabrication, largely because of fashion's continued use of non-renewable energy in these stages of the supply chain. Brands need to transition to renewable energy sources from wind and solar. All of this is much easier when we work collaboratively, and when we choose to invest our limited time and resources into the most high performing solutions. The time is now.

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