



Product sustainability declaration

Polestar 2 Model year 2023

Introduction

This is a high-level presentation of the car's carbon footprint, covering the impact of materials, energy extraction, production, vehicle manufacturing and logistics. It also covers materials traced from the point of extraction to the manufacture of components, and information about the sustainability aspects of specific materials we've chosen.

Polestar aims to be transparent about sustainability, providing information to enable consumers to make informed, ethical choices. It will also help on the journey to achieving the company's moonshot goal: creating a truly climate-neutral car by 2030.



Long range Dual motor
24.4 tCO₂e

Long range Single motor
23.4 tCO₂e

Standard range Single motor
22.5 tCO₂e

Carbon footprint

The carbon footprint of Polestar 2 includes greenhouse gas emissions generated from cradle to gate – from the sourcing of the raw materials to the time the finished car reaches the dealer. This is to enable consumers to compare cars based on climate impact. The carbon footprint from the use phase of the car, which stems from charging, varies depending on which energy source is used.

The carbon footprint results show that the smaller battery and motor capacity both contribute to a lower carbon footprint (Polestar 2 Long range Single motor and Polestar 2 Standard range Single motor have a 4 and 7% lower carbon footprint respectively compared to Polestar 2 Long range Dual motor).

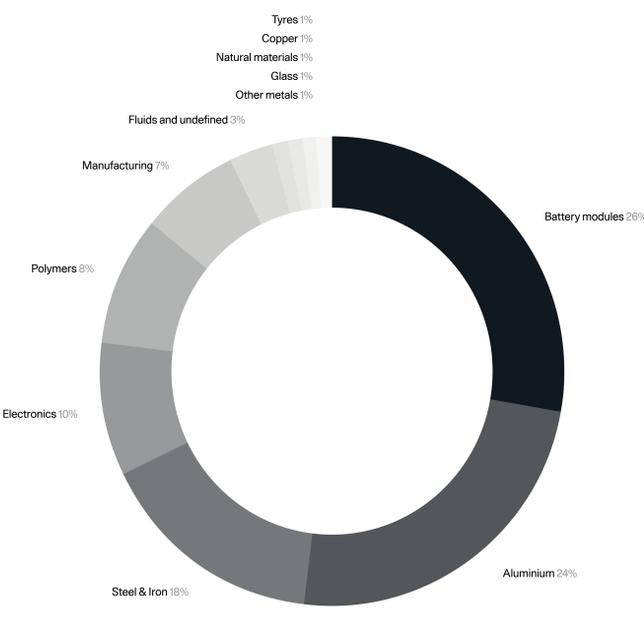
With the introduction of the 2023 model year, the aluminium tray used for the battery casing has been sourced from smelters who only use renewable electricity, resulting in a CO₂e reduction of 0.7t per car (for all Polestar 2 versions).

With the latest version of the model year 2023, the primary aluminium in the 19" rims was replaced with aluminium produced using hydropower. The result is a carbon footprint reduction of 0.5 tCO₂e per car.

In 2022, the manufacturing facility in Taizhou, where Polestar 2 is produced, has shifted to be powered by 100% solar energy. This change to entirely renewable electricity reduces the footprint by 0.5 tCO₂e per car.

There are many other materials contributing to the overall carbon footprint of the vehicle. More information about Polestar's strategic initiatives and projects to minimise climate impact can be found in Polestar's Sustainability Report.

This declaration accentuates the key highlights. For detailed information about how the carbon footprint was assessed, read the original LCA report [here](#).



Carbon footprint proportions of the Standard range Single motor version of the Polestar 2.



Material tracing

Polestar is working to change how materials are extracted and processed and materials traceability is one of the most important steps in achieving more sustainable production and supply chains. Material tracing enables us to map supply chains, and to take action where we see negative impacts on people or nature.

We operate in a very opaque and closed industry, but through our innovative and progressive transparency agenda we are seeking to change this. Already today there are impactful tools for materials traceability that can be utilized and scaled up. It can be third party certified chain-of-custody methods, standards, or more innovative approaches like blockchain.

Building on our groundbreaking pilot project together with Circular, Cobalt and Mica are currently traced using blockchain technology and more risk materials will be traced using this method. Though blockchain technology is utilized at the core of the solution to ensure immutability and auditability, the blockchain is complemented by other technologies such as facial recognition, GPS tracking, RFID, QR codes in order to offer reliable data.

The blockchain tracing journey

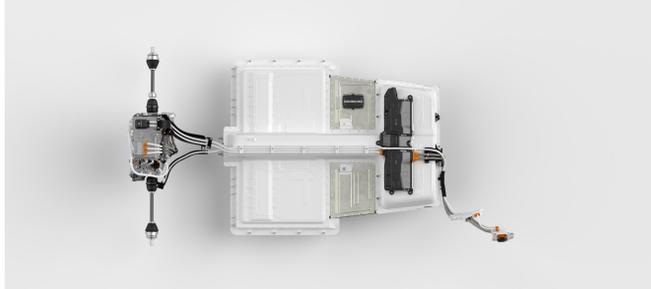
See below for a step-by-step breakdown of the journey materials take, as tracked by blockchain.



Traced risk materials

In our traceability program we target materials that are known to have high risks in the extraction and processing connected to environmental pollution, corruption, human rights violation or animal welfare violations, so called risk materials.

The mining and production of EV lithium-ion batteries bring a number of environmental and human rights concerns and minerals used in batteries are of course included on that list, but also minerals in other parts of the cars, like the motor, as well as metals, polymers and natural fibres. Our vision is to trace all risk minerals that are used in the production of our cars, and we are working relentlessly on our roadmap to get there.



Traced risk materials: Cobalt

Cobalt is an element used to boost battery life and energy density. Minerals are essential in all batteries both in electric and combustion vehicles as well as other electric products containing batteries.

However there are risks associated with cobalt mining. Cobalt has a complex supply chain and is mostly mined in corrupted, conflict areas and with a weak rule of law. This results in human rights violations such as low wages, health issues, forced labour and child labour especially in artisanal and small scale mining. Our aim is to ensure that cobalt is mined responsibly and with respect for human rights.

By tracing the Cobalt in Polestar 2's batteries through blockchain technology, we gain visibility on the supply chain and can promote responsible sourcing and production processes.

Traced risk materials: Mica

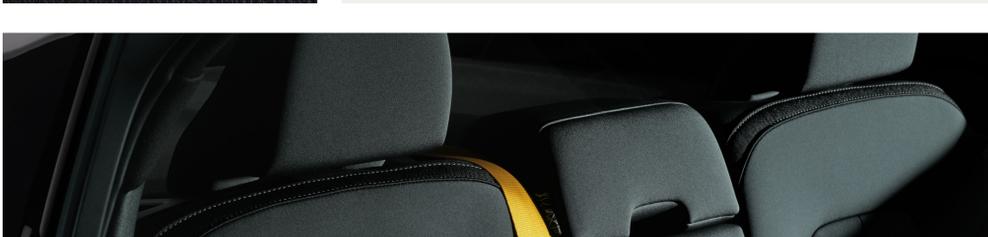
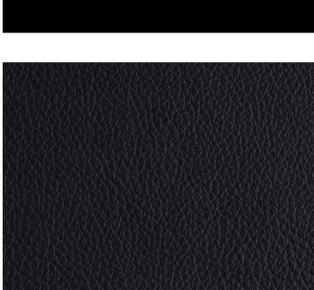
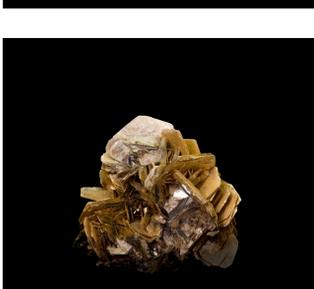
Mica is a group of silicate minerals used for thermal isolation within the batteries. The battery is the heart of the car and necessary in order to make the jump to cleaner cars. Mica has unique physical properties than can help prevent the risk of fire.

Some countries where Mica is mined has high risk of illegal mining with associated risk of child and forced labour as well as safety and health risks. By tracing the Mica in Polestar 2's batteries through blockchain technology we gain visibility into the supply chain and can promote responsible sourcing and production processes.

Traced risk materials: Leather

As a standard Polestar offers alternatives to leather, but uses leather as an upholstery option because of its positive traits – it is a biobased premium choice that offers quality when it comes to high comfort and durability. We are taking action to mitigate the negative risks connected to leather, such as poor conditions for animals, chemical pollution and emissions.

All leather used in Polestar products must meet the strictest standards on animal welfare by the UN Food and Agriculture Program, the World Organization by Animal Health (OIE) in their Animal Health Codes and the Farm Animal Welfare Committee (FAWC). Polestar only accepts leather originating from cattle that has been bred for meat production or made from innovative and more sustainable non-animal sources. Polestar does not want to contribute to deforestation of the Amazon rainforest and does not allow leather from cattle raised in the Amazon. Our leather is also fully traced in a process controlling and monitoring the farms and tanneries from which they originate.



Material innovation: WeaveTech

WeaveTech is entirely free of animal products. It's a water-based (not solvent-based), dirt and moisture resistant, modern PVC material inspired by divers' wetsuits. It was intentionally designed to be distinct from leather, a redefinition of premium materials that has its own identity and characteristics.

With the help of chemical experts and design engineers, we were able to reduce the amount of plasticiser down to 1%, compared to an industry standard of 35-45%.

5.2%
energy savings

Manufacturing plant: Taizhou

The manufacturing facility in Taizhou has been instrumental in helping Polestar realise its sustainability strategy. As of 2022, the plant runs on 100% renewable electricity. In addition to these efforts, the plant is tapping into effective climate actions, which have resulted in total energy savings of 5.2% in 2021 compared to 2020.