

SCANIA MINING SOLUTIONS

THINK BIG, ACT SMALL



BIG ON POSSIBILITIES SMALL ON EMISSIONS

The small things can make you see the world in an entirely different way. Like a low-emissions mining footprint, one that makes it possible to grow your operations beyond tomorrow's challenges with unrivalled margins in the field and on your bottom line.

Scania's sustainable mining fleet is the efficient choice that gives you lower emissions, more horsepower, and lower cost per transported tonne. Smaller footprint, bigger possibilities.

All our sustainable mining solutions comply with leading industrial safety standards and are fully tailored to your operations, giving you ground-breaking fuel efficiency and uncompromising power, robustness and agility wherever you demand it.

This is what change looks like. Think bigger with Scania mining.



SUSTAINABLE MINING

Scania's approach to sustainable mining goes beyond lowering your transport emissions. It's a commitment to raising standards for operational efficiency and safety, as well as creating viable pathways to emerging electrification and autonomous mining technologies.

With a solution that improves your productivity, as well as lowers your emissions output, Scania delivers real growth possibilities that are sustainable for today's and tomorrow's mining operations.



Low-emissions mining

Scania offers the industry's most sustainable transport fleet, from in-pit tipper trucks and outbound haulage, support vehicles and transport of personnel. Lower output emissions are delivered through:

- world-leading fuel efficiency of the Scania Super and V8 engine powertrains
- emerging battery electric alternatives for selected applications
- the industry's widest alternative fuel compatibility
- integrated haulage solutions that increase operational versatility and efficiency.



Payload efficiency

Scania powertrains consume up to 65%* less fuel per transported tonne compared to traditional ultra-haulers owing to their unique ability to carry twice their tare weight in payload.

Faster cycle times

Scania powertrains deliver more horsepower per tonne compared to traditional ultra-haulers, giving you faster cycle times. A Scania customer was able to reduce in-pit cycle time from 90 to 50 minutes based upon a customised product and analysis of the total operation cycle.

* Based on a recent trial in live mining operations. Corresponds to a 40% fuel saving for diesel-electric haul trucks and a 65% saving for articulated dump trucks.

WORLD-LEADING SAFETY STANDARDS

Operating in the harshest environments, your vehicles must deliver uncompromising safety at all times – to protect your people and keep your operations going for longer. At Scania, our vehicles are the result of generations of thorough research, design and testing, making them exceptionally safe. This is due to the wide array of innovative safety and support systems built in to each Scania vehicle.

No matter where you are in the world, we'll make sure that your products and services are tailor-made with your local requirements in mind, for maximum safety across your operations.

Built-in safety

Safety demands a comprehensive approach across both the design and testing stages. Scania's ergonomic cabin design, systems and driver aids facilitate quicker and more intuitive decision making. This can make all the difference in the split-second decisions you face every day. All Scania cabs are approved by the Swedish cab test – one of the world's toughest impact tests.

Safe service

In our workshops, we train mining crews and technicians all over the world with an emphasis on safer ways of working. We'll help you to push the limits of efficiency without compromising the safety of your crew or operations, so you can achieve maximum uptime with minimal disruption to production.

Operational safety

Sub-standard equipment, spillage and bad roads are the biggest factors which contribute to risk. Scania Site Mapping helps you to identify risk factors and find suitable measures – resulting in higher productivity with reduced risk.



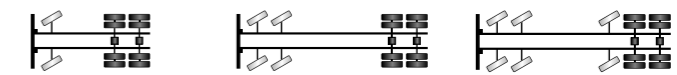


IN-PIT HAULING

Your in-pit operations require robust workhorses, capable of hauling as much as possible, time and again. Scania's three-, four- and five-axle heavy tippers, are built to deliver outstanding reliability in even the harshest mines. Above ground, underground. Any material, anywhere in the world.

Scania vehicles are engineered to guarantee reduced tare-weight-to-payload ratio, to minimize vehicle weight per each tonne of transported material and offer you superior fuel economy and sustainability of use, also on the return trips.

TECHNICAL WEIGHTS



Axle configuration	6x4	8x4	10x4
Gross vehicle weight	49,000 kg	60,000 kg	71,000 kg
Front axle weight	11,000 kg	2 x 11,000 kg	2 x 11,000 kg
Bogie weight	38,000 kg	38,000 kg	49,000 kg

LEANER LOGISTICS FROM PIT TO PORT

Think of your mine as a factory production line. From digging, to loading and supply, each operation depends on one another. This is where your business is made, where every second counts. Which is why it pays to take a holistic approach to your operations, as we do, at Scania.

With our long history in lean production and global mining transport, we offer tailored mining solutions that are built for your daily reality and, as always, continuously improve your total operating economy.

Faster takt and cycle times

Your logistical efficiency is a key part of your sustainable footprint. Not only do idle vehicles and logistical waste reduce your margins, but they can make your entire production cycle fail. For more than half a century, Scania has pioneered the development of new lean principles and tools across our own operations. By applying those methodologies to your daily mining operations, we will help you to improve both takt and cycle times, as well as managing cost and risk in a sustainable way.

Scania Site Mapping

Scania Site Mapping raises the efficiency benchmark of your mining operations. Through live on-site analysis of your mining

operations, our experts will help you to identify logistical bottlenecks, develop best practices, and continuously improve availability, efficiency, and productivity across your chain. Together, we will evolve your mining operations, one step at a time.

Scania Service Mapping

High vehicle availability is the cornerstone of an efficient and productive mine. With Scania Service Mapping, our experts will help you to develop this foundation through continuous mapping and monitoring of your workshop processes. This includes an analysis of your repair and maintenance processes, accident management, and availability of critical parts.

Correct payload is crucial to ensure safety and productivity

A too large tipper body will cause overloading, jeopardizing durability, uptime and operating costs. The sum of payload and empty weight may never exceed gross vehicle weight. The empty weight can vary depending on chassis specification and tipper body design. Heavier and more abrasive material will require thicker steel in the floor and side walls of the tipper body.

This will increase the empty weight of the tipper body, thus decreasing the payload capacity. Weight optimization of the tipper body can be achieved by using high-tensile steel.

Material loaded into a tipper body will form a heap. This heap shall be taken into account when defining the body size. The dimensions of the tipper body shall allow for a heap according to the SAE 2:1 principle (global standard ISO 6483).

RECOMMENDED TIPPER BODY SIZES

Material density (kg/m ³)	Transported material	SAE 2:1 heap volume (m ³)	Struck design volume (m ³)
2,000	Iron ore	19.0	17.0
1,800	Copper ore, gold ore	21.1	18.8
1,600	Overburden, nickel ore	23.8	21.2
1,500	Limestone	25.3	22.8
1,400	Bauxite	27.1	24.2
1,200	Salt	31.7	28.5

Example of 8x4 with gross vehicle weight 60,000 kg, empty weight 22,000 kg and payload 38,000 kg.



UNDERGROUND MINING WITH SCANIA

In the Garpenberg mine in Sweden, the Scania Heavy Tipper reigns supreme. Here, a customised fleet of Scania 580-590 hp XT Heavy Tippers roll in total darkness loaded to the max through narrow tunnels and up steep slopes for up to 24 hours a day.

Vehicle performance is relentlessly put to the test at every turn – from the powertrain's axles, suspension and brakes, to the cab's ergonomic driver support, and the chassis' high load-bearing capabilities. And they pass the test every time.

Scania service workshop – 530 metres underground

It's not just the Scania mining tipper's performance that makes the critical difference, but also its enhanced serviceability. When coupled with Scania's unrivalled service offering, this gives mining operators the fast service and repair that is needed to keep production rolling all hours of the day.

At 'workshop 530' in Garpenberg, Scania technicians work around the clock to ensure that Scania mining tippers and support vehicles are ready to take on the mine's harsh conditions. This is supported through Scania's modular engineering concept that ensures high availability of spare parts at all times.

Facts from the mine

- The Garpenberg mine is 1,480 metres deep, with at least 15 km of road.
- Scania Heavy Tippers run between 18 and 24 hours a day.
- The mine operates 24 hours a day, 365 days a year.
- The steepest part of the mine has an average gradient of 10%. At its steepest, the slope is 15%.

SCANIA HEAVY TIPPER

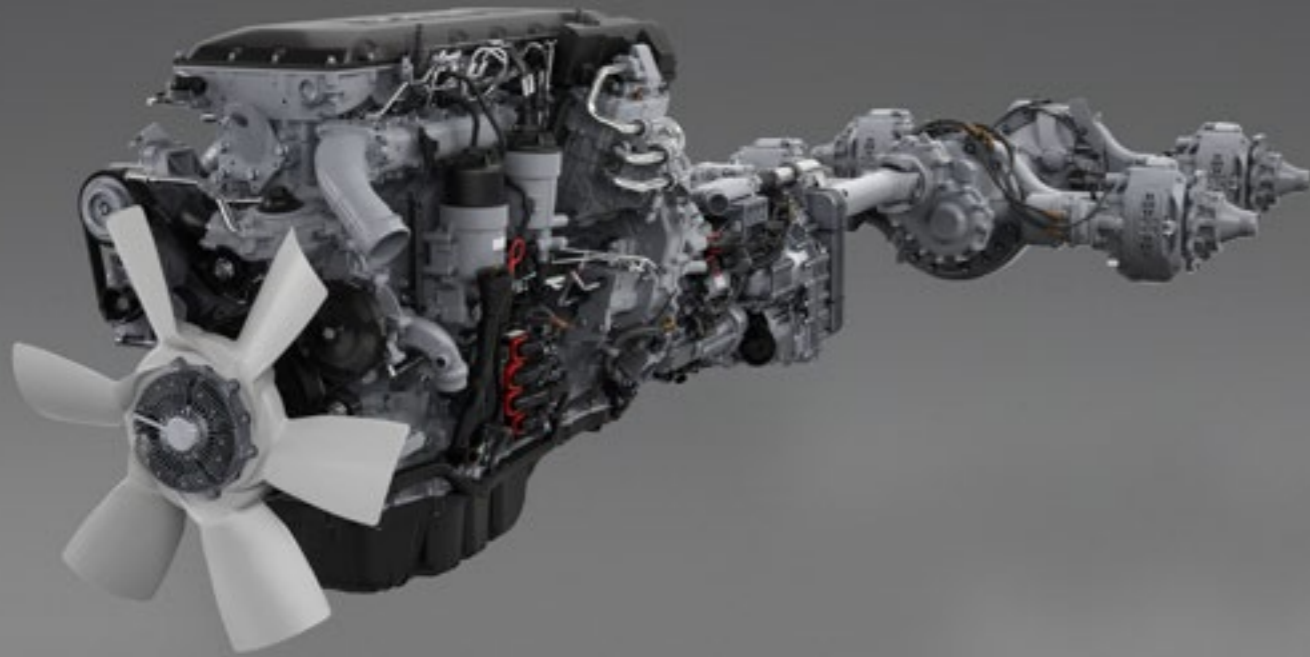
The Scania Heavy Tipper reaches unparalleled performance levels in even the toughest mining operations.

Compared to our standard powertrain offering, our unique Heavy Tipper equips you with up to 25% higher load-bearing capabilities, up to 40% improved powertrain robustness, and a reinforced break and steering system for enhanced safety.

It is available in a tractor-trailer or rigid specification with 6x4, 8x4 and 10x4 axle configurations.



WORLD-LEADING FUEL EFFICIENCY



Scania's low-rev, high-torque philosophy has been a hallmark of all Scania fuel-efficient powertrains for more than 50 years. Today, with our groundbreaking 13-litre Super and 16-litre V8 engine range, we're raising that benchmark yet again.

Off-road driving performance is enhanced through the Opticruise Heavy-Duty gearbox range, giving you the ultimate comfort and control when working with heavy payloads in tough operations.

It's a powertrain that's ready to meet the toughest challenges on your road ahead.

Choose your power output

The 13-litre Scania Super is available in the 420, 460, 500 and 560 horsepower range. The legendary 16-litre V8 is available in the 530, 590, 660 and 770 horsepower range – the world's strongest commercial engine.

Twin-SCR emissions control

Our new engine range features Scania Twin-SCR emissions control that introduces dual treatment of the vehicle's exhaust emissions. This ensures continuous high reduction of exhaust emissions in a wide range of vehicle operations.

INTEGRATED OUTBOUND HAULAGE

The flexibility of Scania's haulage solutions ensure that you can move your material long before most traditional rail and conveyor systems are in place. Optimal for both off-road and road-legal driving, the high payload capabilities of Scania powertrains and chassis give you a uniquely versatile direct pit to port haulage solution – reducing rehandling at your pit's run-of-mine pile and eliminating associated costs. It's lean, efficient, and opens new logistical possibilities across your chain.

Off-Road Outbound

Scania's customised mining trucks can haul a total combined weight of up to 300 tonnes in tough off-road conditions and challenging topographies.

electric powertrains for regional haul. The chassis is fully tailored to operational demands and local road safety legislation.

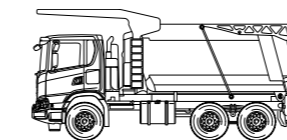
Scania Fleet Management

Through Scania Fleet Management, you can track haulage performance such as location, speed, engine condition, driver behaviour, route deviation and fuel consumption – pushing the limits of efficiency and helping you to move faster.

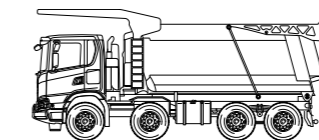
Public-Road Outbound

Scania offers a wide range of sustainable powertrain options from groundbreaking diesel fuel-efficiency to bio-fuels and fully

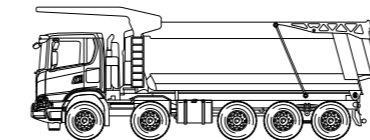
Examples of outbound haulage setups and payload capacity*



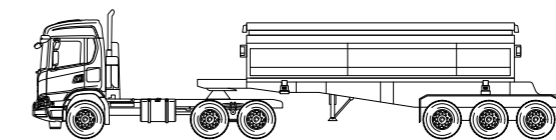
32 tonnes



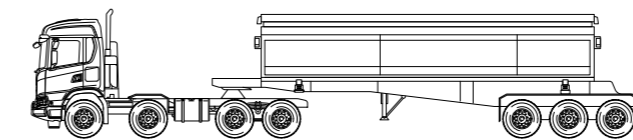
40 tonnes



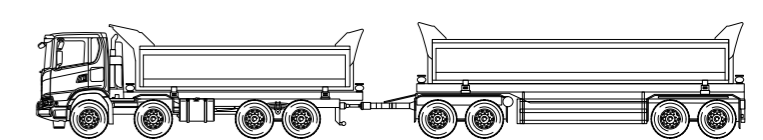
48 tonnes



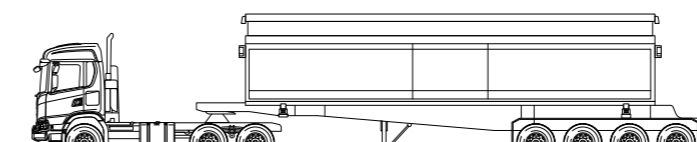
50 tonnes



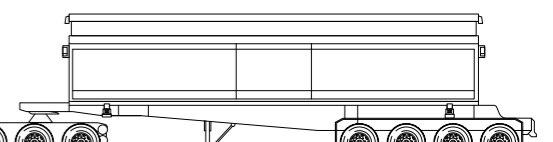
70 tonnes



90 tonnes



220 tonnes



*The payload capacity depends on the GVW/GTW and the empty weight of the vehicle.

SUPPORT VEHICLES

Scania's support vehicle fleet is the logistical lifeblood which safeguards your productivity. Our robust support vehicles are built to exceed across all terrain and applications, ensuring that your water trucks, heavy equipment haulers and crew transport are fit for purpose through all challenges.

Available in all-wheel drive for extra mobility in delivering critical parts and preventive maintenance, we'll help you to make up the seconds where it matters.



ELECTRIC OUTBOUND

Scania delivers battery electric vehicle capabilities for outbound mining operations with a technical gross weight of up to 74 tonnes.

In Tromsdalen limestone quarry in Norway, a Scania P45 electric truck with three axles and 300 kWh battery capacity (3500nm) has enabled the mining operator to cut fuel consumption by 58,800 litres and CO₂ emissions by 156 tonnes. The vehicle will transport around 120,000 tonnes of lime from the quarry to the port for shipment annually.

Technical specifications

- Configuration: P 45 B6X2/4NB
- Cab: CP17N
- 9 Batteries 300 kWh battery capacity
- Electric machine: 450kW, 3500nm continuous power
- 6-speed gearbox
- Rear axle with hub reduction
- 31 tonnes total weight of vehicle (10 + 12.7 + 8.3)
- 74 tonnes technical gross weight



High availability



High comfort and safety



Easier serviceability



Water truck



Lubrication



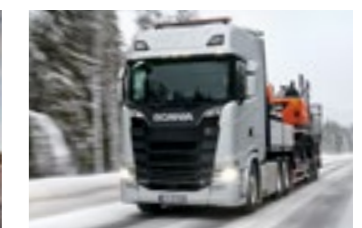
Explosives



Stemming



Mobile crane



Heavy machine transport

TRANSPORT OF PERSONNEL

Your business depends on your ability to transport skilled crews and technicians quickly, reliably and safely across remote and challenging terrain. From smaller crew cabs to larger rugged buses for 30–60 people, our transport solutions make it possible to transport your personnel reliably, safely and with comfort.



Safer travel across your mine

Scania has been building buses for over 110 years, and has a number of models adapted for rugged and safe transport. Because of the Scania modular production system, chassis, axle, engine and powertrain parts on buses are identical to those on trucks. It also means much faster servicing and repair for your operations.



Safety built in

We deliver, together with dedicated body builder partners, safe solutions by always putting safety first. A wide range of safety features such as electronic stability programmes, electronic brake systems and alcolocks provide effortless control as well as matchless driveability.



Sustainable travel

Through world-leading fuel economy, the industry's widest renewable fuel compatibility, and low-emission hybrid-electric powertrain alternatives, each journey in a Scania vehicle doesn't just deliver comfort and safety, it also delivers fewer emissions.



INDUSTRIAL POWER SOLUTIONS

From gensets to pumping systems, Scania industrial engines are designed to perform and deliver prime power in even the most testing conditions – 24 hours a day, 365 days a year.

Instant response, high torque at low revs, plus industry-leading energy efficiency and fuel-economy combine to deliver best-in-class operational efficiency wherever you demand it across your mining operations.

Next generation performance

Scania's next generation engine range builds on our most advanced engine platform yet and is specifically designed and developed in-house to meet the criteria of demanding industrial application.

Lower emissions

Future-proof your business and get ahead of environmental standards and regulations, with significantly reduced CO₂ emissions and full compatibility with renewable 100% HVO fuel.

Outstanding performance

Gain more torque, power and flexibility with a wider total power range, ideal for downsizing. Best-in-class power density and lower fuel consumption ensure more value from every drop.

More reliable than ever

Durable, high-quality engines and parts that keep you up and running longer. Up to 50% longer base engine lifespan and less downtime combine to improve the economy of your operations.

	E-Machine*	13-litre Next Generation	11-litre Next Generation	9-litre	13-litre	16-litre
Engine type	Electric	6 cylinder inline	5 cylinder inline	5 cylinder inline	6 cylinder inline	V8
Output range	150-230 kW continuous	202-450 kW	202-368 kW	202-294 kW	257-405 kW	368-566 kW
Displacement /speed range	0-4000 rpm	12.7 litres	10.6 litres	9.3 litres	12.7 litres	16.4 litres

*E-machine is capable for hybrid and modular for multiple configuration for highest power.



FULL-SERVICE SOLUTION

Developed in collaboration with mining companies, Scania's on-site services are tailored specifically to your mission-critical reality. Our maintenance, driver and workshop services are geared for uptime at each stage of the modern mining chain. Together with flexible and tailored financing solutions to suit your business plan and budget, Scania offers you a full-service solution you can rely on in any condition.

Scania financial services

From leasing to flexible financing, we'll help you to build the perfect package for your business and its specific needs. Through a range of leasing, operating rental and instalment financing options, Scania Financial Services allow you to lessen the load of capital outlay. Our trade-in and buy-back options will also help you to keep your fleet operationally effective, at a lower cost.

Maintenance contracts

Geared to each vehicle or operating characteristic, Scania's Full Maintenance Contracts (FMC) ensure optimal performance, uptime and operating efficiency of your fleet over its entire working cycle. Through a single fixed-cost invoice, which

accounts for all parts, installation and servicing costs, you'll be safeguarded against all unforeseen maintenance expenses. Instead, you can easily tailor your monthly cost per kilometre, hour or tonne of material transported.

Driver services

Your drivers are crucial to your operating success. They keep your operations safe, they drive your profitability. Scania's Driver Training will optimise how your vehicles are operated, by increasing fuel economy, ensuring safety and reducing driver inefficiency. Scania Driver Support provides your operators with real-time support to increase driving economy – such as improving gear change, braking and other driving techniques.



INDUSTRY-LEADING VEHICLE UPTIME

Through enhanced powertrain robustness, Scania's in-pit mining trucks are engineered to keep your production rolling longer beyond the industry average. This contributes to extended service intervals which, and is delivered through enhanced vehicle serviceability and an unrivalled service offering that includes high spare parts availability and a strong support network in over 100 countries.

Field workshop units

Scania's flexible workshops can be housed in as many as eight types of mobile containers – delivering functionality at less time and cost. Ideal for start-up activities or where temporary facilities are needed in mature markets, our specialists can have you fully operable within a week of the foundation being laid.

Scania parts

Our global parts network is connected through a single global digital network, meaning that we can guarantee up to 95% parts availability within 24 hours to any Scania Service Point worldwide. Quite often, however, we'll stock most of the parts you'll need on-site. Or, we can even establish service and parts depots along your transport routes.

Modular engineering

We build up to 90% of all our engines from the same parts – whether they're designed for our trucks, buses, gensets or water pumps. This provides more efficient service, with less space taken for spares and tools.

Uptime and rapid maintenance

Our maintenance procedures are based on maximizing your uptime. At our facilities, we can change an engine in six hours, instead of the industry standard of two days. A complete overhaul of any one of our engines takes only two or three days in a properly equipped field workshop.





ALL OPERATIONS

MINING POWERED BY DATA

The key to operational connectivity lies in your ability to transform real-time operational and logistical data into valuable, actionable information which impacts your entire operation.

Scania's connected service solutions are specifically developed to equip you with real-time logistical data from across your fleet and operations, so that you can make decisions based on facts, not fiction.

Scania Fleet Management

All Scania vehicles offer plug-in compatibility with Scania Fleet Management, an in-built digital interface designed to monitor and report on vehicle performance, fuel consumption, loading and unloading, driver behaviour, safety follow-ups and route planning – improving efficiency in your transport logistics and reducing overall maintenance costs.

Monitoring tower

Tailored to fit your operational needs, Scania's monitoring tower solutions are uniquely developed to increase the value in your chain. Vehicle and operational data are collected and analysed to offer you seamless insight over your entire operation.



PARTNERSHIP

AUTONOMOUS AND ELECTRIC MINING

Scania is driving the research and development of emerging disruptive transport technologies with a commitment to create the industry's pathway to fully autonomous, connected and electric mining solutions.

Choosing to partner with Scania today means taking the first step on that pathway, with the option to upgrade to new technologies as soon as they are available commercially.



Autonomous mining

Automation of mining transport will bring dramatic improvements to operational safety, sustainability, and logistical efficiency, as well as reducing energy requirements, mining footprint and infrastructure requirements.

Today, Scania is working closely with ecosystem partners to develop autonomous solutions that can deliver safer, more sustainable, and more efficient mining operations.

Fully electric mining

Our global parts network is connected through a single global digital Our commitment is to electrify most transport operations including mining, by 2025, in line with our electrification roadmap. This will play a vital role in enabling the decarbonization of today's mining sectors.

Today, there are a range of Scania battery electric vehicles in live operation across several mining sites worldwide. This includes robust off-road tippers and road-bound heavy haulage trucks that can run up to 19 hours a day.



