

TRATON

DECARBONIZATION



INTERNATIONAL



Truck
Bus

DECARBONIZATION BRIEF



Today, the average global temperature continues to rise exponentially since pre-industrial levels.⁽¹⁾ Society is already feeling the effects of this change through the greater incidence of extreme events, economic losses and the impacts on people's health and wellbeing. The TRATON GROUP, as one of the world's leading commercial vehicle manufacturers, has a significant contribution to these issues through greenhouse gas (GHG) emissions throughout our value chain, especially in the use phase of our products. As our purpose is "Transforming Transportation Together. For a sustainable world." and as we are guided by science, we are committed to reducing GHG emissions across our value chain in line with the Paris agreement.

Climate change requires swift and effective action.

The leading greenhouse gases (GHGs) contributing to climate change are carbon dioxide and methane, primarily released through the extraction and use of fossil fuels like coal, oil, and gas.⁽²⁾ Additionally, deforestation, industrial activity, and land-use changes, such as agriculture, are significant contributors to climate change.

Despite this alarming outlook, the Intergovernmental Panel on Climate Change (IPCC) reports that it is still possible to limit global warming to 1.5°C. Achieving this will require a near-halving of global GHG emissions by 2030 and reaching net-zero emissions by 2050.⁽⁵⁾

Climate change is already affecting people's lives, health and wellbeing, particularly among vulnerable populations. Exceeding the 1.5°C threshold heightens the likelihood of more frequent and severe climate impacts, posing serious threats to agriculture, infrastructure, and industry. The global economy could see losses of up to almost one fifth of GDP by 2050 due to climate change.^(3,4)

With measures adopted today, the global temperature could reach 3°C above pre-industrial levels this century, which would significantly increase the risk of catastrophic climate events and extreme weather and have severe and irreversible consequences for societies and ecosystems – making some parts of the world inhabitable. Governments are expected to increase their ambition and adjust policies to protect their citizens, livelihoods and ecosystems, by limiting global warming to well below 2°C above pre-industrial levels, with efforts to limit the increase to 1.5°C by the end of the century.



ROAD TRANSPORT SCENARIO

Road transport alone accounts for 12% of global GHG emissions, with 40% of that coming from road freight⁽⁶⁾, underscoring the urgent need for transformative changes in the sector. For the TRATON GROUP, more than 97% of value chain emissions are connected to use phase emissions.

Although road freight accounts for less than 8% of vehicles (excluding two- and three-wheelers), it is responsible for about 40% of direct CO₂ emissions from road transport. Emissions from this sector continue to grow globally, having returned to pre-pandemic levels in 2022. To slow the rise in emissions, strategies such as rapid electrification, stricter vehicle efficiency standards, improved logistics and operational efficiency are essential.⁽⁷⁾

Heavy-duty vehicle emissions must peak and begin to decline immediately to meet net-zero targets by 2050. More countries need to adopt, strengthen, and harmonize fuel economy standards and mandates for zero-emission vehicles (ZEVs). The adoption of electric and hydrogen-powered vehicles is critical for reducing emissions during the 2020s and 2030s.⁽⁷⁾

Decarbonizing trucks through electrification will demand a significant increase in renewable electricity supply, which may necessitate extensive upgrades to grid infrastructure. In addition, battery technology needs to advance to accommodate the heavier weight and range demands of trucks.⁽⁷⁾

Since 2010, battery costs have dropped by 90%, making lithium-ion batteries dominant, although new chemistries may challenge this. Battery storage, used in grid stabilization, saw record growth. Furthermore, investment in EV batteries reached \$150 billion in 2023, largely from China, Europe, and the U.S.⁽⁸⁾

In this sense, it is interesting to highlight that global investment and deployment of renewable energy reached an all-time high in 2023, despite high interest rates and higher raw material costs. Investment in renewable energy and enabling technology manufacturing grew by 70% in 2023, mainly in solar PV and batteries. In that same year, 24 countries updated their targets for the share of renewable energy in electricity supply.⁽⁸⁾ And it is expected to increase in the coming years.

Successful decarbonization will require strong leadership and resources, particularly from large companies in the transportation sector. While governments are responsible for setting targets and implementing policies, corporate leadership is vital to driving innovation, scaling up battery electric vehicles offer, fostering collaboration across industries, and setting best practices. By leading the way, corporations can create a ripple effect that accelerates progress, enabling free-market solutions and partnerships between industry experts, ensuring that advancements benefit the entire sector.

JOINT IMPACT AREA	Decarbonization	
COMMITMENTS*	Reduce greenhouse gas emissions across the value chain in line with the Paris agreement.	
ACTION AREAS	Reduce emissions in own operations	Reduce greenhouse gas emissions in own operations in absolute terms.
	Reduce use phase emissions	Reduce greenhouse gas emissions in use phase from well to wheel.
	Reduce supply chain emissions	Reduce greenhouse gas emissions in supply chain .
	Partnerships and work beyond our value chain to accelerate transition	Keep decarbonization in the center of partnerships development and work beyond our value chain to accelerate transition to a net-zero society.

* These commitments reflect TRATON GROUP's long-term aspirations and strategic direction. They are intended to guide our actions and decision-making and should not be interpreted as guarantees of specific future outcomes or performance.

OUR ACTION AREAS ON DECARBONIZATION

To live up to our commitment, we defined four Action Areas:

D1: Reduce emissions in own operations

We are prioritizing the reduction of greenhouse gas emissions within our own operations, focusing on direct emissions from fossil fuel combustion (including natural gas and diesel) and refrigerant leaks (Scope 1), as well as indirect emissions from the electricity and district heating we utilize (Scope 2). Our efforts encompass all areas of our operations, including production facilities, the commercial network, engine testing, and other emissions related to the use of company vehicles, across all premises and entities under our direct control. By targeting these greenhouse gas emissions, we aim to significantly reduce our environmental footprint and contribute to broader sustainability goals.

The Main levers to reduce the emissions are:

- / Electrification of heating
- / Renewable electricity consumption
- / Renewable district heating
- / Biogas use
- / Electrification & switching to biofuels for trucks and cars
- / Energy efficiency
- / Refrigerants leakages reductions
- / Substitution of refrigerants to refrigerants with lower global warming potential

D2: Reduce use phase emissions

Reducing greenhouse gas emissions from the use of our products is a critical area of focus, as it accounts for approximately 97% of the TRATON GROUP's total GHG emissions across the value chain. These emissions are directly tied to our revenue-generating products. In our impact calculations we are accounting for Well-To-Wheel emissions – both fuel extraction and generation (Well-To-Tank) as well as fuel combustion (Tank-To-Wheel). This includes the generation and consumption of diesel, electricity, natural gas, and other fuel types. Electrification is a key solution in reducing these emissions. While we are committed to the long-term transition to electric vehicles (EVs), we are also exploring additional localized solutions 'to achieve immediate reductions in GHG emissions. Our focus is on integrating EVs and providing related services that enable our customers to actively participate in this transition, accelerating the adoption and scale-up of electric vehicles. All TRATON brands are expanding their EV portfolios, offering comprehensive solutions to support a more sustainable future.

Main levers:

- / BEV sales
- / Development of access to charging network
- / Providing financial offer to increase BEV sales
- / Energy efficiency of engines
- / Energy efficiency of cap and chassis
- / Hydrogen related (FCEVs, H2ICE)
- / Enabling use of biofuels
- / Drivers support systems

D3: Reduce supply chain emissions

Currently, supply chain emissions represent only a small percentage of our total value chain emissions. However, we recognize the importance of sourcing materials with a lower climate impact to drive meaningful change. To address this, we have identified key materials with significant climate footprints, including iron, aluminum, steel, and battery materials such as nickel, cobalt, and lithium. Building on the efforts within our individual brands, we are actively collaborating to define a comprehensive decarbonization strategy for our supply chain across TRATON, ensuring that we source these critical materials in a more sustainable and responsible manner.

Main Levers:

- / Roadmaps and supplier requirements for key materials
- / Fossil free electricity
- / Recycled content
- / New technologies
- / Partnerships and supplier collaboration

D4: Partnerships and work beyond our value chain to accelerate transition

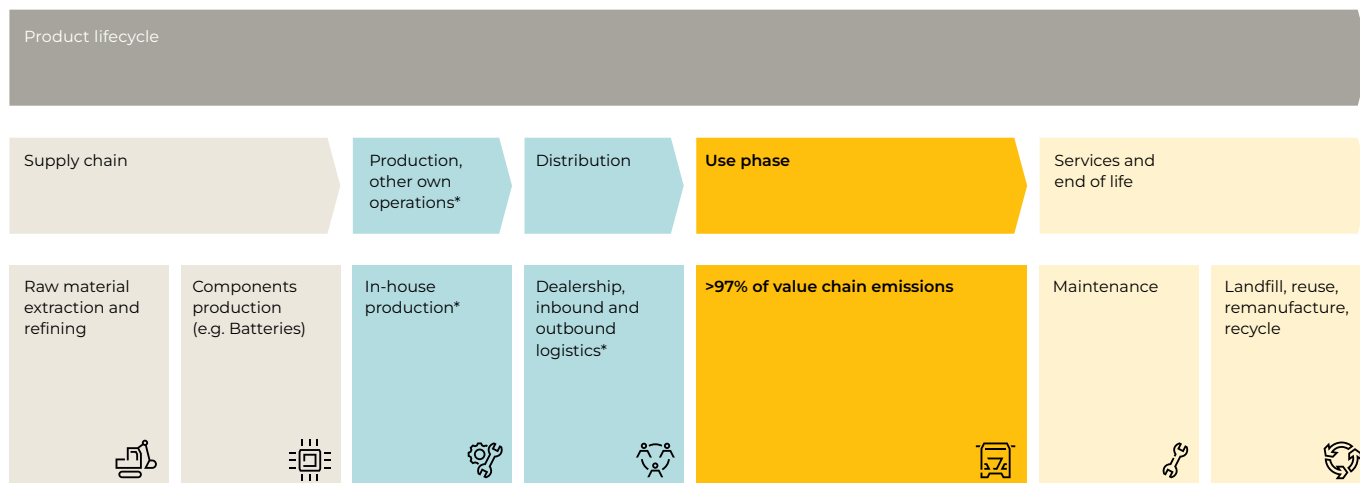
Achieving a net-zero society requires systemic change and collaboration both within and beyond our value chain. To accelerate the transition, fulfill our commitments, and reduce GHG emissions across our operations, product use, and supply chain, we need to integrate decarbonization to become a part of everyday work for our employees and collaborate with suppliers, partners, governments, and civil society. We are advocating for an ambitious and equitable transition, supported by policies and regulations that facilitate a more sustainable transport system. A key enabler of this transition is the development of robust charging infrastructure, essential for putting more electric trucks on the road. To support this, we have formed strategic partnerships, including our entity

TRATON Charging Solutions and investments in the Milence joint venture to advance the expansion of charging networks and accelerate the shift to electric mobility

Main Levers:

- / Collaboration with suppliers
- / Memberships
- / Advocating for a just transition.
- / Supporting regulations and policies
- / Partnerships with other companies

DECARBONIZATION FOCUSING ON WHAT MATTERS MOST



* Scope 1 and 2: inhouse production, own offices, own inbound and outbound logistics.

TRATON GROUP'S POSITION

TRATON GROUP recognizes its responsibility to lead the way in decarbonizing the commercial vehicle sector. We are a global brand with substantial emissions across our value chain and we need to be part of the solution.

- / Electrification is the fastest path to decarbonization, and we are working to offer high-performance battery-electric vehicle models to all our customers.
- / Complementary services are being implemented in the context of decarbonization, where we consider the importance of improving the energy efficiency of engines, providing charging solutions to customers and also financing for easier access to battery electric vehicles (BEVs).
- / Partnerships with other companies and the creation of market strategies are being developed, as we understand the importance of working together to facilitate access to new technologies and enable them to consolidate in the market.
- / We are advocating through our memberships in major institutions to promote a fair climate transition through government initiatives and regulations that facilitate the implementation of infrastructure associated with BEVs, for example.
- / We are keeping up to date with the needs of our customers, studying the possibilities offered by the transport sector around the world, and working so that we can all move forward together.

The transition to a low-carbon business model will give us a competitive advantage if it is managed correctly and the opportunities are seized.

TRATON GROUP believes in the transition to a world of sustainable transport and is working to make it a reality.

References:

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