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Polestar 3

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Carbon footprint
Summary

Introduction

This document illustrates the carbon footprint of Polestar 3 and is taken from the Life Cycle Assessment report. That report, which can be considered a more in-depth analysis, can be read and downloaded at: polestar.com/sustainability.

The original carbon footprint report of Polestar 3 was critically reviewed by Ricardo PLC. Subsequent versions are based on the same ISO14067 methodology but not critically reviewed. Data is based on Start of Production (SoP) for Model Year 2026 (MY26) and Model Year 2027 (MY27) in the beginning of 2026.

Introduction
Transparency

Polestar is dedicated to ensuring transparency regarding the environmental impact of its vehicles. This document aims to promote openness to all audiences by disclosing the carbon footprint associated with our passenger vehicles. This is a summary of the full Life Cycle Assessment report, available at: polestar.com

Read the full report →

Introduction
Carbon footprint

A carbon footprint is the total amount of greenhouse gas emissions, expressed in CO_2 equivalents, caused throughout the entire life cycle of a vehicle.

In the cradle-to-gate calculations we include:

- Material production and refining. From raw materials to components (including battery).
- Manufacturing and logistics*. Energy used in assembly plant, transport of parts to the manufacturing plants and finished vehicles delivered directly to the dealer.

For the cradle-to-grave calculations we add on and include:

- Use phase. Electricity consumed during assumed 200,000 km of driving over 15 years.
- Maintenance. Parts replaced during the vehicle lifetime.
- End-of-life. Dismantling and disposal of the vehicle.

By assessing the full life cycle, we can identify the processes and materials with the greatest climate impact, enabling us to make better design choices and drive decarbonisation across our value chain.

*This summary includes both the Polestar 3 produced in Chengdu, China and in Charleston, USA.

Use phase calculation based on

15 years

200 000 km

Introduction
Reviewing the data

How do we measure it?
Our assessments follow the ISO 14067 standard and use the 100-year global warming potential (GWP) factors from the IPCC (2021). The functional unit is one vehicle kilometre (vkm), with a lifetime distance of 200,000 km assumed over 15 years. Energy use is based on WLTP electricity consumption figures*. We apply a recycled content approach: emissions from recycled material inputs are included, but no credits are given for recycling at end-of-life.

Who reviews this data?
The original Polestar 3 LCA was critically reviewed by independant third party Riccardo PLC in accordance with ISO 14067. Subsequent Polestar 3 LCA reports are not reviewed, but follow the same methodology.

Why does it matter?
A carbon footprint is more than a number. It gives us clarity on where emissions occur, guides material and process choices, and helps accelerate our journey to climate-neutral mobility.

*Final WLTP certification pending

The product
Technical details

Technical details	Dual motor	Rear motor
Powertrain	Electric	Electric
Drive type	All wheel drive	Rear wheel drive
Power	400 kW (544 hp)	245 kW (333 hp)
Max speed	230 km/h	210 km/h
0 - 100 km/h	4.7 s	6.5 s
WLTP range	635 km	604 km
Energy consumption, WLTP	19.1-23.4 kWh/100 km	17.6-21.6 kWh/100 km
Battery capacity (gross)	106 kWh	92 kWh
Battery pack weight, (Chemistry)	458 kg, (NMC)	400 kg, (NMC)
Curb weight	2 490 kg	2 315 kg

Carbon footprint
To car handover

The cradle-to-gate carbon footprint represents all processes occurring up until the point the vehicle arrives at the dealership for customer handover.

When the Polestar 3 reaches its customer, the average carbon footprint totals 25.9 tCO_2e for the Dual motor and 24.5 tCO_2e for Rear motor cars manufactured in Chengdu Those figures are 25.6 tCO_2e and 24.4 tCO_2e respectively, when the car is manufactured in Charleston.

The largest share, 67% for the Dual motor, and 68% for the Rear motor (Chengdu) comes from materials extraction and production, such as aluminium, steel, copper, plastics, electronics and rubber used in the vehicle, excluding the battery modules. Those figures are 69% and 70% respectively, when the car is manufactured in Charleston.

Li-ion battery modules are the next biggest contributor, responsible for 20% for the Dual motor (Chengdu) and 18% for the Rear motor (Chengdu). Those figures are the same (20% and 18% respectively) when the car is manufactured in Charleston.

Logistics account for 13% for the Dual motor (Chengdu) and 14% for the Rear motor (Chengdu). Those figures are 11% and 12% respectively when the car is manufactured in Charleston. Less than 1% of impact comes from the manufacturing processes occurring in both assembly plants thanks to the use of renewable electricity.

The carbon footprint from logistics varies depending on which market the Polestar 3 is shipped to. The total figures mentioned for all model variants in both plants include the average logistics emissions across all markets.

Cradle-to-gate carbon footprint
MY26/MY27, Chengdu, China

	Dual motor	Rear motor
Manufacturing	0.1	0.1
Logistics	3.2	3.2
Li-on battery modules	5.2	4.5
Materials production and refining	17.5	16.7

Cradle-to-gate carbon footprint
MY26/MY27, Charlston, USA

	Dual motor	Rear motor
Manufacturing	0.1	0.1
Logistics	2.8	2.8
Li-on battery modules	5.2	4.5
Materials production and refining	17.6	17.1

Carbon footprint
During lifetime

The cradle-to-grave carbon footprint is calculated based on all processes occurring over the assumed 200,000 km lifetime of the Polestar 3, including end-of-life treatment.

The carbon footprint of the use phase is highly dependent on how the electricity used to charge the Polestar 3 is generated.

Using the global average electricity mix the GHG emissions from the use of the vehicle results in 13.1 tCO_2e (Dual motor) and 12.0 tCO_2e (Rear motor), while the European average electricity mix results in 3.8 tCO_2e. Customers can make significant reductions to their climate impact by charging with renewable electricity, charging exclusively with wind power electricity results in 0.5 tCO_2e.

Both the Global and European electricity mixes include carbon intensity reductions that are estimated to occur during the assumed 15-year lifetime of the vehicle. Data sourced from the International Energy Agency (IEA) according to their STEPS Scenario.

Cradle-to-grave carbon footprint – Chengdu, China

MY26/MY27, Dual motor

End-of-Life	1.1
Use phase, Global electricity mix	13.1
Use phase, European electricity	3.8
Use phase, Wind electricity mix	0.5
Maintenance	2.1
Logistics	3.2
Manufacturing	0.1
Li-on battery modules	5.2
Material production	17.5

Cradle-to-grave carbon footprint – Chengdu, China

MY26/MY27, Rear motor

End-of-Life	1.1
Use phase, Global electricity mix	12.0
Use phase, European electricity	3.5
Use phase, Wind electricity mix	0.5
Maintenance	2.1
Logistics	3.2
Manufacturing	0.1
Li-on battery modules	4.5
Material production	16.7

Cradle-to-grave carbon footprint – Charlston, USA

MY26/MY27, Dual motor

End-of-Life	1.1
Use phase, Global electricity mix	13.1
Use phase, European electricity	3.8
Use phase, Wind electricity mix	0.5
Maintenance	2.1
Logistics	2.8
Manufacturing	0.1
Li-on battery modules	5.2
Material production	17.6

Cradle-to-grave carbon footprint – Charlston, USA

MY26/MY27, Rear motor

End-of-Life	1.1
Use phase, Global electricity mix	12.0
Use phase, European electricity	3.5
Use phase, Wind electricity mix	0.5
Maintenance	2.1
Logistics	2.8
Manufacturing	0.1
Li-on battery modules	4.5
Material production	17.1

Carbon footprint
Measures to reduce

To get to the result of 25.9 tCO_2e, Polestar has set high requirements on suppliers to reduce the carbon footprint of aluminium and battery modules. The figures to the right show the measures Polestar has made to reduce the carbon footprint of the Polestar 3 Dual motor.

If Polestar did not take steps to reduce its carbon footprint, the impact would be significantly higher. Mostly because the average aluminium production in some regions, such as China, tends to have a higher carbon intensity.

Decarbonisation measures effect on Polestar 3 Dual motor – Chengdu, China

Cradle-to-gate carbon footprint