Knorr-Bremse Decarbonization Framework

Content

1 Purpose

Developing solutions for safe, efficient, and sustainable transportation – together and in strong alignment with our customers – is an integral part of Knorr-Bremse's corporate identity. Together with our partners we aim to contribute to sustainable development, by acting consistently and responsibly toward employees, the environment, and the society.

As a globally operating manufacturing company, our business activities across the entire value chain have direct and indirect impacts on the environment and global climate. Our Climate Strategy reflects our commitment to mitigating climate change and supporting the goals of international climate agreements.

Knorr-Bremse has committed to achieving net-zero emissions (Scopes 1–3) by 2050, with interim emission reduction targets for production and the upstream and downstream value chain by 2030. Specifically, we aim to reduce upstream Scope 3.1 emissions by 25% by 2030 compared to a 2021 baseline. Achieving this requires close collaboration with our supply chain. This framework sets out our expectations for suppliers to support decarbonization through transparency, data sharing, and continuous improvement.

2 Commitment

Knorr-Bremse is committed to industry-wide efforts to reduce greenhouse gas emissions and promote sustainable practices. Our approach aligns with recognized standards including the GHG Protocol and the Science Based Targets initiative (SBTi).

We support suppliers by providing suitable and targeted tools and training to facilitate data collection, compliance with ambitions, and progress tracking. Our goal is to foster collaboration that enables measurable and verifiable emissions reductions across the value chain, thus creating the best solutions for our industry.

3 Expectations for Suppliers

Knorr-Bremse expects all suppliers to actively contribute to our upstream (Scope 3.1) emission reduction target by undertaking the following actions:

- **Following ambitious decarbonization targets*:** set and implement suitable emission reduction targets that aim on **achieving at least 25% CO_2e reduction by 2030 and 90% CO_2e reduction by 2050 relative to the company's baseline (2021 or later)**. These goals, that shall cover Scope 1&2 as well as Scope 3.1. emissions, will constitute the framework for action and demonstrate a strong commitment to aligning with global climate objectives.

- **Transition to renewable electricity** (Scope 2): **Ensure that** at least **80% of total electricity consumption is sourced from renewable energy by 2028, increasing to 100% by 2030**. This should be achieved preferably through onsite or offsite renewable generation or renewable power purchase agreements (PPAs). Where these options are not feasible, Energy Attribute Certificates (EACs) may be used, provided they comply with the quality criteria defined in the GHG Protocol.

- **Reduce embedded carbon emission in hotspot materials (Scope 3) by 2030**:**
  - **Steel:** use 100% renewable electricity, usage of DRI or EAF, 100% scrap rate
  - **Iron:** 100% renewable electricity, usage of IF or EAF, minimum of 95% scrap rate
  - **Aluminum:** 100% renewable electricity, 100% secondary aluminum usage
  - Where feasible, collaborate with tier-n suppliers to identify innovative solutions for sourcing and integrating recycled materials throughout the production process.

- **Provide the Carbon Footprint of Product (CFP)** calculation of the products sold to Knorr-Bremse, **verified in accordance with ISO 14064-3** and **meeting the requirements of ISO 14067** as the basis of assessment. Alternatively, the supplier may submit a **GHG verification statement in accordance with ISO 14064-3**, including a **verified and transparent methodology** for allocating the GHG emissions to the products supplied to Knorr-Bremse**.** The emissions calculation should cover Scope 1, Scope 2, and relevant Scope 3 emissions and apply a cradle-to-gate system boundary**.** Any assumptions, exclusions, or processes not included in the CFP shall be clearly documented and made transparent**.**

  If the required product carbon footprint is not available, the supplier is expected to **provide** the relevant material, weight and energy **data using the format or software provided by Knorr-Bremse**. This data will be used by Knorr-Bremse to calculate the carbon footprint of the purchased products**.**

- **Carbon Reduction Measures and Collaboration:** In addition to the CFP calculation, Knorr-Bremse expects suppliers to **define and implement carbon reduction measures and objectives**, including:
    - Upon request, **providing reliable and transparent data** with **regular updates** on carbon emission reduction progress
    - **Engaging in dialogue and collaboration** with Knorr-Bremse regarding improvement measures and targets
    - **Participating in auditing and verification activities**, in a **pre-aligned time and manner**

Suppliers are encouraged to **update the information on a regular (typically annual) basis** and to **support plausibility checks, verification activities, or audits** where required to ensure data quality and comparability.
Failure to comply with these requirements may **significantly influence supplier preference**.

**Disclaimer: While we are committed to decarbonization efforts and agreed sustainability targets, certain exceptions may apply under mutually agreed circumstances.*

***Disclaimer: Any implementation of reduced embedded carbon emission in hotspot materials is conditional upon technical feasibility and formal approval by the KnorrBremse technical team and shall not adversely affect the quality, performance, or safety of the final product.*

4 Improvement

Knorr-Bremse's vision is to build a low-carbon supply chain through transparency, collaboration, and continuous improvement. We will monitor supplier performance, share best practices, and update our requirements in line with evolving standards and regulations and Knorr-Bremse's customer requirements.

5 Supplier Acknowledgment

We acknowledge receipt of the Knorr-Bremse Decarbonization Framework and commit to providing the required data and to develop and implement a decarbonization roadmap aligned with the milestones herein.

Name	Signature
Title	Date
Email	Phone

Official Company name	Site
Company address line 1: Street	Postal code
City	Country

Glossary

Carbon Footprint of Product (CFP)
The total amount of greenhouse gas emissions (expressed as CO_2 equivalent) generated during the entire lifecycle of a product, including raw material extraction, manufacturing, transportation, and disposal.

CO_2e (Carbon Dioxide Equivalent)
A standard unit for measuring greenhouse gases. It expresses the impact of different gases (like methane or nitrous oxide) in terms of the amount of CO_2 that would have the same warming effect.

Decarbonization
The process of reducing carbon dioxide emissions from activities such as manufacturing, energy use, and transportation to mitigate climate change.

Direct Reduced Iron (DRI)
A method of producing iron using natural gas or hydrogen instead of coal, which significantly reduces CO_2 emissions compared to traditional blast furnaces.

Electric Arc Furnace (EAF)
A steelmaking process that uses electricity to melt scrap steel or iron, reducing reliance on fossil fuels and lowering carbon emissions.

Induction Furnace (IF)
A type of furnace that uses electromagnetic induction to heat and melt metals, often used for iron production with lower emissions compared to traditional methods.

Energy Attribute Certificates (EACs)
Certificates that verify electricity was generated from renewable sources. Purchasing EACs allows companies to claim renewable energy use even if they cannot produce it on-site.

Fossil-Free Electricity
Electricity generated without using coal, oil, or natural gas—typically from renewable sources like wind, solar, or hydro.

GHG Protocol (Greenhouse Gas Protocol)
An internationally recognized standard for measuring and managing greenhouse gas emissions across organizations and supply chains.

Hotspot Materials
Materials that contribute significantly to a product's carbon footprint, such as steel, iron, and aluminum. Reducing emissions from these materials is critical for decarbonization.

Net-Zero Emissions
Achieving a balance between the amount of greenhouse gases emitted and the amount removed from the atmosphere, resulting in no net increase in emissions.