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Volvo Cars position on sustainable steel

Purpose of this document

This position paper presents the position and addresses the sustainability challenges of steel, a material used by Volvo Cars in large volumes.

Background and challenges

- Steel is a material used by many different industry sectors today. The automotive sector accounts for 12 per cent of use¹. About 1.8 billion tonnes of crude steel were produced in 2025, indicating the scale of this material.
- Reducing greenhouse gas emissions (currently at 7 per cent of the global emissions) is a big challenge within the primary steel industry². The majority of the greenhouse gas emissions produced in the primary production process originate from the iron-making step i.e. the chemical reduction process creating iron from iron ore.
- A sustainable steel has low CO₂ footprint, below 1.2 kg CO₂ eq/kg crude steel³. However, low CO₂ is not enough to produce sustainable steel. It is also crucial to safeguard human rights, rights of indigenous people, freshwater and biodiversity both during iron ore mining, refining, and recycling, and at the same time have good working conditions at the steel mill. All the alloying elements used in the steel and the processing aids also need to be responsibly sourced.
- Steel plays a key role in our sustainability ambitions. It is used extensively in our products (steel and iron make up approximately half the weight of a car) and is used throughout the framework of our facilities. A fully electric EX60 has around 816 kg steel and iron, contributing to 23 per cent of the carbon footprint from materials production and refining phase of the car's life cycle.
- We need low CO₂ emission steel³ in large quantities and across the full palette of different product forms, grades, coatings and surface finishes. The production volumes of near-zero emission⁴ steel are expected to be low and insufficient to meet demand to deliver climate neutral products by 2040. A combination of methods and technologies to reduce the CO₂ footprint of steel are therefore needed, including increased use of steel scrap, direct reduction of iron ore with green hydrogen⁵, electrolysis and carbon capture and storage/utilization.
- To decarbonize the steel industry, worldwide large investments are needed. It is estimated that \$300 billion on top of the business-as-usual investments are needed⁶. This can be seen as \$10 billion per year until 2050. On top of these investments an additional \$2 trillion needs to be

1 #steelFacts - worldsteel.org

2 <https://www.iea.org/reports/iron-and-steel-technology-roadmap>

3 ResponsibleSteel-Standard-2.0.pdf, ResponsibleSteel Performance level 3, < 1.2 kg CO₂ eq/kg crude steel

4 ResponsibleSteel-Standard-2.0.pdf, ResponsibleSteel Performance level 4, < 0.4 kg CO₂ eq/kg crude steel

5 Green hydrogen refers to hydrogen produced with renewable energy.

6 <https://www.weforum.org/reports/the-net-zero-industry-tracker/in-full/steel-industry/>



invested to build out the infrastructure of green hydrogen production, carbon transport and storage, and low-emission power generation (estimated that 921 GW needs to be installed)⁶.

Volvo Cars position

- We believe steel can be a truly sustainable material with low CO₂ footprint³, high content of post-consumer scrap, recyclable to high value including preserving the alloying elements, safe (without any hazardous chemicals) and extracted and processed with high respect for both people and the planet.
- Volvo Cars actively advocates for policies and tries to support the steel industry in their transform:
 - In 2021, Volvo Cars became the first car maker to partner with SSAB to explore the development of near-zero emission high-quality steel, SSAB Fossil-free™ steel. SSAB is currently aiming to supply the market with SSAB Fossil-free™ steel at a commercial scale by 2026. In 2023 the collaboration was extended to include SSAB Zero™, which will become available sooner. We have today secured access to both SSAB Fossil-free™ and SSAB Zero™ for future car programs.
 - In 2022, Volvo Cars joined SteelZero, committing to strict, interim CO₂ requirements by 2030. All our sourced steel should be near-zero by 2050. We find that it is helpful to collaborate across sectors and send a clear demand-signal.
 - In 2022, Volvo Cars also became a member of ResponsibleSteel and thereby taking an active role in setting a sustainability standard for steel.

Volvo Cars actions

- Volvo Cars aims to reach net zero greenhouse gas emissions throughout our value chain by 2040 and making low-CO₂ steel part of our purchasing policy.
- Today we have high focus on increasing the amount of recycled content in our vehicles, as near-zero emission steel is not yet commercially available. Our ambition is to have 30 per cent recycled and bio-based material average across the fleet by 2030. The new EX60 for example has 29 per cent recycled steel.⁷
- As an active member of ResponsibleSteel, we contribute to the standard development and improving the ESG performance of steel companies. We aim for all our steel suppliers to become members and certify their sites according to ResponsibleSteel by 2030. We therefore urge more steel companies to join ResponsibleSteel. Besides CO₂ reductions, it is vital to ensure safeguarding of human rights, biodiversity, water, and high ESG governance.
- Volvo Cars aims to close the loop on steel recycling. We have started to work with the steel scrap from our inhouse stamping facilities and aim to circulate scrap from end-of-life-vehicle (ELV) back to automotive steel grades. The later can be achieved by a close collaboration between metal recyclers, steel producers and the automotive industries. To succeed, steel from shredded vehicles needs to contain very low levels of copper contamination and high strength automotive steel grade needs to become more tolerant for contamination⁸.

⁷ Volvo Cars Carbon Footprint Report of Volvo EX60

⁸ Tolerant steel grades can handle a higher degree of contamination from recycling.



- We have an agreement with SSAB for the supply of high-quality recycled and near-zero emissions steel in select components in the new EX60 and other cars utilizing our SPA3 architecture. Compared with conventionally produced steel in Europe, SSAB's recycled steel reduces carbon emissions with more than 70 per cent and is made with a recycled content of almost 100 per cent. At Volvo Cars we allow for the use of mass balance, however, we prefer physical traceability. With physical traceability we can prove that the more sustainable material is physically present in our vehicles. When using mass balance, it is important to ensure that the scheme is credible. We therefore have a clear set of requirements on mass balance schemes.
- We recognize that offtake agreements might be crucial to scaling the sustainable steel industry, enabling new entrants in the steel industry to secure long-term investment. This is however, a new approach for us and one that we currently are investigating.
- An important part of the work towards reaching our ambition is to collaborate with other steel users to jointly advocate for reduced CO2 emissions from the steel industry and at the same time raise the importance of safeguarding both people and the planet.

Volvo Cars proposed suggestions to make steel more sustainable

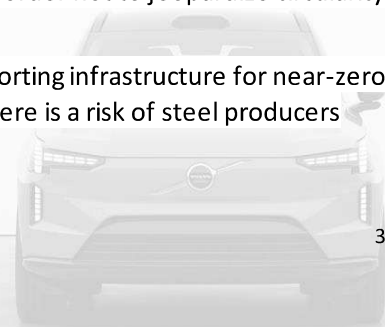
1. Steel industry

- Accelerate investments and plans for near-zero emission steel production
 - We find it critical for the steel industry to speed up investments in near-zero emission steel production on all continents. Steel companies need to ensure their climate roadmaps cover scope 1, 2 and 3 emissions⁹.
- Preserve biodiversity, stop deforestation, and reduce water consumption
 - The demand for steel will continue to increase in society. Preserving biodiversity, stopping deforestation and reducing freshwater use is therefore as important as reductions of CO₂ emissions. Steel producers must place high demands on their raw material providers.
- Safeguarding human rights, providing traceability, and transparency
 - The industry needs to have good traceability of their raw materials to meet demands placed by NGOs, society, and customers.
 - Besides excellent occupational health and safety for their own employees, the steel industry must conduct risk based due diligence to safeguard the rights of local communities and other stakeholders along their value chains.

2. Policymakers

- A harmonized standard on low CO₂ emission steel is vital to bring clarity, reduce financial risk and to support the investment decisions for near-zero emission steel projects, secure supply demands and prevent greenwashing. It must be credible, yet ambitious and 'technology agnostic'. It should also enable the use of recycled material, in order not to jeopardize circularity objectives set by the EU or companies like us.
- Policymakers and others need to secure the expansion of supporting infrastructure for near-zero emission steel, renewable electricity and green hydrogen⁵. There is a risk of steel producers

⁹ What are Scope 3 emissions and how it differs from Scope 1 and 2 | World Economic Forum



continuing to rely on natural gas in the longer term. The faster the transition occurs, the better our chances are of limiting global warming.

- Policymakers must adopt the provisions foreseen in their respective regulations and policies¹⁰ to promote carbon neutral projects, while increasing public spending on research and higher education. We need to overcome the 'green premium' by effective carbon pricing and lead-market support.
3. Recycling Industry
- Steel has been recycled for a long time. However, we believe that more can be done to retain the value of both the steel and its alloying elements. For high performance steel grades to contain post-consumer scrap, the scrap needs to have a low copper content after recycling. We encourage the recycling industry to revise their material standards to clearly indicate the copper content of recycled steel fractions.
4. Steel Users
- Volvo Cars urges other steel users to sign up to SteelZero and put requirements on suppliers to speed up deliveries of near-zero emission steel (scope 1, 2 and 3).

¹⁰ Including the US' Inflation Reduction Act, Net Zero Industry Act and Critical Raw Materials Acts.

