VOLVO

Geared for Growth

Volvo Group
Annual Report 2022

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Driving prosperity through transport and infrastructure solutions

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The Volvo Group drives prosperity through transport and infrastructure solutions, offering trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity.

Founded in 1927, the Volvo Group is committed to shaping the future landscape of sustainable transport and infrastructure solutions.

The Volvo Group is headquartered in Gothenburg, Sweden, employs 102,000 people and serves customers in almost 190 markets. In 2022, net sales amounted to SEK 473 billion (EUR 44.5 billion). Volvo shares are listed on Nasdaq Stockholm.

Shaping the world we want to live in

Every day the Volvo Group's products deliver food and medicine, take children to schools, power irrigation systems and construct roads and buildings. The majority of the Volvo Group's customers are companies within the transportation or infrastructure industries. The reliability and productivity of our products and services are a key factor in their success and profitability.

Climate change, population growth and increasing urbanization are shifting the landscape and expectations on transport and infrastructure. In all our actions, we must consider how to reduce climate impact, use the world's resources more efficiently, and conduct business more responsibly.

Together with our customers and supply chain partners, governments, societies and other stakeholders, we are moving quickly to develop and introduce transport and infrastructure solutions that aim to reach our sustainability targets.

Driving prosperity socially, environmentally and financially means that we strive towards our vision of transport and infrastructure solutions that are 100% fossil-free, 100% safe and 100% more productive.

In this annual report, we will take a closer look at how we are working towards achieving this.

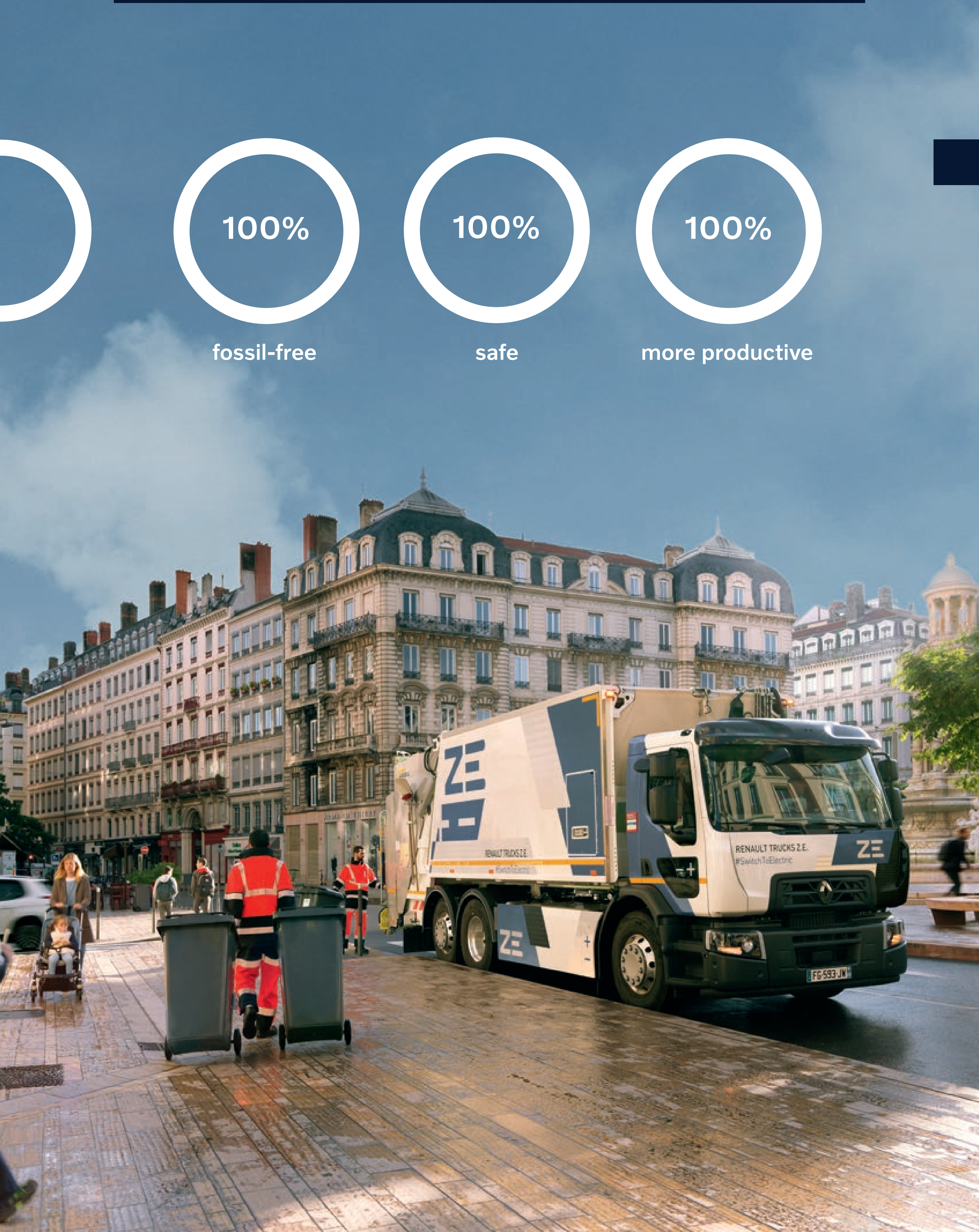
The Volvo Group's formal financial reports are presented on pages 42–146, 204–206 and 212–214 and have been audited by the company's auditors.

Sustainability information is integrated in the sections Strategy and Our Business on pages 6–19 and 21–30, and in Sustainability Notes on pages 147–185, and has been subject to limited assurance by the Group's auditors. For information on which pages constitute the Volvo Group's Statutory Sustainability Report, please see page 42.

100% fossil-free

100% safe

100% more productive



A global Group ...

Volvo Group is one of the world's leading manufacturers of trucks, buses, construction equipment as well as marine and industrial engines. The Group also provides complete solutions for financing and service.

People – our most important asset
The Volvo Group's 102,000 employees are our most important asset. In the words of CEO Martin Lundstedt: "This company has an incredible strength thanks to all the fantastic colleagues who work here. People who are prepared to take responsibility for their link in the chain but also for the big picture."

Strong brands
The Volvo Group sells its products under the Volvo, Volvo Penta, Rokbak, Renault Trucks, Prevost, Nova Bus, Mack and Arquus brands. We also partner in alliances and joint ventures in SDLG, Milence, Eicher, Dongfeng and cellcentric. By offering products and services under different brands, we address many different customer and market segments around the world.

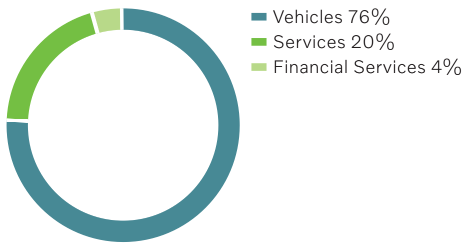
Competitive products and leading technology
The Volvo Group's products have been developed to contribute to efficient transport and infrastructure solutions and to provide our customers with reliable uptime. We drive the development of electrified vehicles and machines as well as automated solutions for the benefit of customers, society and the environment. Sales of vehicles and machines build a population of products that requires spare parts and services.

Partnerships and collaborations with leading companies
New technologies are developing at a faster pace than ever before. Staying at the forefront is vital to be successful, and that is why we work in collaborations and partnerships with other leading companies. We have a strategic alliance with Isuzu Motors. We have partnered with Samsung SDI on batteries. We have established cellcentric together with Daimler Truck to commercialize fuel cell systems for heavy-duty vehicles and other use cases. We work together with Aurora on autonomous vehicles. And we are pioneering a European high-performance charging network for heavy-duty trucks and coaches called Milence together with Daimler Truck and Traton Group.

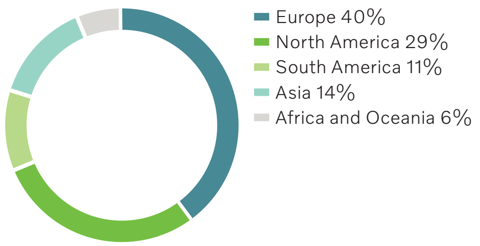
World-class services
In addition to vehicles and machines, our offering includes various types of services such as financing, insurance, rentals, spare parts, repairs, preventive maintenance, service agreements and assistance services. The range and flexibility of the offering means that solutions can be tailor-made for each customer to secure uptime and productivity. The service business contributes to balancing the fluctuations in the sales of new products and improving profitability over the business cycle. Growing the service business is an area of priority.

Strong positions globally
Thanks to competitive product programs, strong dealers with extensive service networks and increasingly more complete offerings, the Volvo Group has established leading positions globally. These positions provide for economies of scale in product development, production, purchasing and financial services.

NET SALES BY REVENUE TYPE

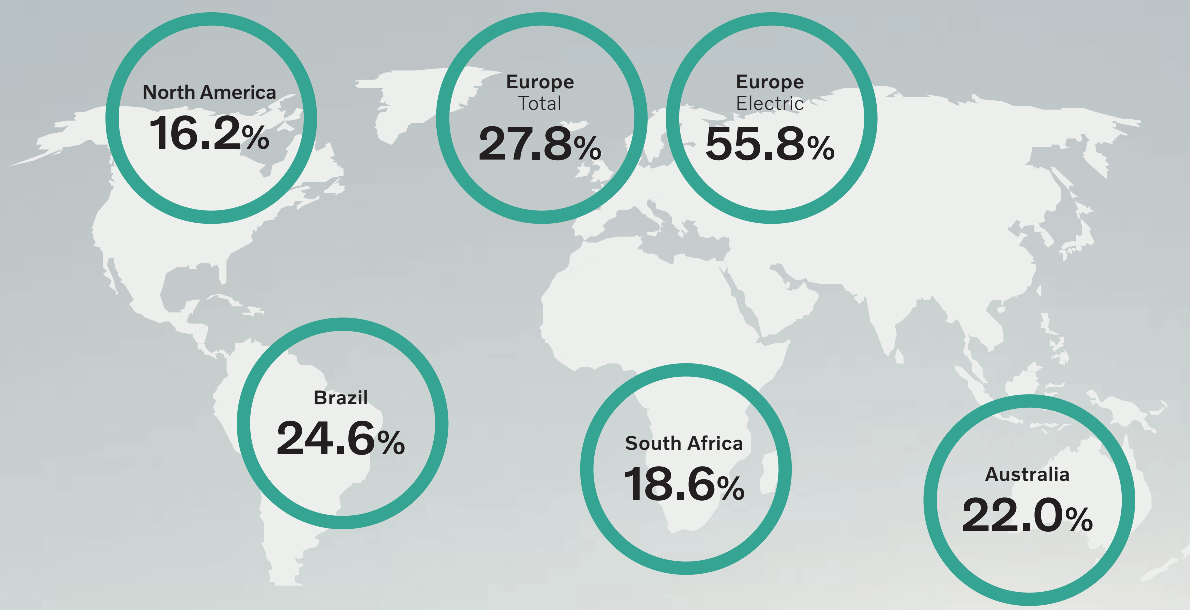


NET SALES BY MARKET



... with strong positions

The Volvo Group’s total market shares in heavy-duty trucks



Volvo Group in 2022

- **Strong growth** in both vehicle and service sales – net sales increased by **29% to SEK 473.5 billion.**
- Continued **good profitability** despite supply chain challenges – **adjusted operating income** increased to **SEK 50,467 M** (41,015), excluding a negative impact from provisioning of assets related to Russia in an amount of SEK 4,125 M and SEK 630 M relating to costs for claims arising from the European Commission's 2016 antitrust settlement decision. For more information, please see Legal Proceedings in Note 24.
- **Reported operating income** amounted to **SEK 45,712 M** (43,074).
- **Earnings per share** of **SEK 16.09** (16.12).
- **Good operating cash flow** in the Industrial Operations of **SEK 35.3 billion** (29.4).
- **Return on capital employed** in the Industrial Operations of **27.4%** (25.3).
- High pace in the transformation with a **rapid expansion of the offer of electric** vehicles and machines.
- **Series-production** of **heavy-duty**, 44-tonne **electric trucks** started.
- The Board of Directors proposes an **ordinary dividend of SEK 7.00** per share and an **extra dividend of SEK 7.00** per share.

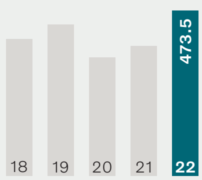
KEY RATIOS	2022	2021
Net sales, SEK M	473,479	372,216
Net sales excluding UD Trucks[1], SEK M	473,479	366,778
Adjusted operating income[2], SEK M	50,467	41,015
Adjusted operating margin, %	10.7	11.0
Operating income, SEK M	45,712	43,074
Operating margin, %	9.7	11.6
Income after financial items, SEK M	45,077	43,190
Income for the period, SEK M	32,969	33,243
Earnings per share, SEK	16.09	16.12
Dividend, SEK per share	14.00[3]	13.00
Operating cash flow, Industrial Operations, SEK M	35,327	29,440
Net financial position excl. provisions for post-employment benefits and lease liabilities, Industrial Operations, SEK bn	73.9	66.2
Return on capital employed, Industrial Operations, %	27.4	25.3
Return on equity, Financial Services, %	–0.3	18.0
Return on equity excluding impacts related to Russia, Financial Services, %	15.1	18.0
Return on shareholders' equity, Volvo Group, %	20.7	23.4
Total number of employees	102,155	95,850
Share of women, %	22	21
Share of women, presidents and other senior executives, %	28	27
Energy use per net sales, Industrial Operations, MWh/SEK M	5.1	6.8
Total CO_2 emissions per net sales, Industrial Operations, tons/SEK M (scope 1 & 2)	0.7	1.0
Share of direct material purchasing spend from suppliers having made a CSR self-assessment, %	89	97

1 UD Trucks was divested on April 1, 2021.
2 For more information on adjusted operating income, please see Key Ratios on page 212.
3 Proposed by the Board of Directors to the Annual General Meeting 2023. SEK 7.00 per share in ordinary dividend and SEK 7.00 per share in extra dividend.
4 Paid out in July 2021.

Unless otherwise stated, all comparisons refer to the same period or the same date of the preceding year.

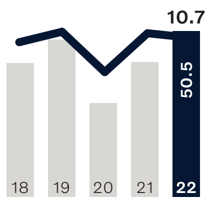
Volvo Group

Net sales, SEK bn

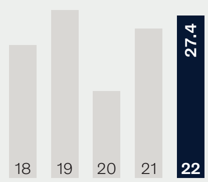


Adjusted operating income[1] and Adjusted operating margin

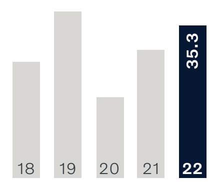
Operating income, SEK bn
Operating margin, %



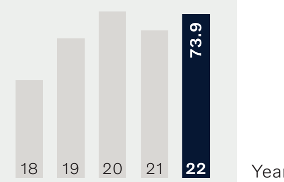
Return on capital employed Industrial Operations, %



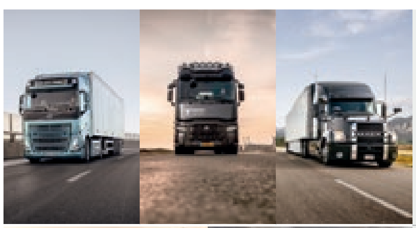
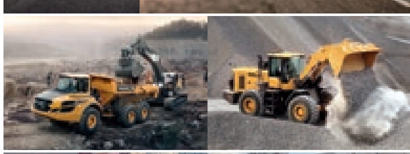
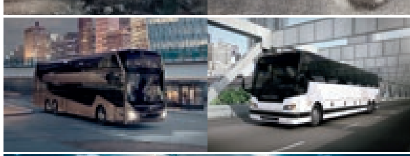
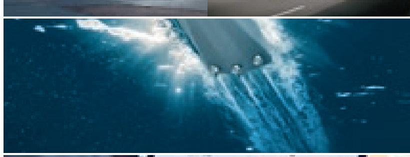
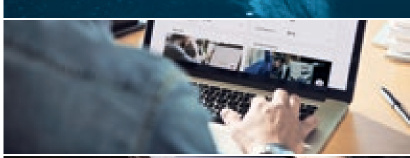
Operating cash flow Industrial Operations, SEK bn



Net financial position excl. post-employment benefits and lease liabilities Industrial Operations, SEK bn



Segments

		Net sales, SEK M	Share of Group net sales, %	Adjusted operating income, SEK M	Adjusted operating margin, %
	**TRUCKS** Volvo Trucks, Renault Trucks, Mack Trucks, Volvo Autonomous Solutions, Volvo Energy, VE Commercial Vehicles (45.6% ownership), Dongfeng Commercial Vehicles (45%), cellcentric (50%) and Milence (33%).	310,536	66	33,821	10.9
	**CONSTRUCTION EQUIPMENT** Volvo Construction Equipment and Lingong (70%).	100,261	21	13,244	13.2
	**BUSES** Volvo Buses and Prevost.	18,583	4	353	1.9
	**VOLVO PENTA** Engines and power systems for marine and industrial applications.	18,102	4	2,530	14.0
	**FINANCIAL SERVICES** Provides financial services to customers and dealers.	17,355	4	3,416	N/A
	**GROUP FUNCTIONS & OTHER** Nova Bus, Arquus and common business support functions.	16,376	1[2]	−2,911	N/A

More information on the Volvo Group's segments and how they are reported can be found in Note 6 to the Financial Statements.

1 For more information on adjusted operating income, please see Key Ratios on page 212.

2 Including Group eliminations.

Strong performance and ...

In 2022, the Volvo Group delivered strong growth as well as good profitability and cash flow. We increased our net sales by over SEK 100 billion to SEK 473.5 billion and our adjusted operating income rose to SEK 50.5 billion (41.0), with an adjusted operating margin of 10.7% (11.0). Several transformation milestones to decarbonize the transport system were also passed. This transition is not only vital for a sustainable future, it also delivers on our customers' commitments to reduce their CO_2 emissions and it drives growth for the Volvo Group.

Transport and infrastructure vital for sustainable growth

The transport and infrastructure industries are vital parts in driving sustainable growth. Our customers use our products and services to move goods and materials, help people get to work or school and build and maintain the infrastructure we all rely on every day. We drive prosperity, in advanced economies and developing countries, across the globe and around the clock.

With a growing world population, an ongoing urbanization and growing e-commerce, demand for transport and infrastructure will continue to increase. We will meet this demand with solutions that are considerably more sustainable, productive and safer than today. We have already started on this journey together with a growing number of customers, and the shift to a decarbonized transport system is a unique growth opportunity for us as a Group, while at the same time enabling us to have a positive impact on our customers' businesses and society.

While the long-term growth trend is clear, short-term demand for our products will naturally continue to fluctuate with the business cycle. Following the economic rebound after the covid-19 pandemic, our customers have continued to operate with high activity levels. In 2022, this translated into strong demand for both products and services. At the same time, the supply of critical components was a limiting factor.

In this situation, with disruptions, unpredictability and the almost unthinkable scenario of war in Europe becoming a tragic reality, it has been fantastic to see how colleagues across the Group have taken responsibility, supported each other and worked together with our supply partners and in dialogue with our customers to try to deliver on our promises despite all challenges. Our organizations, teams and colleagues are empowered to take decisions, and they have responded by finding new, faster, and more agile ways of working. I would like to thank all colleagues and business partners in the extended Volvo Group family for their hard work, dedication, and outstanding professionalism. Succeeding in this industry is all about people, and our people are truly fantastic.

Good growth in all business areas

Throughout the year, we focused on flexibility to be able to respond quickly to changes in demand. Costs related to energy, materials and supply chain disruptions increased at a high pace and we worked proactively to compensate for these effects. Despite the challenges in the supply chain, our truck business delivered 232,558 vehicles which was an increase of 15% compared with 2021 and an all-time-high. Our brands captured the good demand for both new and used trucks as well as for spare parts and services, resulting in net sales in the truck business of SEK 310.5 billion, for the first time above SEK 300 billion. Trucks maintained a good adjusted operating margin of 10.9% (11.1). Thanks to our strong product and service offer and our ability to deliver trucks, we continued to gain market shares in most regions.

Construction activity was high in Volvo Construction Equipment's (Volvo CE) key markets in Europe and North America, while demand in China continued to be weak. Towards the end of the year, interest rate increases made customers in some markets more cautious about the near-term future. In the longer term, there is a need to renew and expand an aging infrastructure in many countries across the world, and the investments needed to drive the green transformation in society is also a big opportunity. Volvo CE increased net sales by 9% to SEK 100.3 billion, for the first time above SEK 100 billion, and maintained a good adjusted operating margin of 13.2% (13.3). We continued the rollout of electric machines and moved up to the 20-ton class with the EC230 Electric excavator. In the latest step on the path towards net-zero, Volvo CE became the first manufacturer to deliver a construction machine – an A30G articulated hauler – built using fossil-free steel to a customer.

Volvo Buses net sales increased by 36% to SEK 18.6 billion, which was an improvement from low levels as demand for transport and services began to increase as societies opened up after covid-19. Profitability improved, but the adjusted operating margin of 1.9% (0.4) was still low and continues to be a focus area. On the city bus side of the business, the transition to electric buses continued to accelerate.

Volvo Penta's sales of both engines and services grew, with net sales increasing by 25% to SEK 18.1 billion. The adjusted operating margin amounted to 14.0% (14.5). Electrification projects for both marine and industrial applications are gaining momentum.

> **"In 2022, we delivered solid profitability, good return to our shareholders and accelerated our transformation in yet another challenging year with geopolitical turmoil, supply chain constraints and high inflationary pressure."**

… accelerated transformation

In May, Arctic tourism operator Hurtigruten Svalbard started operations with a vessel powered by a hybrid electric solution from Volvo Penta in one of the world's most extreme maritime environments.

The high activity level at many of our customers was also reflected in low credit provisions in our customer-financing business, Volvo Financial Services. The adjusted operating income increased to SEK 3,416 M (3,279) and return on equity was 15.1% (18.0), excluding a negative effect from provisioning of assets related to Russia.

In addition to delivering good profitability and a return on capital employed in the Industrial Operations that increased to 27.4% (25.3), we also generated a strong operating cash flow of SEK 35.3 billion (29.4). We ended the year with a net cash position of SEK 73.9 billion in the Industrial Operations, pension and lease liabilities excluded. Our strong finances mean that we can continue to provide a good return to our shareholders and at the same time invest in the transformation of our industries. The Board of Directors proposes an ordinary dividend of SEK 7.00 per share and an extra dividend of SEK 7.00 per share.

Good performance a platform for the transformation

Our good performance provides the platform for transformation. And we transform today to continue to perform tomorrow. In 2022, we saw an exponential increase in the number of companies that have committed to ambitious targets for reduction of greenhouse gas emissions. As they embark on their journey towards net-zero, many companies find that transports make up a substantial part of their CO_2 footprint. This creates a positive pressure for change in the value chains and provides us with an opportunity to grow. Acting as advisors and solution providers, we work together with our customers – and sometimes with their customers – to help them decarbonize their transport systems. The shift is happening now and it is accelerating.

"I would like to thank all colleagues and business partners in the extended Volvo Group family for their hard work, dedication, and outstanding professionalism. Succeeding in this industry is all about people, and our people are truly fantastic."

We were early out in the transformation, starting with electric city buses more than 10 years ago. Since then, we have step-by-step introduced electric offerings across product segments in all business areas, from compact excavators and wheel loaders to electric drivelines for industrial and marine applications, and trucks for waste collection, city distribution and regional haulage. In 2022, we passed yet another important milestone with the start of series production of heavy-duty electric Volvo trucks in the Tuve plant, in Gothenburg. These trucks are designed for city-to-city haulage, regional assignments and urban construction. They have gross combination weights of up to 44 tonnes, power of up to 490 kW/666 hp, and operating ranges of up to 300 km depending on application. We are producing them on the same lines where we assemble our fuel-efficient conventional trucks. This enables us to utilize our existing industrial footprint, and to build on the vast experience and knowledge of our colleagues within operations, also for electric trucks. This year, Renault Trucks will follow, complementing their successful electric light- and medium-duty trucks with a heavy-duty electric offering for regional transport and construction.

A great opportunity for the Group

The transformation to electric products goes hand in hand with our strategy to offer our customers complete solutions that bring both value and peace of mind. It is about truly understanding our customers' business and providing a complete package with equipment, financing, service contracts, insurance, uptime and productivity services – and in the case of electric solutions also charging capabilities and battery optimization. This is a great opportunity for us to deepen our engagement with our customers' business and to build true partnerships over time.

The transformation will also lead to increased revenues for the Volvo Group with the main driver being the higher value of the electric vehicles and machines. Today, electric trucks, buses and construction machines are part of our core business and I am very proud that we have earned the trust of companies like Maersk, DFDS, Carlsberg, Coca-Cola and Amazon. We have leading positions in electric trucks in Europe and North America, with estimated market shares of over 50% albeit based on small volumes.

The Volvo Group has been instrumental in creating a market for electric trucks and construction equipment that did not exist only a few years ago. And to accelerate the rate of change even further, we are working with partners in a number of key areas, ranging from our strategic alliance with the Isuzu Motors to cellcentric – our joint venture with Daimler Truck on fuel cells. When it comes to charging infrastructure, the partnership with both Daimler Truck and the Traton Group in the newly formed company Milence will set an example with the establishment of at least 1,700 high-performance charging points for trucks and buses along public roads in Europe.

Batteries are crucial for the electrification journey. In 2022, we continued to increase our engagement upstream in the value chain. We are already assembling battery modules into battery packs in-house and we will in the future take further steps in the value chain with the start of production of battery modules. Furthermore, we have started the process to establish battery cell production in Mariestad, Sweden.

Ambition to be at the forefront

Our ambition is to be at the forefront, to lead this transformation and to run a responsible business. Already today, a large part of our R&D activities are related to low- and zero-emission technology and it will continue to grow. We have set climate targets that are in line with what the latest climate science deems necessary to keep global warming at a maximum 1.5° C, and our pathway to reach the goals of the Paris Climate Agreement have been validated by the Science Based Targets initiative. And we have further strengthened our work with the principles of the UN Global Compact regarding climate, resources and people.

In 2022, we delivered solid profitability, good return to our shareholders and accelerated our transformation in yet another challenging year with geopolitical turmoil, supply chain constraints and high inflationary pressure. We have a strong foundation in terms of our strong financial position, customer relations, industrial backbone, technology, products and services and – most importantly – people. These qualities and capabilities will be equally important as we move forward, working together with our customers and partners – shaping the world we want to live in.

Martin Lundstedt
President and CEO

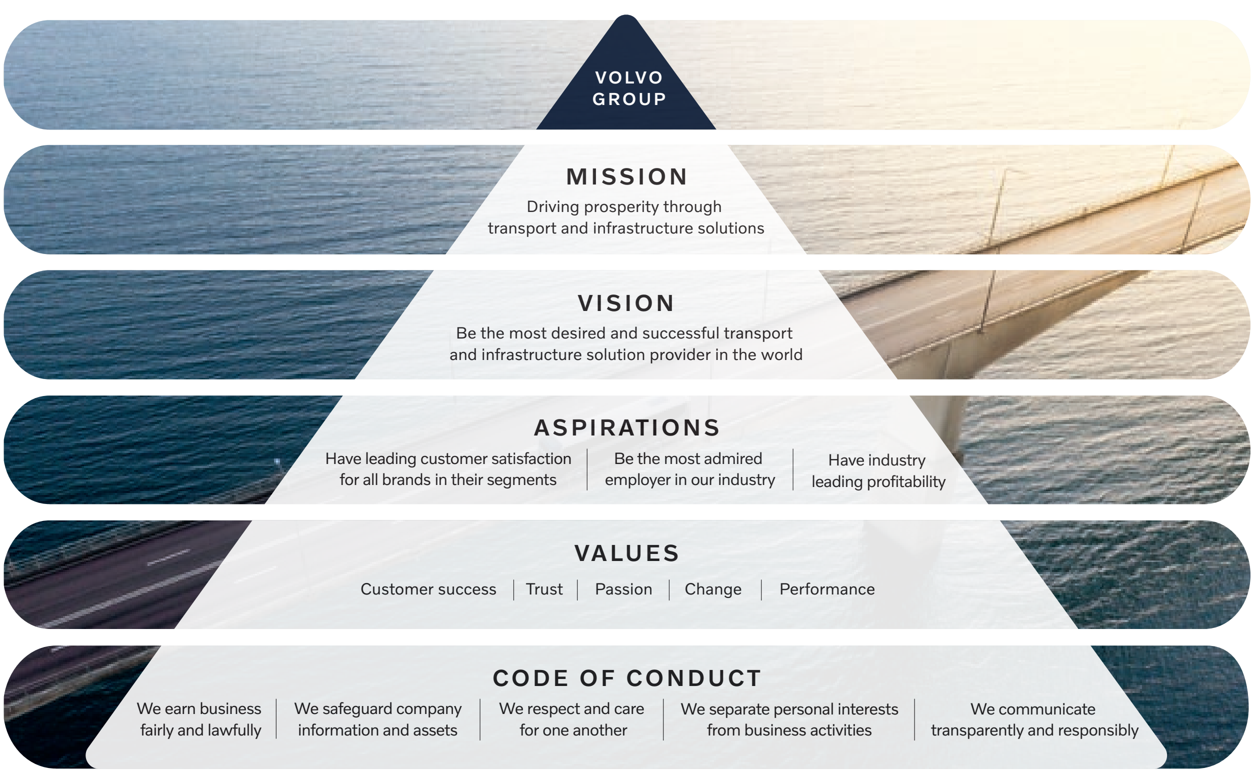
Our mission – driving prosperity

Every company exists for a reason – it has a purpose. Our purpose and our solutions to global challenges are driven by our mission to drive prosperity through transport and infrastructure solutions, and our vision to be the most desired and successful transport and infrastructure solution provider in the world.

We continuously develop our products and services to create value for our customers and contribute to sustainable societies and the well-being and safety of people. By doing so, we also provide value for our shareholders.

Creating customer value and showing the way forward
We aspire to having leading customer satisfaction for all brands in their segments; to be the most admired employer in the industry and to have industry-leading profitability. The Group's values, Customer success, Trust, Passion, Change and Performance, serve as a guide to our day-to-day behavior and drive decisions on all levels of the organization. Our Code of Conduct outlines how we do business in the Volvo Group: ethically and in compliance with the law.

The foundation of our strategy is to create value by supporting our customers' profitability. There are many paths to pursue to take on opportunities and challenges and our seven strategic priorities focus on areas with large benefits for both customers and Volvo Group.



Seven strategic priorities

To be successful, the key is to create value for our customers by improving their bottom-line profitability. By understanding our customer's needs, priorities and challenges, we can provide products and services that grow customers' revenues and decrease customers' cost. This is the foundation of our strategy.

In addition to the mission, vision, aspirations, values and Code of Conduct we have decided on seven strategic priorities for the Volvo Group to capture growth opportunities and improve underlying performance. The strategic priorities will guide our decision making and result in action – but should not be seen as a detailed action plan. The order in which the priorities are presented does not reflect relative importance.

Creating value by supporting customer profitability

1 **Transform the Volvo Group to become a leading end-to-end integrator and offer easy-to-integrate products and services through strong brands.** An overview of our strong position in the world market can be found on page 3. Read more about our business model and how we create value for customers and through the entire value chain starting on page 22.

2 **Grow the service business and target selected industry verticals offering a portfolio of tailor-made solutions.** Service sales including Financial Services rose by 22% in 2022 and accounted for 24% of the Group's sales.

3 **Secure a desirable and sustainable product and service portfolio with the right quality, leveraging new and well-known technologies, CAST, partnerships, and digital innovation – accelerating electromobility solutions.** Read more about our modular CAST system on page 18 and about our partnerships on page 28. More information about the roll-out of electric trucks and machines and our journey towards fossil-free transport and infrastructure solutions starts on page 30.

4 **Grow in Asia and the US: In Asia through JVs, alliances and by strengthening the Volvo Group footprint in China. In the US by significantly improving the Group's market position.** We have a strategic alliance with Isuzu Motors (page 28) and own 45% in Chinese Dongfeng Commercial Vehicles. In the US, we are rolling out electric trucks and more and more customers are coming on board for the journey (page 33). Information on the development in North America is also available starting on page 54.

5 **Develop robust profitability throughout the decentralized regional value chains by leveraging global scale, digitalization, a purpose-fit footprint and continuous improvement using the Volvo Production System.** Read more about how we drive synergies by having the same truck platform and manufacturing the trucks in the same factory regardless of driveline on page 18.

6 **Selectively capture, accelerate and scale-up new businesses and develop competencies and capabilities needed.** We have together with Daimler Truck a joint venture in fuel cells, cellcentric, (page 34) and together with Daimler Truck and the Traton Group we will install and operate a high-performance public charging network for battery-powered heavy-duty long-haul trucks and long-distance buses across Europe called Milence (page 35).

7 **Reinforce value-based leadership and ways of working where all colleagues are empowered to take action and are accountable for the results.** Read more about how some of our employees work in different parts of the value chain on page 24 and more about employee development on page 163.

Moving towards a decarbonized future ...

The transport of people and goods are essential for economic and social development. With a growing global population, urbanization and e-commerce, demand for transportation and infrastructure is expected to continue to increase. We need to meet this demand with products and services that are considerably more sustainable than those of today.

It is our long-term ambition to offer solutions that are 100% safe, 100% fossil-free and 100% more productive. Safe because we cannot accept a situation where, every year, people are killed and injured on roads and job sites. Approximately 1.3 million people die in traffic accidents alone, according to the World Health Organization. Fossil-free because climate change is the challenge of our generation. More productive because that will help us meet the growing demand for transport while staying within the natural boundaries of what our planet can sustain.

Rapid shift in the transportation industry

The transportation industry has an important role to play in the decarbonization of society, and the shift towards electrification is taking place here and now, with the pace of change increasing.

Just as the Volvo Group has set ambitious targets on greenhouse gas emission reductions in line with the Paris Agreement approved by the Science Based Targets initiative (SBTi), many of our customers and their customers are also committing to their own sustainability goals. This is driving them to phase out vehicles and machines running on fossil fuels and replace them with electric products. In 2015, there were 116 companies taking action with the SBTi. By the end of 2022, that number had grown to more than 4,200.

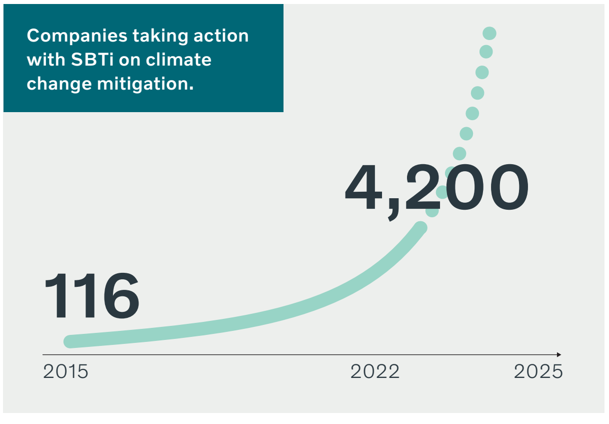
More and more companies are taking their first steps on this journey together with the Volvo Group. Our electric vehicles and machines, based on well-proven technology within the Volvo Group, are serving in real operations. The electrified transport

and infrastructure solutions are helping transport operators and customers in the construction sector to significantly reduce emissions and noise.

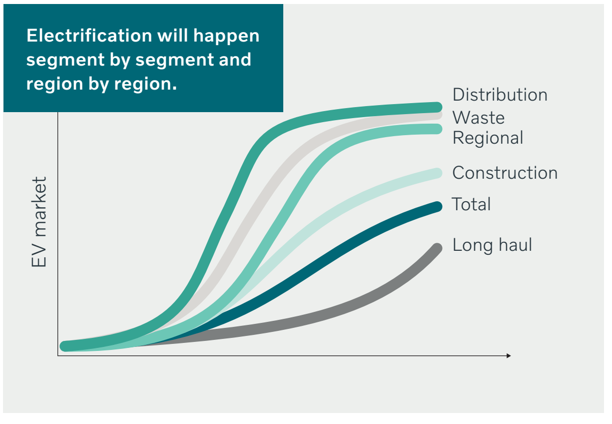
Already today, electric trucks and construction machines are viable options from a total cost of ownership perspective in certain segments in some markets. This transformation will continue to develop segment by segment and region by region, with demand for electric trucks and machines expected to increase. This is exemplified by the illustration below with the expected development for trucks.

With improvements in battery and hydrogen fuel cell technology and the fast development of charging networks, the Volvo Group is convinced that there will be a transformation of the entire transport and infrastructure industries in the near future.

TAKING ACTION WITH SCIENCE-BASED TARGETS



EXPECTED TRANSFORMATION TO ELECTRIC TRUCKS



… creates the opportunity of a lifetime

The shift to electric equipment drives system thinking, where the truck or machine is only one part of a total solution encompassing charging infrastructure, battery optimization, maintenance, financing and other value-adding services.

For the Volvo Group, the transition to a fossil-free society brings a deeper, broader, and more long-term engagement in our customers' business, and a significant opportunity for growth.

The Volvo Group estimates that there is a potential to increase the revenues by more than 50% over the lifecycle when comparing an electric vehicle to a conventional version. This is primarily based on the increased sales value of an electric vehicle but also on increased revenues from autonomous solutions, new digital services and services connected to energy solutions. Other factors expected to drive growth are increased service contract penetration and an increase in the duration of the contracts.

The Volvo Group started series production of electric trucks up to 27 tons already in 2019 and has established leading market shares both in Europe and North America. In September 2022, Volvo Trucks started series production of heavy electric 44-tonne trucks. With the addition of electric versions of its most important product range, the Volvo FH, Volvo FM, and Volvo FMX, Volvo Trucks has six electric truck models in series production.

Furthermore, in early October we announced that Renault Trucks would open for pre-orders of heavy electric trucks for regional transport and urban construction. Production will start at the end of 2023. Read more on page 31 and 32.

In 2022, Volvo Trucks had a market share of 31.6% in heavy-duty electric trucks in Europe and Renault Trucks had a market share of 24.2%. Also in North America, Volvo Trucks and Mack Trucks have a strong position in heavy-duty electric trucks with a combined market share of over 50%, according to our assessment. However, it must be emphasized that the volumes are still small.

With a continued global roll-out of electric machines across markets in Europe, North America and Asia in 2022, Volvo Construction Equipment supports the journey towards emission-free job sites in a growing number of markets.

Autonomous solutions tapping into new revenue pools

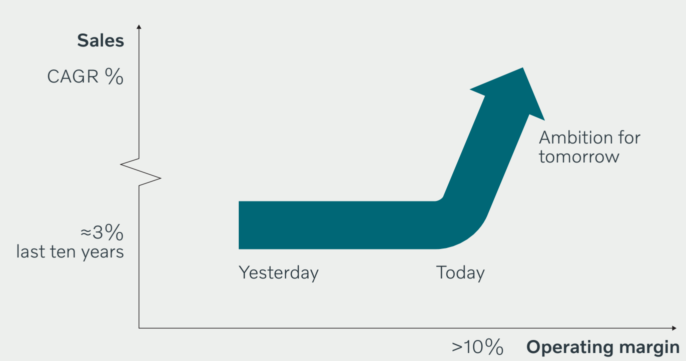
We also believe that autonomous solutions has the potential to bring a wide range of benefits to society. The introduction of self-driving vehicles and machines opens the way to transport systems that have a significantly reduced impact on the climate, are more productive, more energy efficient and safer. Since 2020, the Volvo Group has a business area focused on developing and commercializing industrial autonomous transport solutions: Volvo Autonomous Solutions.

Although autonomous solutions are in relatively early phases, we believe that they may offer a significant growth opportunity for the Volvo Group as they tap into substantial revenue pools that have not previously been addressed. Instead of selling a truck or machine, we can provide customers with complete transport systems, driving productivity for them and revenues for the Group. Read more about autonomous solutions on page 37.

GEARED FOR GROWTH

Clear opportunity

- Capturing industry growth
- Untapped service potential
- Electric vehicles and machines
  - higher sales value
  - increased market shares
  - increased service contract penetration and duration
- Autonomous solutions
- Energy services
- Digital services



The Volvo Group's journey continues

The Volvo Group's strategy is a continuation of a journey the Group has been on for the last two decades.

Since the divestment of Volvo Cars in 1999, the Volvo Group is focused on commercial vehicles. From 1999 until 2011, the Group's strategy primarily targeted growth, not least through acquisitions.

From 2012 to 2015 the Volvo Group underwent a restructuring program aimed at reorganizing the company to take out overlaps, reduce structural costs and increase efficiency and profitability after the period of acquisition-driven growth. During this period, there was one major acquisition –45% of Dongfeng Commercial Vehicles in China in 2015.

The period between 2016 and 2018 was characterized by a reinforcement of the performance culture with a more decentralized organization and a regionalized value chain approach.

In 2019, the Group's performance had improved significantly and the importance of accelerating the transition towards more sustainable products and operations was manifested when Transform was added. A further strengthening of the customer focus and continuous performance improvements continue to be important parts of Perform and Transform, which are not sequential events, but are run in parallel. To stay relevant and profitable, driving both current business performance and the transformation to meet future demands are our key focus areas.

Over the last decade, the Volvo Group has established an industry-leading level of profitability and is now taking the next step on its strategic journey. Growth is expected to accelerate with the main driver being the higher value of electric vehicles and machines.

The continuous streamlining of the Group's business portfolio has also involved the divestment of e.g. Volvo Aero (2012), Volvo Rents (2014), 75.1% of Wireless Car (2019) and UD Trucks (2021).

Improved performance

Everyday performance is the foundation for our business, here and now, as well as in the future. We need to be agile and flexible in terms of production volumes, use our common architecture and shared technology (CAST, see page 18) wherever appropriate, and in having continuous introductions instead of major launch projects.

Our quality work is crucial in achieving customer satisfaction and the work of regionalizing our value chain is necessary to secure access to key components and give our people the right prerequisites to support our customers with short lead times.

The performance of the Volvo Group has improved substantially during the last few years. Our focus has been on gradual and consistent earnings improvement, reduced volatility in earnings and cash flow, as well as allocating capital in a disciplined way. We have great assets in our people, products, and services, as well as production sites, well-established dealer networks and customer relations. We have strong finances and are in a good position to be able to invest further in new technologies. Our aim is to excel on the basics as well as building resilience.

Building resilience is key to our long-term profitability. There are close to 3 million trucks, buses, and machines, produced by the Volvo Group in the last ten years, operating on or off-road.

1999–2011

ACQUISITION-DRIVEN GROWTH
Scale, synergies and geographical expansion.

MAJOR ACQUISITIONS

2001	Renault Trucks and Mack Trucks
2007	Nissan Diesel (UD Trucks)
2007	70% of Lingong (SDLG)
2007	Ingersoll Rand Road Development
2008	VECV (joint venture with Eicher)

2012–2015

CLOSING THE GAP
Product renewal, restructuring and cost efficiency.

2016–2018

IMPROVED PERFORMANCE
Customer focus, simplicity, speed, continuous improvement and organic growth.

2019–

PERFORM AND TRANSFORM
Customer-centricity, continuous performance improvement, accelerate solutions and partnerships for sustainability.

Of those, almost 1.4 million are connected. With this as a base we can extend our service offer and increase the uptime to the benefit of our customers. A stronger service relation and growing service business also improve our resilience throughout the business cycle.

Transform to provide value

The need for transportation is increasing as are the investments in infrastructure, and the drivers of transformation within our industries are clear. We transform our business to provide even greater value to our customers and respond to the need for transport and infrastructure solutions that are safe, fossil-free and more productive.

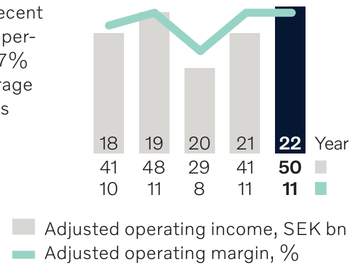
Today's trucks and construction machines are not used to their full capacity due to e.g. congestion, insufficient route planning and low fill rates. However, with current infrastructure, a fully-loaded truck operating on diesel is one of the most energy-efficient ways of transporting goods on our roads. The same is true for construction equipment. Our view though is that battery-electric and fuel cell-electric vehicles and machines as well as products with internal combustion engines running on different types of renewable fuels are the future. These offers will be further developed to meet upcoming stringent CO_2 regulations and our customers' increased demand for sustainable alternatives.

When it comes to safety aspects, it is a fact that people die in traffic and human error is by far the main reason. It is also a fact that people and goods spend a lot of time in congestion. Our daily life pattern and non-optimized infrastructure and logistics models result both in temporary congestions and at other times heavily unutilized road networks. In the last couple of years we have continuously invested in new business models and new technologies to be able to offer safer, more sustainable and more productive solutions to our customers, with Volvo Autonomous Solutions and Volvo Energy as two examples.

The Volvo Group has a good market position in electric vehicles and machines and the focus is on accelerating the commercialization of new technologies and business models to get traction and impact. This is when the real change happens.

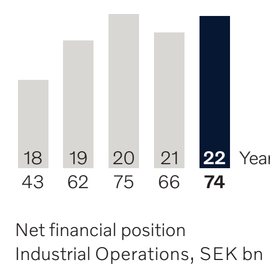
IMPROVED THROUGH-CYCLE EARNINGS RESILIENCE

Profitability has improved in recent years. In 2022, the adjusted operating margin amounted to 10.7% (11.0). In 2018–2022 the average adjusted operating margin was 10.3%.



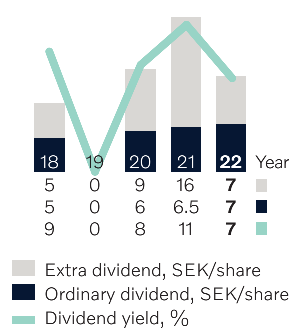
STRONG FINANCIAL POSITION

The Group's financial position is strong with a net cash position in the Industrial Operations of SEK 73.9 billion excluding post-employment benefits and lease liabilities at year-end 2022.



GOOD SHAREHOLDER RETURNS

In the calendar years 2018–2022, AB Volvo distributed SEK 109 billion to the shareholders with a dividend yield of 7–11% each year, except the pandemic year of 2020. The extra dividend in 2021 included SEK 9.50 relating to the distribution of the proceeds from the sale of UD Trucks. 2022 is according to the Board's proposal.



DELIVERING ON OUR FINANCIAL AMBITIONS AND STRATEGIC DIRECTION

Over the last decade, the Volvo Group has established an industry-leading level of profitability and is now taking the next step on its strategic journey. Growth is expected to accelerate with the main driver being the higher value of electric vehicles and machines.

Transforming towards decarbonization

The Volvo Group has committed to the Science-Based Targets initiative (SBTi) call for action campaign Business Ambition for 1.5°C. The campaign requires greenhouse gas emissions to be net-zero across the Group's value chain by 2050 at the very latest, but our target is to reach this already by 2040 in order to help our customers to reach net-zero by 2050. The Group's targets were validated by the SBTi in June 2021.

The expected economic life of the Volvo Group's products is about ten years. What we offer to the market in 2040 will thus still be in use until 2050, and therefore the ambition is that all Volvo Group products delivered from 2040 should avoid fossil fuel GHG emissions. We expect the shift into battery-electric vehicles, fuel cell-electric vehicles and vehicles with internal combustion engines running on biofuels to be gradual.

Our ambition is that by 2030, electric vehicles should account for at least 35% of our vehicle sales globally. Even when most of the vehicles are electric, we foresee use cases for internal combustion engines (ICE) running on sustainable biofuels or other fossil-free fuels in some markets. We base the product plan and therefore our research and development on these basic prerequisites. We have the competence and the financial resources required to invest in several different techniques.

On the road towards decarbonized transport, there will be legislative milestones when it comes to CO_2 across the globe. We therefore continue to invest in combustion engines and aftertreatment systems to increase fuel efficiency, meet the legislative milestones and stay competitive.

On our pathway to net-zero we set strategies to reduce emission in all relevant scopes. According to our latest emission inventory, the use of our products make up approximately 95% of GHG emissions from the product lifecycle. Hence, this is where we emphasize our work and find most opportunities. Individual targets are set for our operating segments – Trucks, Buses, Construction Equipment and Volvo Penta.

In our work we focus on three main technologies:

- More efficient combustion technology in combination with lower carbon fuels. This is key to reduce emissions in rolling fleets here and now.
- Rapid introduction of battery electric technology to enable zero tailpipe emissions. The bus segment has been at the forefront of this rollout, medium-duty and heavy-duty trucks are in series production and followed by Construction Equipment and Volvo Penta. The main volumes of fully electric vehicles and its associated GHG emissions reduction of the rolling fleets are expected to be seen at the second half of this decade.
- Development of fuel cell technology for heavy transports. This will enable zero tailpipe emissions for transport segments where battery electric solutions are not suitable. The ambition is to offer fuel cell-electric vehicles in the latter part of this decade.

The increasing pace in the transformation is already evident in the Volvo Group's deliveries and order intake. In 2022, the Group's deliveries of electric trucks increased by 226%, albeit from low volumes. At the same time, order intake for electric trucks increased by 242%. The share of research and development expenses targeted at low-carbon solutions were 26%.

This transition is associated with a range of risks and opportunities. Investments in research and development will increase in the transition phase as we accelerate to help customers switch to low emission. Over time the investments into combustion technology are expected to decrease. Investments in property, plant and equipment will increase in connection with the Group building up capacity for battery-electric and fuel cell-electric vehicles. However, thanks to the Group's modular product architecture (CAST, read more on page 18) both electric trucks and trucks with combustion engines can be produced on the same assembly lines, thus limiting the investments needed for this transition in the industrial system. The Group also invests in joint ventures and partners with strategic suppliers to accelerate the transition.

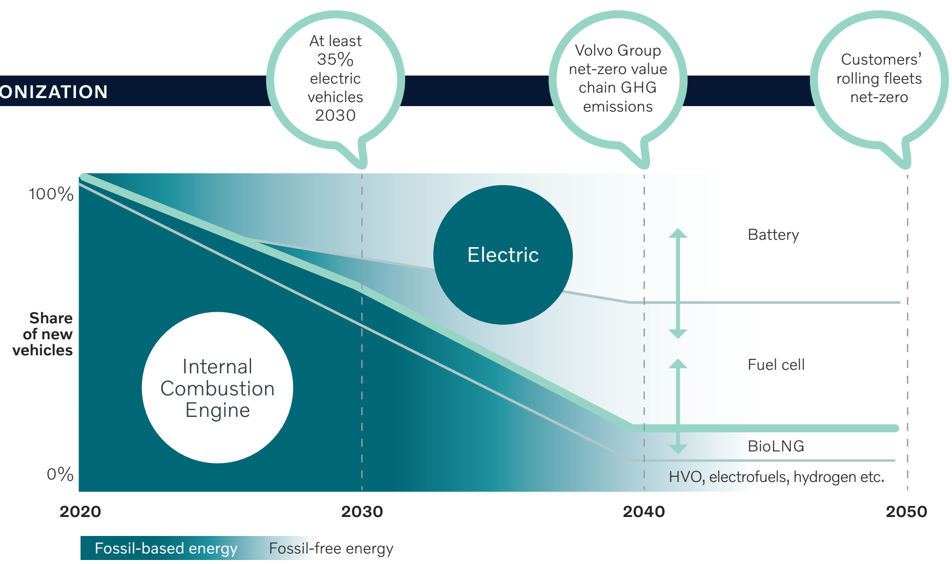
Read more about this scenario and climate-related risks and opportunities on page 150.

THE GROUP'S PATH TO DECARBONIZATION

Volvo Group's ambition is to reach net-zero GHG emissions by 2040. This will enable our customers to have net-zero rolling fleets by mid-century as it takes approximately ten years to renew a rolling fleet.

The Volvo Group has a three-pronged approach to the decarbonization of the product offer and customers' fleets of vehicles and machines:

- Battery-electric
- Fuel cell-electric
- Internal combustion engines running on lower carbon fuels.



Our commitment to achieving development without exceeding the planetary boundaries connects to many of the **17 the UN's Sustainable Development Goals**.

2030

One global agenda drives development

The Sustainable Development Goals (SDGs) were set in 2015 by the United Nations General Assembly and signed by all member states and the SDGs are therefore referred to as one global agenda for 2030. This global agenda impacts the technological and regulatory development as well as expectations from customers, investors, employees and other stakeholders where we operate. Our commitment to achieving social and economic development without exceeding the planetary boundaries spans across many of the SDGs. Several topics, such as equality and fighting corruption are universal. Beyond these responsibilities, we identify closer connections and impacts from our business and operations in a number of goals. Read more about our activities and the most impactful connections to the SDGs in the Sustainability Notes on pages 147–185.

Existing industrial footprint and competence are great assets

In the shift to electric vehicles and autonomous transports, the Volvo Group's modular vehicle architectures will continue to serve the Group well. They create flexibility as well as cost and capital efficiencies in research and development and in the industrial system as we go through the transformation.

CAST – the Volvo Group's modular system
The Volvo Group and its partners can benefit from the Group's modular platform Common Architecture & Shared Technology (CAST). The ambition with CAST is to develop a competitive set of modular products and services that are easy to integrate, meet future legal, market and society needs, as well as meeting customer expectations.

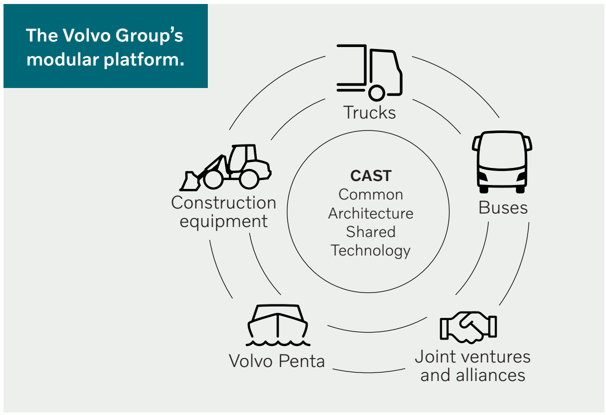
The CAST system is modular, scalable and cost-efficient. We secure an aggregated view on needed common architecture and platform solutions, consolidate and support activities on new enabling technology development and strive for continuous development of standardized interfaces for both hardware and software.

Through well-defined performance steps and continuous reduction of complexity, the CAST ecosystem supports our different brand strategies across disruptive technology trends while capturing synergies for the Volvo Group and its joint ventures and alliance partners.

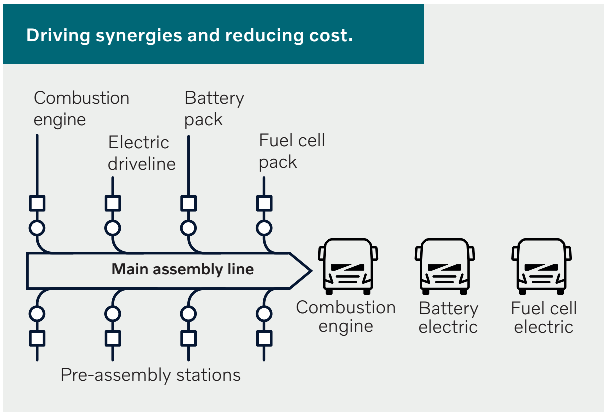
Trucks with different drivelines on same assembly line
The Volvo Group's modular vehicle architecture creates advantages in both the development and manufacturing phase. For example, the architecture allows us to put either an internal combustion engine or an electric driveline in the same truck chassis. In this way, we can reduce time and costs in the development phase and bring new offers to the market faster. In addition, we can manufacture the different variants on the same assembly line in existing plants, leveraging our skilled workforce and invested capital, which again reduces cost and enables us to scale up volumes quickly when required.

Increased depth of engagement in the battery value chain
In May 2022, Volvo Group opened its very first battery pack assembly plant. Located in Ghent, Belgium, the plant supplies ready-to-install batteries for Volvo Trucks' full electric heavy-duty trucks. In the new battery plant, cells and modules from Samsung SDI are assembled into battery packs that are tailor-made for the Volvo Group's products.

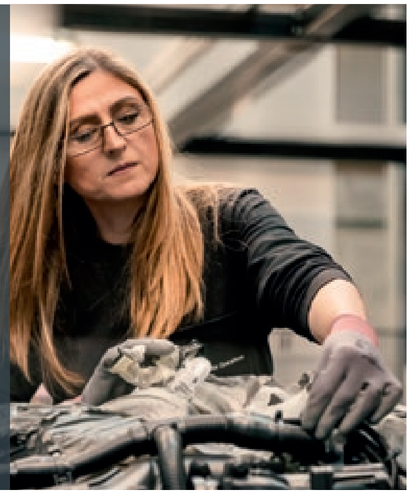
COMMON ARCHITECTURE & SHARED TECHNOLOGY



TRUCKS WITH DIFFERENT DRIVELINES ON SAME LINE



Ghent plant to produce battery modules



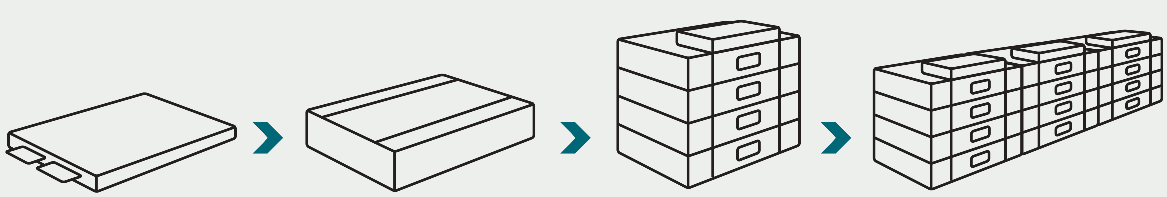
Each battery pack has a capacity of 90 kWh, and in a truck a customer can choose to have up to six battery packs (540 kWh). The number of batteries depends on each customer's specific range, load capacity demands and access to charging infrastructure, etc. When our customers invest in electric trucks, we help them plan their routes and operations. Done effectively, this makes for a smooth transition to electric trucks and extends the truck's range.

Volvo Group's batteries are designed so that they can later be remanufactured, refurbished, and reused. In October, it was announced that in 2025, the plant in Ghent will start to produce battery modules. The investment decision to install battery module manufacturing capacity is an important step for the Volvo Group to shape its future value chain for battery systems.

Another important step is the initiation of the process to establish a large-scale production plant for battery cells in Mariestad, Sweden. The proposed site is close to the Volvo Group's current main powertrain plant in Skövde. It will benefit from the region's existing industrial and logistics infrastructure and build on a strong heritage and world-class competence in advanced, high-volume manufacturing, while having access to Sweden's rich supply of fossil-free energy. The Volvo Group plans to gradually increase capacity and reach large-scale series production by 2030. The battery cells will be designed specifically for commercial vehicle applications, supporting the global roll-out of electric trucks, buses, construction equipment and electric drivelines for different applications. Establishment of the production site is subject to approvals from relevant authorities. The battery module manufacturing line in Ghent will be able to use battery cells both from partners and from the planned battery cell plant in Sweden.

BUILD-UP OF A BATTERY

Volvo Group is gradually increasing its vertical integration towards cell production.



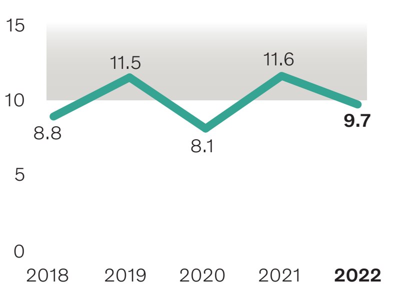
Financial targets – fulfilling our ambitions

The current financial targets were decided on by the Board of Directors in 2017.

A clear and straightforward operating margin target supports the efforts to drive performance across the Group through the business cycle. The target also aligns with the way the Group is challenged and measured internally.

A debt-free industrial balance sheet, excluding pension and lease liabilities, enables the Volvo Group to better manage cyclicality in a capital-intensive industry and to secure competitive cost of funds for the Financial Services' operation.

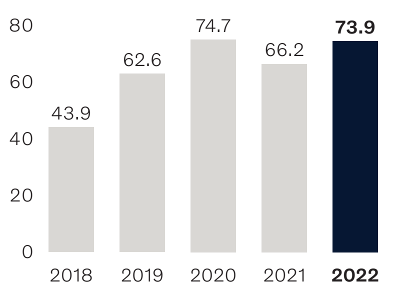
OPERATING MARGIN FOR THE VOLVO GROUP, %



Target: The Volvo Group's operating margin shall exceed 10% measured over a business cycle.

Outcome: In 2022, the operating margin amounted to 9.7% (11.6). In 2018–2022 the average operating margin was 9.9%. In 2022, the adjusted operating margin amounted to 10.7% (11.0). In 2018–2022 the average adjusted operating margin was 10.3%. For more information on adjusted operating margin, please see Key Ratios on page 212.

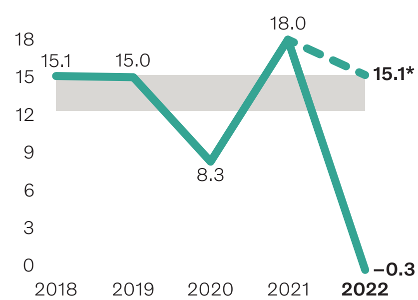
NET FINANCIAL POSITION INDUSTRIAL OPERATIONS, excl. post-employment benefits and lease liabilities, SEK bn



Target: The Industrial Operations shall under normal conditions have no net financial indebtedness excluding provisions for post-employment benefits and lease liabilities.

Outcome: At the end of 2022, the Industrial Operations had a net financial asset position of SEK 73.9 billion.

RETURN ON EQUITY IN FINANCIAL SERVICES, %



Target: Financial Services' target is a return on equity of 12–15% at an equity ratio above 8%.

Outcome: In 2022, return on equity amounted to –0.3% at an equity ratio of 8.0%. In 2018–2022 the average return on equity was 11.2%. In 2022, return on equity excluding a negative effect from provisioning of assets related to Russia amounted to 15.1%. In 2018–2022 the average return on equity excluding the adjustment related to Russia was 14.3%. For more information on adjustments, please see Key Ratios on page 212.

* Excluding a negative effect from provisioning of assets related to Russia.

Climate targets – towards net-zero

The Volvo Group has committed and set targets in line with the Science-Based Targets initiative (SBTi) campaign Business Ambition for 1.5°C, and we have set ambitious milestone targets in our value chain along the way. As the most significant emissions are in the customers' use-phase, the Volvo Group sees significant opportunities in helping to decarbonize their operations.

The transition towards lower emissions in our industries is at an early stage but is expected to accelerate with increased electric vehicle sales and also with the support of fuel-efficiency improvements.

The Group's own operations (Scope 1 and 2) make up less than 1% of total emissions. The use-phase (Scope 3.11) makes up over 95% of lifecycle emissions and this is our main focus of decarbonization. Consequently, we have established targets per segment.

For Trucks and Buses the targets are set in emission per vehicle-kilometer. For Construction Equipment, Volvo Penta and our own operations, the targets are set as total absolute reductions. These targets are approved by the SBTi as science-based. Tracking of emissions in remaining scopes, representing approximately 4% of the total, is under development.

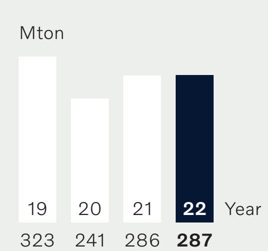
SBTI APPROVED TARGETS, FROM BASELINE 2019

Scope 3 use phase **TRUCKS**	Scope 3 use phase **BUSES**	Scope 3 use phase **CONSTRUCTION EQUIPMENT**	Scope 3 use phase **VOLVO PENTA**	Scope 1–2 **OWN OPERATIONS**
Target 2030 **–40%** emissions per vehicle km	**Target 2030** **–40%** emissions per vehicle km	**Target 2030** **–30%** absolute emissions	**Target 2034** **–37.5%** absolute emissions	**Target 2030** **–50%** absolute emissions
Status 2022 **–4%**	**Status 2022** **–7%**	**Status 2022** **–11%**	**Status 2022** **+5%**	**Status 2022** **–13%**

On an aggregated level, the total calculated emissions amounted to 287 million tons 2022 compared with 323 million tons in 2019. The result in total GHG emissions is a combination of energy efficiency, sales volumes and product mix.

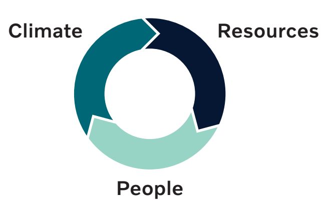
The reported emissions for the year in 'scope 3.11' use phase make up the vast majority of the total emissions footprint and is calculated by including expected lifetime emissions from all products sold in the reporting year. As such, annual sales volumes have a significant impact on results from one year to the next. The Volvo Group is operating in cyclical industries, which are linked to economic activity, and consequently sales volumes and utilization of the rolling fleet of products vary over time. See detailed information on GHG emissions, measurements and targets on page 154–156.

GREENHOUSE GAS EMISSIONS



Creating shared value across the value chain

Our strategy responds to a range of sustainability-related issues. This means considering the impact on the world around us as part of how we look at the long-term success of our business.



We focus on three key areas where our products, services and operations are particularly important for sustainable development:

- **People** – focusing on health, empowerment, business ethics and human rights, striving for 100% safe products and operations.
- **Climate** – focusing of reducing greenhouse gas emissions from our business and operation, striving for 100% fossil free.
- **Resources** – using natural resources in the most efficient way and contributing to 100% productivity improvement of our customers' logistics operations.

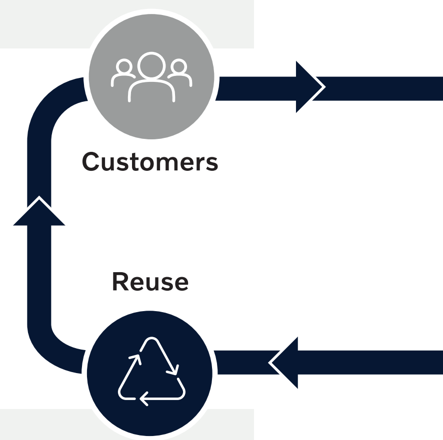
Customers

Our aim is to support our customers by providing offers that increase their productivity, secure uptime and increase fuel and GHG efficiency, which improve their financial performance and reduce their impact on the environment. As 95% product life-cycle emissions occur in the use phase, we see great opportunities in helping to reduce these emissions and by doing so reducing our climate-related impacts and risks.

Sustainability focus areas

- Traffic and site safety example, page 41.
- Science-based targets, scope 3 use phase, page 155.
- Climate strategy, opportunities, risk and governance, page 150.

This illustration maps some of our priorities in managing sustainability impacts, risks and opportunities in our value chain and key processes, as well as references to further disclosures in this report.



Reuse

We strive to increase material efficiency and reduce energy use by incorporating more recycled materials, recovering heat and recycling waste. We also work to optimize and extend product life and by doing so extend customer contracts, which can lead to both resource <-efficiency as well as business opportunities. One key in this work is to increase service-based business and peace of mind for customers. Durable products in combination with added services can enable good opportunities to extend product usefulness and sell used or repurposed vehicles.

Read more about sustainability focus areas

- Waste and recycling in operations, page 157.
- Supporting the transition to circular economy, page 158.

Product development

Fulfilling our customers' needs and improving their safety, profitability and environmental performance forms the basis of our product and service development. Product development is also influenced by legislation, changes in society and new technologies. There are strong trends such as automation, electromobility and connectivity that we are investing in that need to be balanced with investments in the development of current technologies.

Sustainability focus areas

- Customer health and safety, page 169.
- R&D related to zero- and low-emission vehicles, page 153.

Purchasing

Long-term cooperation with suppliers drives efficiency, quality and responsible behavior throughout the value chain. The Volvo Group places high demands on ourselves and our supply chain partners. We have both global and local supply chains to deliver components, parts and complete services and systems. When developing a robust supplier base, we look at a wide range of impacts, opportunities and risks. Our Supply Partner Code of Conduct sets the foundation for how we work.

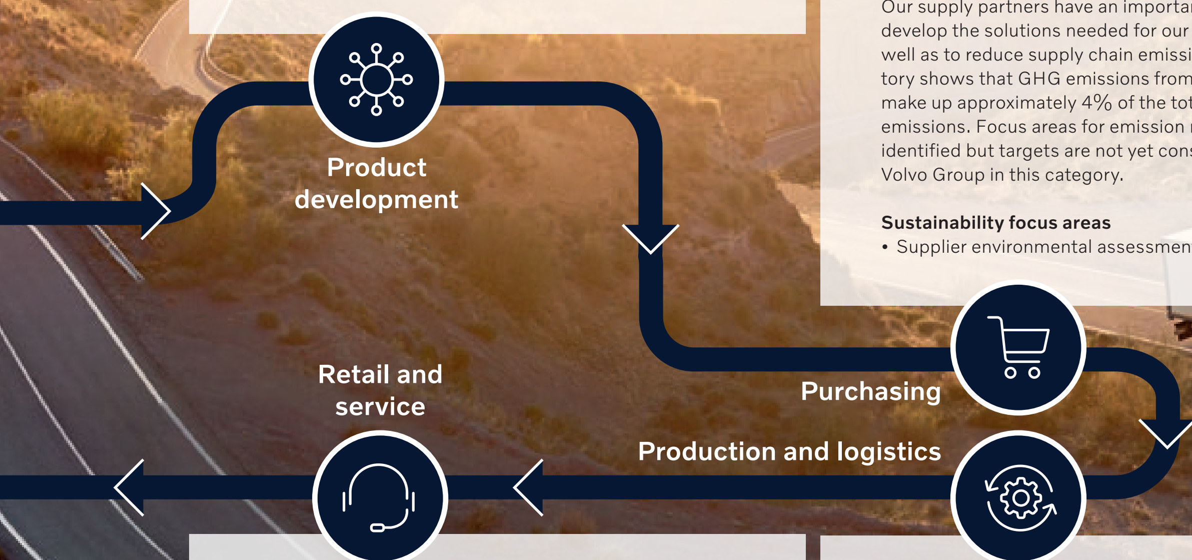
Sustainability focus areas

- Supplier social assessments including human rights, page 176.
- Sustainable minerals program, page 177.

Our supply partners have an important role in helping to develop the solutions needed for our net-zero ambition as well as to reduce supply chain emissions. Our latest inventory shows that GHG emissions from the supply chain make up approximately 4% of the total product life-cycle emissions. Focus areas for emission reduction have been identified but targets are not yet consolidated for the full Volvo Group in this category.

Sustainability focus areas

- Supplier environmental assessments on page 177.



Retail and service

Our global network of dealers and service centers staffed by competent and service-oriented personnel are key factors for customer satisfaction and success. The business areas within the Volvo Group support customers via efficient dealer workshops, and through service and maintenance agreements.

Sustainability focus areas

- Responsible sales, page 175.

Production and logistics

Our global industrial and logistics system strives for continuous improvement to deliver on customer expectations and meet internal targets. The industrial system consists of capital-intensive component factories as well as labor-intensive assembly plants. The component factories supply the Group's needs on a global basis, whereas assembly plants, in most cases, are located close to end-markets to cater for local needs and specifications, and short delivery times.

Sustainability focus areas

- Employee related matters, page 163.
- Health and safety, page 167.

Less that 1% of the GHG emissions footprint is connected to the Group's own operations in production, retail and service. Yet the direct management control makes this a relevant area in our net-zero value chain GHG ambition.

Sustainability focus areas

- Energy and emissions, page 156.

Making the strategy come to life

As we set out to provide customers with the right solutions for their business needs and individual prerequisites, we make the strategy come to life. Our people want to be empowered to take action to drive performance and deliver on the challenge. Here are examples in their own words how we work in different parts of our value chain – taking the lead and accelerating the shift.

Supporting customers with different needs

Help me maintain my vehicle

Keep my vehicle available

Maximize the use of my vehicle

Maximize the use of my fleet

Provide me with the right transport capacity when I need it

Optimize my supply chain

1 **Vehicle parts services**

2 **Vehicle uptime services**

3 **Vehicle productivity services**

4 **Fleet productivity services**

5 **Mobility services**

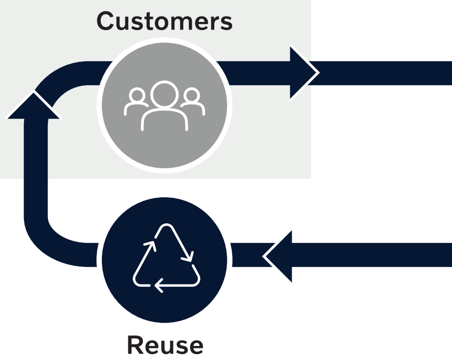
6 **Platform solutions**

FINANCING AND INSURANCE, INCLUDING USAGE-BASED MODELS

CONNECTED PLATFORM

VEHICLES AND EQUIPMENT

There are different business models for different customers. The range goes from selling a vehicle or machine and get paid by unit, to solving the customer's mission and get paid by result. We will have different offerings along the entire range for different customers depending on preferences, segments and geographies.



Belén Neira, Head of Indirect Sales, Volvo Energy

I strongly identify myself with the start-up environment in Volvo Energy, because there's an entrepreneurial mindset in this type of smaller organizations where everyone is creating something completely new together. It's also in my personality to network and collaborate so working in a cross-functional organization makes me feel at home.

At Volvo Energy, I'm in a place where my personal and professional ambitions meet, and that motivates me every day. I believe energy is a basic human need and human right, and absolutely necessary to live our lives. With our circularity concepts at Volvo Energy, we are enabling green energy to be accessible and affordable for many people as part of our business model. One of the most interesting opportunities is within second-life for batteries. We are working with the ambition to prolong battery life after it has served its purpose in the application, finding a second-life in new products like Battery Energy Storage Systems that can provide a solution to stabilizing energy availability.

Striving for societal development has always engaged me and is the reason I want to work at the Volvo Group. It has a clear purpose for people and society, sharing the belief that there is no trade-off in switching to electric and green energy. On the contrary, we are making society better for everyone.

Edouard Rochard, Product Line Electric Vehicles, European Medium Duty Business Unit

I have always wanted to be in the forefront of development, that is why I have chosen to go electric. How to make a truck maximize in matching diverse customer needs intrigues me and currently, I am involved in a project to design an experimental urban logistics solution. A brand new, 16-tonne electric truck tailored for urban deliveries, with improved safety, increased driver comfort and elimination of pollution and noise as its main features.

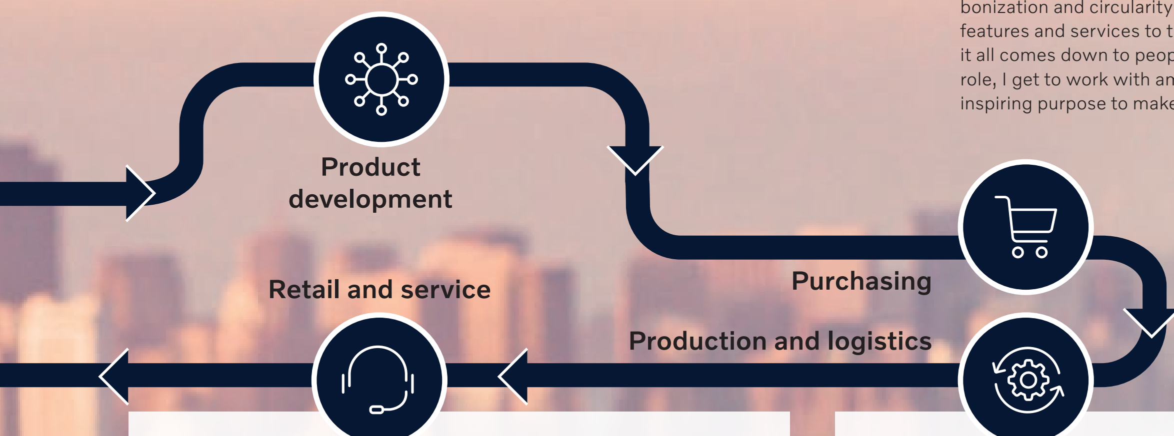
In this challenge, we truly work as 'intrapreneurs' – connecting people, competences, customers, and partners in one collaborative ecosystem. In each decision, big or small, we keep the customer needs at the center. If a feature doesn't solve the customer pain point, we think of something else. We're not doing anything just because it is nice engineering – we are doing it since it will be good for our customers and for society at large.

The market is full of opportunities and in Volvo Group, we are at the forefront of the decarbonization journey. We are not just bystanders – we are really taking the lead on all the changes in society that are necessary for a sustainable future. To be a part of this journey is super rewarding and gives me all the energy I need to push forward towards new solutions. So, let's team up and do something great!

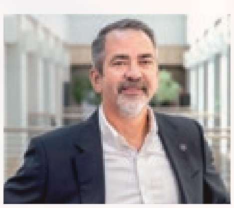
Wissam Ait Sidi Hammou, Segment Leader, Electromobility, Group Trucks Purchasing

As a Segment Leader within Electromobility, I oversee the Electrical Distribution and Charging segment. This gives me the opportunity to work on the growth of the electromobility journey and together with my colleagues have the chance to influence how we drive that growth together with our supply chain partners.

Working in this new technology area and in Purchasing is for me the perfect match to fully contribute to the Volvo Group transformation and sustainability targets. It is truly exciting to be in contact with so many inspiring colleagues every day to enable the switch to electrified vehicles. Working with our supply chain partners is also very rewarding. Together, we accelerate the technology journey while focusing on all the important dimensions – from securing a resilient value chain, setting decarbonization and circularity plans to offering the right features and services to the end-customer. For me, it all comes down to people and purpose, and in this role, I get to work with amazing people and an inspiring purpose to make a difference.



Brett Pope, E-Mobility Commercial Support, Volvo Trucks North America

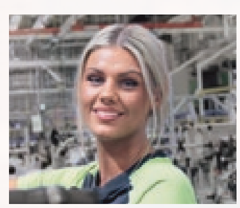


Drawn to the outdoors and open water, I began my career at Volvo Penta in Chesapeake, Virginia. My early days as an Engineer at Volvo Penta offered me the confidence of an amazing team and an established network of colleagues who supported my exploration of other areas of the business, which is how I found my way to Volvo Trucks.

Throughout my journey with the Group, I have always had the opportunity to solve complex challenges, learn new skillsets, work abroad, and grow. But at Volvo Trucks, I am able to blend my personal and our company values by pushing boundaries and exploring new technologies. With the introduction of e-mobility into the marketplace, through initiatives like Volvo VNR Electric trucks, Volvo LIGHTS (Low Impact Green Heavy Transport Solutions), along with other sustainability driven projects, we are blazing the trail through collaboration, trust, and transparency with people and businesses all over the world.

I am proud to say that it is my job to convince you that projects like this matter! The industry is changing, and through our collaborative efforts, we are the leading the way in delivering solutions that benefit humankind, long term.

Elise Harfelt, Team Leader Module Under Cab (MUC), Group Trucks Operations

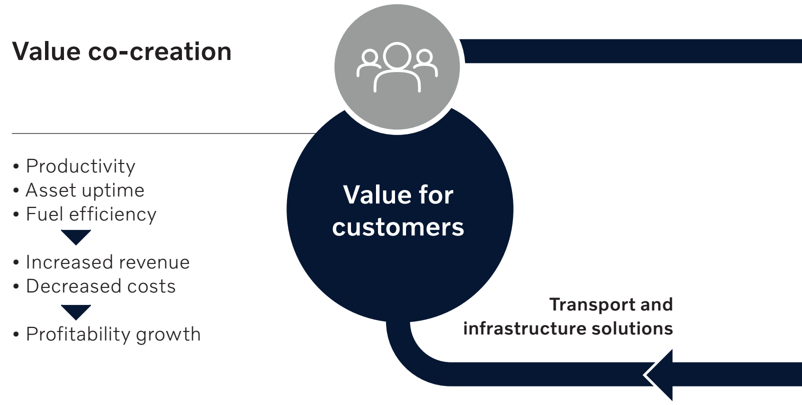


I am a Team Leader at the truck assembly plant in Tuve, Gothenburg. My team works with assembling the MUC – the Module Under Cab – that is replacing the diesel engine on the brand new heavy-duty electric trucks that we now have in serial production in Tuve plant. What I think is most fun being in my role is seeing the journey. From where we started several years ago with test builds, to where we are today being first out serial producing these electric trucks for our customers.

It is so engaging being a part of this. The transformation is of course about new sustainable products; contributing to a greener society and shaping the world we want to live in. But the transformation is also so much about people. The products are developing, and so are we as a plant in building them, and we as human beings in making this happen. Another important thing is everyday communication and helping each other to win not separately – but as a team.

I am sure this journey would not have been possible without the great teamwork we have. Not only in my team working with the MUC, but as a plant and as an entire company. Volvo is driving the transformation – and we are Volvo.

Driving prosperity for many stakeholders



We believe that the key to being successful is to create value for our customers by contributing to improving their profitability. By understanding our customers' priorities and challenges, we are able to provide products and services that grow customers' revenues and decrease customers' cost. Key areas to create value for our customers are offers that increase our customers' productivity, secure uptime and increase fuel efficiency. By delivering customer value, we will also deliver value for ourselves, our owners and society.

For customers

For our customers, uptime is everything. Regardless of if it is a customer that owns one single truck or a fleet of trucks, if they are a public transport provider or a coach owner, a construction entrepreneur or a quarry owner; their performance depends on reliable products and services that meet the needs of their business.

More than 2 million trucks and close to 100,000 buses, which the Group manufactured in the last ten years, perform transport work worldwide. Construction equipment operate at sites all around the world, and we have delivered more than 700,000 machines the last ten years.

Uptime and profitability

Insights for additional value creation

Value for Volvo Group

- Excellent products and services
- Closeness to customers
- Efficient way of operating

- Increased revenue
- Decreased costs

- Profitability growth

For employees

SEK 49.5 bn

The Group's 102,155 employees are our most important asset. Employee engagement and a performance culture based on customer success, trust and passion are critical for the Group to fulfill its mission. The Group strives to offer competitive employment terms and benefits as well as a stimulating, safe and healthy work environment. In 2022 we paid SEK 49,531 M in salaries and remuneration.

For suppliers

SEK 333.0 bn

A solid supplier base and professional partnerships are essential for the Volvo Group. The Group provides both income and employment for a large number of companies and in many societies around the world. Purchased goods and services is the Volvo Group's single largest expense and in 2022 we bought goods and services for SEK 332,982 M.

For shareholders

SEK 28.5 bn

The Volvo Group strives to generate value for its shareholders through a positive share price development and payout of dividends. From 2017 to 2022 the price for the Volvo B share rose by 77%. Shareholders normally receive a certain portion of the retained earnings in the form of a dividend, after consideration has been given to the Group's need for capital for continued development according to its strategies. In 2022, shareholders received dividends totaling SEK 26,435 M. To the Annual General Meeting 2023, the Board of Directors proposes an ordinary dividend of SEK 7.00 per share and an extra dividend of SEK 7.00 per share, in total SEK 28,468 M.

For society

SEK 27.6 bn

Our products and services make societies function. Our customers operate bus lines so that people can get to work, they transport food and industrial goods and they build infrastructure such as roads and hospitals. Furthermore, road transport directly creates millions of jobs around the world. We also contribute to the local economy by being a major employer in many communities, providing both direct and indirect employment. In 2022 the Group paid SEK 10,682 M in social costs, SEK 5,267 M in pension costs and SEK 11,614 M in income taxes, in total SEK 27,563 M. We also pay customs duties as well as property and energy taxes.

For creditors

SEK 0.9 bn

A long-term competitive business requires access to capital to be able to invest. The Volvo Group strives to ensure that the capital is used in the best possible way and to assure debt providers with the financial strength to secure proceeds and repayment. In 2022, the Volvo Group paid its creditors in the Industrial Operations SEK 856 M in interest.

For the Volvo Group

SEK 33.8 bn

A significant portion of generated capital is normally transferred back into the business. The capital is used for investments that will strengthen competitiveness and create long-term value for the Group and its stakeholders. In 2022, the Volvo Group invested SEK 22,526M in R&D and another SEK 11,301 M in property, plant and equipment, in total SEK 33,827 M.

Leadership through partnerships

Technologies develop at a faster pace than ever before. Combined in new ways they offer new and innovative solutions in almost all industries. Keeping up with the latest development is vital to stay successful and is hard to do on one's own, and that is why the Volvo Group works in collaborations and partnerships.

With the rapid development of electrification, connectivity and automation, we see great opportunities to co-create a more sustainable transport system and to make societies prosper. Here are some examples of our partnerships.

Many alliances and partnerships
We have a strategic alliance with Samsung SDI to develop batteries for the Volvo Group's electric products. Working together with Samsung SDI, Volvo Group aims to accelerate the speed of development and strengthen the long-term capabilities within electromobility, to the benefit of customers in different segments and markets.

cellcentric

Sharing the Green Deal vision of sustainable transport and a carbon neutral Europe by 2050, the Volvo Group and Daimler Truck have launched a fuel cell joint venture called cellcentric. The intention is to develop, produce and commercialize fuel cell systems for heavy-duty vehicle applications and other use cases. During the year, Volvo Trucks showcased a fuel cell-electric truck running on hydrogen. Read more on page 34.

milence

Together with Daimler Truck and the Traton Group we have founded Milence, which plans to install and operate a high-performance public charging network for battery-electric heavy-duty long-haul trucks and coaches across Europe. Read more on page 35.

We collaborate with SSAB on the research and development and commercialization of the world's first vehicles made of fossil-free steel. Read more on page 36.

We work together with Aurora to develop autonomous trucks. Aurora is a US-based company specialized on the development virtual drivers. Volvo Autonomous Solutions has also partnered with customers DHL Supply Chain and UBER Freight regarding on-highway autonomous solutions and with Holcim to further develop the use of autonomous electric haulers in a limestone quarry. Read more on page 37.

Furthermore, we have a strategic alliance with Isuzu Motors. The alliance aims to capture opportunities in the ongoing transformation of the commercial vehicle industry. Alliance work is focused on deriving potential synergies in areas that will encompass i.e. forming a technology partnership and creating a larger volume base to support investments for world-class technology.

Driving change with public-private partnerships
We are also active in public-private partnerships to drive change.

First Movers Coalition

One such partnership is First Movers Coalition to drive demand for low carbon tech. Roughly half of the emission reductions needed to reach the UN's 2050 climate goals rely on technologies in early development, demonstration, or prototype phases. Accelerating innovation in this decade is critical to bring these technologies to market and make them cost-competitive. To jumpstart this effort, the First Movers Coalition is a platform for companies to make purchasing commitments that create market demand for low-carbon technologies in seven "hard-to-abate" industrial sectors that currently account for 30% of global emissions: Aluminum, Aviation, Chemicals, Concrete, Shipping, Steel, and Trucking. The coalition's members commit in advance to purchasing a proportion of the industrial materials and long-distance transportation they need from suppliers using near-zero or zero-carbon solutions, despite the premium cost. Volvo Group is a founding member of the coalition.

H2Accelerate

H2Accelerate is a collaboration with the aim to accelerate the use of hydrogen as a fuel for heavy-duty road transport in Europe. As a growing number of governments and businesses align on a common vision of a net-zero emissions energy system, the H2Accelerate participants believe that hydrogen is an essential fuel for the complete decarbonization of the truck sector. The group comprises vehicle OEMs Volvo Group, Daimler Truck and Iveco and hydrogen suppliers Shell, OMV and TotalEnergies.

Support for disaster relief in Ukraine with the Red Cross and UNHCR

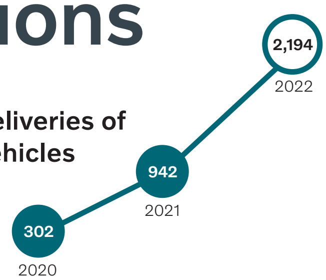
During the year, Volvo Group worked in collaboration with the International Red Cross Committee and UNHCR to transport aid to Ukraine. The Red Cross early identified truck capacity and logistics systems as an area where Volvo Group could support with expertise and assets. The Volvo Group saw an opportunity to donate a previous exhibition version of a Renault Trucks T and to support with transport and logistics expertise. The collaboration resulted in approximately 100 truckloads of life-saving kits being delivered across the border between Hungary and Ukraine.

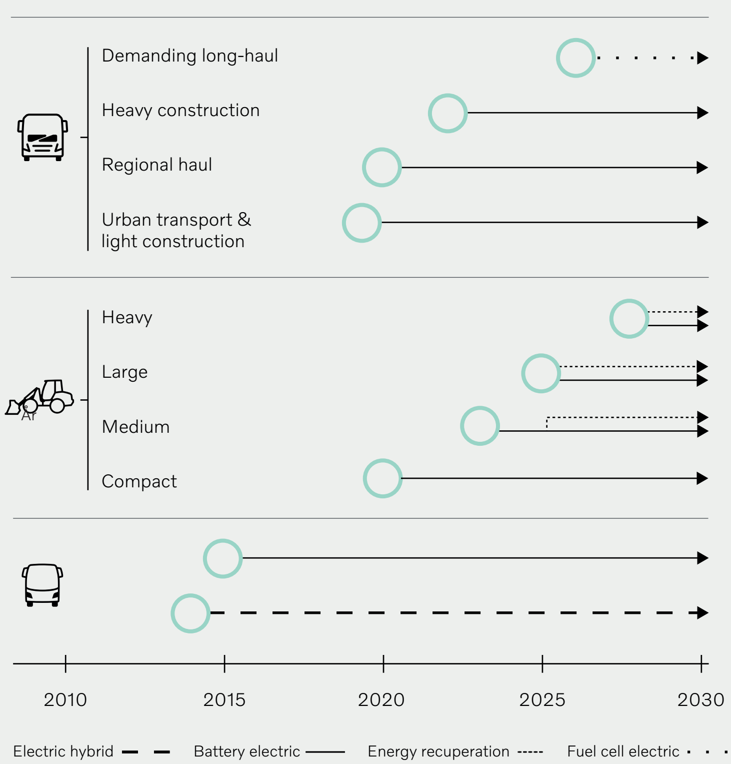
"The Volvo Group believes in the force of partnership with a clear aim – to rapidly introduce and implement best-in-class low carbon technology throughout industry verticals. Together we are strong enough to really make a difference and we are increasing our efforts, both ourselves, but also with partners to accelerate the shift into a path that aims to deliver on the goals in the Paris agreement", says Martin Lundstedt, President and CEO.

Rollout of more sustainable transport and infrastructure solutions

Climate change, congested cities, and hazardous road and working conditions call for future transportation technology and systems solutions that are safer, cleaner and more efficient. On the following pages are some examples of what we worked on in 2022.

Volvo Group deliveries of fully electric vehicles and machines





Towards a fully-electric offer

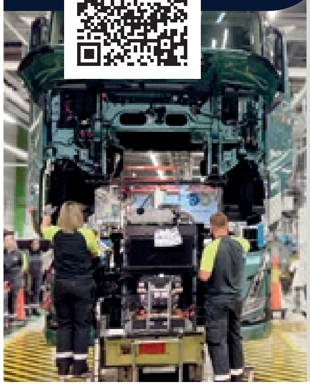
Our introduction of electric trucks, buses and machines has already started. We are drawing on the experience from the city bus applications, where we have more than 10 years of experience from electrification – starting with hybrid-electric solutions and building that into battery-electric buses.

On the truck side, Volvo Trucks, Renault Trucks and Mack Trucks started series production of trucks for important segments such as city distribution, waste and recycling in 2020. The Group continued its step-by-step rollout with regional haul Volvo trucks in North America in 2021 and of trucks for regional haul and heavy construction in Europe in 2022. The Volvo Group intends to have electric products and solutions for all relevant truck segments, eventually also the really heavy-duty long haul segment, which will be a combination of battery-electric (BEV) and fuel cell-electric vehicles (FCEV).

The first electric compact construction equipment were introduced in select markets in Europe in 2020. The rollout continued in Europe and North America in 2021, followed by Asia in 2022. In 2022, the first medium-duty electric machine, the 23-ton EC230 Electric excavator, was brought to selected markets.

Volvo Group's electric vehicles and machines on the road, off road, in the city and at sea.

Volvo Trucks started series production of heavy electric trucks



In September 2022, Volvo Trucks started series production of heavy electric, 44-tonne trucks in the company's most important product range, its heavy-duty trucks Volvo FH, Volvo FM, and Volvo FMX. With these new additions, Volvo Trucks has six electric truck models in series production globally – the broadest electric truck line up in the industry. The electric line-up covers a wide range of applications such as city distribution and refuse handling, regional transport, and construction work.

"This is a milestone and proves that we are leading the transformation of the industry. It's less than two years ago since we showcased our heavy electric trucks for the very first time. Now we are ramping up volumes and will deliver these great trucks to customers all over Europe, and later on also to customers in Asia, Australia and Latin America", said Roger Alm, President of Volvo Trucks.

Series production of Volvo's heaviest electric trucks started in the Tuve factory in Gothenburg, Sweden and in 2023 the factory in Ghent, Belgium will follow.

Volvo produces the electric trucks on the same line as its conventional trucks, which gives high production flexibility and efficiency gains. The batteries are supplied from the Group's new battery assembly plant in Ghent.

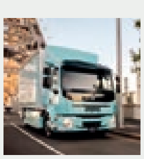
According to Eurostat statistics "Road Freight Transport by distance" (2018), 45% of all goods transported on road in Europe travel less than 300 km. That means that Volvo Trucks' electric portfolio could cover around 45% of all goods transported in Europe today.

20 heavy-duty electric Volvo trucks to Amazon

Amazon is one of Volvo Trucks' customers committed to decarbonizing its fleet. Amazon in Germany ordered 20 Volvo FH Electric, which are expected to drive more than one million road kilometers annually, fueled by electricity instead of diesel. Heavy goods vehicles and other commercial vehicles make up around 36% of Germany's domestic transport emissions, which makes road transport decarbonization an important issue to address.

DHL and Volvo Trucks kick off zero-emission cooperation

In May, Volvo Trucks and Deutsche Post DHL Group signed a cooperation agreement to accelerate the shift to zero exhaust emission vehicles. DHL intends to intensify its transition to heavy electric trucks by deploying a total of 44 new electric Volvo trucks on routes in Europe.



Record order for electric trucks in Australia

In December, Australian express freight company, Team Global Express, placed an order for 36 Volvo electric trucks. This was Volvo's largest electric truck order to date in Australia. The trucks will hit the streets of Sydney during Q1 2023.

Fully electric rear axle unveiled

In September, Volvo Trucks unveiled a completely new, fully electric rear axle. Freeing up space for more batteries by integrating the electric motors and the transmission into the rear axle, the new e-axle means even longer range for Volvo's battery-electric trucks. Serial production of trucks with the new e-axle will begin in a few years.

Renault Trucks expanded its range of electric trucks

A customer's view on electric trucks.

Renault Trucks is expanding its all-electric range and during the year announced the start of sales in the first quarter of 2023 of two new models of up to 44 tonnes, namely the Renault Trucks T E-Tech for regional transport and the Renault Trucks C E-Tech for the construction industry.

Renault Trucks is pursuing its commitment to supporting its customers' energy transition and its ambition to provide electric trucks for all uses. Since 2020, Renault Trucks has been selling a range of all-electric trucks from 3.1 to 26 tonnes.

These new models in Renault Trucks' heavy-duty range will be fitted with two or three electric motors providing a combined power of up to 490 kW. They will be manufactured at the Renault Trucks plant in Bourg-en-Bresse.

With a full electric range that extends from 3.1 to 44 tonnes, Renault Trucks is stepping up its strategy and setting its sights higher: the manufacturer intends to sell 50% of its vehicles in electric form by 2030.

Barcelona commits to sustainable transport with 73 Renault Trucks electric trucks

The city of Barcelona, Spain made a strong choice in favor of decarbonized urban transport when awarding its latest public contract for municipal waste collection and maintenance. This contract was awarded in batches to several waste management sub-contractors who share the same sustainability goals for the city. The companies CLD Sorigué, Urbaser, and Valoriza (Sacyr Group) chose Renault Trucks to provide 73 fully electric trucks.

Coca-Cola to make local deliveries in Belgium with 30 Renault Trucks electric vehicles

Coca-Cola Europacific Partners will start using 30 electric trucks to make "last mile" deliveries to local customers in Belgium. The first five vehicles went out in November 2022 in the Antwerp area. Through a key partnership with Renault Trucks, the beverage manufacturer is electrifying one-fifth of its truck fleet and will also reduce its CO_2 emissions by 75% compared to diesel trucks.

"Our industry is facing difficulties that require rapid adaptation, but we are also firmly committed to maintaining a long-term approach. Investing in electric trucks will allow Coca-Cola Europacific Partners to cut CO_2 emissions by 30% across the entire value chain by 2030 and become climate neutral by 2040", says An Vermeulen, VP & Country Director of Coca-Cola Europacific Partners for Belgium and Luxembourg.

Volvo Trucks North America launched an electric truck with longer range

In January 2022, Volvo Trucks in North America launched an enhanced version of its heavy-duty Volvo VNR Electric with up to 85% increased range and faster charging. Sales start of the first generation of Volvo VNR Electric was in December 2020 and series production began in 2021. It had an operating range of up to 240 km. The enhanced version has an operational range of up to 440 km (275 miles) and increased energy storage of up to 565 kWh. The improved performance is due to, among other things, improved battery design and a new six battery pack option.

The new Volvo VNR Electric also reduces the required charging time, as the 250kW charging capability provides an 80% charge in 90 minutes for the six-battery pack, and 60 minutes for the four-battery version. Production of the new version started in the second quarter of 2022.

Customers going further with electric trucks

Volvo Trucks has a strong position in electric trucks with an increasing number of customers going for zero-tailpipe emission trucks. Nowhere more so than in California, where the adoption of electric trucks is spurred on by incentives.

In March, our customer WattEV ordered 50 Volvo VNR Electric trucks to launch its Truck-as-a-Service model in California, providing shippers and carriers access to battery-electric trucks at a per-mile rate, including charging, that is on par with the total cost of operating diesel trucks. Also in March, Volvo Trucks received its largest global order of heavy-duty electric trucks thus far when Performance Team – A Maersk Company, ordered a further 110 trucks. Together with previous orders, this made their total purchase commitment 126 Volvo VNR Electric. In May, Quality Custom Distribution, a Golden State Foods company, increased its commitment to zero-tailpipe emission freight transport with an order of 30 Volvo VNR Electric. The trucks will deliver products to restaurants and coffee shops throughout Riverside and San Bernardino Counties. Also in May, NFI Industries, a leading third-party supply chain solutions provider, ordered 60 Volvo VNR Electric. In September, family-owned 4 Gen Logistics ordered 41 Volvo VNR Electric to haul freight between the Port of Long Beach and Southern California's Inland Empire — a national logistics and warehousing hub.

Customers in other states are also investing in electric trucks. In May, Fleetmaster Express, a for-hire logistics carrier based in Texas, ordered 10 Volvo VNR Electric to support supply chain sustainability efforts for Ball Corporation, a leading global provider of recyclable aluminum beverage packaging. Also in May, PITT OHIO, a leader in transportation, warehouse, and logistics services, announced the addition of two Volvo VNR Electric box trucks to its fleet.

Mack LR Electric – built tough to run clean

Mack Trucks began serial production of the Mack LR Electric refuse truck in December 2021. By year end 2022, the on-board battery capacity had been increased by 42%. The rollout of these trucks are in the early stages, but the 44 orders received in 2022 were nearly five times as many as the previous year. Mack Trucks was the only OEM to deliver serial production electric heavy-duty refuse vehicles during the year, amounting to 100% of the market share in North America.

Volvo Trucks showcased zero-emissions fuel cell truck

Imagine a truck that only emits water vapor, produces its own electricity onboard and has a range of up to 1,000 km. It is expected to be possible with fuel cells powered by hydrogen, and in 2022 Volvo Trucks started to test vehicles using this new technology.

To decarbonize transport, Volvo Trucks already today offers battery electric trucks and trucks that run on renewable fuels, such as biogas. In the second half of this decade, a third option will be added – fuel cell electric trucks powered by hydrogen. The fuel cell electric trucks is planned to have an operational range comparable to many diesel trucks – up to 1,000 km – and a refueling time of less than 15 minutes. The two installed fuel cells have the capacity to generate 300 kW of electricity onboard. Customer pilots will start in a few years from now and commercialization is planned for the latter part of this decade.

"Hydrogen-powered fuel cell electric trucks will be especially suitable for long distances and heavy, energy-demanding assignments. They could also be an option in countries where battery charging possibilities are limited," says Roger Alm, President of Volvo Trucks.

Fuel cell technology is still in an early phase of development. There are many benefits with the new technology, but also some challenges ahead. One of them is large-scale supply of green hydrogen produced by using renewable energy sources, such as wind, water and solar power. Another is the fact that refueling infrastructure for heavy vehicles is yet to be developed.

FACTS ABOUT FUEL CELLS

- A fuel cell generates its own electricity from the hydrogen onboard instead of being charged from an external source. The only byproduct emitted is water vapor.
- The fuel cells will be supplied by cellcentric – the joint venture between the Volvo Group and Daimler Truck AG. Cellcentric plans to build one of Europe's largest series production facilities for fuel-cells, specially developed for heavy vehicles.

Volvo CE testing the world's first prototype hydrogen articulated hauler

Volvo Construction Equipment (Volvo CE) continues to act on its commitment to drive change towards a net-zero future. Besides battery-electric solutions, where Volvo CE is already offering a large range of commercial products, the company's efforts also include exploring the potential of electrification through hydrogen fuel cell technology.

In 2022, an important milestone was reached with the testing of a world-first emission-free hydrogen fuel cell articulated hauler prototype, the Volvo HX04.

Milence – the European charging infrastructure joint venture – kicked off

In July, the Volvo Group, Daimler Truck, and Traton Group completed the final step in forming the announced joint venture for charging infrastructure in Europe. The new joint venture, named Milence, is expected to have a significant role in supporting the European Union's Green Deal for carbon-neutral freight transportation by 2050.

Milence plans to install and operate at least 1,700 high-performance green energy charge points on, and close to, highways as well as at logistics hubs across Europe. The Volvo Group, Daimler Truck, and the Traton Group own equal shares in Milence but continue to be competitors in all other areas. The parties are committing to invest EUR 500 M in total, which is a significant investment in charging infrastructure for heavy-duty trucks in Europe.

Milence intends to take a catalyzing role as a charge point operator in the value chain by installing and managing charging stations for heavy-duty trucks and coaches. This kick-start is a call to action to all other industry players, as well as governments and policymakers, to work together for a rapid expansion of the necessary charging network as well as investing in renewable energy in order to reach Europe's climate targets. As a clear signal to all stakeholders, the charging network will be open and accessible to all heavy commercial vehicles in Europe, regardless of brand.

milence

Partnership with Pilot Company to create charging network in North America

In November, the Volvo Group and North American-based Pilot Company signed a Letter of Intent for the development of a public, high-performing charging infrastructure for medium- and heavy-duty electric vehicles. Pilot Company intends to install the charging infrastructure at selected Pilot and Flying J travel centers that will be open to vehicles of any brand. This initiative will provide customers the necessary peace of mind to consider adopting electric trucks, eliminating range anxiety and give the prerequisites for the North American fleet customers to meet their environmental goals on their decarbonization journeys.

Volvo Trucks constructing California electrified charging corridor

In July, Volvo Trucks North America announced that it was joining forces with Volvo Financial Services, Volvo Technology of America, Shell Recharge Solutions, TEC Equipment, Affinity Truck Center, and Western Truck Center to develop a publicly accessible medium- and heavy-duty electric vehicle charging network that connects several of California's largest metropolitan areas. With an award from the California Energy Commission (CEC) of USD 2 M, the Electrified Charging Corridor Project will address a key barrier to the deployment of electric trucks for long-range transports. The project got underway in 2022, with all stations anticipated to be online by the end of 2023.

Volvo Construction Equipment adds electric power to customer sites

With a range of electric construction machines available on the market today, Volvo Construction Equipment (Volvo CE) is showcasing that the journey towards emissions-free and quieter job sites is well under way.

Volvo CE believes that electromobility has the power to change the way customers do business – by opening up work in new places, in sensitive environments and even indoors, thanks to the near silence and zero exhaust emissions that they bring. No longer is electromobility only a niche option – change is here, and the company's technology is already proving to be a reliable and emission-free solution for customers.

Volvo CE's electric range incorporates the ECR18 Electric and EC18 Electric compact excavators and the L25 Electric and L20 Electric compact wheel loaders available in Europe and North America, and the ECR25 Electric, available in Europe, North America and Asia, together with the EC55 Electric excavator, for now only available in China.

For medium-sized equipment, Volvo CE in 2022 introduced the 23-ton EC230 Electric excavator in selected markets. These solutions are proving their potential for more efficient and more sustainable operations with just as much power and performance as their diesel counterparts.

Volvo Group has started using fossil-free steel

When it comes to the race to net zero, there is a lot of focus on the exhaust emissions from vehicles and machines. But it goes much deeper than that – in fact, right down to the very materials that the products are built from. The creation of fossil-free steel is another crucial step on a journey that can make things better for our industries.

The global steel industry accounts for a significant amount of CO_2 emissions worldwide. With around 70% of a truck's weight coming from steel and cast iron – and with the figure for Volvo construction machines even higher – replacement of material in our products with fossil-free and recycled alternatives is another important step on the journey to net zero.

Fossil-free steel has been on Volvo Group's radar for a while and, thanks to a collaboration with Swedish steel manufacturer SSAB, it has started to make its way into our product range. To make fossil-free steel, hydrogen produced with renewable energy is used instead of the coke normally used to smelt iron ore. The end result is water vapor instead of CO_2. At least 90% of the CO_2 emitted when producing steel is eliminated with the current production process.

In October 2021, Volvo Group and SSAB unveiled the world's first vehicle created with fossil-free steel: an articulated hauler. And in 2022, Volvo Construction Equipment became the first manufacturer to deliver a construction machine made with fossil-free steel to a customer, when an A30G articulated hauler was handed over to long-term partner NCC as part of the United Nations' Stockholm +50 summit.

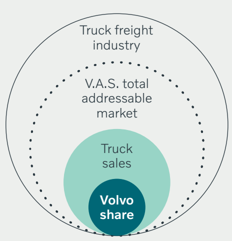
Volvo Trucks has also started to introduce fossil-free steel into parts of its range: specifically, the electric versions of the heavy-duty Volvo FH, Volvo FM and Volvo FMX models. Steel produced with hydrogen is being introduced into the frame rails, the backbone of the truck upon which all other main components are mounted. As the availability of fossil-free steel increases, so will the amount that is used in the rest of the truck.

Transforming the movement of goods through efficient, sustainable and safe autonomous transport solutions

Volvo Autonomous Solutions (V.A.S.), is the Volvo Group's business area dedicated to commercializing autonomous transport solutions. Contributing to a more sustainable industry and society is a driving force behind V.A.S.'s strategy. The solutions being developed by V.A.S. will complement today's transport system and address some of the biggest challenges the industry faces – demand for more freight capacity, driver shortage and a desire to reduce emissions while keeping people out of hazardous environments.

Focus on industry verticals
V.A.S.'s solutions are offered as Transport-as-a-Service and geared towards three industry verticals: hub-to-hub on highway trucking, ports and logistics centers, as well as mines and quarries. By providing a complete transport solution tailored to each vertical, V.A.S. believes it can facilitate the introduction and acceptance of technology while accessing a larger market.

Large market potential for V.A.S.



BUILDING TECHNOLOGY LEADERSHIP

Multiple virtual drivers: V.A.S. is taking a two-pronged strategy for virtual driver development by investing in both an in-house developed virtual driver for confined areas while also partnering with virtual driver company Aurora to develop a solution for U.S. on highway transportation.

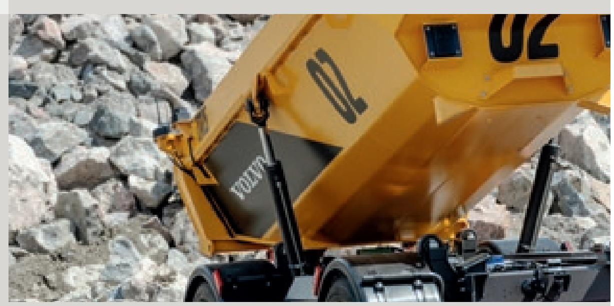
Platform strategy: V.A.S. is utilizing Volvo Group's common architecture and shared technology (CAST) platform to develop and deploy machines and vehicles purpose-built for autonomy. Through this approach V.A.S. believes it can both ensure the safety and scalability of its autonomous transport offering while also bolstering Volvo Group's leadership position.

Autonomous transport solution in real-world applications

Since 2018, the Volvo Group has been operating autonomous transport missions in a limestone quarry in Brönnöy, Norway. In 2022, V.A.S. achieved several milestones including the granting of a permit by Norwegian authorities allowing the operation of autonomous trucks without a safety driver while personnel is working in the area where the trucks operate.

V.A.S. is also working together with Holcim to develop the use of autonomous electric haulers in a limestone quarry in Switzerland. The technologies being deployed in both projects utilize V.A.S. in-house developed virtual driver.

In the U.S., V.A.S. is developing an Autonomous Transport Solution intended for shippers, logistics providers, carriers, and freight brokers. To better understand customer needs and accelerate commercialization, V.A.S. is forming long-term strategic partnerships with others who share the same vision for a safer and more sustainable future. These include technology partner Aurora but also customers like Uber Freight and DHL. In 2022, V.A.S. announced long-term partnerships with both companies to deploy its Autonomous Transport Solution on U.S. highways.



Improvements on trucks with internal combustion engines

A customer review of the Volvo FH with I-Save.

We are not only driving the development of electric vehicles and machines, but we are also continuously improving our products with internal combustion engines in terms of fuel-efficiency and performance that enhances productivity.

Volvo Trucks cuts fuel use by 18% in test

An independent test done in Germany on Volvo's fuel-efficiency flagship, the recently updated Volvo FH with I-Save, showed that it consumes almost 18% less fuel compared with four years ago. In the test carried out by German magazine Trucker, the 32 tonne Volvo FH 460 with I-Save was taken on a 343 km long route of public roads, including a variety of motorways, hilly terrains, and tighter roads. When compared with the same test in 2018 – before Volvo introduced the I-Save fuel-saving package – the test showed an impressive 18% combined reduction in diesel and AdBlue consumption. Even if Volvo Trucks' goal is that electric trucks shall account for half of its global truck sales in 2030, the combustion engine will continue to play an important role in the transport industry for many years to come. The Turbo Compound engine is also certified to run on HVO100, a renewable diesel in the form of hydrogenated vegetable oils, that cuts CO_2 emissions dramatically. I-Save was first launched in 2019. The 13-liter engine with Volvo's Turbo Compound technology, D13TC, makes it possible to drive with low engine revs and high gears for longer periods of time. The new I-Torque function manages gear selection, engine torque and braking when I-Cruise is activated. The function uses I-See to look at the road ahead and evaluate how much torque the engine needs to run as energy and fuel efficiently as possible, based on the truck's total weight.

Up to 10% less fuel and CO_2 with Renault Trucks new heavy-duty models

Renault Trucks is stepping up the energy efficiency of its models designed for distribution and light construction, while reducing their environmental footprint. Thanks to engine optimization, a new gearbox and the Fuel Eco+ pack, which includes a roof deflector, side deflectors, a compressor that can be disengaged and automatic engine shutdown after three minutes, the Renault Trucks D, D Wide and C 2.3 m 2023 are set to reduce fuel consumption and the associated CO_2 emissions by up to 10% compared with the previous versions.

The day-to-day work of drivers in urban areas can be very challenging, with deliveries in congested city centers, stress caused by always being watchful of the safety of other road users and loads, and the need to maintain productivity. Renault Trucks works hard to facilitate their task and boost performance for both drivers and their vehicles. Therefore, improved safety and on-board comfort are further benefits of the new range, which was launched in 2022 with deliveries to begin in 2023.

New platform for premium coaches can save up to 9% in fuel costs

In June, Volvo Buses launched a powerful new fuel-saving platform for its premium coach range and for chassis customers. With power ratings up to 500 hp and fuel savings of up to 9% it is a true cost saver for tour, charter and line-haul operations. The core of the new coach platform is a new Euro 6 version of Volvo's trusted and well-proven 13-liter engine with improved fuel efficiency. The new platform is the basis for Volvo's 9000 range of coaches, and it is also offered as the B13R chassis on all Volvo Buses main markets. Versions with two-or three axle configurations are available on various markets. The power ratings span from 380 to 500 hp, all of which are certified for HVO while the 460 and 500 hp versions are also certified for biodiesel. To complete the range, there is also a low-entry configuration, ideal for building premium double decker coaches.

Volvo Trucks North America introduces I-Torque

Volvo Trucks North America added to its track record of breakthroughs in powertrain innovation with the Volvo I-Torque. Now available as an option with the latest D13 Turbo Compound engine, I-Torque is designed to achieve best-in-class fuel efficiency, without compromising performance, drivability and productivity. The all new Volvo I-Torque is a unique powertrain solution enabling the truck to operate optimally with up to a 31% increase in fuel efficient speed range. I-Torque comprises the D13 Turbo Compound (TC) engine, the I-Shift with overdrive features, adaptive gear shift strategy, a new map-based version of the predictive cruise control Volvo I-See, and rear axle ratios as exceptionally low as 2.15.

Data and wireless technology preventing trucks from breaking down

Almost 1.4 million connected vehicles and machines.

Imagine if our customers knew when their trucks would breakdown before it happened? How much would this improve their business' uptime and productivity? With the help of data, our understanding of how vehicles work is enhanced even further. And with the help of artificial intelligence (AI) and machine learning, it is becoming possible to predict breakdowns with even greater accuracy and to prevent them from occurring.

There are almost 1.4 million connected vehicles and machines from the Volvo Group in operation. The vast amounts of data being collected from for instance trucks today means its increasingly easier to identify and fix faults before they lead to unexpected breakdowns. Traditionally, the main approach to improving uptime has been regular, scheduled servicing and reactive measures like breakdown support services. But with the range of sensors and wireless technologies found on today's trucks, we and our customers can be far more proactive.

Vast amounts of data in real time

The core of connected services and preventative maintenance is that the use of wireless technology and sensors makes it possible to collect vast amounts of data from a vehicle in real time. By analyzing this data and identifying patterns, it is possible to predict and anticipate a fault before it occurs. This gives customers time to schedule a workshop visit at their convenience, and then fix the fault before it causes an unexpected breakdown.

The Volvo Group's technologies and capabilities in this field are expanding quickly. In 2016, Volvo Trucks' Monitoring Centre in Ghent, Belgium remotely monitored just one component and it took a full day to complete a full check in a fleet of several hundred trucks. Currently, multiple components in tens of thousands of trucks are monitored, and a full check of the whole fleet can be completed in just eight minutes. And we are constantly improving.

The role of artificial intelligence in reshaping the truck industry

The more data a system can analyze, the more accurately it can predict outcomes. Initially, connected services and real-time monitoring services were designed to react to certain thresholds or sensor values for individual parameters as a means of predicting faults, for example, the engine exceeding a set temperature. While these sorts of insights are useful, they can be somewhat limited because they do not take into account the vehicle's unique circumstances and driving conditions. While it is important to detect a potential fault as early as possible, it is also important not to bring a vehicle into the workshop unnecessarily either.

Machine learning can be used to analyze greater volumes of data and to detect patterns impossible to find otherwise. This results in even more accurate predictions. Different parameters and data points from a wider variety of components and sensors can be combined, which is then analyzed by AI systems to detect patterns indicative of potential problematic behavior that is likely to lead to a breakdown.

For example, the temperatures of different parts can be analyzed in combination with other factors such as vehicle mileage and fault codes. Once a machine learning algorithm has been trained to identify a pattern or combination of factors that often cause a particular fault, it then becomes possible to predict problems for individual vehicles no matter what type of application they are in. You could say that it will be as if the service was created for a specific vehicle and its customer. And as we continue to improve our capacity to analyze data, the more accurate these systems will be.

New safety system to protect cyclists and pedestrians

Volvo Trucks introduced a new safety system to detect other road users entering the blind spot on both sides of the truck. The new safety system uses a dual radar on each side of the truck that detects when other road users enter the blind-spot area.

When someone is in the blind spot zone, the system, called Side Collision Avoidance Support, informs the driver via a red light on the relevant side mirror. If the driver indicates a lane change via the turn signal, the red light starts to flash and a warning sound emits from the side of the potential collision. The driver is alerted and can brake the truck, allowing for example a cyclist to pass.

The new system was made available globally on the Volvo FH, Volvo FM and Volvo FMX with diesel, gas and electric drivelines in September 2022.

Volvo Group Health & Safety Awards

Since 2006, the Volvo Group Health & Safety Awards recognize success and celebrate achievements across all our sites – from plants and offices to retail and warehouses.

The purpose is to give leaders and teams across the Group an opportunity to demonstrate their commitment to raising the health and safety standards, promote well-being and share their passion for improving our working conditions to inspire others.

For 2021, over 80 applications were submitted and finally, five winning achievements were selected. The award ceremony was held in Gothenburg in April 2022, with members of the Volvo Group Executive Board present to celebrate the winning teams.

One of the celebrated best practices were Volvo Construction Equipment in Shanghai, who have been working consistently with infusing a safety culture in operations and customer solutions for over a decade. Health and safety committees with employees and management, emergency response training, involvement of local and external stakeholders and arranging safety-focused family days are some of the tools thev have deployed for over a decade to build the knowledge, capacity and culture needed to deliver on their health and safety commitment.

BOARD OF DIRECTORS' REPORT

Ownership and legal form

AB Volvo (publ) with corporate identity no 556012-5790 is a limited company and its shares are listed on Nasdaq Stockholm, Sweden. AB Volvo is the parent company of the Volvo Group and is headquartered in Gothenburg, Sweden. The ultimate parent of the Group is AB Volvo with registered office at SE-405 08 Gothenburg, Sweden.

Business activities

The Volvo Group drives prosperity through transport and infrastructure solutions, offering trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity. Founded in 1927, the Volvo Group is committed to shaping the future landscape of sustainable transport and infrastructure solutions. The Volvo Group has production in 18 countries and sell its products in almost 190 markets. A significant part of the Group's operations is in Sweden. Other significant operations are found in the US, Brazil, India, France and China.

Statutory sustainability report

The Volvo Group has prepared a sustainability report in accordance with the Global Reporting Initiative's guidelines (GRI Standards) and the non-financial disclosure requirements in the Swedish Annual Accounts Act. The Volvo Group's sustainability report consists of the Sustainability Notes on pages 147–185 together with all other relevant sustainability disclosures in this Annual and Sustainability Report, see:

- Strategy and business model, pages 10–29
- Policies, assessments and results, pages 147–179
- Material risks and mitigation, pages 68–73 and 148–179
- Key performance indicators, pages 150–181, Taxonomy regulation disclosures, page 159–162.

Events after the balance sheet date

No material events have occurred after the end of the financial year that are expected to have a material effect on the Volvo Group's financial statements.

Financial performance

Higher sales and operating income

For the Volvo Group, 2022 was a year with a strong increase in net sales and an improved operating income, despite challenges created by geopolitical turmoil, supply chain constraints and high inflationary pressure. Both vehicle and service volumes grew significantly compared with the preceding year.

INCOME STATEMENTS VOLVO GROUP

SEK M	Note	Industrial Operations 2022	Industrial Operations 2021	Financial Services 2022	Financial Services 2021	Eliminations 2022	Eliminations 2021	Volvo Group 2022	Volvo Group 2021
Net sales	6, 7	**459,703**	**361,062**	**17,355**	**13,437**	**–3,579**	**–2,283**	**473,479**	**372,216**
Cost of sales		–354,682	–277,048	–10,641	–7,700	3,581	2,285	–361,741	–282,463
Gross income		**105,021**	**84,013**	**6,714**	**5,738**	**2**	**2**	**111,737**	**89,753**
Research and development expenses		–22,526	–18,027	–	–	–	–	–22,526	–18,027
Selling expenses		–26,066	–21,575	–2,978	–2,384	–	–	–29,044	–23,959
Administrative expenses		–5,867	–4,859	–13	–11	–	–	–5,880	–4,870
Other operating income and expenses	8	–4,498	300	–2,876	–54	–	–	–7,374	246
Income/loss from investments in joint ventures and associated companies	5, 6	–1,333	–54	–	–	–	–	–1,333	–54
Income/loss from other investments		132	–15	0	0	–	–	132	–15
Operating income		**44,862**	**39,783**	**848**	**3,289**	**2**	**2**	**45,712**	**43,074**
Interest income and similar credits		1,315	362	0	–	–307	–4	1,008	358
Interest expenses and similar charges		–1,512	–1,172	0	0	307	4	–1,205	–1,167
Other financial income and expenses	9	–437	926	0	–	–	–	–437	926
Income after financial items		**44,228**	**39,899**	**848**	**3,289**	**2**	**2**	**45,077**	**43,190**
Income taxes	10	–11,207	–9,140	–901	–807	–0	–0	–12,108	–9,947
Income for the period		**33,021**	**30,759**	**–53**	**2,482**	**1**	**1**	**32,969**	**33,243**
Attributable to:									
Owners of AB Volvo								32,722	32,787
Non-controlling interest								247	456
								32,969	**33,243**
Basic earnings per share, SEK	19							16.09	16.12
Diluted earnings per share, SEK	19							16.09	16.12

OTHER COMPREHENSIVE INCOME

SEK M	Note	2022	2021
Income for the period		**32,969**	**33,243**
Items that will not be reclassified to income statement:			
Remeasurements of defined benefit plans	20	3,817	6,091
Remeasurements of holding of shares at fair value	19	–45	48
Items that may be reclassified subsequently to income statement:			
Exchange differences on translation of foreign operations		10,544	5,775
Share of other comprehensive income related to joint ventures and associated companies		1,279	1,349
Accumulated translation difference reversed to income		–	–324
Other comprehensive income for the period, net of income tax		**15,596**	**12,938**
Total comprehensive income for the period		**48,565**	**46,182**
Attributable to:			
Owners of AB Volvo		48,140	45,354
Non-controlling interest		425	828
		48,565	**46,182**

Net sales

During 2022, net sales increased by 27% to SEK 474 billion (372). Adjusted for currency movements and UD Trucks, which was divested on April 1, 2021, the sales increase was 17%, of which vehicle sales increased by 19% due to growing transport volumes, improving construction activities and price relaization, and service sales increased by 11%, as high utilization of vehicles and machines drove demand for spare parts and services.

The truck business' net sales increased by 25% adjusted for currency movements and UD Trucks, driven by strong demand for both new and used trucks as well as services combined with price realization in most markets. For Construction Equipment, net sales decreased by 2%, adjusted for currency movements, due to weak market conditions in China. Overall demand outside of China continued to be good. Buses' net sales increased by 23% adjusted for currency movements, primarily driven by increased demand for long-distance buses. Net sales for Volvo Penta increased by 17%, adjusted for currency movements, as both the marine and industrial engine market continued their positive development after the covid-19 pandemic.

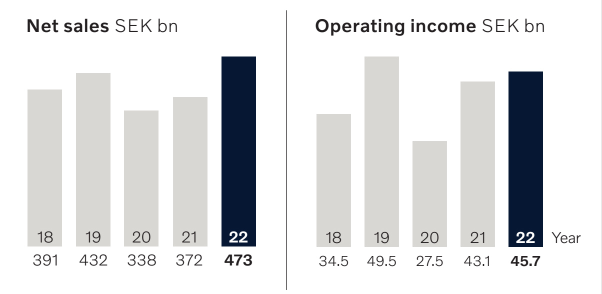
The Volvo Group's sales of defense material, as defined in the Swedish Military Equipment Ordinance (1992:1303) section A, amounted in 2022 to 0.72% (0.63) of net sales.

Operating income

In 2022, the Volvo Group's adjusted operating income amounted to SEK 50.5 billion (41.0), excluding a negative impact from provisioning of assets related to Russia in an amount of SEK 4.1 billion and SEK 0.6 billion relating to costs for claims arising from the European Commission's 2016 antitrust settlement decision. For more information, please see Legal Proceedings in Note 24. Adjusted operating income in 2021 excluded positive effects of SEK 2.1 billion mainly related to the divestment of UD Trucks. For information on adjustments, see Key Ratios on page 212. The adjusted operating margin amounted to 10.7% (11.0).

Profitability was solid in yet another challenging year with geopolitical turmoil, supply chain constraints and high inflation pressure. Compared with 2021, the increased adjusted operating income is mainly an effect of price realization, improved volumes, and positive currency effects. This was partly offset by higher material costs, costs related to supply chain disturbances, higher selling and administrative expenses and increased R&D expenses relating to investments in the transformational technologies such as electrification and automation.

Reported operating income amounted to SEK 45.7 billion (43.1).



Net sales by operating segment, SEK M	**2022**	2021	%
Trucks	310,536	230,881	35
Construction Equipment	100,261	92,031	9
Buses	18,583	13,652	36
Volvo Penta	18,102	14,437	25
Group Functions & Other	16,376	13,459	22
Eliminations	–4,155	–3,398	–
Industrial Operations	**459,703**	**361,062**	**27**
Financial Services	17,355	13,437	29
Reclassifications and eliminations	–3,579	–2,283	–
Volvo Group[1]	**473,479**	**372,216**	**27**

1 Adjusted for changes in currency rates and acquired and divested operations, net sales increased by 17%.

Net sales by geographical region, SEK M	**2022**	2021	%
Europe	187,715	154,296	22
North America	131,632	94,356	40
South America	48,400	28,810	68
Asia	63,604	62,310	2
Africa and Oceania	28,352	21,291	33
Total Industrial Operations	**459,703**	**361,062**	**27**
Of which:			
Vehicles	367,234	282,666	30
Services	92,469	78,396	18

Adjusted operating income by operating segment, SEK M	**2022**	2021
Trucks	33,821	25,567
Construction Equipment	13,244	12,228
Buses	353	59
Volvo Penta	2,530	2,092
Group Functions & Other	–2,911	–2,265
Eliminations	12	53
Industrial Operations	**47,049**	**37,733**
Financial Services	3,416	3,279
Reclassifications and eliminations	2	2
Volvo Group adjusted operating income	**50,467**	**41,015**
Adjustments[1]	–4,755	2,059
Volvo Group operating income	**45,712**	**43,074**

1 For more information on adjusted operating income, please see section for Key ratios

Adjusted operating margin, %	**2022**	2021
Trucks	10.9	11.1
Construction Equipment	13.2	13.3
Buses	1.9	0.4
Volvo Penta	14.0	14.5
Industrial Operations	**10.2**	**10.5**
Volvo Group adjusted operating margin	**10.7**	**11.0**
Volvo Group operating margin	**9.7**	**11.6**

Change in operating income, Volvo Group SEK bn	Change (excluding currency)	Currency impact	Total
Operating income 2021			**43.1**
Change in gross income Industrial Operations	10.2	10.8	21.0
Change in gross income Financial Services	0.3	0.7	1.0
Higher credit losses[1]	–3.7	0.0	–3.7
Sale of tangible and intangible assets	–0.5	0.0	–0.5
Divestment of group companies[2]	–1.6	0.0	–1.6
Higher capitalization of development cost	1.7	0.0	1.7
Higher research and development expenditures	–5.6	–0.4	–6.0
Higher selling and administrative expenses	–3.7	–2.4	–6.1
Income from investments in joint ventures and associated companies	–1.2	0.0	–1.2
Higher damages and litigation expenses[3]	–2.0	0.0	–2.0
Restructuring costs	–0.1	0.0	–0.1
Other	0.5	–0.4	0.1
Operating income 2022	**–5.7**	**8.3**	**45.7**

1 Including provisioning of assets related to Russia.

2 In 2021 a capital gain of SEK 1.7 bn from the divestment of UD Trucks was included.

3 Includes costs for claims arising from the European Commission's 2016 antitrust settlement decision and costs for a civil penalty from the National Highway Traffic Safety Administration in the US.

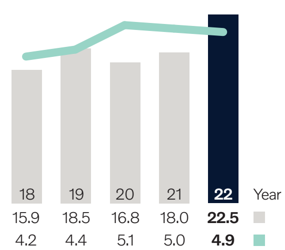
Impact of exchange rates on operating income, Volvo Group, Compared with preceding year, SEK M	
Net sales[1]	44,031
Cost of sales	–32,548
Research and development expenses	–442
Selling and administrative expenses	–2,375
Other	–387
Total effect of changes in exchange rates on operating income	**8,279**

1 The Volvo Group sales are reported at monthly average rates.

Key operating ratios, Industrial Operations, %	**2022**	2021
Gross margin	22.8	23.3
Research and development expenses as % of net sales	4.9	5.0
Selling expenses as % of net sales	5.7	6.0
Administrative expenses as % of net sales	1.3	1.3
Operating margin	**9.8**	**11.0**

Expenses by nature, SEK M	**2022**	2021
Material cost (freight, distribution, warranty) and purchased services	301,407	232,774
Personnel	65,480	56,944
Amortization/depreciation	20,729	18,720
Other	31,575	20,881
Total	**419,191**	**329,319**

Research and development expenses, Industrial Operations



Impact of exchange rates on operating income

In 2022, changes in exchange rates compared to last year impacted the Volvo Group's operating income positively by SEK 8.3 billion. The impact was related to translation of operating income in foreign subsidiaries by SEK 4.5 billion, net flows in foreign currency by SEK 4.4 billion and revaluation of receivables and liabilities of SEK –0.6 billion. The translation of operating income was mainly impacted by the appreciation of BRL, USD and EUR. The net flows in foreign currency were positively impacted by an appreciation of USD, AUD and GBP.

» **Read more in Note 4** Goals and policies in financial risk management regarding Volvo Groups transaction exposure from operating net flows, **graphs 4:4** and **4:6**, as well as currency impact on sales and operating income.

Net financial items

In 2022, interest income increased by SEK 0.7 billion and amounted to SEK 1.0 billion (0.4). Interest expenses was on par with the previous year and amounted to SEK 1.2 billion (1.2). Other financial income and expenses amounted to SEK –0.4 billion (0.9). The change compared with 2021 was primarily due to revaluation effects on financial assets and liabilities mainly related to derivatives hedging interest rate exposure in Financial Services.

» **Read more in Note 9** Other financial income and expenses.

Income taxes

The tax expense for the year amounted to SEK 12.1 billion (9.9) corresponding to an effective tax rate of 27% (23).

Income for the period and earnings per share

In 2022, income for the period amounted to SEK 33.0 billion (33.0). Earnings per share and diluted earnings per share amounted to SEK 16.09 (16.12).

Financial position

Strengthened financial position

In 2022, the Volvo Group returned SEK 26,4 billion to its shareholders and strengthened the financial position to continue to invest in transformational technologies.

BALANCE SHEET VOLVO GROUP – ASSETS

		Industrial Operations		Financial Services		Eliminations		Volvo Group	
SEK M	Note	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021
Assets									
Non-current assets									
Intangible assets	12	41,471	36,971	73	98	–	–	41,544	37,070
Tangible assets	13								
Property, plant and equipment		63,058	54,299	50	48	–	–	63,108	54,348
Investment property		54	57	–	–	–	–	54	57
Assets under operating leases		34,109	32,150	21,372	19,658	–11,963	–11,838	43,518	39,969
Financial assets									
Investments in joint ventures and associated companies	5	21,583	20,685	–	–	–	–	21,583	20,685
Other shares and participations	5	587	524	18	15	–	–	605	539
Non-current customer-financing receivables	15	1,903	1,669	105,536	83,774	–2,375	–2,057	105,064	83,386
Net pension assets	20	2,722	2,372	5	–	–	–	2,727	2,372
Non-current interest-bearing receivables	16	7,227	1,747	1,153	74	–6,578	–70	1,803	1,752
Other non-current receivables	16	10,997	9,211	227	187	–202	–170	11,022	9,227
Deferred tax assets	10	12,219	9,744	1,969	1,203	0	0	14,189	10,947
Total non-current assets		**195,931**	**169,430**	**130,404**	**105,058**	**–21,118**	**–14,135**	**305,217**	**260,352**
Current assets									
Inventories	17	75,382	63,715	307	202	–	–	75,689	63,916
Current receivables									
Customer-financing receivables	15	1,128	868	89,145	68,352	–1,409	–1,102	88,864	68,118
Tax assets	16	1,489	1,336	570	373	–	–	2,059	1,708
Interest-bearing receivables	16	5,690	1,976	0	0	–27	–26	5,663	1,950
Internal funding[1]		7,991	16,672	–	–	–7,991	–16,672	–	–
Accounts receivables	16	46,672	39,321	1,548	1,455	–	–	48,220	40,776
Other receivables	16	21,390	18,103	3,302	1,840	–5,319	–3,201	19,373	16,742
Marketable securities	18	93	167	–	–	–	–	93	167
Cash and cash equivalents	18	76,005	59,435	9,688	3,913	–1,806	–1,223	83,886	62,126
Total current assets		**235,840**	**201,593**	**104,560**	**76,135**	**–16,553**	**–22,223**	**323,847**	**255,504**
Total assets		**431,771**	**371,022**	**234,964**	**181,193**	**–37,671**	**–36,359**	**629,064**	**515,856**

1 Internal funding is internal lending from Industrial Operations to Financial Services.

Balance sheet

In 2022, total assets in the Volvo Group increased by SEK 113.2 billion compared to year-end 2021, whereof SEK 45.9 billion is related to currency movements. The increase was mainly in inventory, accounts receivables, customer financing receivables and cash and cash equivalents.

» **Read more in Note 15** Customer-financing receivables.
» **Read more in Note 16** Receivables.
» **Read more in Note 17** Inventories.
» **Read more in Note 18** Cash and cash equivalents.

No assets and liabilities held for sale were recognized as of December 31, 2022 (–).

» **Read more in Note 3** Acquisitions and divestments of operations, regarding assets and liabilities held for sale.

Investments in joint ventures and associated companies amounted to SEK 21.6 billion as of December 31, 2022 an increase of SEK 0.9 billion compared with year-end 2021.

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations.

BALANCE SHEET VOLVO GROUP – EQUITY AND LIABILITIES									
		Industrial Operations		Financial Services		Eliminations		Volvo Group	
SEK M	Note	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021
Equity and liabilities									
Equity attributable to owners of AB Volvo	19	143,921	126,546	18,796	14,500	–	–2	162,717	141,045
Non-controlling interest	11	3,519	3,073	–	–	–	–	3,519	3,073
Total equity		**147,439**	**129,619**	**18,796**	**14,500**	**–**	**–2**	**166,236**	**144,118**
Non-current provisions									
Provisions for post-employment benefits	20	8,690	12,095	55	82	–	–	8,745	12,177
Provisions for deferred taxes	10	3,060	2,774	2,412	2,153	–	–	5,472	4,926
Other provisions	21	12,330	10,610	66	49	–	557	12,396	11,216
Total non-current provisions		**24,080**	**25,478**	**2,533**	**2,284**	**–**	**557**	**26,613**	**28,319**
Non-current liabilities									
Bond loans	22	102,887	79,365	–	–	–	–	102,887	79,365
Other loans	22	25,446	16,488	12,325	10,148	–2,086	–1,823	35,684	24,812
Internal funding[1]		–110,254	–82,734	98,310	74,223	11,944	8,512	–	–
Other liabilities	22	51,351	42,978	1,467	1,557	–7,270	–7,705	45,549	36,831
Total non-current liabilities		**69,431**	**56,096**	**112,101**	**85,928**	**2,587**	**–1,016**	**184,119**	**141,008**
Current provisions	21	**13,095**	**11,535**	**24**	**36**	**–**	**383**	**13,119**	**11,954**
Current liabilities									
Bond loans	22	37,794	21,747	–	–	–	–	37,794	21,747
Other loans	22	24,666	21,230	11,163	7,432	–1,247	–962	34,583	27,700
Internal funding[1]		–50,804	–36,176	79,677	63,141	–28,873	–26,964	–	–
Trade payables	22	89,174	76,079	1,003	666	–	–	90,177	76,745
Tax liabilities	22	6,147	3,720	760	567	–	–	6,907	4,287
Other liabilities	22	70,749	61,693	8,906	6,639	–10,138	–8,354	69,517	59,978
Total current liabilities		**177,726**	**148,293**	**101,510**	**78,445**	**–40,258**	**–36,281**	**238,977**	**190,457**
Total equity and liabilities		**431,771**	**371,022**	**234,964**	**181,193**	**–37,671**	**–36,359**	**629,064**	**515,856**

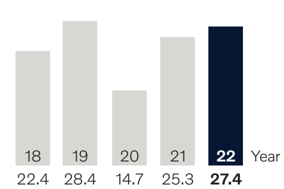
1 Internal funding is internal lending from Industrial Operations to Financial Services.

The net value of assets and liabilities related to pensions and similar obligations amounted to a liability of SEK 6.0 billion as of December 31, 2022, a decrease of SEK 3.8 billion compared with year-end 2021.

» **Read more in Note 20** Provisions for post-employment benefits.

On December 31, 2022, total equity for the Volvo Group amounted to SEK 166.2 billion compared with SEK 144.1 billion at year-end 2021. The equity ratio was 26.4% (27.9). On the same date the equity ratio in the Industrial Operations amounted to 34.1% (34.9). Return on capital employed in Industrial Operations amounted to 27.4% (25.3).

Return on capital employed, Industrial Operations %



Net financial position excl. post-employment benefits and lease liabilities	Industrial Operations		Volvo Group	
SEK M	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021
Non-current interest-bearing assets				
Non-current customer-financing receivables	–	–	105,064	83,386
Non-current interest-bearing receivables	7,227	1,747	1,803	1,752
Current interest-bearing assets				
Customer-financing receivables	–	–	88,864	68,118
Interest-bearing receivables	5,690	1,976	5,663	1,950
Internal funding	7,991	16,672	–	–
Marketable securities	93	167	93	167
Cash and cash equivalents	76,005	59,435	83,886	62,126
Total interest-bearing financial assets	**97,006**	**79,998**	**285,372**	**217,499**
Non-current interest-bearing liabilities				
Bond loans	–102,887	–79,365	–102,887	–79,365
Other loans	–20,611	–11,995	–30,878	–20,343
Internal funding	110,254	82,734	–	–
Current interest-bearing liabilities				
Bond loans	–37,794	–21,747	–37,794	–21,747
Other loans	–22,875	–19,575	–32,806	–26,068
Internal funding	50,804	36,176	–	–
Total interest-bearing financial liabilities excl. post-employment benefits and lease liabilities	**–23,109**	**–13,772**	**–204,365**	**–147,523**
Net financial position excl. post-employment benefits and lease liabilities	**73,897**	**66,227**	**81,008**	**69,976**

Provisions for post-employment benefits and lease liabilities, net	Industrial Operations		Volvo Group	
SEK M	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021
Non-current lease liabilities	–4,835	–4,492	–4,806	–4,469
Current lease liabilities	–1,792	–1,655	–1,777	–1,632
Provisions for post-employment benefits, net	–5,968	–9,723	–6,018	–9,805
Provisions for post-employment benefits and lease liabilities, net	**–12,595**	**–15,870**	**–12,601**	**–15,907**

Net financial position incl. post-employment benefits and lease liabilities	Industrial Operations		Volvo Group	
SEK M	**Dec 31 2022**	Dec 31 2021	**Dec 31 2022**	Dec 31 2021
Net financial position excl. post-employment benefits and lease liabilities	73,897	66,227	81,008	69,976
Provisions for post-employment benefits and lease liabilities, net	–12,595	–15,870	–12,601	–15,907
Net financial position incl. post-employment benefits and lease liabilities	**61,303**	**50,356**	**68,407**	**54,070**

Net financial position

In 2022, net financial assets in Industrial Operations, excluding provisions for post-employment benefits and lease liabilities, increased by SEK 7.7 billion resulting in a net financial asset position of SEK 73.9 billion on December 31, 2022. The change was mainly explained by a positive operating cash flow of SEK 35.3 billion offset by the dividend paid to AB Volvo shareholders by SEK 26.4 billion. Currency movements increased net financial assets by SEK 1.6 billion.

Including provisions for post-employment benefits and lease liabilities, the Industrial Operations net financial assets amounted to SEK 61.3 billion on December 31, 2022. During 2022 provisions for post-employment benefits and lease liabilities decreased by SEK 3.3 billion. This was mainly related to remeasurements of post-employment benefits of SEK 4.8 billion, partly offset by negative currency movements of SEK 1.2 billion. The positive remeasurements were primarily an effect of significantly higher discount rates in all countries, partly offset by adjustments on inflation assumptions in Sweden and the Eurozone as well as lower return on assets.

» **Read more in Note 20** Provisions for post-employment benefits.

Changes in net financial position, Industrial Operations

SEK bn	2022	2021
Net financial position excl. post-employment benefits and lease liabilities at the end of previous period	**66.2**	**74.7**
Operating cash flow	35.3	29.4
Investments and divestments of shares, net	–0.9	–7.4
Acquired and divested operations, net[1]	–0.1	17.9
Capital injections to/from Financial Services	–2.1	1.6
Currency effect	1.6	3.0
Dividend to owners of AB Volvo	–26.4	–49.8
Dividend to non-controlling interest	–0.0	–
Other changes	0.3	–3.2
Net financial position excl. post-employment benefits and lease liabilities at the end of period	**73.9**	**66.2**
Provisions for post-employment benefits and lease liabilities at the end of previous period	**–15.9**	**–23.7**
Pension payments, included in operating cash flow	1.5	1.8
Remeasurements of defined post-employment benefits	4.8	7.7
Service costs and other pension costs	–1.6	–2.0
Investments and amortizations of lease contracts	0.0	0.3
Transfer pensions and lease liabilities to UD Trucks	–	1.1
Currency effect	–1.2	–0.7
Other changes	–0.2	–0.4
Provisions for post-employment benefits and lease liabilities at the end of period	**–12.6**	**–15.9**
Net financial position incl. post-employment benefits and lease liabilities at the end of period	**61.3**	**50.4**

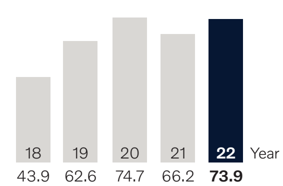
1 In 2021 it Includes both the cash flow from the divestment of UD Trucks operations and the inter-company loans that financed the divestment of the customer-financing portfolio in VFS Japan. This was repaid by UD Trucks at the time of divestment. » **Read more in Note 3** Acquisitions and divestments of operations.

The Volvo Group's cash and cash equivalents amounted to SEK 83.9 billion on December 31,2022 compared with SEK 62.1 billion on December 31, 2021. In addition to this granted, but unutilized, credit facilities amounted to SEK 45.5 billion (42.3) on December 31, 2022. Cash and cash equivalents include 2.3 (2.8) billion that is not available to use by the Volvo Group and SEK 14.5 (8.7) billion where other limitations exist, mainly liquid funds in countries where exchange controls or other legal restrictions apply.

» **Read more in Note 18** Cash and cash equivalents.

» **Read more in Note 22** Liabilities, regarding the maturity structure on credit facilities.

Net financial position, excl. provisions for post-employment benefits and lease liabilities, Industrial Operations SEK bn



Cash flow statement

Strong operating cash flow

In 2022, operating cash flow in the Industrial Operations amounted to SEK 35.3 billion (29.4). The higher operating cash flow compared with 2021 is primarily an effect of higher operating income. In the working capital, changes in inventories affected the cash flow positively compared to 2021. This was offset by a decrease in trade payables and an increase in accounts receivables compared to prior year. The total changes in working capital largely remained on par with 2021.

Operating cash flow in Financial Services was negative in an amount of SEK –22.8 billion (–12.7). The change compared to 2021 was mainly due to significantly higher increase of new business volume in the credit portfolio.

Investments and disposals

The Industrial Operations' investments in tangible and intangible assets during 2022 amounted to SEK 16.6 billion (12.5).

Trucks investments in tangible and intangible assets amounted to SEK 13.4 billion (9.8). The major investments were related to industrial efficiency measures such as replacement and extension at the Köping plant in Sweden as well as the ongoing replacement of casting process equipment in Skövde, Sweden. Capital expenditures were also related to product upgrades and renewals such as the development of battery electrical and fuel-cell electrical trucks with both product development activities and required adaptations in the plants. Investments in dealer networks and workshops were primarily made in Europe, mainly for optimization and replacements.

Investments in Construction Equipment amounted to SEK 1.4 billion (1.2). The major investments in the plants were mainly related to industrial efficiency measures primarily in Europe and US. The product related investments during the year were mainly related to product upgrades and continued electrification with both product development activities and investments in adaptations in the plants.

The investments in Buses were SEK 0.4 billion (0.4), and in Volvo Penta SEK 0.8 billion (0.7).

The investment level for tangible assets during 2022 increased by SEK 2.5 billion compared to 2021. During 2023 investments in property, plant and equipment are expected to continue upwards. Optimization of the industrial footprint, product related tooling, replacements as well as dealer investments will continue to be the main areas.

Investments and divestments of shares

In 2022, investments and divestments of shares had a negative impact on cash flow of SEK –0.9 billion (–7.4). The negative impact was mainly due to capital injections of SEK 0.9 billion in the joint venture cellcentric GmbH & Co. KG.

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations.

Acquired and divested operations

In 2022, acquired and divested operations had a negative impact on cash flow of SEK –0.1 billion (22.0). The positive impact in 2021 was mainly due to the divestment of UD Trucks by SEK 22.8 billion.

» **Read more in Note 3** Acquisitions and divestments of operations.

Financing and dividend

In 2022, net borrowings increased by SEK 34 billion, mainly due to significantly higher new business volume in the credit portfolio. During 2022, dividends of in total SEK 26.4 billion (49.8) were paid. These consists of an ordinary dividend of SEK 6.50 per share, and one extra dividend of SEK 6.50 per share.

» **Read more in Note 29** Cash flow regarding change in loans.

Change in cash and cash equivalents

In 2022, Cash and cash equivalents increased by SEK 21.8 billion and amounted to SEK 83.9 billion on December 31, 2022.

» **Read more in Note 18** Cash and cash equivalents regarding the accounting policy.

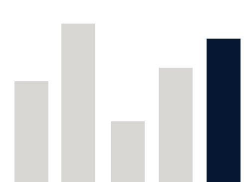
» **Read more in Note 29** Cash flow regarding principles for preparing the cash flow statement.

CONSOLIDATED CASH FLOW STATEMENT

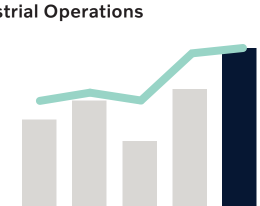
SEK M	Note	Industrial Operations 2022	Industrial Operations 2021	Financial Services 2022	Financial Services 2021	Eliminations 2022	Eliminations 2021	Volvo Group 2022	Volvo Group 2021
Operating activities									
Operating income		44,862	39,783	848	3,289	2	2	45,712	43,074
Amortization intangible assets	12	2,918	2,757	53	36	–	–	2,971	2,793
Depreciation tangible assets	13	8,601	7,238	25	26	–	–	8,626	7,264
Depreciation leasing vehicles	13	4,408	4,301	4,724	4,361	0	0	9,132	8,663
Other non-cash items	29	3,403	–1,444	3,675	453	–114	–7	6,964	–998
Total change in working capital whereof		–2,532	–2,270	–26,294	–16,054	152	853	–28,674	–17,471
Change in accounts receivables		*–5,600*	*–1,999*	*–170*	*–64*	–	–	*–5,770*	*–2,062*
Change in customer-financing receivables		*–169*	*–623*	*–26,330*	*–15,619*	*148*	*871*	*–26,350*	*–15,370*
Change in inventories		*–5,804*	*–12,438*	*–106*	*151*	–	–	*–5,911*	*–12,287*
Change in trade payables		*7,749*	*13,137*	*282*	*37*	–	–	*8,031*	*13,174*
Other changes in working capital		*1,293*	*–347*	*30*	*–559*	*4*	*–19*	*1,327*	*–925*
Dividends received from joint ventures and associated companies		70	769	–	–	–	–	70	769
Interest and similar items received		1,055	347	0	0	56	18	1,111	365
Interest and similar items paid		–1,147	–854	0	6	290	–6	–856	–854
Other financial items		–199	–307	–	–	–	–	–199	–307
Income taxes paid		–10,019	–8,657	–1,596	–994	–	–	–11,614	–9,651
Cash flow from operating activities		**51,423**	**41,664**	**–18,565**	**–8,877**	**386**	**860**	**33,244**	**33,647**
Investing activities									
Investments in intangible assets		–5,361	–3,737	–29	15	–	–	–5,390	–3,722
Investments in tangible assets		–11,287	–8,806	–14	–3	–	–	–11,301	–8,809
Investment in leasing vehicles		–1	–37	–9,173	–9,291	19	21	–9,155	–9,308
Disposals of in-/tangible assets and leasing vehicles		553	356	5,026	5,495	–21	–15	5,558	5,837
Operating cash flow		**35,327**	**29,440**	**–22,756**	**–12,662**	**384**	**866**	**12,956**	**17,645**
Investments of shares	5							–1,085	–7,384
Divestments of shares	5							157	–
Acquired operations	3							–265	–789
Divested operations	3							153	22,773
Interest-bearing receivables incl marketable securities								–158	–87
Cash flow after net investments								**11,758**	**32,158**
Financing activities									
New borrowings[1]	29							177,532	89,141
Repayment of borrowings[1]	29							–143,551	–96,113
Dividend to owners of AB Volvo								–26,435	–49,820
Dividend to non-controlling interest								–19	–631
Other								–44	–132
Change in cash and cash equivalents excl. translation differences								**19,241**	**–25,396**
Translation difference on cash and cash equivalents								2,520	2,316
Change in cash and cash equivalents								**21,761**	**–23,080**
Cash and cash equivalents, beginning of year	18							**62,126**	**85,206**
Cash and cash equivalents, end of year	18							**83,886**	**62,126**

1 Non-cash items from unrealized currency effects and currency translation are adjusted on new borrowings and repayments of borrowings.

Operating cash flow, Industrial Operations SEK bn



Investments in property, plant and equipment, Industrial Operations



Changes in consolidated equity

SEK M	Note	Share capital	Other reserves[1]	Translation reserve	Retained earnings	Total	Non-controlling interest	Total equity
		Equity attributable to owners of AB Volvo						
Balance as of December 31, 2020		**2,562**	**230**	**–2,778**	**145,281**	**145,295**	**2,847**	**148,142**
Income for the period		–	–	–	32,787	32,787	456	33,243
Other comprehensive income								
Remeasurements of defined benefit plans	20	–	–	–	6,091	6,091	–	6,091
Remeasurements of holding of shares at fair value	5, 19	–	48	–	–	48	–	48
Exchange differences on translation of foreign operations		–	–	5,403	–	5,403	372	5,775
Share of other comprehensive income related to joint ventures and associated companies		–	–	–	1,349	1,349	–	1,349
Accumulated translation differences reversed to income		–	–	–324	–	–324	–	–324
Other comprehensive income for the period		–	48	5,079	7,440	12,566	372	12,938
Total comprehensive income for the period		**–**	**48**	**5,079**	**40,227**	**45,354**	**828**	**46,182**
Transactions with shareholders								
Dividends to owners of AB Volvo		–	–	–	–49,820	–49,820	–631	–50,451
Changes in non-controlling interests		–	–	–	–	–	26	26
Other changes		–	–270	–	486	216	4	220
Transactions with shareholders		–	–270	–	–49,334	–49,604	–602	–50,206
Balance as of December 31, 2021		**2,562**	**8**	**2,301**	**136,174**	**141,045**	**3,073**	**144,118**
Income for the period		–	–	–	32,722	32,722	247	32,969
Other comprehensive income								
Remeasurements of defined benefit plans	20	–	–	–	3,817	3,817	–	3,817
Remeasurements of holding of shares at fair value	5, 19	–	–45	–	–	–45	–	–45
Exchange differences on translation of foreign operations		–	–	10,366	–	10,366	179	10,544
Share of other comprehensive income related to joint ventures and associated companies		–	–	–	1,279	1,279	–	1,279
Accumulated translation differences reversed to income		–	–	–	–	–	–	–
Other comprehensive income for the period		–	–45	10,366	5,096	15,417	179	15,596
Total comprehensive income for the period		**–**	**–45**	**10,366**	**37,818**	**48,140**	**425**	**48,565**
Transactions with shareholders								
Dividends to owners of AB Volvo		–	–	–	–26,435	–26,435	–19	–26,454
Changes in non-controlling interests		–	–	–	–	–	40	40
Other changes		–	–	–	–33	–33	–	–33
Transactions with shareholders		–	–	–	–26,468	–26,468	20	–26,447
Balance as of December 31, 2022		**2,562**	**–37**	**12,667**	**147,524**	**162,717**	**3,519**	**166,236**

1 **Read more in Note 19** Equity and number of shares regarding specification of other reserves.

Financial management

Stable credit rating

The objectives of the financial management in the Volvo Group is to assure shareholders long-term attractive total return and debt providers the financial strength and flexibility to secure proceeds and repayment. A long-term competitive business requires access to capital to be able to invest. Financial management ensures that the capital is used in the best possible way through well-defined ratios and objectives for the Industrial Operations as well as for the customer finance operations in Financial Services.

The objective on Group operating margin and return on equity for Financial Services are intended to secure the return requirements from shareholders. The target on no net financial indebtedness under normal circumstances in the Industrial Operations and the equity ratio for Financial Services are there to secure financial stability.

Steering principles to ensure financial flexibility

To ensure financial stability and flexibility throughout the business cycle the Volvo Group holds a strong liquidity position. Besides cash and marketable securities, the liquidity position is built up of revolving committed credit facilities. Funding and lending in Financial Services are in local currency and the portfolio is matched both from an interest and a liquidity risk perspective, in accordance with the Volvo Group policy. For further information, please see Note 4 to the Consolidated financial statements.

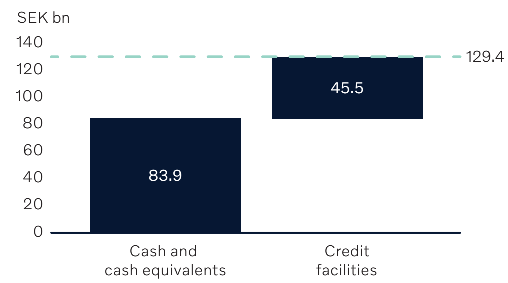
Diversified funding sources

The Volvo Group has centralized the portfolio management of financial assets and liabilities, funding operations and cash management through the internal bank, Volvo Treasury. The liability portfolio is separated into two portfolios, one for Industrial Operations and one for Financial Services, to correspond to the needs of the different operations. Volvo Treasury works to assure the possibility to access capital markets at all times through diversified funding sources. To access capital markets around the world, the Group uses different instruments, such as bilateral bank funding, corporate bonds and certificates, agency funding as well as securitization of assets in Financial Services' credit portfolio. An increasingly important part of the treasury work is to manage increased funding needs in new growth markets.

Green Finance Framework

Volvo Group has a Green Finance Framework for the financing of investments and projects in the area of clean transportation. The framework enables the Group to issue green bonds and other green financial instruments and allows it to identify, select, manage and report on eligible projects and assets in line with International Capital Market Association Green Bond Principles. The funds will be earmarked to projects in areas such as R&D and manufacturing of electric vehicles, machines and engines with zero tailpipe emissions. Funds will also be used by Volvo Financial Services to offer green loans to customers who buy the Group's electric products. The Green Finance Framework has been subject to an independent external assessment by CICERO Shades of Green, which has classified it as Dark Green – their highest level.

Volvo Group liquidity position, December 31, 2022



Geographically diversified market programs

Credit rating, February 27, 2023

	Short-term	Long-term
Moody's (Corporate Rating)	P-1	A2, stable
S&P (Corporate Rating)	A-2	A–, positive
R&I (Japan)	a-1	A+, stable

A strong and stable credit rating is important

Being a large issuer of bonds, it is critical to have a strong and stable credit rating. The level of the credit rating is not only important for debt investors but also for a number of other stakeholders when it comes to creating long-term relationships. A strong credit rating has a positive effect on the ability to attract and finance customers' purchases of the Group's products and on the trust from suppliers. It also gives access to more funding sources and lower cost of funds.

The Volvo Group has contractual relations with two global Credit Rating Agencies for solicited credit ratings: Moody's Investors Service (Moody's) and Standard & Poors' Rating Services (S&P). During 2022, both Moody's long-term rating of A2, stable, and S&P's rating of A-, positive were unchanged.

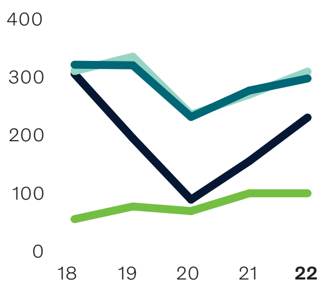
Trucks

Increased sales and continued good profitability

BRANDS

In 2022, net sales in the truck business increased by 35% to SEK 310,536 M. The increase was as a consequence of strong demand for both trucks and services in most markets around the world. The global supply chain constraints which followed the covid-19 pandemic limited production in 2022, which meant that deliveries of trucks could not fully meet customer demand. The adjusted operating income amounted to SEK 33,821 M (25,567) corresponding to an adjusted operating margin of 10.9% (11.1).

Market development, heavy-duty trucks
Thousands



18	19	20	21	22	
322	321	231	277	298	Europe 30
311	336	235	270	310	North America
53	75	67	98	98	Brazil
306	194	87	154	230	India
1,148	1,174	1,619	1,395	672	China

Good demand in most markets

In 2022, demand for both new and used vehicles continued to be good in Europe and North America. Customers' fleets have been utilized a lot and aged in recent years as an effect of constraints in the production of trucks due to the strained supply chains. This has led to a pent-up need to replace aging trucks and an increased need for spare parts and services.

In Brazil, the agricultural segment drove demand on the back of a record harvest, high prices for crops and a pre-buy ahead of the Euro VI emissions legislation that was implemented on January 1, 2023.

The Chinese truck market continued to decline due to lower economic activity and lower freight prices and contacted more than 50% during the year.

Demand for trucks in India continued to grow, spurred on by increased consumption, pent-up demand and increased government investments in infrastructure.

Orders and deliveries

In 2022, net order intake to the Group's wholly-owned truck operations decreased by 16% to 217,779 (257,856) trucks, excluding UD Trucks. Order intake increased in South America and Asia, whereas it decreased in Europe, North America, and Africa and Oceania. Demand was strong as customers in many markets wanted to both replace old trucks and expand their fleets. However, this was not fully reflected in the order intake, as the Group's truck brands were restrictive in slotting orders into production due to large order books, long delivery times and to manage cost inflation.

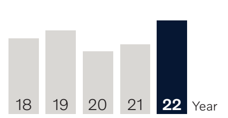
During the year, a total of 232,558 trucks were delivered from the Group's wholly-owned operations, an increase of 17% compared with 198,464 trucks in 2021, excluding UD Trucks. However,

The truck operation's product offer stretches from heavy-duty trucks for long-haulage and construction work to light-duty trucks for distribution. The offer also includes maintenance and repair services, financing and leasing.

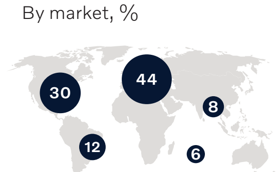
Position on the world market
Volvo Group is one of the world's largest manufacturers of heavy-duty trucks.

Number of regular employees
54,046 (50,974).

Net sales

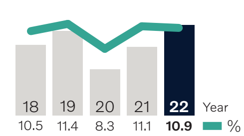


By market, %



Share of Group

Adjusted operating income[1] and adjusted operating margin

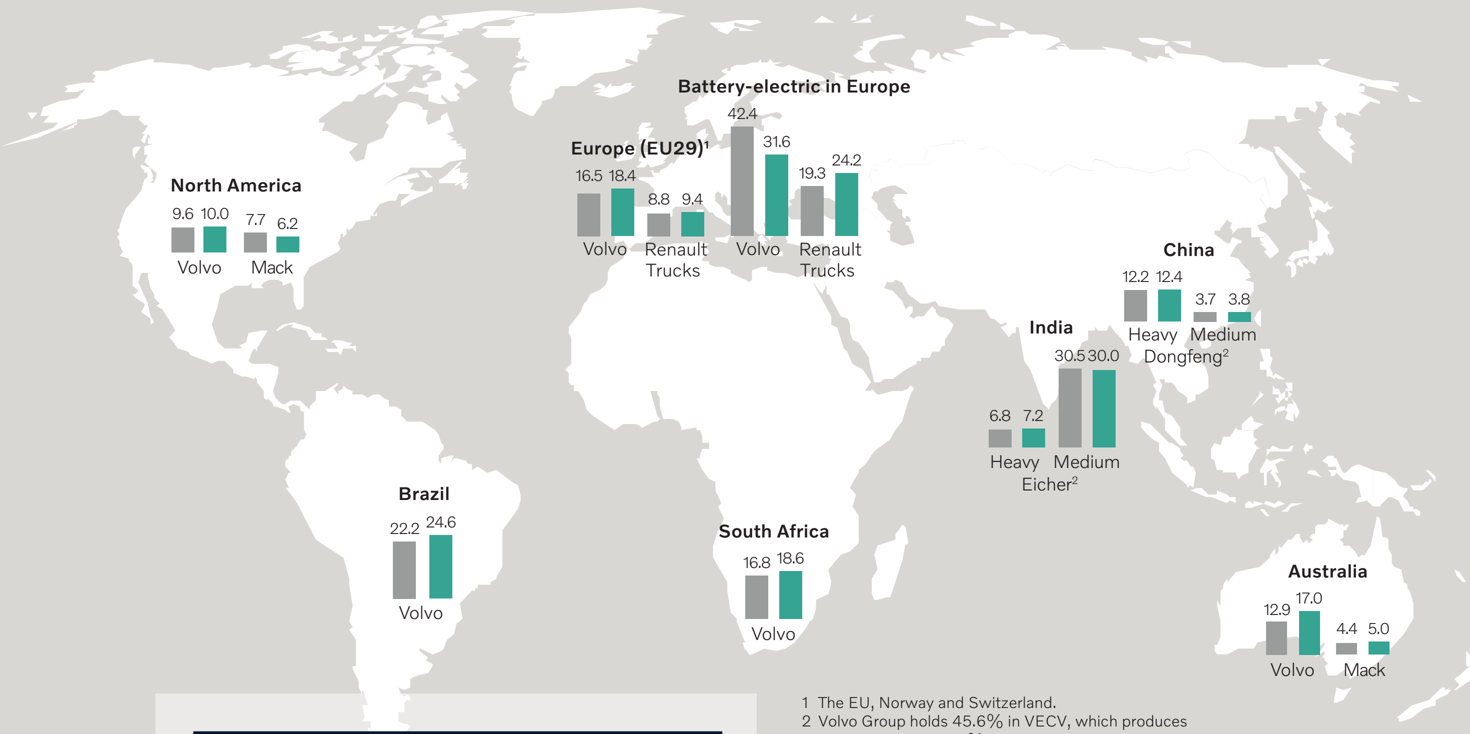


1 For information on adjusted operating income, see Key Ratios on page 212.

STRONG POSITIONS GLOBALLY

Market shares, heavy-duty trucks %

2021 ■ 2022 ■



1 The EU, Norway and Switzerland.
2 Volvo Group holds 45.6% in VECV, which produces Eicher trucks, and 45% in DFCV, which produces Dongfeng trucks.

Deliveries by market No. of trucks	2022	2021
Deliveries excluding UD Trucks		
Europe	113,245	98,600
North America	56,535	47,613
South America	31,958	28,609
Asia	19,066	14,814
Africa and Oceania	11,754	8,828
Total deliveries excluding UD Trucks	**232,558**	**198,464**
UD Trucks[1]	–	3,994
Total deliveries	**232,558**	**202,458**
Deliveries excluding UD Trucks		
Heavy duty (>16 tons)	197,249	167,290
Medium duty (7–16 tons)	15,475	13,136
Light duty (<7 tons)	19,834	18,038
Total deliveries excluding UD Trucks	**232,558**	**198,464**
UD Trucks[1]	–	3,994
Total deliveries	**232,558**	**202,458**
Volvo	145,195	122,525
UD Trucks[1]	–	3,994
Renault Trucks	58,967	51,460
Mack	26,801	23,631
Other brands	1,595	848
Total deliveries	**232,558**	**202,458**
Non-consolidated operations		
VE Commercial Vehicles (Eicher)	61,119	51,777
Dongfeng Commercial Vehicle Company (Dongfeng Trucks)	86,920	177,430

1 UD Trucks was divested on April 1, 2021.

Net sales and operating income SEK M	2022	2021
Net sales excluding UD Trucks		
Europe	137,177	107,794
North America	92,582	65,281
South America	38,254	23,527
Asia	23,988	16,609
Africa and Oceania	18,535	12,233
Total net sales excluding UD Trucks	**310,536**	**225,444**
Of which		
Vehicles	245,681	172,163
Services	64,855	53,281
UD Trucks[1]	–	5,348
Total net sales	**310,536**	**230,881**
Adjusted operating income[2]	**33,821**	**25,567**
Adjustments[2]	–1,845	1,781
Operating income	**31,976**	**27,349**
Adjusted operating margin, %	10.9	11.1
Operating margin, %	10.3	11.8

1 UD Trucks was divested on April 1, 2021.
2 For information on adjusted operating income, please see Key Ratios on page 212.

both the production and the delivery of trucks were hampered by supply chain disturbances relating to semiconductors and other components as well as lack of freight capacity.

The Volvo Group is rapidly expanding its offer of fully-electric light-, medium- and heavy-duty trucks. Total order intake for fully-electric trucks increased by 242% to 3,633 (1,062) vehicles and deliveries of fully-electric trucks increased by 226% to 1,211 (371) vehicles.

Solid performance

In 2022, net sales in the truck operations increased by 35% to SEK 310,536 M (230,881). Adjusted for currency movements and UD Trucks, which was divested on April 1, 2021, net sales increased by 25%, of which vehicle sales increased by 30% and service sales by 10%.

Adjusted operating income amounted to SEK 33,821 M (25,567), corresponding to an adjusted operating margin of 10.9% (11.1). Adjusted operating income in 2022 excludes a negative effect of SEK 1,215 M primarily from provisioning of assets related to Russia and SEK 630 M relating to costs for claims arising from the European Commission's 2016 antitrust settlement decision. For more information, please see Legal Proceedings in Note 24. Adjusted operating income in 2021 excluded positive effects of SEK 1,781 M. For information on adjustments, see Key Ratios on page 212.

The higher earnings were mainly an effect of price realization on both vehicles and services, which were partly offset by increased material costs, higher R&D and selling expenses as well as higher freight costs. Before the divestment on April 1, 2021, UD Trucks had a marginally positive impact on adjusted operating income.

Reported operating income amounted to SEK 31,976 M (27,349). Currency movements had a positive impact of SEK 3,935 M compared with 2021.

Important events

In March, Volvo Trucks in North America received an order for 110 Volvo VNR Electric trucks from the global logistics company Maersk. The deal adds to a previous order of 16 trucks of the same model in 2021 and marks the single largest commercial order to date for Volvo's electric trucks. Read more about the rollout of electric trucks starting on page 30.

Also in March, Renault Trucks announced the expansion of its all-electric range and the start of sales in 2023 of two new models of up to 44 tonnes, the Renault Trucks T E-Tech for regional transport and the Renault Trucks C E-Tech for the construction industry.

In May, Volvo Group opened its very first assembly plant for battery packs. Located in Ghent, Belgium, the plant supplies ready-to-install batteries for fully electric heavy-duty trucks and other Group products.

As the world's first truck manufacturer to do so, Volvo Trucks announced that it would introduce fossil-free steel in frame rails in its battery-electric trucks. The steel is produced by the Swedish company SSAB, see page 36.

In June, Volvo Trucks showcased a new zero-emission fuel-cell truck powered by hydrogen. The fuel cells were supplied by cellcentric, the joint venture between the Volvo Group and Daimler Truck AG, intends to build one of Europe's largest series-production facilities for fuel cells specially developed for heavy vehicles.

In September, as the first global truck manufacturer, Volvo Trucks started series production of heavy electric trucks with up to 44 tonnes in gross combination weight when the Volvo FH, Volvo FM, and Volvo FMX models were added to the line-up. These three models represent around two thirds of Volvo Trucks' sales.

In October, Renault Trucks announced the opening of pre-orders for the heavy electric trucks for regional transport and urban construction, extending the current offer. These new 44-tonne electric trucks will be produced at the plant in Bourg-en-Bresse, France.

In October, Volvo Trucks announced that they would deliver 20 fully electric heavy-duty trucks to Amazon in Germany by year end. XPO Logistics, a long-standing customer of Renault Trucks, accelerated its transition to a sustainable fleet in France with a landmark investment in 100 electric Renault Trucks vehicles. Delivery of the battery-electric trucks began in Q4 2022 and will continue until 2024.

In November, the Volvo Group and North America-based Pilot Company signed a Letter of Intent for the development of a public, high-performing charging infrastructure for medium- and heavy-duty electric vehicles.

1,000 electric trucks produced in Blainville-sur-Orne, France

The Volvo Group's plant in Blainville-sur-Orne, France has been serial-producing medium-duty 100% electric trucks for Volvo Trucks and Renault Trucks since 2020. Proof of the success of this carbon-free mobility offer is that the plant in October surpassed a production number of 1,000 electric trucks of 16, 19 and 26 tonnes used throughout Europe. In operation since 1956, the plant in Normandy specializes in the manufacturing of medium-duty trucks and truck cabs. Ever since the start of series production in March 2020, demand for electric trucks has been growing. Thanks to excellent production flexibility with continuous adaptation of industrial tooling, the production capacity of electric trucks has continued to increase to meet growing demand. The plant is ready to meet the expected volume ramp-up as more and more customers choose to buy electric trucks. In 2022, half of the electric trucks sold in Europe were produced in the plant in Blainville.

VOLVO FMX ELECTRIC

As urban skylines grow rapidly, so do noise and air pollution. But the robust Volvo FMX Electric can deliver and remove heavyweight material and machines, even in sensitive parts of the city, with as little disturbances as possible.

Fully electric trucks	Net order intake		Deliveries	
	2022	2021	**2022**	2021
Volvo	1,846	440	554	121
Renault Trucks	1,743	613	647	249
Heavy- and medium-duty	804	290	379	64
Light-duty	939	323	268	185
Mack	44	9	10	1
Total	**3,633**	**1,062**	**1,211**	**371**

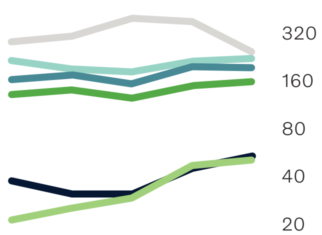
Construction Equipment

Continued good profitability

BRANDS

2022 was characterized by consistent demand across most regions amid ongoing infrastructure investments. Volvo Construction Equipment's (Volvo CE) net sales in 2022 rose by 9% to SEK 100,261 M. Deliveries however declined by 19% due to the combination of high deliveries in 2021, the effects of a slowdown in China and halted sales in Russia. Adjusted operating income amounted to SEK 13,244 M (12,228) corresponding to an adjusted operating margin of 13.2% (13.3).

Market development in Volvo CE's product ranges, construction equipment
Thousands



18	19	20	21	22*	
167	178	157	202	**199**	Europe
134	143	127	152	**162**	N. America
21	25	29	47	**51**	S. America
219	195	187	219	**228**	Asia (excl. China)
292	317	411	393	**250**	China
37	31	31	45	**54**	Africa & Oceania

*Rollling 12 months per November

Global markets at good levels

Overall demand, outside of China continued to be good in 2022. Demand in North America continued to be robust driven by a good economic activity and infrastructure projects. The South American market was supported by high activity in the commodity segment. In Europe the market grew in the beginning of the year, but demand flattened in the second half of the year as macro-economic uncertainty and higher interest rates made customers more cautious. The slowdown in China, the largest global market for construction equipment, was caused by lower economic activity combined with restrictions and lockdowns related to covid. In other markets in Asia, government stimulus programs and high commodity prices provided buoyancy to demand.

Increased sales and maintained profitability

In 2022, net sales in Construction Equipment increased by 9% to SEK 100,261 M (92,031). Adjusted for currency movements, net sales decreased by 2%, of which machine sales decreased by 3% and service sales increased by 6%.

Adjusted operating income amounted to SEK 13,244 M (12,228), corresponding to an adjusted operating margin of 13.2% (13.3) excluding adjustments of SEK –338 M (0). For information on adjustments, please see Key Ratios on page 212.

Compared with 2021, the higher adjusted operating income was an effect of price realization and positive mix effects, which were partially offset by increased material costs, selling expenses, freight costs and R&D expenses.

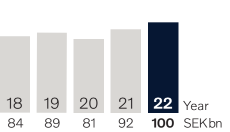
Reported operating income amounted to SEK 12,907 M (12,228). Currency movements had a positive impact of SEK 3,472 M compared with 2021.

Volvo CE is one of the leaders in the development of products and services for the construction, extraction, waste processing and materials handling sectors.

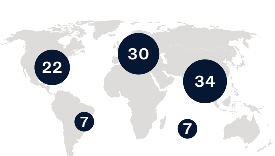
Position on the world market
One of the world's leading manufacturers of haulers, wheel loaders and excavators. It also produces road construction machines and compact equipment. The offering also includes services such as customer support agreements, machine control systems, attachments, financing and leasing.

Number of regular employees
14,797 (13,847).

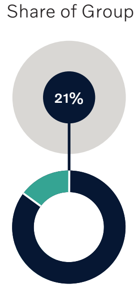
Net sales



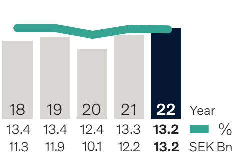
By market, %



Share of Group



Adjusted operating income[1] and adjusted operating margin



1 For information on adjusted operating income, see Key Ratios on page 212.

Volvo CE partners on Sweden's largest fossil-free worksite

More than 2,000 tons of CO_2 will be saved in a partnership to transform a 100-year-old meat-packing district in Stockholm, Sweden, setting a new benchmark for almost entirely fossil-free construction sites. Volvo CE is working with the City of Stockholm, construction company Skanska, Volvo CE dealer Swecon and other like-minded partners in the pioneering urban development of Stockholm city's meat packing district. The EC230 Electric, a new 23-ton battery electric excavator from Volvo CE, will play a key role in constructing the neighborhood of 3,000 homes and 14,000 workplaces – helping to build with the lowest possible greenhouse gas emissions.

Perform to transform

With solid profitability as the base, Volvo CE is continuing to invest in new technologies, such as electrical products, in order to meet the increasing demand for sustainable solutions from customers. With the global rollout of Volvo CE's electric machines along with services to reduce customers' carbon impact, Volvo CE is proving that it is possible to lead the decarbonization transition while maintaining its strong financial performance.

Important events

Volvo CE became the first manufacturer in the world to deliver a construction machine built using fossil-free steel to a customer – showing that the decarbonization journey requires changes in the whole value chain, including suppliers, and not only in the use phase of the products. It also proved that partnership is the key to accelerating the implementation of low- or zero-carbon innovations across the value chain. The steel comes from SSAB, see page 36.

And with its continued global roll-out of electric machines across markets in Europe, North America and Asia, Volvo CE is supporting the journey towards emission free jobsites in a growing number of markets. In 2022, Volvo CE introduced its first fully electric machine also on the Asian market, the ECR25 Electric excavator. The 23-ton EC230 Electric excavator – the largest electric machine in the portfolio – was brought to selected markets, making sustainable solutions in the mid-size range more accessible to customers.

In May, Volvo CE invested in Limach, a manufacturer of electric excavators for the domestic Dutch market. The collaboration will see the development of electric construction machines using Limach's proven Li-Ion battery technology applied to conventional Volvo CE products as a base. The internal combustion engine on select excavators will be replaced by a Limach developed electrification kit.

Net sales and operating income SEK M	2022	2021
Europe	30,194	29,524
North America	22,294	16,583
South America	6,491	3,951
Asia	34,228	36,427
Africa and Oceania	7,054	5,546
Total net sales	**100,261**	**92,031**
Of which		
Construction Equipment	85,465	79,390
Services	14,796	12,641
Adjusted operating income[1]	**13,244**	**12,228**
Adjustments[1]	–338	0
Operating income	**12,907**	**12,228**
Adjusted operating margin, %	13.2	13.3
Operating margin, %	12.9	13.3

1 For information on adjusted operating income, see Key Ratios on page 212.

Deliveries by market Number of machines	2022	2021
Europe	16,767	20,453
North America	7,663	6,217
South America	4,875	4,263
Asia	48,153	65,635
Africa and Oceania	3,451	3,303
Total deliveries	**80,909**	**99,871**
Large and medium construction equipment[1]	58,110	73,144
Compact construction equipment[2]	22,799	26,727
Of which		
Fully electric	598	321
Total deliveries	**80,909**	**99,871**
Of which		
Volvo	39,327	39,903
SDLG	41,339	59,753
Of which in China	34,545	51,819

1 Excavators >10 tons, wheel loaders engine power >120 hp, articulated haulers, rigid haulers and road machinery products.
2 Excavators <10 tons, wheel loaders engine power <120 hp, skid steer loaders and backhoe loaders.

Following the unveiling of its dedicated fuel cell test lab at the R&D Center in Eskilstuna, Sweden in 2021, Volvo CE in 2022 revealed its first fuel cell prototype in the form of a concept hydrogen fuel cell articulated hauler – an important milestone in its drive towards a net-zero future where fuel cells, batteries and internal combustion engines powered by biofuels play an important role.

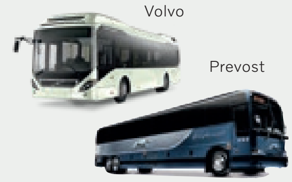
In services, Volvo CE launched a new CO_2 Reduction Program, aimed at helping customers realize their own unique goals towards decarbonization, and other pioneering digital solutions such as Connected Map and a Collision Mitigation System, designed to boost productivity, fuel efficiency and safety.

Volvo CE also announced a SEK 360 M investment in its articulated hauler plant in Braås, Sweden. Over the coming years the plant will be adapted to be able to produce a larger range of articulated haulers with different types of powertrains, including electric drivelines.

Buses

A recovery in the bus market

BRANDS



The year 2022 was characterized by a recovery in travel following the covid-19 pandemic. Demand for city buses and coaches increased, which contributed to a 36% rise in net sales to SEK 18,583 M. The adjusted operating income amounted to SEK 353 M (59), with an adjusted operating margin of 1.9% (0.4).

During the year, the implementation of Volvo Buses' vision "being the most desired and successful provider of sustainable people transport solutions, driving value creation through innovation, partnership and people" and the focus on its strategic priorities continued, with local adjustments and developments. The strategic priorities consist of five different components: profitable growth, accelerated electromobility, grow services and solutions sales, leverage partnerships and development of people and culture.

Increased demand after covid-19

As the effects of the pandemic began to wane, demand for long-distance buses and services were the first to recover. The order intake for long-distance buses improved significantly, primarily in North and South America, with several large orders from Brazil and Mexico and for Prevost in North America. Demand also grew in the city bus segment.

Total order intake rose by 54% to 6,459 units (4,197) and deliveries increased by 29% to 5,815 units (4,522). The utilization level in customers' bus fleets also rose, which contributed to an improvement in service sales of 38% to SEK 4,398 M.

The changeover to electrified buses in cities continued and the global demand for electrified solutions increased. To meet this growing demand, there is a global offering for electric buses, the Volvo BZL Electric chassis, which was launched in 2021. The Volvo BZL Electric meets the highest standards of driving safety, operation and road safety and has been designed to be 90% recyclable. The chassis offers customers a robust platform with a long service life for efficient, sustainable public transport. As part of our focus on electrified vehicles, Prevost launched a development project with the aim of being able to offer customers an electric coach.

Total order intake for fully electric buses rose by 36% to 304 units (223), while deliveries increased by 14% to 240 units (211).

As a result of the pandemic and the global situation, the year was also characterized by problems in the supply chain. The availability of components and transport was limited and this led to challenges in purchasing, logistics and production. A considerable amount of work went into reducing the negative effects and safeguarding deliveries to customers.

Improved profitability

Volvo Buses' net sales increased by 36% to SEK 18,583 M (13,652). Adjusted for currency movements, net sales increased by 23%, with vehicle sales increasing by 23% and service sales increasing by 25%.

Adjusted operating income amounted to SEK 353 M (59), which corresponded to an adjusted operating margin of 1.9% (0.4). There were no adjustments in 2022 (20). For information on adjustments, please see Key Ratios on page 212.

The improved earnings were mainly an effect of increased vehicle and service volumes. Price adjustments to a large extent counteracted cost increases for material.

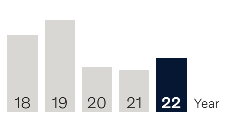
Reported operating income amounted to SEK 353 M (78). Currency movements had a positive impact of SEK 310 M compared with 2021.

Volvo Buses is a leader in the development of sustainable people transport solutions. The offering includes premium city and intercity buses, coaches, and chassis as well as services for increased productivity, uptime and safety. Volvo Buses has sales in 85 countries and a global service network with more than 1,500 dealerships and workshops. Production facilities are found in Europe, North America and South America.

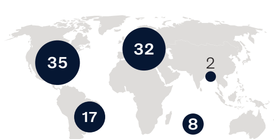
Position on the world market
Volvo Buses is one of the world's largest manufacturers of premium buses and coaches.

Number of regular employees
5,325 (5,117).

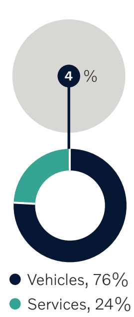
Net sales



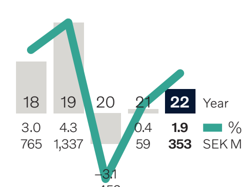
By market, %



Share of Group



Adjusted operating income[1] and adjusted operating margin



As of October 1, 2021, the operations of Nova Bus were reclassified from the Buses segment into Group Functions and Other. To facilitate comparability, financial numbers for 2020 and 2021 have been restated.

1 For information on adjusted operating income, see Key Ratios on page 212.

New operational model for public transport in Chile

To meet demand for a new operational model for public transport in Santiago, Chile, Volvo Buses and Volvo Financial Services established a partnership with the operators RedBus and Metropol. This meant that the two Volvo companies could jointly solve the wishes for maximum uptime and safety as well as financing.

Volvo Buses started delivery of the 564 buses in 2022 and is responsible for certification of their maintenance throughout the contract period. Volvo Buses is also responsible for training drivers and service personnel, providing spare parts and for digital services for operational management and monitoring of the buses, while Volvo Financial Services owns the buses run by operators RedBus and Metropol. The business model is the first on the continent.

"We believe that the new operational model with partnerships between several different actors can become the standard for other major cities in Latin America as it raises the quality of public transport while facilitating financing for operators and transport authorities," says Dan Pettersson, Senior Vice President at Business Unit Chassis.

Launch of Volvo Connect

Volvo Connect, including the unique Zone Management solution, a portal where customers have access to Volvo Buses' service offerings and connected services was launched as an important means of increasing sales of services and improving customer service.

The responsibility for digital and connected services was assigned to a new unit within Volvo Buses, Digital Services & Solutions, in order to further strengthen and develop the offering to customers in this area.

Major orders for buses based on new coach platform

During the summer, a new coach platform was launched for premium coaches and chassis. With a power output of up to 500 hp and potential fuel savings of 9%, the new platform offers customers operating tourist and charter coaches as well as public transport services the potential to lower costs and reduce emissions. The new platform is designed for global use but provides significant flexibility for local market adaptations. It is supplied both as a complete coach and as a chassis. In the autumn, several orders were placed for buses based on the new platform, including 330 long-distance coaches for Mexico. In Europe, 219 orders were received for the new platform.

Net sales and operating income[1] SEK M	2022	2021
Europe	6,034	5,886
North America	6,521	4,089
South America	3,154	882
Asia	1,372	1,371
Africa and Oceania	1,502	1,423
Total net sales	**18,583**	**13,652**
Of which		
Vehicles	14,185	10,459
Services	4,398	3,192
Adjusted operating income[2]	**353**	**59**
Adjustments[2]	0	20
Operating income	**353**	**78**
Adjusted operating margin, %	1.9	0.4
Operating margin, %	1.9	0.6

1 The operations of Nova Bus were reclassified from the Buses segment into the segment Group Functions and Other as of October 1, 2021. To facilitate comparability, financial numbers for 2021 have been restated.

2 For information on adjusted operating income, see Key Ratios on page 212.

Deliveries by market[1] Number of buses	2022	2021
Europe	1,424	1,388
North America	1,134	1,118
South America	1,957	726
Asia	819	585
Africa and Oceania	481	705
Total deliveries	**5,815**	**4,522**
Of which		
Fully electric	240	211
Hybrids	127	232

1 The operations of Nova Bus were reclassified from the Buses segment into the segment Group Functions and Other as of October 1, 2021. To facilitate comparability, financial numbers for 2021 have been restated.

A number of larger orders were also received for electric models, including 82 Volvo 7900 Electric buses for three different cities in Finland. Metroline in London, UK placed an important order for 48 units of the BZL electric chassis. Volvo Buses now has a total of more than 5,400 electrified buses in operation.

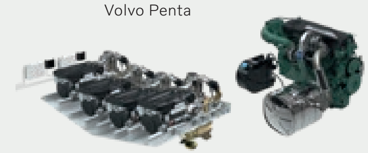
Volvo Buses and the city of Gothenburg, Sweden were included on TIME's list of "Best Innovations 2022" for their geofencing partnership. Geofencing zones can be downloaded to city buses, which automatically can be slowed down in safety zones. Geofencing can switch to electric drive on hybrid buses in sensitive areas.

Volvo Penta

Increased sales and good profitability

BRAND

Volvo Penta



Marine engines Industrial engines

In 2022, Volvo Penta's net sales increased by 25% to SEK 18,102 M driven by strong market demand and increased utilization of Volvo Penta products. Adjusted operating income amounted to SEK 2,530 M (2,092), with an adjusted operating margin of 14.0% (14.5).

Customer success in focus

Volvo Penta operates in two business units: Marine, consisting of the leisure and commercial subsegments and Industrial, which includes the off-road and power generation subsegments. Volvo Penta's strategy is to deliver customer success through power solutions and services that increase the customer satisfaction within each segment. Along with the rest of the Group, Volvo Penta has set ambitious targets to reach net-zero value chain greenhouse gas emissions by 2040.

Volvo Penta continues the accelerated transformation journey working with multiple technology paths including combustion engines using renewable fuels, battery electric and fuel cell electric. The development is done by maximum leverage of Volvo Group common solutions, in-house product development, and through collaborations and partnerships. The transformation also includes the continued development of services and digital experiences.

Continued positive market development

On the marine leisure market, the effects of the stay-at-home trends in the wake of the covid-19 pandemic continued during 2022. In the marine commercial market, projects previously postponed due to the pandemic were restarted in the beginning of the year. Increased demand for vessels serving the offshore wind industry and patrol vessels contributed to the positive development.

The market for industrial off-road engines had a positive development, especially driven by agriculture, mining, construction and material handling. The industrial power generation market increased due to the strained situation in the energy sector. The strong demand in combination with supply constraints in the value chain affected lead times in all segments.

Continued good performance

Volvo Penta's net sales increased by 25% to SEK 18,102 M (14,437). Adjusted for currency movements, net sales increased by 17%, of which engine sales increased by 20% and service sales by 9%.

Adjusted operating income amounted to SEK 2,530 M (2,092), corresponding to an adjusted operating margin of 14.0% (14.5) excluding adjustments of SEK –3 M (0). For information on adjustments, please see Key Ratios on page 212.

The higher adjusted operating income was primarily an effect of price realization and positive mix effects on engines as well as price realization and increased volumes in the service business, which were partially offset by increased material and freight costs as well as higher R&D and selling expenses.

Reported operating income amounted to SEK 2,527 M (2,092). Currency movements had a positive impact of SEK 757 M compared with 2021.

Transformation and innovation at a high pace

Volvo Penta's journey towards net zero power solutions for both industrial and marine customers continued at a high pace. Among other milestones, the 600V electric driveline for Rosenbauer's city fire truck was introduced also to the US market.

Volvo Penta aims to be the most forward thinking and customer focused supplier of sustainable power solutions. Volvo Penta provides engines, power solutions and services for leisure and commercial vessels, as well as for power generation and industrial off-road applications.

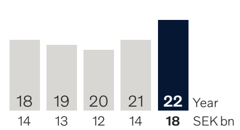
Position on the world market

Volvo Penta is one of the world's largest producer of power systems for leisure boats and a leading provider of power systems for industrial off-road and power generation segments.

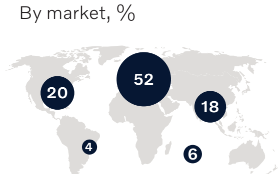
Number of regular employees

2,022 (1,832).

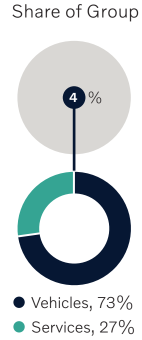
Net sales



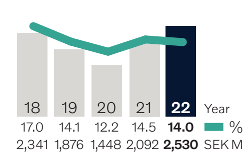
By market, %



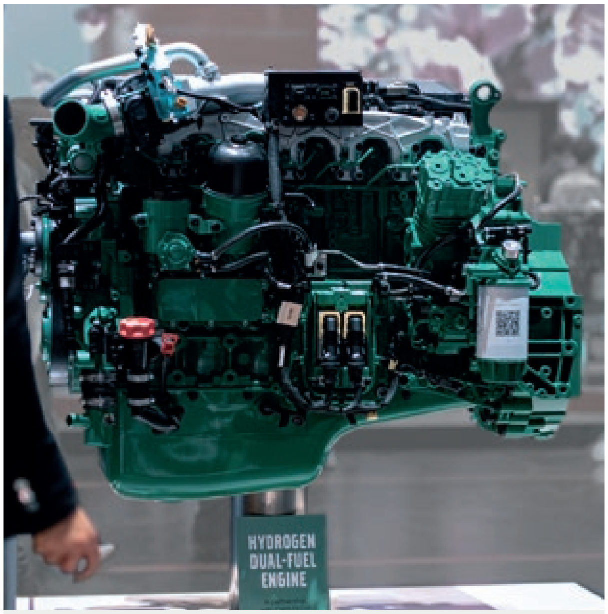
Share of Group



Adjusted operating income[1] and adjusted operating margin



1 For information on adjusted operating income, see Key Ratios on page 212.



Powerful partnerships

Partnerships are a cornerstone of Volvo Penta's business strategy. The partnership with CMB.Tech aims to establish dual-fuel hydrogen technology as a low-carbon interim solution before suitable zero-emissions alternatives become viable. The partnership includes pilot projects and small-scale industrialization of a hydrogen dual-fuel solution for selected customers.

Net sales and operating income SEK M	2022	2021
Europe	9,417	7,464
North America	3,695	2,949
South America	635	474
Asia	3,302	2,698
Africa and Oceania	1,054	851
Total net sales	**18,102**	**14,437**
Of which		
Engines	13,221	10,282
Services	4,881	4,155
Adjusted operating income[1]	**2,530**	**2,092**
Adjustments[1]	–3	0
Operating income	**2,527**	**2,092**
Adjusted operating margin, %	14.0	14.5
Operating margin, %	14.0	14.5

1 For information on adjusted operating income, see Key Ratios on page 212.

Deliveries by segment Number of units	2022	2021
Marine engines	17,924	17,149
Industrial engines	27,360	24,839
Total deliveries	**45,284**	**41,988**
Of which		
Fully electric	24	39

The hybrid solution for Hurtigruten Svalbard's sightseeing vessel Kvitbjørn (Norwegian for polar bear) was put into field testing in the Arctic. Kvitbjørn was nominated as one of the "Significant Boats of 2022" by WorkBoat, a major American conference and expo for commercial vessels. It was the first non-US built vessel ever to be nominated.

The D13 engine package was extended to meet Tier III emission regulations for marine high-speed vessels. Also, a new range of variable speed generator sets for marine vessels, which is a key enabler for electrified marine propulsion, was launched.

As a step towards zero emission solutions, Volvo Penta entered a partnership with the Belgian clean tech company CMB.Tech. The partnership is designed to accelerate the development of dual-fuel hydrogen-powered solutions. The solution can be used for both industrial and marine applications and has the potential to reduce CO_2 emissions by up to 80%.

Furthermore, Volvo Penta launched the revolutionary Joystick Docking system for single diesel Aquamatic sterndrive installations. It integrates steering, bow thruster, gear, and engine speed into one control and was nominated for the DAME design award, following up on last year's success when the Assisted Docking system won the overall DAME design award. The Assisted Docking system was introduced as a retrofit upgrade offer.

Volvo Penta also expanded the power generation offer with a new D13 500 kVA genset. The engine is designed to provide full power output quickly when it starts up – essential when being used in emergency/stand-by operations, such as in hospitals, pharmaceutical companies, or data centers.

Financial Services

Good underlying financial performance

In 2022, Volvo Financial Services (VFS) continued to deliver strong results by focusing on sustainable growth and operational efficiency while also executing on its transformation agenda.

New business volume increased by 11% and adjusted operating income increased to SEK 3,416 M (3,279), while return on equity, excluding adjustments related to Russia, amounted to 15.1% (18.0).

Good growth and portfolio performance

During the year, VFS achieved new financing volumes of SEK 103.6 billion (85.1), an increase of 22%. Adjusted for currency the volume increase was 11%. The number of Volvo Group vehicles and machines financed was 68,658 (69,556) for 2022.

Inflation and the resulting interest rate hikes have led to strong competition from other commercial lenders, impacting penetration growth. Even with these headwinds, VFS maintained good penetration of 28% (30).

VFS net credit portfolio increased by 13% to SEK 216,053 M (171,784) on a currency-adjusted basis compared to 2021. The funding of the credit portfolio is matched in terms of maturity, interest rates and currencies in accordance with Group policy. For further information, see Note 4.

Adjusted operating income amounted to SEK 3,416 M (3,279), excluding adjustments of SEK –2,568 M from provisioning of assets related to Russia. In 2021, adjustments amounted to SEK 9 M related to restructuring charges. For information on adjustments, please see Key Ratios on page 212.

Reported operating income amounted to SEK 848 M (3,289). Currency movements had a positive impact of SEK 372 M compared with 2021.

Return on shareholders' equity amounted to –0.3% (18.0). Excluding the adjustments related to Russia return on shareholders' equity was 15.1%, with a stabilization during the year. The equity ratio at the end of the year was 8.0% (8.0).

Excluding the impacts related to Russia, credit provision expenses amounted to SEK 302 M (299) while write-offs of SEK 95 M (413) were recorded. The write-off ratio for 2022 was 0.05% (0.25). At the end of December 2022, credit reserves were 1.64% (1.82) of the credit portfolio excluding the impacts related to Russia.

Continued transformational investments

With a foundation of solid performance, VFS is continuing investments on four transformation initiatives to advance growth and unlock service revenue creation for the Volvo Group. These four initiatives are the acceleration of Equipment-as-a-Service (EaaS) and electromobility solutions, the expansion of parts & service financing, growth of insurance-related offerings, and digital payment solutions.

To achieve its aspirations around these initiatives, VFS relies on its Transforming Together strategy and key enablers of people and culture, customer expertise and innovation. These elements, together with an embedded focus on integrating ESG (Environmental, Social and Governance) factors into its business, provide VFS a roadmap to future revenue growth.

In 2022, VFS executed on several key elements of its Transforming Together strategy. Volvo Pay was launched in select European markets, offering customers a digital payment solution to easily approve and securely pay for services using their smartphones.

VFS partners with Volvo Group customers and dealers to help simplify the purchase and ownership experience of Group products, as well parts and service financing during the ownership lifecycle. Through innovative and flexible financing and insurance solutions, and other services tailored to customers' needs, VFS builds long-term relationships, increasing loyalty to the Volvo Group and its brands.

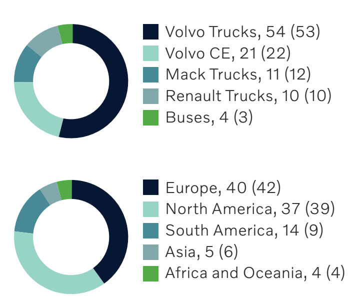
Position on the world market

VFS offers customer financing in 48 countries worldwide, with a footprint covering approximately 90% of Volvo Group sales. VFS manages a credit portfolio of SEK 216 billion with more than 285,000 vehicles and equipment.

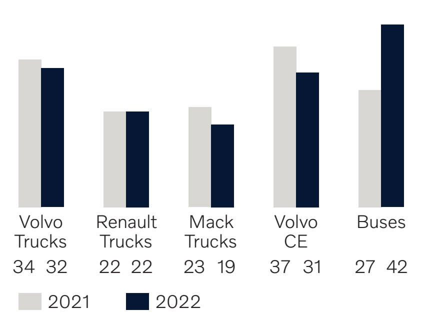
Number of regular employees

1,596 (1,546).

Distribution of credit portfolio %



Penetration rate[1] %



1 Share of unit sales financed by Volvo Financial Services in relation to total number of units sold by the Volvo Group in markets where financial services are offered.

Focus on sustainability

Sustainable thinking is rapidly becoming a focal point in and across society, as people and businesses consider how their decisions impact our world. Volvo Financial Services (VFS) is no exception. VFS is developing a sustainability strategy to help us become the leader in sustainable captive financial services and solutions.

Aligned with the Volvo Group's efforts and overall ESG (Environmental, Social and Governance) considerations, VFS' sustainability strategy focuses on making a difference in the areas of climate, resources and people.

Our Equipment-as-a-Service and electromobility efforts will have a significant impact on climate, while our parts & services financing and insurance solutions support circularity by enabling second and third lives for trucks and machines.

In 2022, VFS and Junior Achievement Worldwide partnered together to launch financial literacy programs in nine VFS markets around the world. These programs will see VFS employee volunteers join with JA educators to teach our next generation the financial skills needed to be successful.

By taking these steps and making a positive impact on climate, resources and people, VFS and our colleagues around the globe are helping to shape the world we want to live in.

Key ratios, Financial Services	2022	2021
Number of financed units	68,658	69,556
Total penetration rate[1], %	28	30
New financing volume, SEK billion	103.6	85.1
Credit portfolio net, SEK billion	216	172
Credit provision expenses, SEK M	3,332	299
Credit provision expenses excluding impacts related to Russia, SEK M	302	299
Adjusted operating income[2]	3,416	3,279
Adjustments[2]	–2,568	9
Operating income, SEK M	848	3,289
Credit reserves, % of credit portfolio	3.00	1.82
Credit reserves, % of credit portfolio excluding impacts related to Russia	1.64	1.82
Return on shareholders' equity, %	–0.3	18.0
Return on shareholders' equity excluding impacts related to Russia, %	15.1	18.0

1 Share of unit sales financed by Volvo Financial Services in relation to the total number of units sold by the Volvo Group in markets where financial services are offered.

2 For information on adjusted operating income, please see Key Ratios on page 212.

Income statement Financial Services SEK M	2022	2021
Finance and lease income	17,355	13,437
Finance and lease expenses	–10,641	–7,700
Gross income	**6,714**	**5,738**
Selling and administrative expenses	–2,991	–2,395
Credit provision expenses[1]	–3,355	–266
Other operating income and expenses	479	213
Operating income	**848**	**3,289**
Income taxes	–901	–807
Income for the period	**–53**	**2,481**

Related to services revenue growth, VFS increased its focus on EaaS, a key priority area for VFS that will help customer adoption of electric vehicles and will also drive higher finance penetration. By providing a framework to bundle services and solutions, VFS will enable the Volvo Group's brands to offer compelling total offers and peace of mind to customers.

EaaS will reduce complexity for customers, provide differentiation from competition, drive the potential to increase service revenue, and provide an opportunity to optimize the Group offer.

VFS is also working with Volvo Trucks and other partners to help build a medium- and heavy-duty electric vehicle (MHD EV) charging network connecting California's largest metropolitan areas. Scheduled for completion by the end of 2023, the publicly accessible network will help accelerate the adoption of MHD EVs by helping eliminate charging availability as a barrier to their use.

Expanded service offer and start in Portugal

To provide customers increased flexibility based on their usage needs, VFS expanded its service offer with new rental programs in Brazil, Italy and France. By offering reduced upfront investment amounts, more customers can access Volvo Group trucks and machines.

During the year, VFS also began offering customer financing in Portugal, giving customers in the market access to our business solutions. With a strong transport sector and upward pressure in the construction segment, Portugal is an excellent growth opportunity for VFS.

VFS partnered with Volvo Buses in Santiago, Chile to implement a new operations model to support public transport with a complete Group solution. Under the new model, VFS retains ownership and management of the assets, while Volvo Buses provides the training, maintenance and certification, helping to improve the quality of public transportation.

The share

Total shareholder return ahead of index in 2022

Most of the world's leading stock markets had a negative development during 2022. The price of both the Volvo A share and the B share declined. However, total return for both shares beat index.

The Volvo share is listed on the stock exchange Nasdaq Stockholm, Sweden. One A share carries one vote at General Meetings and one B share carries one tenth of a vote. Dividends are the same for both classes of shares. The Volvo share is included in many indices compiled by Dow Jones, FTSE, S&P and Nasdaq Nordic.

The Volvo share development

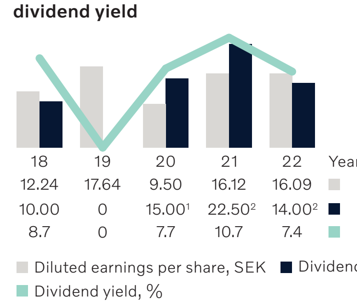
In general, the leading stock exchanges declined during 2022. On Nasdaq Stockholm the broad OMXSPI index fell by 25% after having risen by 35% in 2021. The share price for the Volvo A share declined by 7%, and at year-end the price was SEK 198.10 (212.60). The lowest closing price was SEK 157.20 on May 9 and the highest was SEK 223.60 on January 13. The share price for the Volvo B share declined by 10% and at year-end the price was SEK 188.48 (209.65). The lowest closing price was SEK 152.52 on April 14 and the highest was SEK 222.80 on January 13. Total return, including reinvested dividends, was 1% for the A share and –3% for the B share compared with –20% for the OMX Stockholm Benchmark GI index.

In 2022, a total of 1.0 billion (1.2) Volvo shares at a value of SEK 229 billion (242) were traded on Nasdaq Stockholm, with a daily average of 4.0 million shares (4.5). In terms of value, the Volvo shares were the third most traded on Nasdaq Stockholm in 2022. At year-end, Volvo's market capitalization was SEK 388 billion (428).

Why invest in the Volvo share?

- Competitive products and services
- Ambition to lead the transformation of our industry to more sustainable solutions
- Strong market positions globally
- Good return on capital employed
- Strong financial position
- Good cash returns to shareholders

Earnings and dividend per share, dividend yield



1 Ordinary dividend of SEK 6.50, an extra dividend of SEK 6.50 and SEK 9.50 relating to the proceeds from the sale of UD Trucks.

2 Ordinary dividend of SEK 7.00 and an extra dividend of SEK 7.00 proposed by the Board of Directors to the AGM 2023.

Share conversion option

In accordance with a resolution at the Annual General Meeting 2011, the Articles of Association includes a conversion clause, stipulating that series A shares may be converted into series B shares, on the request of the shareholder. At the end of 2021, there were 444,987,946 A shares outstanding. During 2022, a total of 71 A shares were converted to B shares. Further information on the conversion procedure is available on volvogroup.com

Dividend

The Board proposes an ordinary dividend of SEK 7.00 per share for the financial year 2022 and an extra dividend of SEK 7.00 per share, which would mean that a total of SEK 28,468 M would be transferred to AB Volvo's shareholders. For the preceding year a dividend of SEK 6.50 per share and an extra dividend of SEK 6.50 per share were distributed, in total SEK 26,435 M. Furthermore, the proceeds from the sale of UD Trucks, SEK 9.50 per share (SEK 19,318 M in total), were distributed to the shareholders in 2021.

Policy for remuneration to senior executives

See Note 27 on page 125 for the current policy for remuneration to senior executives, and page 204 for the Board of Directors' proposal to the Annual General Meeting for an updated remuneration policy.

Communication with shareholders

Dialogue with the shareholders is important for Volvo. In addition to the Annual General Meeting and a number of larger activities aimed at professional investors, private shareholders and stock market analysts, the relationship between Volvo and the stock market is maintained through such events as press and telephone conferences in conjunction with the publication of interim reports, meetings with retail shareholders' associations, investor meetings and visits, as well as roadshows in Europe and North America. On volvogroup.com it is possible to access financial reports and search for information concerning the share and statistics for truck deliveries. It is also possible to access information concerning the Group's governance, including information about the Annual General Meeting, the Board of Directors, Group Management and other areas that are regulated in the "Swedish Code of Corporate Governance." The website also offers the possibility to subscribe to information from the company.

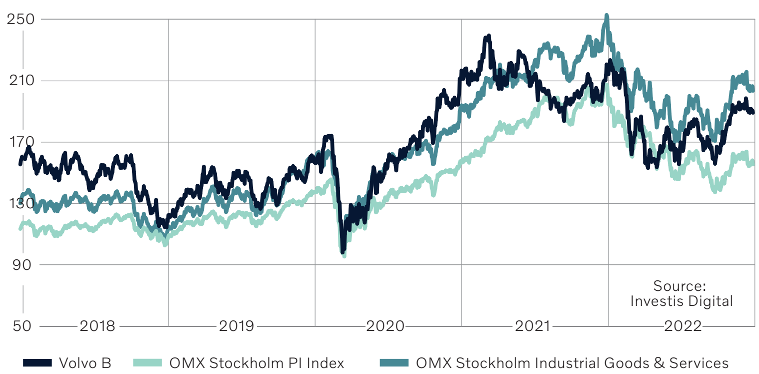
Volvo has decided to present its Corporate Governance Report as a separate document to the Annual Report in accordance with Chapter 6 § 8 of the Swedish Annual Accounts Act and it is available on page 186–203.

Contractual conditions related to takeover bids

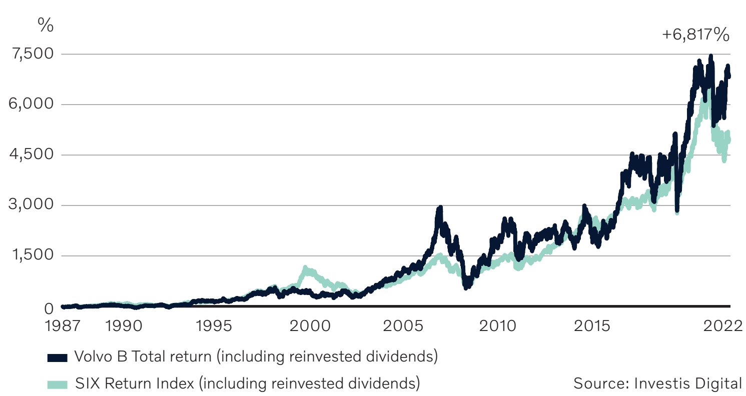
Provisions stipulating that an agreement can be changed or terminated if the control of the company is changed, so called change of control clauses, are included in some of the agreements whereby Renault Trucks has been given the right to sell Renault s.a.s. and Nissan Motor Co. Ltd's light-duty trucks as well as in some of the Group's purchasing agreements.

Some of Volvo Group's long-term loan agreements contain conditions stipulating the right for a creditor to request repayment in advance under certain conditions following a change of the control of the company. These clauses are not unusual in loan agreements. In AB Volvo's opinion it has been necessary to accept those conditions in order to receive financing on otherwise acceptable terms.

Price trend, Volvo B share, 2018–2022 SEK



Accumulated total return for the Volvo B share



The graph shows that SEK 1,000 invested in the Volvo B share on January 2, 1987 had grown to SEK 69,170 at the end of 2022, under the condition that all dividends have been reinvested in Volvo B shares.

The shareholders with the largest voting rights in AB Volvo, December 31, 2022

	Voting rights, %	Capital, %
Industrivärden	27.8	8.9
Geely Holding	16.0	8.2
AMF Insurance & Funds	5.4	3.5
Alecta	4.3	3.4
AFA Insurance	2.3	0.7
BlackRock	2.2	3.3
Vanguard	1.9	3.0
Swedbank Robur Funds	1.9	4.6
AP4 Fund	1.7	0.7
Norges Bank Investment Management	1.3	2.3

Share capital, December 31, 2022

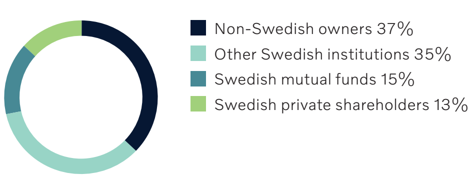
Number of shares	2,033,452,084
of which, Series A shares[1]	444,987,875
of which, Series B shares[2]	1,588,464,209
Share capital, SEK M	2,562
Quota value, SEK	1.62
Number of shareholders	374,185
Private persons	356,245
Legal entities	17,940

For further details on the Volvo share, see Note 19.

1 Series A shares carry one vote each.

2 Series B shares carry one tenth of a vote each.

Ownership by category[1]



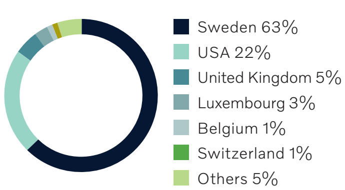
More details on the Volvo shares are provided in Note 19 to the financial statements and in the Eleven-year summary.

Employees' ownership of shares in Volvo through pension foundations is insignificant.

Source: Euroclear

1 Share of capital

Ownership by country[1]



Source: Euroclear

1 Share of capital

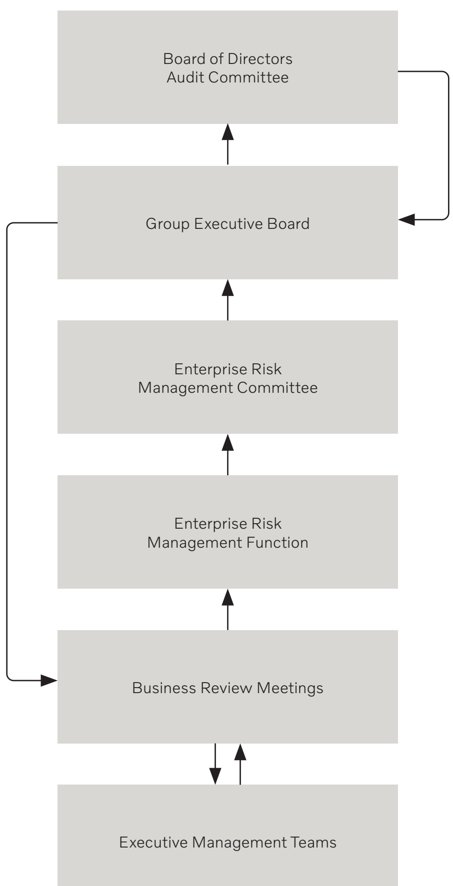
Risks and uncertainties

Managed risk-taking

Each of the Volvo Group's Business Areas and Truck Divisions monitors and manages risks in its operations. In addition, the Volvo Group utilizes a centralized Enterprise Risk Management (ERM) reporting process, which is a systematic and structured framework for reporting and reviewing risk assessments and mitigations as well as for following up on identified risks.

Volvo Group Enterprise Risk Management Process

For the governance model of the Volvo Group, please see page 187.



The Board of Directors monitors risks and mitigation activities annually and the Audit Committee regularly goes through the consolidated ERM report.

The Group Executive Board analyzes accuracy of reported risks and mitigation activities as well as ensures alignment to strategic and operational agendas.

The ERM Committee reviews, analyzes and challenges compiled risks and mitigation activities, ensuring a first alignment with the Group's operational agenda. The committee consists of the Executive Vice President Group Finance, Executive Vice President Legal & Compliance, Senior Vice President Group Treasury & Corporate Finance and the Senior Vice President Group Financial Reporting and Business Control, and Senior Vice President Risk Management and Internal Audit.

Each Business Area and Truck Division reports its largest risks and mitigation activities to the ERM function, which reviews and combines reported risks into the Group ERM report.

Business review meetings in each Business Area and Truck Division identify, analyze, mitigate and monitor its largest risks. This forms the basis for the ERM reporting.

Executive Management Teams in each Business Area and Truck Division are fully responsible for risk and mitigation management in their respective areas. Risks are identified, mitigation activities are established, and monitoring and reporting of progress is part of daily operations.

Risk categories

The ERM process classifies Volvo Group risks into five categories:

- Macro and market-related risks
- Operational risks
- Climate and people risks
- Compliance risks
- Financial risks.

The following pages present principal risks and uncertainties the Volvo Group is facing within each risk category. These risks can, separately or in combination, have a material adverse effect on the Group's business, strategy, financial performance, cash flow, shareholder value or reputation.

For short-term risks, please also see the segment reporting in the Board of Directors report, and Note 2 in the most recent quarterly report.

MACRO AND MARKET-RELATED RISKS

Cyclical commercial vehicles industry

The Volvo Group's customers operate all over the world, some within a single country and others across borders. A multitude of global and regional economic, regulatory, digital, technological, climate and energy resource efficiency factors contribute to a considerable volatility in demand and risks in different markets.

Like many capital goods industries, the commercial vehicle industry generally has been cyclical, impacted by e.g. developments of GDP and corresponding changes in transport demand, the need to replace aging vehicles and machines as well as changing laws and regulations. Although there is a continued shift in focus in the commercial vehicle industry from product to service, the cyclicality in the industry remains. Fluctuating demand for the Group's products and services makes the financial result of the operations dependent on the Group's ability to react quickly to market changes. Inability to adapt to changes in demand could lead to capacity constraints or underutilization of resources, which could have a negative effect on earnings, cash flows and financial position.

Competition

The Volvo Group operates in markets which are highly competitive, and thus faces intense competition from global and local industry peers. The Volvo Group also encounters competition from new market entrants, seeking to offer e.g. sustainable transportation, increased logistics efficiency, new technologies and/or new business models. In this market environment, there can be no assurance that current or new competitors cannot be more successful than the Group in bringing new products and service solutions to the market, in implementing new technologies or collaboration models or in offering more attractively priced products, services or solutions. This could result in e.g. reduced profit margins, loss of market share or a need to accelerate research and development investments and/or sales and marketing expenses, which each could adversely affect the Group's business, results of operations, market share and financial position.

Regulations

The Volvo Group is subject to environmental, occupational health and safety laws and regulations that affect the operations, facilities, products and services in each of the jurisdictions in which the Volvo Group operates. In particular, regulations regarding exhaust emissions, noise, safety and pollutants from production plants and products are extensive and evolving. These laws and regulations result in an often complex, uncertain and changing legal and regulatory environment for Volvo Group's global businesses and operations.

The Volvo Group works actively to ensure compliance with applicable laws and regulations and endeavors to collaborate and be transparent with all governing bodies in certification and compliance processes, during development and throughout the lifecycle of Group products as well as in investments in production plants, but can provide no assurance that it will at all times be fully compliant. If the Volvo Group has failed or fails to comply with these laws, regulations and requirements it could be subject to costs of recalls and other remediation, significant penalties and other sanctions and liability as well as reputational damage. A failure to meet applicable laws and regulations in this area could also imply a failure to assure an updated and compliant product and service range in time to meet regulations which could have a material adverse effect on the Volvo Group's business, operating results, financial position and brand equities. In addition, safety regulations are becoming increasingly important with autonomous vehicles in commercial applications.

If regulations are not set, or not clear enough, there is a risk of not being able to scale up the autonomous offer, or not complying with regulations. A safety incident could have a detrimental effect on the images of the Group's brands and possible earnings. An incident in the industry could also lead to quickly adjusted or additional regulations.

Geopolitics and security

The Volvo Group is active in almost 190 countries across the world. Political instability, armed conflicts or civil unrest can impact the Group's ability to trade in affected areas. Acts of terrorism, sabotage, and other criminal or malicious activities directed towards the Volvo Group's people, information systems, products, production systems, or facilities, or those of its business partners, suppliers or customers, could cause harm to people and severely damage the Group's operations and corporate reputation.

The changing geopolitical situation, potential trade sanctions and/or decoupling economies may also give rise to further tariffs and other trade restrictions and barriers being imposed, which can negatively impact the Group's production system and ability to conduct its operations (including in the JVs).

OPERATIONAL RISKS

Transformation and technology

The ongoing and accelerating transformation of the transport and vehicle industry towards low-carbon and sustainable transportation and infrastructure solutions entails various transitional risks for the Volvo Group. The Volvo Group's future business success depends on its ability to develop new, attractive, competitive and energy-efficient products as well as to successfully position itself in this industry shift. Failure to develop products in line with demand and regulations, especially in view of digitalization, electromobility (battery-electric and fuel cell-electric) and autonomous solutions could adversely impact the Group's operations.

The driving factors of the transformation come from different sources that may not always correlate. Extensive and continuously evolving regulations and government actions set the legal framework. Social attitudes and customer preferences relating to climate change and the transition to a lower carbon economy are additional factors that the Volvo Group is impacted by. In addition, investor preferences and sentiment are more and more influenced by environmental, social and corporate governance (ESG) considerations. Changes in these factors, including the pace of change to any of these factors, as well as the pace of the transition itself, could have an adverse impact on the result of strategic business decisions and, in the end, on the overall business of the Volvo Group. Changes in investor preferences and sentiment could significantly affect the Volvo Group's business plans and financial performance.

Compliance with CO_2, fuel efficiency and emission control requirements might lead to a need to accelerate introduction of significant volumes of electric vehicles as well as implementing additional new technologies for conventional diesel engines. There can be no assurance that such new technologies and solutions can be produced and sold profitably or that customers will purchase those in the quantities needed to meet the regulatory requirements. Even if challenges in these areas are resolved and handled, they could have a negative impact on the Group's reputation, usage of resources, cost of production or cost of product recalls, and may result in adverse effects on earnings and financial position.

The transformation to electric solutions also depends on external factors such as the existence of a functioning charging infrastructure and access to renewable energy sources to power battery-electric and fuel cell-electric products. If the expansion of charging infrastructure or the availability and cost of renewable energy sources, alone or in combination, are inadequate, customers' investments into the Volvo Group's electrified products may happen in a slower pace than anticipated, which could negatively impact the Group's operating income, financial position and the Group's sustainability goals. Many of the new products and technologies are still in early stages of development which – together with the lack of broadly accepted standards – poses significant risks for the Volvo Group as it is required to choose relevant technologies, quality of products and time their introduction wisely, while respecting the widespread in readiness level among markets and segments across the globe. If the Volvo Group miscalculates, delays recognition of, or fails to adapt its products and services to trends, legal and customer requirements in individual markets or other changes in demand, it could have a material adverse impact on the Group's results of operations, financial position and cash flows. Last, if the Volvo Group positions itself unsuccessfully in this technology shift (timing and/or technology selection), earnings capacity and financial position could be severely affected.

New business models

The transport and vehicle industry is facing new technologies, business models, competitors and global trends such as digitalization which combined create a highly disruptive environment. These factors are shifting the Volvo Group from a heavy commercial vehicle manufacturer to more of a provider of transport and logistics solutions. The Volvo Group has, during the last couple of years, continuously invested in new business models and new technologies to be able to offer safer, more sustainable, and more productive solutions to its customers. Going forward, a new transport landscape will continue to emerge and will impact large parts of the Volvo Group's operations and way of working, entailing risks related to the ability to respond to specific customer needs with tailored services and the availability of technological innovations that respond to the major trends of the industry (i.e. digitalization, electromobility and autonomous solutions). If the Volvo Group miscalculates, delays recognition of, or fails to adapt its services to trends, legal and customer requirements or other changes in demand, it could have a material adverse impact on the Group's results of operations, financial position and cash flows.

An additional level of risk relates to the need to evolve from a vehicle/product focus towards an ecosystem-driven approach, where vehicles and infrastructures are to be developed and implemented simultaneously.

Industrial operations including supply chain

Our ability to deliver in accordance with market demand and product quality expectations depends significantly on obtaining a timely and adequate supply of materials, components and other vital services, as well as on our ability to properly utilize the capacity in the Group's different production and service facilities. Our industrial system and supply chain were strained in many areas during 2022 due to e.g. shortages of materials and components, shortages of transport services, developments of the covid-19 pandemic and response measures taken as well as the war in Ukraine and ensuing sanctions. Further disturbances in the supply chain and industrial system can arise from a variety of factors, including continued or additional shortages of material, single sourcing, supplier insolvency, shortages of labor and components, strikes, pandemics or climate hazards such as extreme weather, which each or in combination could result in stoppages and other interferences in production and deliveries, which may impair our ability to meet our customers' orders, and thus negatively affect the Volvo Group's business and results from operations.

Suppliers and materials

The ongoing technology shift into electrification and other new customer offerings, combined with required investments in traditional technologies, may move the industry and the Volvo Group towards reliance on new suppliers, new materials and on materials being used in new applications and in different quantities compared to traditional technologies. Some of these materials may pose a risk of supply due to scarcity or geopolitical, conflict or human rights concerns. Adherence of new suppliers to the Volvo Group's code of conduct may pose a reputational risk. At the same time the suppliers providing more traditional products might lose business and risk closing, which could leave the Volvo Group with a shortage of suppliers in a particular area and thereby a need to make investments.

Cost inflation and price increases

During 2022 the Group experienced higher input costs from increased prices on e.g. purchased material, freight and energy as well as higher labor costs. These inflationary trends could continue with potential further impact from the energy crisis and also occur for additional commodities and materials which the Group purchases on the world market as well as on salaries and services. The ability to pass on such higher costs into price increases for products and services may be limited by competitive pressure or already committed prices to customers in order books and other agreements.
If the Group is unable to compensate for the higher input costs through increased prices on products and services sold, this could have a negative impact on the Group's financial performance.

Information security and digital infrastructure
The operation of many of the Volvo Group's business processes depends on reliable information technology (IT) systems and infrastructure. This applies to e.g. research and development, production, logistics and sales, as well as products and services using connectivity and automation features. Disruptions, cyber-attacks and other security threats against our products or business could harm the Volvo Group's operations, reputation and have a significant adverse effect on earnings and financial position. Timely detection of cybersecurity and other security incidents is becoming increasingly complex, and the Volvo Group seeks to investigate and manage incidents with a view to prevent their recurrence.

The Volvo Group relies on third parties where significant parts of maintenance and operations of the IT systems has been outsourced. The Volvo Group has taken precautions in the selection and ongoing management of these third parties, but events or incidents caused by vulnerabilities in their operations or products could cause disruption of operations, loss or leakage of data, reputational risk and financial losses.

Mergers and acquisitions, partnerships and divestments
In addition to the Volvo Group's in-house work and focus on organic growth, the Volvo Group engages in acquisitions and divestments, as well as in JVs, partnerships and other forms of cooperation. These are essential parts in executing on our strategy. However, there can be no assurance that these transactions and cooperations become or remain successful, nor that they will deliver expected benefits. Acquisitions could e.g. result in incurrence of contingent liabilities and an increase in amortization expenses and impairments related to goodwill and other intangible assets, as well as unanticipated difficulties in integration of an acquired entity. Divestments could present risks in e.g. the operational separation or through contractual undertakings or legal liabilities with respect to the business divested.

JVs and partnerships may fail to perform as expected for various reasons, including our or our partner's incorrect assessment of needs and potential synergies, a failure to invest sufficient resources in the cooperation or a change of strategic direction that the cooperation fails to accommodate. Further, JVs and partnerships may restrict e.g. our ability to run independent operations within the scope of cooperation, and limitations in our or our partner's operational and financial resources may restrain the capabilities of the cooperation.

Residual value commitments
The Volvo Group sometimes offers customers to acquire Group products with a residual value commitment, meaning that the customer can return the asset at an agreed date and to an agreed price. The committed prices are established within each Business Area, which assumes the responsibility for maintaining a residual value matrix aiming to reflect fair future market values. Volvo Group will have a residual value risk if vehicles subject to residual value commitments are rebought and the fair market value of the vehicles is below the committed residual value. A residual value commitment can also become a future used vehicle inventory risk if vehicles are not sold, affecting the cash flow negatively. For further information on residual value commitments, see Note 13 Tangible assets.

CLIMATE AND PEOPLE

Pandemics
The outbreak of pandemics throughout the world, such as the still ongoing covid-19 pandemic, may lead to major disruptions in the economies of many countries, including the Group's key markets, and may impact global economic activity as well as Group performance negatively going forward. The duration and expected development of the covid-19 pandemic is unknown, and no predictions can be made in relation to future impacts. Any prolongation or worsening of the virus outbreak would, however, be expected to negatively affect the Group's financial performance, and could have a material adverse effect on the Group's business and financial position.

Climate
The scientific consensus indicates that emissions of greenhouse gases continue to alter the composition of the earth's atmosphere in ways that are affecting, and are expected to continue to affect, the global climate. The potential impacts of climate change on the Volvo Group's customers, product offerings, operations, facilities and suppliers are uncertain, as they will be particular to local and customer-specific circumstances. Overall climate scenario analysis has been conducted to learn more about potential developments over the short, medium and long term, see Sustainability Notes on page 147.

The Volvo Group has identified a number of climate-related transitional risks, which are incorporated into the Group's Enterprise Risk Management process. These risks, including their potential financial impact, are assessed as part of macro and market developments as found in the risk descriptions for "Regulations", "Transformation and technology", "New business models" and "Suppliers and materials". Physical climate hazards can potentially also impact Volvo Group's operations and supply chain as mentioned in the "Industrial operations" risk description.

People and culture
Volvo Group strongly believes that there is a high correlation between the Group's future success and its capability to recruit, retain and develop qualified personnel. Furthermore, Volvo Group strives to increase health and safety in its operations, and targets to significantly reduce both the accident rate and the risks associated with our activities. The Volvo Group counts on leveraging the full diversity of its workforce to fulfil customer demands. Managing the needed competence shift in the transformation in specialized areas is key to succeed. To meet expectations from employees and other stakeholders, a strong focus is required on areas such as health and safety, leadership, empowerment, employee engagement, working conditions, inclusive culture and values, sharing of knowledge, and building diverse teams. Failure to do the right things in

these areas can cause a negative impact on the health, safety and well-being of our personnel, on the Volvo Group's reputation, as well as on its image as an employer. Moreover, it can impair the Group's ability to recruit, retain and develop the knowledge and skills necessary to ensure customer success and the transition to new technologies.

Human rights

The Volvo Group is committed to respecting internationally recognized human rights and avoiding causing or contributing to adverse human rights impacts in line with applicable legislation throughout the world, relevant global frameworks such as the United Nations Guiding Principles on Business and Human Rights (UNGP) and the UN Global Compact.

The Volvo Group works to promote human rights interests in its own operations and throughout the value chain – including the Group's own operations, supply chain, strategic business partners and certain sales transactions – but also on country/region levels as well as purchase categories and/or sales segments.

The Volvo Group attempts to monitor its compliance with applicable laws, policies and guidelines and strives for continuous improvements, but there can be no assurances that future adverse human rights impacts will not materialize in the Group's own organization, or in the Group's business relationships or in the value chain. The Group seeks to address adverse human rights impacts with which it may be involved, however, such events may adversely affect the Group, financially as well as reputationally.

COMPLIANCE RISKS

Data protection laws

Focus on Data Protection is increasing from authorities around the globe resulting in new Data Protection laws entering into force and increased activities by Data Protection Authorities in terms of sanctions, audits, and court rulings. It becomes even more relevant with Volvo Group operations and products being more data driven (e.g. connected vehicles). The EU General Data Protection Regulation ("GDPR") introduced increased monetary penalties for breaches of the regulation and sets a standard applied in several other data protection laws throughout the jurisdictions in which Volvo Group operates. Non-compliance with data protection laws could expose the Group to fines and penalties and severe infringements may potentially cause authorities to issue instructions to stop processing of personal data, which could disrupt operations. The Group could also face litigations with persons allegedly affected by data protection violations. Data protection law infringements may hence involve severe negative impact for the business operations, including reputational damage and adverse effect on the Group's earnings and financial position.

Intangible assets

The Volvo Group owns or otherwise has rights to patents, trademarks, designs and copyrights that relate to the products and services that the Group manufactures and markets. These rights have been developed or acquired over a number of years and are valuable to the operations of the Volvo Group. Further, in order to safeguard investments in R&D, the Volvo Group has an intellectual property plan defining the creation and use of its intellectual property rights.

The share of trade in counterfeit goods as a proportion of global trade has grown significantly. Products infringing on Volvo Group's intellectual property rights are often of substandard quality and poses risks to the Group regarding safety of customers, vehicle performance, quality and emission levels that will affect public health and the climate, as well as individual brand's and corporate reputation.

AB Volvo and Volvo Car Corporation jointly own the Volvo brand and trademarks through Volvo Trademark Holding AB. AB Volvo has the exclusive right to use the Volvo name and trademark for its products and services and according to a license agreement. Similarly, Volvo Car Corporation has the exclusive right to use the Volvo name and trademark for its products and services. The Volvo Group's rights to use the Renault brand and trademarks are related to the truck operations only and are regulated by a license from Renault s.a.s., which owns the Renault brand and trademarks. In addition, the Volvo Group owns several other trademarks relating to its business. More partnerships and JVs are established involving intellectual property arrangements

Use in possible conflict with third-party intellectual property rights, or third-parties' unauthorized use of the Volvo Group's proprietary rights, may have significant business impact on the Group.

Legal proceedings

In the normal course of business, the Volvo Group is involved in legal proceedings. These proceedings may relate to a number of topics, including vehicle safety and other product related claims, warranty claims, commercial disputes, intellectual property claims, allegations concerning health, environmental or safety issues, antitrust, tax or labor disputes and regulatory inquiries and investigations. Further, AB Volvo and other companies in the Group, as well as their officers, may be subject to claims alleging failures to comply with stock market regulations, securities law and other applicable rules and regulations. Legal proceedings can be expensive, lengthy, take up resources that could be used for other purposes and are often difficult to predict. There can be no assurance that provisions, where recognized, for a particular legal proceeding will cover the costs of an adverse outcome, nor that unprovisioned proceedings will not give rise to any significant additional expenditure. For information about certain legal proceedings involving entities within the Volvo Group, see Note 21 Other Provisions and in Note 24 Contingent Liabilities.

Corruption and competition law

Corruption risks are primarily linked to the Volvo Group's sales and supply chain activities but may also relate to administrative procedures, such as licensing and permitting. This includes activities of Volvo Group employees but may further extend to the activities of the Volvo Group's business partners and intermediaries. The overall risk level therefore is affected by sales volumes, the way of distribution and the fact that Volvo Group pursues business operations also in markets that are considered high risk from a corruption perspective.

Potential risks for non-compliance with competition law (e.g. price fixing, market sharing, unlawful information exchange, abuse of market power) are primarily linked to behavior of employees when interacting with competitors and other external stakeholders in various situations.

Corruption as well as competition law infringements may involve severe negative impacts for the business operations, including reputational damage, legal proceedings, fines and imprisonment of employees. The Group could also be affected by claims raised by persons or entities affected by allegedly non-compliant practices.

FINANCIAL RISKS

Insurance
The Volvo Group generally takes out insurance coverage where it is legally or contractually obligated to do so and otherwise against such risks, in such amounts and on terms that it considers commercially motivated from time to time. Where insurance coverage cannot be procured on such terms, the Group can be exposed to material uninsured losses, which could have a materially adverse effect on Group operations and financial standing. For example, the Group is not fully insured against effects from flooding, earthquakes and other natural disasters.

Credit risk
The Volvo Group is exposed to credit risk mainly through its sales to customers in the Industrial Operations, and its long-term credit receivables in its Financial Services operations. Total exposure as of December 31, 2022 can be found in Note 15 Customer-financing receivables and Note 16 Receivables. The Group is also exposed to financial credit risk due to short-term deposits with the Group's core banks and unrealized results from derivatives used for hedging purposes. For further information, please see Note 4 Goals and policies in financial risk management and Note 15 Customer-financing receivables. If several larger customers, dealers, or a core bank, fails to meet its undertakings the Group could suffer significant losses.

Pension commitments
The Volvo Group has substantial pension commitments, some of which are owed under defined benefit plans. Changes in assumptions of interest and inflation rates, mortality, retirement age and pensionable remunerations could result in significant changes to the present value of already accrued benefit obligations as well as the cost of new benefit accruals, affecting funding level of such plans. The investment performance of pension assets may also substantially affect funding levels. Defined benefit plan assets are managed independently from the Group, with a significant portion of plan assets held in shares and other instruments that are exposed to market risks which do not fully match the characteristics of the pension obligation. Please see Note 20 Provisions for post-employment benefits for further information. If there is a shortfall in benefit plans, the Volvo Group could be required to make substantial unexpected cash contributions, which would adversely affect cash flow and the Group's financial position.

Interest-rate risk
Volvo Group's net financial debt structure is exposed to fluctuations in market interest rates. Movements in interest-rate levels may impact the Group's net income and cash flow or the value of financial assets and liabilities.

Currency risk
The Volvo Group's global presence means that business is conducted in several different currency regions. More than 95% of the Group's net sales are generated in countries other than Sweden. The Volvo Group's cash flow, profitability, and balance sheet are impacted by fluctuations in foreign exchange rates.

Liquidity risk
It is of critical importance for the Volvo Group to assure a sufficient payment capability over time, to continuously manage demands and expectations from external stakeholders. Sudden changes in the business cycle, unforeseen events within the financial markets (in particular for the Financial Services operations), changes in the Volvo Group's access to financial markets, and changes in customers' appetite for financing from the Group, may stress the Group's liquidity preparedness or involve fines and penalties. Failure to properly manage the Group's liquidity risks, may cause material adverse impact on earnings capability and financial standing.

Impairment
The Volvo Group has substantial values in goodwill and other intangible assets on its balance sheet. Goodwill and other intangible assets not yet in use are not amortized, hence there is a risk for impairment if the calculated recoverable amount is lower than the carrying amount. The calculated recoverable amounts differ between the operating segments and they are, to a varying degree, sensitive to changes in the business environment. Instability in the business performance and volatility in interest and currency rates may indicate a need for impairment. Please see Note 12 Intangible assets.

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1 Accounting policies

The consolidated financial statements for AB Volvo (publ) and its subsidiaries are prepared in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), as adopted by the European Union (EU). This Annual Report is prepared in accordance with IAS 1 Presentation of Financial Statements and the Swedish Annual Accounts Act. In addition, RFR 1 Supplementary Rules for Groups has been applied, which is issued by the Swedish Financial Reporting Board. Amounts in SEK M unless otherwise specified. The amounts within parentheses refer to the preceding year.

1:1

Accounting policies	Note	IFRS standard
Acquisitions and divestments	3, Acquisitions and divestments of operations	IFRS 3, IFRS 10
Assets and liabilities held for sale and discontinued operations	3, Acquisitions and divestments of operations	IFRS 5, IFRS 13
Joint ventures	5, Investments in joint ventures, associated companies and other shares and participations	IFRS 11, IFRS 12, IAS 28
Associated companies	5, Investments in joint ventures, associated companies and other shares and participations	IFRS 12, IAS 28
Other shares and participations	5, Investments in joint ventures, associated companies and other shares and participations	IFRS 7, IFRS 9, IFRS 13, IAS 28, IAS 32
Operating segments	6, Segment reporting	IFRS 8
Revenue	7, Revenue	IFRS 9, IFRS 15, IFRS 16
Financial income and expenses	9, Other financial income and expenses	IFRS 9
Income taxes	10, Income taxes	IAS 12
Non-controlling interest	11, Non-controlling interest	IFRS 10, IFRS 12
Research and development	12, Intangible assets	IAS 36, IAS 38
Goodwill	12, Intangible assets	IFRS 3, IAS 36, IAS 38
Tangible assets	13, Tangible assets	IFRS 13, IFRS 16, IAS 16, IAS 36, IAS 40
Leasing	14, Leasing	IFRS 16
Inventories	17, Inventories	IAS 2
Earnings per share	19, Equity and number of shares	IAS 33
Pensions and similar obligations	20, Provisions for post-employment benefits	IFRS 2, IAS 19
Residual value risks	21, Other provisions	IFRS 15, IAS 37
Product warranty	21, Other provisions	IAS 37
Technical goodwill	21, Other provisions	IAS 37
Restructuring costs	21, Other provisions	IAS 19, IAS 37
Extended coverage and service contracts	21, Other provisions	IFRS 15, IAS 37
Insurance operations	21, Other provisions	IFRS 4
Contingent liabilities and contingent assets	24, Contingent liabilities and contingent assets	IAS 37
Transactions with related parties	25, Transactions with related parties	IAS 24
Government grants	26, Government grants	IAS 20
Incentive programs	27, Personnel	IAS 19
Cash flow statement	29, Cash flow	IAS 7
Financial instruments	4, Goals and policies in financial risk management	IFRS 7, IFRS 9
	15, Customer-financing receivables	IFRS 7, IFRS 9, IFRS 13, IFRS 16, IAS 32
	16, Receivables	IFRS 7, IFRS 9, IFRS 13, IAS 32
	18, Cash and cash equivalents	IFRS 7, IFRS 9, IFRS 13, IAS 32
	22, Liabilities	IFRS 7, IFRS 9, IFRS 13, IAS 32
	30, Financial instruments	IFRS 7, IFRS 9, IFRS 13, IAS 32

VOLVO GROUP'S ACCOUNTING POLICIES

The Volvo Group describes the most material accounting policies in conjunction with each note with the aim of providing enhanced understanding of each accounting area. The Volvo Group focuses on describing the accounting choices made within the framework of the prevailing IFRS standard and avoids repeating the actual text of the standard, unless the Volvo Group considers it particularly important to the understanding of the note's content. The following symbols I/S and B/S show if amounts in the notes can be found in the income statement or balance sheet. The total amount in tables and statements might not always summarize as there are rounding differences. The aim is to have each line item corresponding to the source and it might therefore be rounding differences in the total. Refer to **table 1:1** to see in which note each accounting policy can be found and the applicable IFRS standard with material impact.

Consolidated financial statements

Principles for consolidation

The consolidated financial statements comprise the parent company and subsidiaries over which the parent company exercises control. Control over a subsidiary exists when the Volvo Group is exposed, or has rights, to variable returns from its involvement with the subsidiary and has the ability to affect those returns through its power over the company. Joint ventures and associated companies are recognized by applying the equity method accounting, when the Volvo Group has joint control or exercise significant influence. Intragroup transactions as well as gains on transactions with joint ventures and associated companies are eliminated in the consolidated financial statements.

» **Read more in Note 3** Acquisitions and divestment of operations.

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations.

» **Read more in Note 11** Non-controlling interest.

Translation to Swedish kronor when consolidating companies that have other functional currencies

The functional currency of each Volvo Group company is determined based on the primary economic environment in which the company operates. The primary economic environment is normally in which the company primarily generates and expends cash. The functional currency is in most cases, the currency in the country where the company is located. AB Volvo's and the Volvo Group's presentation currency is SEK. In preparing the consolidated financial statements, items in the income statements of foreign subsidiaries are translated to SEK using monthly average exchange rates. Balance sheet items are translated into SEK using exchange rates at year end (closing rate). Exchange differences are recognized in other comprehensive income and accumulated in equity.

The accumulated translation differences related to a certain subsidiary, joint venture or associated company are reversed to the income statement as a part of the gain or loss arising from disposal of the company or repayment of capital contribution from the company.

Receivables and liabilities in foreign currency

Receivables and liabilities in currencies other than the functional currency of the reporting entity (foreign currencies) are translated to the functional currency using the closing rate. Exchange rate gains and losses arising from operating assets and liabilities impact operating income while exchange rate gains and losses arising from financial assets and liabilities impact other financial income and expenses. Interest-bearing financial assets and liabilities are defined as items included in the net financial position of the Volvo Group (see section Key ratios).

Exchange rate differences on loans and other financial instruments in foreign currency, which are used to hedge net assets in foreign subsidiaries, joint ventures and associated companies, are offset against translation differences in equity of the respective companies.

» **Read more in Note 4** Goals and policies in financial risk management, about currency exposure and currency risk management.

The most important exchange rates used in the consolidated financial statements are shown in **table 1:2**.

1:2

Exchange rates		Average rate		Closing rate as of Dec 31	
Country	Currency	**2022**	2021	**2022**	2021
Australia	AUD	7.0136	6.4415	7.0892	6.5625
Brazil	BRL	1.9616	1.5925	1.9746	1.5856
Canada	CAD	7.7712	6.8453	7.7060	7.0636
China	CNY	1.5018	1.3307	1.5017	1.4186
Euro Zone	EUR	10.6300	10.1449	11.1283	10.2269
Great Britain	GBP	12.4672	11.8022	12.5811	12.1790
Norway	NOK	1.0523	0.9980	1.0572	1.0254
South Africa	ZAR	0.6182	0.5809	0.6146	0.5660
South Korea	KRW	0.0078	0.0075	0.0083	0.0076
United States	USD	10.1245	8.5815	10.4371	9.0437

New accounting policies 2022

No new or revised accounting standards or interpretations effective from January 1, 2022 have materially affected the Volvo Group's financial statements.

New accounting policies 2023 and later

New accounting standards and interpretations that have been published and are effective from 2023 and later are not considered to have a material impact on the Volvo Group's financial statements.

2 Key sources of estimation uncertainty and critical judgments

The preparation of the Volvo Group's financial statements requires the use of estimates and assumptions that may affect the recognized amounts of assets and liabilities at the date of the financial statements. In addition, the recognized amounts of net sales and expenses during the periods presented are affected. In preparing the financial statements, management has made its best judgments of certain amounts included in the financial statements, materiality taken into account. Actual results may differ from previously made estimates. In accordance with IAS 1, the company is required to disclose the assumptions and other major sources of estimation uncertainties that, if actual results differ, may have a material impact on the financial statements.

SOURCES OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

The sources of estimation uncertainty and critical judgments identified by the Volvo Group and which are considered to fulfill these criteria are presented in connection to the items considered to be affected. **Table 2:1** discloses where to find these descriptions.

2:1

Source of estimation uncertainty and critical judgments	Note	
Sales with residual value commitments and variable sales price	7,	Revenue
Deferred taxes and uncertainty over income tax treatments and claims	10,	Income taxes
Impairment of goodwill and other intangible assets	12,	Intangible assets
Impairment of tangible assets and residual value risks	13,	Tangible assets
Measurement of lease liabilities and right-of-use assets	14,	Leasing
Allowance for expected credit losses	15, 16,	Customer-financing receivables Receivables
Write down of inventories	17,	Inventories
Assumptions when calculating post-employment benefits	20,	Provisions for post-employment benefits
Provisions for product warranty, other provisions and provisions for legal proceedings	21,	Other provisions

3 Acquisitions and divestments of operations

ACCOUNTING POLICY

Acquisitions

Companies are consolidated as of the date of acquisition, when the Volvo Group obtains control over the operations. Business combinations are recognized in accordance with the acquisition method. The identifiable assets acquired and the liabilities assumed are measured at their fair values. A surplus amount from the purchase price paid, possible non-controlling interest, and fair value of previously held equity interests at the acquisition date compared to the acquired net assets is recognized as goodwill. All acquisition-related costs are expensed. Any deficit amount, known as gain from a bargain purchase, is recognized in the income statement.

For acquisitions done in stages, a business combination occurs on the date when control is achieved. As part of obtaining control, the acquired identifiable net assets are measured at their fair values and goodwill is recognized. The previously held equity interest is remeasured to its fair value and any resulting gain or loss compared to the carrying amount is recognized in the income statement. For each business combination, the Volvo Group decides whether the non-controlling interest shall be valued at fair value or at the non-controlling interest's proportionate share of the net assets of the acquiree. Transactions between the Volvo Group and owners with non-controlling interest are recognized in equity if control of the subsidiary is retained.

Divestments

Subsidiaries that have been divested are included in the consolidated financial statements until the date of the divestment, when the Volvo Group loses control over the subsidiary. A decrease in ownership interest of a subsidiary without losing control is accounted for as an equity transaction. Divestment of operations with the main purpose to dispose intangible and tangible assets is treated as disposal of intangible and tangible assets.

Assets and liabilities held for sale and discontinued operations

In a global group like the Volvo Group, activities are continuously ongoing regarding the sale of assets or groups of assets at minor values. When the criteria for being classified as assets and liabilities held for sale are fulfilled and the asset or group of assets are of material value, the asset or group of assets, both current and non-current, and the related liabilities are recognized on separate lines in the balance sheet. The asset or group of assets are measured at the lower of its' carrying amount and fair value after deductions for selling expenses. The balance sheet items and the potential income statement effect resulting from the revaluation to fair value less selling expenses are, if related to Industrial Operations, normally recognized in the segment Group functions & Other, otherwise in the Financial Services segment. When the sale is completed the result is distributed to the relevant segments.

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations.

» **Read more in Note 11** Non-controlling interest.

» **Read more in Note 12** Investments in shares and participations in the parent company about AB Volvo's holding of shares in subsidiaries as of December 31, 2022.

Acquisitions during the period

In 2022, the Volvo Group has not made any acquisitions which solely or jointly have had a material impact on the financial statements.

During 2021, the Volvo Group completed acquisitions which mainly pertained to Designwerk Technologies AG and SOPROVI Algérie SPA. In April 2021, the Volvo Group acquired 60% of the shares in Designwerk Technologies AG, a Swiss company that develops and sells electromobility products and engineering services within electromobility eco-systems. In August 2021, the Volvo Group acquired the remaining 70% of shares in the former joint venture SOPROVI Algérie SPA (acquisitions done in stages), hence the company is now a subsidiary within the Volvo Group.

The total impact on the Volvo Group's balance sheet and cash flow statement in connection with all acquisitions of operations are included in **table 3:1**.

3:1

Acquisitions	2022	2021
Other non-current assets	133	337
Cash and cash equivalents	–	2
Other current assets	118	274
Non-current liabilities	–9	–523
Current liabilities	–89	–245
Acquired net assets	**153**	**–155**
Non-controlling interest	–25	– 26
Goodwill	146	654
Purchase price	–274	– 474
Outstanding purchase price	9	–
Effect on Volvo Group cash and cash equivalents	**–265**	**–472**

Divestments during the period

In 2022, the Volvo Group has not made any divestments which solely or jointly have had a significant impact on the financial statements. The Volvo Group has received SEK 145 M in 2022 related to the earnout for the divestment of UD Trucks to Isuzu Motors in 2021.

During 2021, the Volvo Group completed divestments which mainly pertained to the divestment of UD Trucks to Isuzu Motors. The divestment was completed on April 1, 2021 and resulted in a net gain of SEK 1.7 billion, which had a positive effect on the Volvo Group's operating income. In respect of Isuzu Motors' acquisition of UD Trucks, an additional amount up to JPY 15 billion (approx. SEK 1.2 billion) is to be paid to Volvo Group as an earnout subject to the performance of UD Trucks during the years 2021–2023. The earnout will be revaluated continuously throughout the period specified. At the time of the sale, the fair value of the additional amount was estimated to JPY 6.3 billion (approx. SEK 0.5 billion). It is recognized as a financial asset at fair value through profit or loss and impacted the net gain recognized in the period by the same amount.

The total impact on the Volvo Group's balance sheet, income statement and cash flow statement in connection with all divestments of operations are specified in **table 3:2**.

3:2

Divestments	2022	2021
Goodwill	–	–890
Other intangible assets	–	–2,650
Tangible assets	–	–11,482
Other shares and participations	–	–854
Deferred tax assets	–	–2,306
Inventories	–	–4,763
Accounts receivable	–	–5,523
Other receivables	–	–3,364
Cash and cash equivalents	–	–2,344
Provisions	–	1,883
Loans	–	20,614
Other non-current liabilities	–	1,631
Trade payables	–	4,200
Other current liabilities	–	2,599
Divested net assets	**–**	**–3,250**
Net gain/loss on divestments affecting operating income	**–**	**1,643**

Cash flow and net financial position	2022	2021
Cash and cash equivalents, received	153	4,502
Loan repayment	–	20,614
Cash and cash equivalents, divested operations	–	–2,344
Effect on Volvo Group cash and cash equivalents	**153**	**22,773**
Effect on Volvo Group net financial position	**–**	**19,064**

Details on divestment of UD Trucks	2021
Consideration received or receivable:	
Cash	4,506
Fair value of contingent consideration	482
Total disposal consideration	**4,988**
Carrying amount of divested net assets	–3,246
Transaction costs	–151
Translation differences in foreign currency reversed to income	62
Net gain/loss	**1,653**

Assets and liabilities held for sale
As of December 31, 2022, no assets or liabilities were recognized as held for sale (–).

Acquisitions and divestments after the end of the period
The Volvo Group has not made any acquisitions or divestments after the end of the period that have had a material impact on the financial statements.

4 Goals and policies in financial risk management

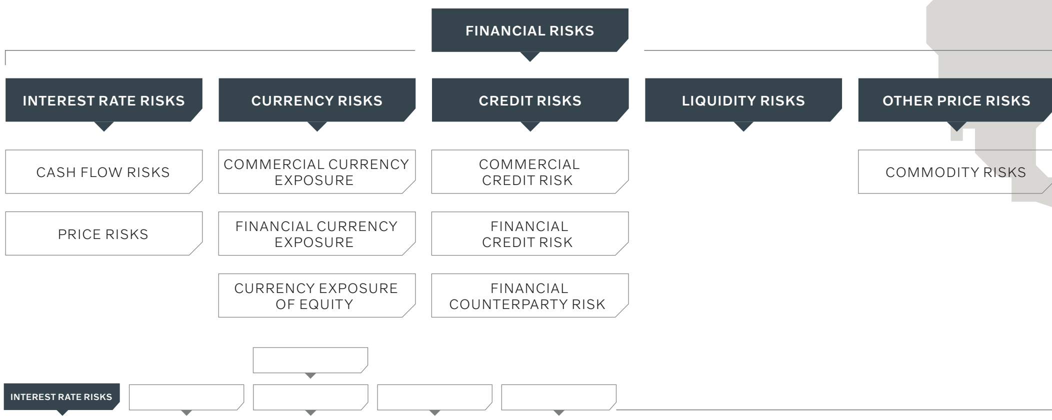
The Volvo Group's global operations expose the Group to financial risks in the form of interest rate risks, currency risks, credit risks, liquidity risks and other price risks. The board of AB Volvo has adopted a financial risk policy that regulates how these risks should be controlled and governed and defines roles and responsibilities within the Volvo Group. The financial risk policy also establishes principles for how financial activities shall be carried out, sets mandates and steering principles for the management of financial risks as well as defines the financial instruments to be used for mitigating these risks. Key mandates and steering principles are described in the respective risk section.

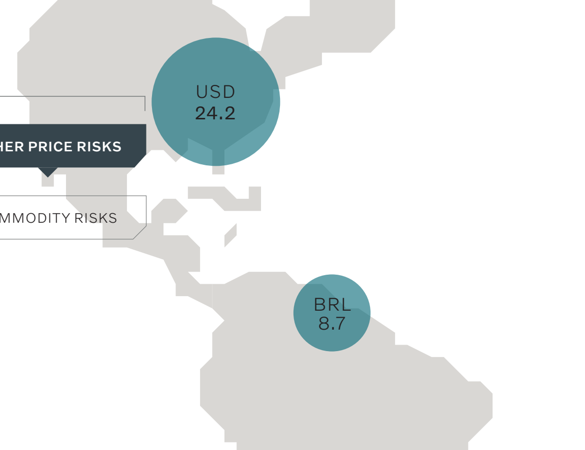
The board and audit committee of AB Volvo are informed regularly during the year about the development of the Volvo Group's financial risks and other matters covered within the financial risk policy. The financial risk policy is reviewed on an annual basis. The Volvo Group manages financial risk as an integrated element of the business operations where parts of the responsibility for the finance operation and financial risk management are centralized to Volvo Group Treasury, the internal bank of the Volvo Group. Their responsibilities include financing of Industrial Operations as well as financing of the credit portfolio in Financial Services. The Volvo Group balance sheet is presented per segment where Volvo Group Treasury is part of the Industrial Operations and the internal lending from Industrial Operations to Financial Services is presented in the balance sheet as internal funding.

During 2022 the volatility in the financial markets has increased. The war in Ukraine and rising inflation has affected market rates significantly. Under these conditions the Volvo Group has performed financial activities and managed risk in accordance with the financial risk policy, without any policy breaches.

» **Read more in Note 30** Financial instruments about accounting policies for financial instruments.

» **Read more** in section Financial Management and section Risks and uncertainties about financial risk management.





INTEREST RATE RISKS

Interest rate risk refers to the risk that changed interest rates will affect the Volvo Group's net income and cash flow (cash flow risk) or the fair value of financial assets and liabilities (price risk). Following the implementation in 2021 of the interest rate benchmark reform, GBP LIBOR was replaced by SONIA and USD LIBOR has been replaced by SOFR for all new transactions. The Volvo Group has a number of outstanding interest derivative contracts linked to USD LIBOR which will be converted to SOFR in 2023, with no material effect expected in the income statement.

POLICY

Matching the interest fixing terms of financial assets and liabilities reduces the exposure. Interest rate swaps are used to change/influence the interest fixing term for the Volvo Group's financial assets and liabilities. Currency interest rate swaps enable borrowing in foreign currencies from different markets without introducing currency risk.

Cash flow risks

The effect of changed interest rate levels on future currency and interest flows primarily pertains to Financial Services and Industrial Operations' net financial items. The interest rate risk in Financial Services is managed with the objective to achieve a match of interest rate fixings on borrowing and lending, in order to eliminate interest rate risk. The matching degree is measured excluding equity, which amounted to 8% in Financial Services. At year-end 2022, the degree of such matching ratio was 100% (99) in Financial Services which is in accordance with the Group policy.

In addition to the financial assets in Financial Services, the Volvo Group's interest-bearing assets at year-end 2022 consisted primarily of cash and cash equivalents. On December 31, 2022, the average interest on Industrial Operations financial assets was 3.2% (0.4). The increase relates to significantly higher underlying interest rates in most regions during the year. The Industrial Operations' results and profitability are closely aligned to the business cycle. Therefore, in order to minimize the interest rate risk, outstanding loans had interest terms corresponding to an interest rate fixing of between one to three months. The average interest on Industrial Operations financial liabilities at year end amounted to 5.2% (3.6), including the Volvo Group's credit costs, also affected by the increase in underlying interest rates.

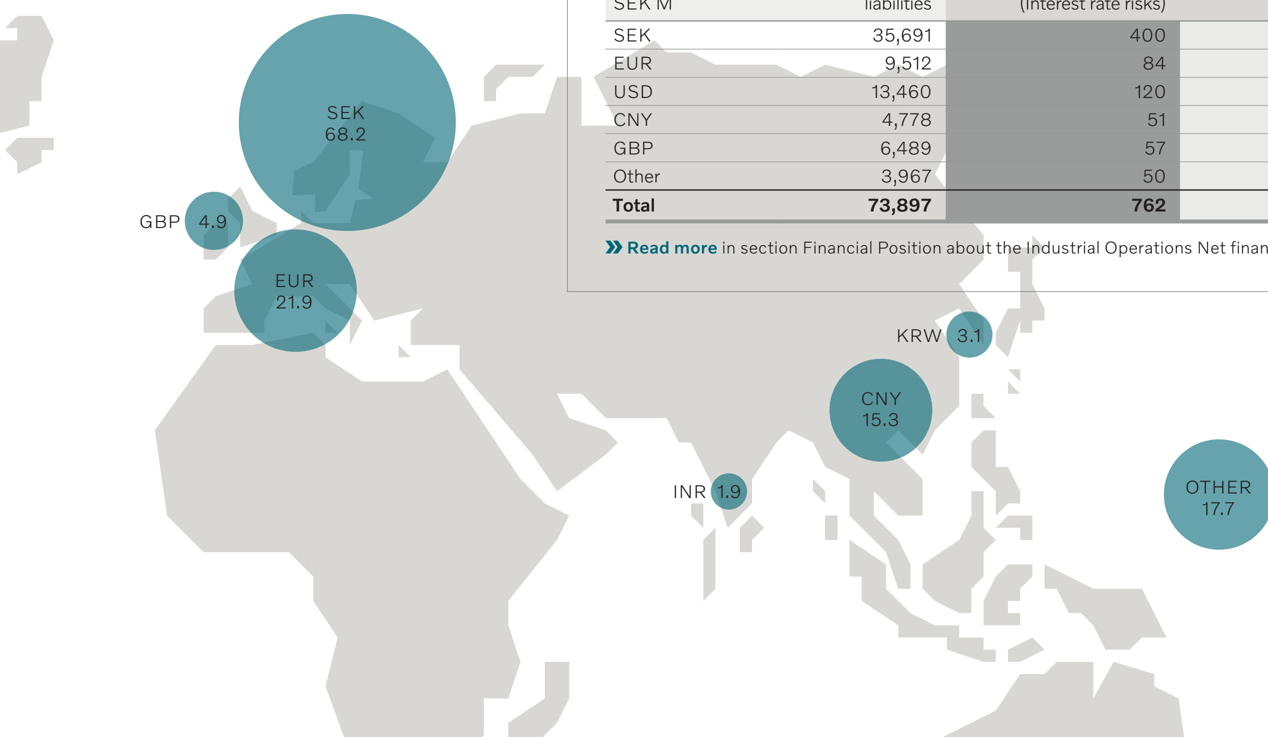
Table 4:1 shows the impact on income after financial items in Industrial Operations' net financial position, excluding lease liabilities and post-employment benefits, if interest rates were to increase by 1 percentage point, assuming an average interest rate fixed term of three months on the liability side.[1] The impact on equity is earnings after tax.

1 The sensitivity analysis on interest rate risk is based on simplified assumptions. It is not unlikely for market interest rates to change by one percentage point on an annual basis. However, in reality, these rates often rise or decline at different points in time. The sensitivity analysis also assumes a parallel deferment of the return curve, and that the interest on assets and liabilities will be equally impacted by changes in market interest rates. Accordingly, the impact of real interest rate changes may differ from the analysis presented in **table 4:1**.

» **Read more in Note 20** Provisions for post-employment benefits regarding sensitivity analysis on the defined benefit obligations when changes in the applied assumptions for discount rate and inflations are made.

The Volvo Group's net assets in different currencies (SEK bn) =

» **Read more** in section Currency exposure of equity in this note.



4:1

Risk net financial position Dec 31, 2022 SEK M	Net financial position excl. post-employment benefits and lease liabilities	Impact on income after financial items if interest rate rises 1% (Interest rate risks)	Impact on net financial position if SEK appreciates against other currencies 10% (Currency risks)
SEK	35,691	400	–
EUR	9,512	84	–951
USD	13,460	120	–1,346
CNY	4,778	51	–478
GBP	6,489	57	–649
Other	3,967	50	–397
Total	**73,897**	**762**	**–3,821**

» **Read more** in section Financial Position about the Industrial Operations Net financial position.

Price risks

Exposure to price risk as a result of changed interest rate refers to financial assets and liabilities with a longer interest rate fixing term (fixed interest). All outstanding loans in Industrial Operations are signed with short interest rate fixings, therefore the price risk is immaterial.

For Financial Services, financial assets and liabilities are matched in order to limit risk. Volvo Group Treasury is allowed to take limited active currency and interest rate positions in relation to the Financial Services portfolio. This responsibility is subject to, and shall be within, applicable market risk limitations. There are several measurements which can be used to define market risk. Volvo Group Treasury is using Value-at-Risk (VaR) as the main tool for mandating market risk (including interest rate risk, currency risk and liquidity risk). Volvo Group Treasury measures VaR over a one day holding period, using a 97.7% confidence level and historical volatility and correlation. The total VaR mandate for Volvo Group Treasury is SEK 150 M, and the usage is measured daily. As of December 31, 2022, the VaR usage was SEK 40.8 M (11.8). Assets related to Russia are risk measured and followed up separately.

CURRENCY RISKS

CURRENCY RISKS

The balance sheet may be affected by changes in different exchange rates. Currency risks in the Volvo Group's operations are related to changes in the value of contracted and expected future payment flows (commercial currency exposure), changes in the value of loans and investments (financial currency exposure) and changes in the value of assets and liabilities in foreign subsidiaries (currency exposure of equity).

POLICY

The aim of the Volvo Group's currency risk management is to secure cash flow from firm flows through currency hedges pursuant to the established Financial risk policy, and to minimize the exposure of financial items in the Volvo Group's balance sheet. Below is a presentation on how this work is conducted for commercial and financial currency exposure, and for currency exposure of equity.

4:2
Sensitivity analysis[1]

Risk currency exposure 2022 SEK bn	Transaction exposure from operating net flows	Impact on operating income if currency rate appreciates against all other currencies by 10% (Currency risks)
SEK	–49	–4,9
KRW	–7	–0,7
GBP	12	1,2
USD	8	0,8
CAD	7	0,7

The deficit in transaction exposure in SEK is mainly generated from flows in GBP, USD, CAD, AUD and NOK against SEK.

Commercial currency exposure

Transaction exposure from commercial flows

The Volvo Group conducts manufacturing in 18 countries around the globe and more than 95% of net sales are generated in countries other than Sweden. Transaction exposure from commercial flows in foreign currency is generated from internal purchases and sales between manufacturing entities and market companies and external sales and purchases in foreign currency around the globe. As the predominant parts of the operations in the Volvo Group are situated outside Sweden, the fluctuations in currency rates affecting the transaction flows in foreign currency are in many cases not against SEK. Industrial Operations' transaction exposure from commercial flows for key currencies is presented in **graph 4:4**. The graph represents the transaction exposure from commercial operating cash flows in foreign currency, expressed as net surpluses or deficits in key currencies. Commercial net flows increased compared to previous year as an effect of improved demand for the Volvo Group's products and services. The deficit in SEK and KRW is mainly an effect of manufacturing costs in the plants in Sweden and South Korea, but limited external revenues in those currencies. The surplus in GBP is mainly generated from internal and external sales to Great Britain. The surplus in USD is mainly generated from external sales to entities in USA and emerging markets around the globe. The surplus in CAD is mainly generated from internal and external sales to Canada. The transaction exposure in Financial Service is limited as the lending is done in local currency and the currency risk is managed through the matching in lending and borrowing.

The hedging of the Volvo Group's commercial currency exposure is executed centrally. The Volvo Group's consolidated currency portfolio exposure is the value of forecasted flows in foreign currency. The Volvo Group may hedge the part of the forecasted portfolio that is considered highly probable to occur, however during 2022 only future cash flows for specific orders, decided on case-by-case basis, has been hedged. The Volvo Group uses forward contracts and currency options to hedge the future payment flows in foreign currency. The hedged amount of firm flows for all periods fall within the framework of the Volvo Group's financial risk policy. The Volvo group has no outstanding forward and option contracts for hedging commercial risks as of December 31, 2022.

Translation exposure from the consolidation of operating income in foreign subsidiaries

In conjunction with the translation of operating income in foreign subsidiaries, the Volvo Group's income is impacted if currency rates change. The Volvo Group does not hedge this risk. **Graph 4:6** shows the translation effect in key currencies when consolidating operating income for 2022 in foreign subsidiaries in the Volvo Group.

» **Read more** in section Currency exposure of equity.

Sensitivity analysis for transaction exposure[1]

The **table 4:2** illustrates the impact on operating income if key currencies for Volvo Group appreciate by 10% against all other currencies. Hedge accounting is not applied on derivatives hedging cash flows in foreign currency. As a consequence, the impact on equity equals the impact on operating income.

Volvo Group currency review

The **table** and **graphs 4:3** to **4:7** show the currency impact on operating income and illustrate the transaction exposure and currency impact on operating income from commercial net flows in foreign currency , translation effect when consolidating operating income in foreign subsidiaries and currency impact on sales in key currencies.

» **Read more** about Volvo Group transaction exposure in section Commercial currency exposure above.

Financial currency exposure

Loans and investments in the Volvo Group's subsidiaries are performed mainly in local currencies through Volvo Group Treasury, which minimizes individual companies' financial currency exposure. Volvo Group Treasury uses various derivatives to facilitate lending and borrowing in different currencies without increasing the risk for the Volvo Group. The net financial position of the Volvo Group is affected by currency fluctuations since financial assets and liabilities are distributed among the Volvo Group companies that conduct their operations using different currencies.

Table 4:1 discloses the impact on income after financial items on Industrial Operations net financial position, excl. post-employment benefits and lease lilibities, if SEK were to strengthen by 10%.

Currency exposure of equity

The carrying amount of assets and liabilities in foreign subsidiaries are affected by current exchange rates in conjunction with the translation of assets and liabilities to SEK. To minimize currency exposure of equity, the size of equity in foreign subsidiaries is continuously optimized with respect to commercial and legal conditions and in connection with this activity, payments of major internal dividends in foreign currency can be subject for hedging. Currency hedging of equity may occur in cases where a foreign subsidiary is considered overcapitalized. Net assets in foreign subsidiaries, associated companies and joint ventures amounted at year end 2022 to SEK 98 billion (88). The need to undertake currency hedging relating to investments in associated companies, joint ventures and other companies is assessed on a case-by-case basis.

On the map on the previous pages the Volvo Group's net assets in different currencies (SEK bn) are displayed.

» **Read more in Note 30** Financial instruments about Volvo Group's policy choice on hedge accounting. Information on gain and losses regarding hedging of internal dividend, refeer to **table 30:3.**

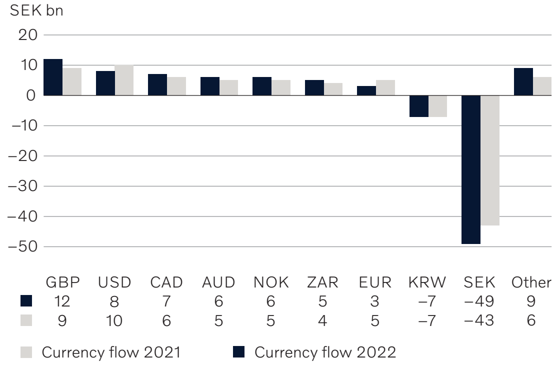
1 The sensitivity analysis on currency rate risks is based on simplified assumptions. It is not unlikely for a currency to appreciate by 10% in relation to other currencies. In reality however, all currencies usually do not change in the same direction at any given time, so the actual effect of exchange rate changes may differ from the sensitivity analysis. Please refer to **table 4:2**.

4:3
The Volvo Group's currency review
When the Volvo Group communicates the currency impact on operating income, the following factors are included:

Currency impact on operating income, Volvo Group, SEK billion	**2022**	2021	Change
Net flows in foreign currency			4,4
Realized and unrealized gains and losses on currency hedging contracts	–0.0	–0.0	–0.0
Unrealized gains and losses on receivables and liabilities in foreign currency	–0.7	–0.2	–0.6
Translation effect on operating income in foreign subsidiaries			4.5
Total currency impact on operating income, Volvo Group			**8.3**

Currency impact on net flows in foreign currency is detailed in **graph 4:5** and translation effect on operating income in foreign subsidiaries is detailed in **graph 4:6** in key currencies.

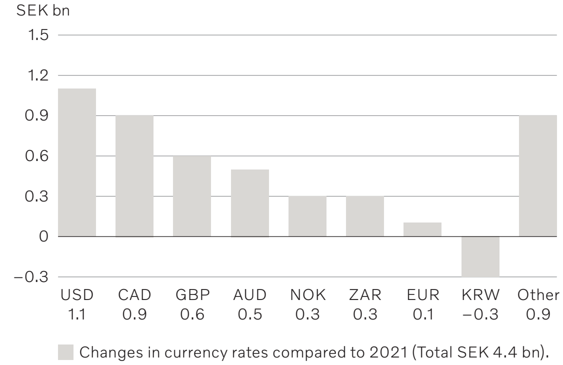
4:4
Transaction exposure from commercial net flows in 2022 and 2021



The graph above represents the transaction exposure from commercial operating net cash flows in foreign currency, expressed as net surpluses or deficits in key currencies.

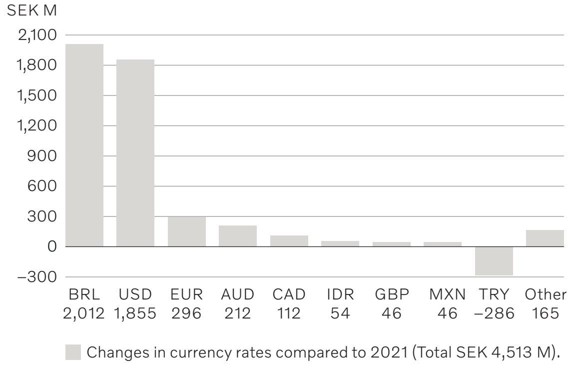
» **Read more** in section Commercial currency exposure.

4:5
Currency impact on operating income from net flows in foreign currency 2022 versus 2021



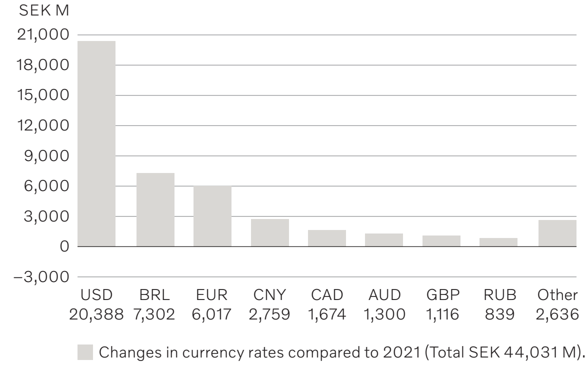
Currency effect on operating income from net flows in foreign currency in Volvo Group is presented in the graph above.

4:6
Translation effect on operating income in 2022 versus 2021



Translation effect when consolidating operating income in foreign subsidiaries for Volvo Group is presented in the graph above.

4:7
Currency impact on net sales in 2022 versus 2021



Currency effect on net sales from inflows in foreign currency and translation effect when consolidating net sales in foreign subsidiaries for Volvo Group is presented in the graph above.

CREDIT RISKS

Credit risk is defined as the risk that the Volvo Group does not receive payment for recognized accounts receivables and customer-financing receivables (commercial credit risk), that the Volvo Group's investments are unrealizable (financial credit risk) and that potential profit is not realized due to the counterparty not fulfilling its part of the contract when using derivative instruments (financial counterparty risk).

POLICY

The objective of the Volvo Group's credit risk management is to define, measure and monitor the credit exposure in order to minimize the risk of losses deriving from credit to customers and suppliers, financial credit risk, counterparty risk and customer finance activities within Financial Services.

Commercial credit risk

The Volvo Group's credit granting is steered by group policies and customer-classification rules. The credit portfolio should contain a distribution among different customer categories and industries. The credit risk is managed through active credit monitoring, follow-up routines and, where applicable, product repossession. In addition to this, regular monitoring ensures that necessary allowances are made for expected credit losses on financial assets. Risk management practices for Financial Services are presented in note 15 Customer-financing receivables and for Industrial Operations in note 16 Receivables. Moreover, note 15 includes information on gross exposure for customer-financing receivables by past due status and in note 16 accounts receivables, a gross exposure for accounts receivables by past due status is presented in relation to allowance for expected credit losses.

The customer-financing receivables in the Volvo Group amounted to net SEK 194 billion (152) on December 31, 2022. The credit risk of this portfolio is distributed over a large number of retail customers and dealers. Collateral is provided in the form of the financed products. In the credit granting the Volvo Group strives for a balance between risk exposure and expected return. Syndication of customer-financing receivables is made in order to reduce concentration risk.

The Volvo Group's accounts receivables as of December 31, 2022 amounted to net SEK 48 billion (41).

» **Read more in Note 15** Customer-financing receivables about Volvo Group's concentration of credit risk in Financial Services.

» **Read more in Note 16** Receivables.

Financial credit risk

The Volvo Group's financial assets are to a large extent managed by Volvo Group Treasury. All investments must meet the requirements of high liquidity and low credit risk. According to the Volvo Group's financial risk policy, this normally includes using counterparties for investments and derivative transactions with a credit rating better or equivalent to A– from one of the well-established credit rating institutions or similar.

Cash and cash equivalents including marketable securities as of December 31, 2022 amounted to SEK 84 billion (62) and consists primarily of bank account positions.

» **Read more in Note 18** Cash and cash equivalents.

Financial counterparty risk

The use of derivatives involves a counterparty risk, in that a potential loss may not be possible to offset (in full or in part) against a potential gain if the counterparty fails to fulfill its part of the contract. The Volvo Group is actively working with limits per counterpart in order to reduce the risk for high net amounts towards individual counterparts. To reduce the exposure further the Volvo Group enters into master netting agreements, so called ISDA agreements, with all counterparts eligible for derivative transactions. The netting agreements provide the possibility for assets and liabilities to be offset under certain circumstances, such as in the case of the counterpart's insolvency. A Credit Support Annex (CSA) often accompanies the ISDA agreement. The CSA stipulates the terms and conditions under which the two parties are required to make cash transfers to each other in order to further reduce the exposure from the net open positions. The netting agreements have no effect on the financial performance or the financial position of the Volvo Group, since derivative transactions are accounted for on a gross basis. **Table 4:8** shows the effect of netting agreements and cash transfers on the Volvo Group's gross exposure from outstanding interest and currency risk derivatives as of December 31, 2022.

» **Read more in Note 30** Financial instruments about the Volvo Group's gross exposure from derivatives per type of instrument.

4:8
The impact from netting agreements and cash transfers on the Volvo Group's gross exposure from derivatives as of Dec 31, 2022

	Gross amount	Netting agreements	Cash transfers	Net position	Change
Interest and currency risk derivatives reported as assets	5,751	–4,399	–129	1,223	79%
Interest and currency risk derivatives reported as liabilities	8,975	–4,399	–4,387	189	98%

LIQUIDITY RISKS

LIQUIDITY RISKS

Liquidity risk is defined as the risk that the Volvo Group would be unable to finance or refinance its assets or fulfill its payment obligations.

POLICY

The Volvo Group ensures sound financial preparedness by always keeping a certain percentage of its sales in liquid assets, mainly as bank account positions in banks rated at least A- from one of the well-established credit rating institutions or similar. A sound balance between current and non-current debt maturities, as well as non-current committed credit facilities, is intended to secure liquidity preparedness, and thus the Volvo Group's payment capability.

The Volvo Group's cash and cash equivalents amounted to SEK 84 billion (62) on December 31, 2022. In addition to this, granted but unutilized credit facilities amounted to SEK 46 billion (42). **Graph 4:9** discloses expected future cash flows related to financial liabilities. Capital flow refers to expected payments of loans, lease liabilities and derivatives. Expected interest flow refers to the future interest payments on loans, lease liabilities and derivatives based on interest rates anticipated by the market. The interest flow is recognized within cash flow from operating activities. The maturity structure of the unutilized credit facilities is disclosed in note 22, in **table 22:3**. The predominant part of expected future cash flows that will occur in 2023 and 2024 is an effect of the Volvo Group's normal business cycle, with shorter duration in the portfolio within Financial Services compared to Industrial Operations.

Financial Services measure the degree to which the duration of borrowing and lending matches. The calculation of the matching degree excludes equity, which amounted to 8% in Financial Services. At year-end 2022, the degree of such matching was 100% (99) for the segment Financial Services, which was in line with the Volvo Group's policy. Volvo Group Treasury has, for practical as well as business reasons, the mandate to mismatch their portfolio for Financial Services between a matching ratio of 80–120%. At year-end 2022, the matching ratio was 103% (94). Any gains or losses from the mismatch impact the segment Group functions & other within Industrial Operations.

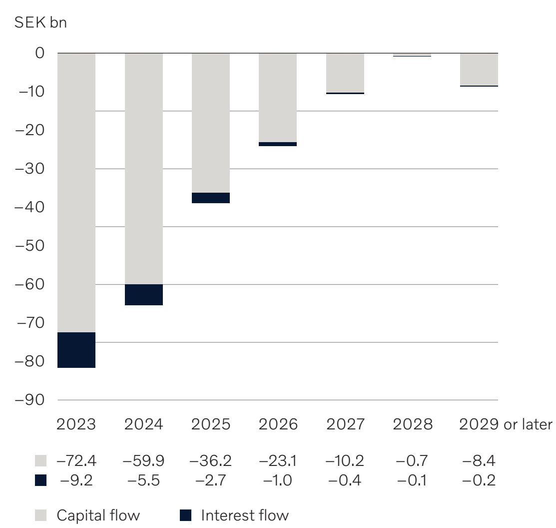
A hybrid bond amounting to EUR 1.5 billion was issued in the Volvo Group in 2014 in order to further strengthen the Volvo Group's financial position and prolong the maturity structure of the debt portfolio. The hybrid bond is classified as a loan with an original duration of 61.6 years, subordinated to all other financial liabilities currently outstanding.

The first tranche of this bond (EUR 0.9 billion) was repaid in 2020. After publishing the Volvo Group report on the fourth quarter and full year 2022 a decision has been made to call the remaining tranche (EUR 0.6 billion) in March, 2023.

» **Read more in Note 14** Leasing about the maturity for non-current lease liabilities in **table 14:4**.

» **Read more in Note 22** Liabilities about the maturity for non-current loans in **table 22:3**.

4:9
Future cash flow including lease liabilities and derivatives related to non-current and current financial liabilities[1, 2]



1 In addition to derivatives included in **graph 4:9** there are also derivatives in the Volvo Group related to financial liabilities recognized as assets, which are expected to give a future capital flow of SEK 1.7 billion (2.0) and a future interest flow of SEK 2.9 billion (–0.0).

2 The interest payments related to the hybrid bond are included with an amount of SEK 0.3 billion (0.6), which pertains to the period through the first call date for the remaining tranche, in March 2023.

OTHER PRICE RISKS

OTHER PRICE RISKS

Commodity risks
Commodity risk refers to the risk that changed commodity prices will affect the consolidated earnings within the Volvo Group. Procurement of commodities such as steel, precious metals and electricity are made in the Volvo Group on a regular basis where prices are set in the global markets.

POLICY

Changes in commodity prices are included in the Volvo Group's product cost calculation. Increased commodity prices are therefore reflected in the sales price of the final products. Purchasing agreements with commodity suppliers may also be long-term in nature or structured in a way to decrease the volatility in commodity prices.

5 Investments in joint ventures, associated companies and other shares and participations

ACCOUNTING POLICY

Joint ventures

Joint ventures are companies in which the Volvo Group has joint control together with one or more external parties. Investments in joint ventures are recognized by applying equity method accounting. The Volvo Group's most material holdings in joint ventures are VE Commercial Vehicles, Ltd., (VECV) and cellcentric GmbH & Co. KG (cellcentric). Both investments are joint ventures since common agreement is needed for important matters related to the governance in the joint ventures. The investment in VECV aims at strengthening the Volvo Group's position in the market in India. cellcentric will develop, produce, and commercialize fuel-cell systems for use in heavy-duty trucks as the primary focus. Both VECV and cellcentric are included in the Trucks segment. During 2022, the Volvo Group, Daimler Truck and the TRATON GROUP created a joint venture for charging infrastructure in Europe. The aim is to provide reliable and accessible high-performance charging stations for all battery electric heavy-duty vehicle fleet operators. The joint venture is called Milence and is included in the Trucks segment.

Associated companies

Associated companies are companies in which the Volvo Group has a significant influence. A strong indication of such influence is when the Group's holding is more than 20% but less than 50% of the voting rights. Investments in associated companies are recognized by applying equity method accounting. The ownership in the Chinese automotive manufacturer Dongfeng Commercial Vehicles Co., Ltd (DFCV) is classified as an associated company and is included in the Trucks segment.

Equity method

The Volvo Group's share of the companies' income/loss recognized according to the equity method is included in the Volvo Group's income statement as income/loss from investments in joint ventures and associated companies. Where appropriate, the income has been reduced by depreciation of surplus values and the effect of applying different accounting policies has been considered. Income from companies recognized in accordance with the equity method is included in operating income since the Volvo Group's investments are business related in nature. For practical reasons, some of the associated companies are included in the consolidated financial statements with a certain time lag, normally up to one quarter. Dividends from joint ventures and associated companies are not included in the consolidated income. The carrying amount of investments in joint ventures and associated companies are affected by the Volvo Group's share of the companies' net income, less depreciation of surplus values and dividends received. Investments in joint ventures and associated companies are also affected by the Volvo Group's share of the companies' other comprehensive income and by the translation difference from translating the companies' equity in the consolidation of the Volvo Group.

When applying the equity method, losses recognized by joint ventures or associates could indicate impairment and additional impairment losses might be recognized. For instance, a significant or prolonged decline in the fair value of the shares is an indication of impairment. However, investments accounted for in accordance with the equity method cannot amount to a negative carrying value. The Group's share of losses are therefore not adjusted for, if the holding is of a negative amount. Additional losses are provided for to the extent that the Volvo Group has incurred legal or constructive obligations to make payments on behalf of the joint venture or the associated company.

Other shares and participations

Other shares and participations recognizes holding of shares in which the Volvo Group does not hold a significant influence. This generally means the Volvo Group's holding of shares corresponds to less than 20% of the voting rights. Listed shares are recognized at fair value through other comprehensive income since the shares are not held for trading. For unlisted shares and participations, a fair value cannot be reasonably measured, hence these are measured at amortized cost. Earned or paid interest attributable to these assets is recognized in the income statement as part of net financial items, in accordance with the effective interest method. Dividends received attributable to these assets are recognized as income from other investments within operating income.

» **Read more in Note 30** Financial instruments, regarding classification and valuation of financial instruments.

Joint ventures

The Volvo Group's investments in joint ventures are listed below.

5:1

Investments in joint ventures	**Dec 31, 2022 Percentage holding**	**Dec 31, 2022 Carrying value**	Dec 31, 2021 Percentage holding	Dec 31, 2021 Carrying value
VE Commercial Vehicles, Ltd., (VECV)	45.6	2,860	45.6	2,618
cellcentric	50.0	7,622	50.0	6,678
Other holdings in joint ventures[1]		179		122
Investments in joint ventures		**10,661**		**9,418**

1 Other holdings in joint ventures include investments in World of Volvo AB, Force Réseau and Milence.

The following tables present summarized financial information for the Volvo Group's joint ventures:

5:2

Summarized income statements	**2022**				2021			
	VECV	cellcentric	Other joint ventures	**Total**	VECV	cellcentric (10 months)	Other joint ventures	**Total**
Net sales	21,900	119	653	22,671	13,912	88	616	14,615
Operating income[1]	640	–1,164	–49	–573	248	–1,053	7	–798
Interest income and similar credits	99	–	–	99	57	–	0	57
Interest expense and similar charges	–29	–	–	–29	–51	–	0	–51
Other financial income and expenses	–1	–7	–12	–19	0	–4	–2	–6
Income taxes	–251	–	4	–247	–85	–	–2	–87
Income for the period[2]	**458**	**–1,172**	**–56**	**–770**	**169**	**–1,057**	**4**	**–884**
Other comprehensive income[3]	**–6**	**7**	**–**	**1**	**–13**	**3**	**1**	**–9**
Total comprehensive income	**452**	**–1,164**	**–56**	**–768**	**156**	**–1,054**	**5**	**–893**

1 Depreciation and amortization of SEK 744 M (678) are included within operating income.

2 Income for the period in joint ventures includes depreciation of surplus values.

3 Including the Volvo Group's share of other comprehensive income related to joint ventures. Translation differences from translating joint ventures' equity in the Volvo Group are excluded.

5:3

Summarized balance sheets	**Dec 31, 2022**				Dec 31, 2021			
	VECV	cellcentric	Other joint ventures	**Total**	VECV	cellcentric	Other joint ventures	**Total**
Non-current assets	5,871	14,571	1,077	21,519	5,522	13,057	491	19,070
Marketable securities, cash and cash equivalents	2,236	883	–	3,119	1,629	380	50	2,059
Other current assets	7,419	561	271	8,250	6,007	390	200	6,597
Total assets	**15,526**	**16,014**	**1,347**	**32,888**	**13,158**	**13,827**	**741**	**27,726**
Equity[1]	6,272	15,210	361	21,844	5,741	13,312	320	19,374
Non-current financial liabilities	133	317	–	450	527	–	–	529
Other non-current liabilities	512	57	809	1,378	209	159	302	669
Current financial liabilities	6,192	7	–	6,199	4,666	–	20	4,686
Other current liabilities	2,417	423	177	3,017	2,014	355	100	2,469
Total equity and liabilities	**15,526**	**16,014**	**1,347**	**32,888**	**13,158**	**13,827**	**741**	**27,726**

1 Including translation differences from translating joint ventures' equity in the Volvo Group.

Net financial position for the joint ventures (excluding post-employment benefits) amounted to SEK 1,833 M (1,575) as of December 31, 2022. As of December 31, 2022, the Volvo Group's share of contingent liabilities in its joint ventures amounted to SEK 110 M (106). Dividends received during 2022 from VECV amounted to SEK 44 M (26).

Associated companies

The Volvo Group's investments in associated companies are listed below.

5:4

Investments in associated companies	Dec 31, 2022 Percentage holding	Dec 31, 2022 Carrying value	Dec 31, 2021 Percentage holding	Dec 31, 2021 Carrying value
Dongfeng Commercial Vehicles Co., Ltd (DFCV)	45.0	9,929	45.0	10,324
Other holdings in associated companies[1]		992		944
Investments in associated companies		**10,922**		**11,268**

1 Other holdings in associated companies include the investment in Blue Chip Jet II HB and WirelessCar Sweden AB.

The following tables present summarized financial information for the Volvo Group's associated companies:

5:5

Summarized income statements	2022			2021		
	DFCV	Other associated companies	Total	DFCV	Other associated companies	Total
Net sales	33,211	3,892	37,103	57,045	3,818	60,863
Operating income	–2,998	78	–2,920	880	141	1,022
Income for the period[1]	**–1,952**	**57**	**–1,895**	**731**	**39**	**769**
Other comprehensive income[2]	**–5**	**–**	**–5**	**–5**	**–**	**–5**
Total comprehensive income	**–1,957**	**57**	**–1,900**	**726**	**39**	**764**

1 Income for the period in associated companies includes depreciation/amortization of surplus values and internal transactions.

2 Including the Volvo Group's share of other comprehensive income related to associated companies. Translation differences from translating the associated companies' equity in the Volvo Group are excluded.

5:6

Summarized balance sheets	Dec 31, 2022			Dec 31, 2021		
	DFCV	Other associated companies	Total	DFCV	Other associated companies	Total
Non-current assets	21,474	1,327	22,801	20,647	1,207	21,854
Current assets	30,651	1,743	32,394	43,733	1,432	45,164
Total assets	**52,124**	**3,070**	**55,195**	**64,380**	**2,639**	**67,019**
Equity[1]	20,957	1,390	22,348	21,684	1,229	22,913
Non-current liabilities	4,701	545	5,245	5,090	483	5,573
Current liabilities	26,467	1,135	27,602	37,606	927	38,533
Total equity and liabilities	**52,124**	**3,070**	**55,195**	**64,380**	**2,639**	**67,019**

1 Including the translation differences from translating associated companies' equity in the Volvo Group.

During 2022 no dividend was recevied from DFCV (767).

5:7

Income/loss from investments in joint ventures and associated companies	2022	2021
Income/loss joint ventures		
VECV	212	80
cellcentric	–572	–522
Other companies	–15	2
Subtotal	**–374**	**–440**
Income/loss associated companies		
DFCV[1]	–969	362
Other companies	10	11
Subtotal	**–959**	**373**
Revaluation, write-down and gain on divestment of shares		
Other companies	–	13
Subtotal	**–**	**13**
I/S **Income/loss from investments in joint ventures and associated companies[2]**	**–1,333**	**–54**

1 Income/loss includes an internal profit elimination of net SEK 37 M (37) and an adjustment to Volvo Group Accounting policies of SEK –99 M (71).

2 Income/loss from investments in joint ventures include the Volvo Group's share of depreciation of surplus values of SEK – M (–) and associated companies include depreciation of surplus values of SEK 37 M (37).

Other shares and participations

The carrying amount of the Volvo Group's holding of shares and participations in other companies is disclosed in the table below.

» Read more in Note 30 Financial Instruments, regarding classification and valuation of financial instruments.

5:8

Holding of shares in listed and non-listed companies	Dec 31, 2022 Carrying value	Dec 31, 2021 Carrying value
Holdings in listed companies[1]	6	51
Holdings in non-listed companies	599	488
B/S **Other shares and participations**	**605**	**539**

1 Changes in fair value is measured through other comprehensive income and amounts to SEK –45 M (48).

6 Segment reporting

ACCOUNTING POLICY

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision maker. The chief operating decision maker, identified as the Group Executive Board, makes strategic decisions and is responsible for allocating resources and assessing financial performance of the operating segments.

The Volvo Group comprises ten business areas: Volvo Trucks, Mack Trucks, Renault Trucks, Volvo Autonomous Solutions, Volvo Energy, Volvo Construction Equipment, Volvo Buses, Volvo Penta, Arquus and Volvo Financial Services.

Each business area is seen as a separate segment, except for the truck business areas, Volvo Autonomous Solutions and Volvo Energy which are included in the segment Trucks. This segment also comprises the associated companies and joint ventures Dongfeng Commercial Vehicles, VE Commercial Vehicles, cellcentric and Milence. The truck segment has shared operations for product development, purchasing and manufacturing which are highly integrated, and strategic allocation of resources is done to the total segment.

The segment Group functions & Other includes Arquus, Nova Bus and common business support functions such as Volvo Group IT and Volvo Group Real Estate. The costs of these business support functions are shared between the different business areas based on utilization according to principles set by the Volvo Group.

6:1

2022	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. eliminations	Industrial Operations	Financial Services	Eliminations	Volvo Group
Net sales, external customers	307,344	99,786	17,387	17,108	14,888	456,513	16,966	–	473,479
Net sales, internal	3,192	475	1,196	994	–2,667	3,190	389	–3,579	0
I/S **Net sales**	**310,536**	**100,261**	**18,583**	**18,102**	**12,221**	**459,703**	**17,355**	**–3,579**	**473,479**
Expenses	–277,235	–87,354	–18,235	–15,584	–15,100	–413,507	–16,508	3,581	–426,433
I/S Income from investments in joint ventures and associated companies	–1,325	–	5	8	–21	–1,333	–	–	–1,333
I/S **Operating income**	**31,976**	**12,907**	**353**	**2,527**	**–2,900**	**44,862**	**848**	**2**	**45,712**
I/S Interest income and similar credits						1,315	0	–307	1,008
I/S Interest expense and similar charges						–1,512	0	307	–1,205
I/S Other financial income and expense						–437	0	–	–437
I/S **Income after financial items**						**44,228**	**848**	**2**	**45,077**
Other segment information									
Depreciation, amortization and impairment	–14,914	–2,119	–687	–549	2,341	–15,928	–4,802	–	–20,729
Restructuring costs	33	49	–6	1	–	77	0	–	77
Gains/losses from divestments	–	–	–	–	–	–	–	–	–
Investments in in-/tangible assets	14,290	1,603	492	900	825	18,109	9,229	–19	27,320
B/S Investments in joint ventures and associated companies	20,599	0	100	46	837	21,583	–	–	21,583
B/S Assets held for sale						–	–	–	–
B/S Liabilities held for sale						–	–	–	–

6:2

2021	Trucks	Con-struction Equipment	Buses	Volvo Penta	Group functions & Other incl. eliminations	Industrial Operations	Financial Services	Elimina-tions	Volvo Group
Net sales, external customers	228,573	91,722	12,884	13,710	12,186	359,075	13,140	–	372,216
Net sales, internal	2,309	309	767	727	–2,125	1,986	297	–2,283	0
I/S **Net sales**	**230,881**	**92,031**	**13,652**	**14,437**	**10,061**	**361,062**	**13,437**	**–2,283**	**372,216**
Expenses	–203,496	–79,803	–13,577	–12,348	–12,001	–321,225	–10,149	2,285	–329,088
I/S Income from investments in joint ventures and associ-ated companies	–36	0	4	3	–24	–54	–	–	–54
I/S **Operating income**	**27,349**	**12,228**	**78**	**2,092**	**–1,964**	**39,783**	**3,289**	**2**	**43,074**
I/S Interest income and similar credits						362	–	–4	358
I/S Interest expense and similar charges						–1,172	0	4	–1,167
I/S Other financial income and expense						926	–	–	926
I/S **Income after financial items**						**39,899**	**3,289**	**2**	**43,190**
Other segment information									
Depreciation, amortiza-tion and impairment	–13,317	–2,097	–716	–504	2,337	–14,297	–4,423	–	–18,720
Restructuring costs	143	–3	18	0	0	159	–1	–	157
Gains/losses from divestments	1,649	–5	–	–	0	1,643	–	–	1,643
Investments in in-/tangible assets	10,708	1,338	347	750	590	13,732	9,302	–21	23,014
B/S Investments in joint ventures and associated companies	19,746	0	92	42	806	20,685	–	–	20,685
B/S Assets held for sale						–	–	–	–
B/S Liabilities held for sale						–	–	–	–

6:3

Reporting by geographical region	Net sales[1]		Non-current assets[2]	
	2022	2021	**2022**	2021
Europe	191,165	158,070	83,351	74,941
of which Sweden	*12,793*	*10,160*	*26,899*	*26,435*
of which France	*36,252*	*30,806*	*14,435*	*12,274*
of which the UK	*23,641*	*17,511*	*7,281*	*8,398*
North America	137,154	98,771	27,472	22,459
of which USA	*115,499*	*81,324*	*25,371*	*20,522*
South America	51,734	30,424	2,780	2,064
of which Brazil	*37,196*	*21,794*	*2,226*	*1,582*
Asia	64,392	63,154	5,729	5,394
of which China	*22,429*	*29,675*	*2,381*	*2,311*
Africa and Oceania	29,033	21,797	3,256	2,662
I/S B/S **Total**	**473,479**	**372,216**	**122,589**	**107,520**

1 The reporting of net sales by geographical region is based on where the delivery of the goods or services took place.

2 Non-current assets include tangible and intangible assets excluding goodwill.

7 Revenue

ACCOUNTING POLICY

The recognized net sales in Industrial Operations pertain to revenues from sales of vehicles and services. Revenue from vehicles and services are recognized when control has been transferred from Volvo Group to the customer. Control refers to the customers' ability to use vehicles or services in its operations and to obtain the associated cash flow related to the use. Vehicles and services are sold separately or as a combined offer. In combined offers where the vehicle and services are separable from each other and the customer can benefit from the vehicle and the service independently, the transaction price is allocated between vehicles and services based on stand-alone selling price according to price lists.

The recognized net sales in Financial Services pertain to interest income related to finance leases and installment credits as well as income from operating lease contracts. Interest income is recognized during the underlying contract period and income from operating leasing is recognized over the leasing period.

Vehicles

Vehicles include sales of new trucks, buses, machines and engines as well as sales of used trucks, buses, machines, trailers, superstructures and special vehicles. A standard contractual warranty is included as part of the sales, read more in note 21 Other provisions about product warranty. The customer can pay for the vehicle at the point of sale or defer the payment by entering into agreements such as installment credits and finance lease.

Revenue is recognized at a specific point in time, when control of the vehicle has been transferred to the customer, normally when the vehicle has been delivered to the customer. The value of rebates, returns and variable sales price have been considered as part of the revenue recognition.

If the sale of the vehicle is combined with a residual value commitment (buybacks and tradebacks) the criterion of transferring control is based on if the customer has a significant economic incentive to exercise the option to return the vehicle or not. A significant economic incentive exists if the repurchase price is higher than the assessed fair market value i.e. net realizable value at the end of the residual value commitment period, or if the historical returns indicate that it is probable that the customer will return the vehicle at the end of the commitment period. Thus, the control has not been transferred and the sales transaction is recognized as an operating lease transaction. The revenue and expense are recognized over the residual value commitment period in the income statement. Assets under operating leases, a residual value liability, and a deferred lease income are recognized in the balance sheet. The asset is depreciated over the commitment period and the deferred lease income is recognized as revenue over the same period. The residual value liability amount remains unchanged until the end of the commitment period. If the vehicle is returned at the end of the commitment period, the residual value liability is paid to the customer and the vehicle is reclassified from assets under operating lease to inventory.

» **Read more in Note 14** Leasing about lease income on assets under operating lease.

» **Read more in Sustainability notes** and section EU Taxonomy regulation disclosures about taxonomy eligible turnover.

If the customer is not considered to have a significant economic incentive to return the vehicle, the sales transaction is recognized in accordance with the right of return model. Revenue corresponding to the sales amount less the buyback amount is recognized at the initial sale, as well as a proportionate share of cost of goods sold. The remaining revenue is recognized as a refund liability and the remaining cost of goods sold as a right of return asset during the commitment period. If the vehicle is not returned the refund liability is recognized as revenue and the right of return asset is recognized as cost of goods sold at the end of the commitment period.

Services

Services include sale of spare parts, maintenance services, repairs, extended coverage, connectivity solutions and other aftermarket products. The control of the service has been transferred to the customer when the Volvo Group incurs the associated cost to deliver the service and the customer can benefit from the use of the delivered services. For spare parts, revenue is recognized at one point time, normally when it is delivered to the customer. For maintenance services, connectivity solutions and other aftermarket products, revenue is recognized over time, i.e. normally during the contract period. When payment for maintenance contracts is received in advance, the payment is recognized as a contract liability.

Services also includes sales in Financial Services related to finance lease, installment credits and operating leases. During 2022, revenue from Financial Services operations amounted to SEK 17,355 M (13,437).

» **Read more in Note 6** Segment reporting regarding net sales by segment and geographical region.

» **Read more in Note 14** Leasing about lease income on assets under operating lease and finance income on customer-financing receivables.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Sales with residual value commitments

When the Volvo Group enters into sales transactions of vehicles with residual value commitments (buybacks and tradebacks) the judgment whether control has been transferred from Volvo Group to the customer and at what point in time revenue shall be recognized is critical. The judgment made is when a significant economic incentive exists or not for the customer to return the vehicle at the end of the commitment period. The assessment of significant economic incentive is performed at the inception of the contract and the outcome at the end of the commitment period can differ from the initial assessment. Factors that are considered and requires judgment is the assessed fair market value i.e. net realizable value at the end of the residual value commitment period and historical returns. The future mix of vehicles and services is driven by customer demand for products and solutions with lower environmental impact. The gradual shift into battery electric and fuel cell electric products, as well as supply chain and production disturbances imply to some extent uncertainties in the assessment of fair market value.

» **Read more in Note 13** Tangible assets for a description of residual value risks and the assessment of fair market value.

Variable sales price

In some sales transactions, the sales price is variable such as residual value guarantees. In assessing the variable sales price the expected value method is used and revenue is recognized when it is highly probable that a reversal will not occur. Both the expected value method and the assessment of highly probable requires judgments to be able to make estimates. The estimates are made at the contract start with continuous assessment at each reporting period.

7:1

Disaggregation of revenue 2022	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. eliminations	Industrial Operations	Financial Services	Elimina-tions	Volvo Group
Net sales per geographical region									
Europe	137,177	30,194	6,034	9,417	4,893	187,715	6,705	–3,255	191,165
North America	92,582	22,294	6,521	3,695	6,540	131,632	5,752	–229	137,154
South America	38,254	6,491	3,154	635	–133	48,400	3,338	–5	51,734
Asia	23,988	34,228	1,372	3,302	714	63,604	788	0	64,392
Africa and Oceania	18,535	7,054	1,502	1,054	207	28,352	772	–90	29,033
I/S **Net sales**	**310,536**	**100,261**	**18,583**	**18,102**	**12,221**	**459,703**	**17,355**	**–3,579**	**473,479**
Net sales per product group									
Vehicles	245,681	85,465	14,185	13,221	8,682	367,234	–	–3,575	363,659
Services	64,855	14,796	4,398	4,881	3,539	92,469	17,355	–4	109,820
I/S **Net sales**	**310,536**	**100,261**	**18,583**	**18,102**	**12,221**	**459,703**	**17,355**	**–3,579**	**473,479**
Timing of revenue recognition									
Revenue of vehicles and services recognized at the point of delivery	291,639	97,555	17,826	18,102	9,522	434,644	–	–839	433,805
Revenue of vehicles and services recognized over contract period	18,897	2,706	757	–	2,699	25,059	17,355	–2,740	39,674
I/S **Net sales**	**310,536**	**100,261**	**18,583**	**18,102**	**12,221**	**459,703**	**17,355**	**–3,579**	**473,479**

7:2

Disaggregation of revenue 2021	Trucks	Construction Equipment	Buses	Volvo Penta	Group functions & Other incl. eliminations	Industrial Operations	Financial Services	Elimina-tions	Volvo Group
Net sales per geographical region									
Europe	107,798	29,524	5,886	7,464	3,623	154,296	5,929	–2,155	158,070
North America	65,308	16,583	4,089	2,949	5,427	94,356	4,519	–105	98,771
South America	23,569	3,951	882	474	–67	28,810	1,618	–4	30,424
Asia	21,360	36,427	1,371	2,698	455	62,310	843	–	63,154
Africa and Oceania	12,846	5,546	1,423	851	624	21,291	528	–20	21,797
I/S **Net sales**	**230,881**	**92,031**	**13,652**	**14,437**	**10,061**	**361,062**	**13,437**	**–2,283**	**372,216**
Net sales per product group									
Vehicles	175,509	79,390	10,459	10,282	7,026	282,666	–	–2,279	280,387
Services	55,373	12,641	3,192	4,155	3,035	78,396	13,437	–4	91,829
I/S **Net sales**	**230,881**	**92,031**	**13,652**	**14,437**	**10,061**	**361,062**	**13,437**	**–2,283**	**372,216**
Timing of revenue recognition									
Revenue of vehicles and services recognized at the point of delivery	213,656	89,780	13,073	14,437	7,628	338,575	–	–223	338,352
Revenue of vehicles and services recognized over contract period	17,225	2,251	578	0	2,432	22,486	13,437	–2,061	33,863
I/S **Net sales**	**230,881**	**92,031**	**13,652**	**14,437**	**10,061**	**361,062**	**13,437**	**–2,283**	**372,216**

7:3

Contract and right of return assets	Dec 31, 2022	Of which due within 12 months	Of which due after 12 months	Dec 31, 2021	Dec 31, 2020
Contract assets	3,800	1,325	2,475	3,779	5,945
Right of return assets	1,857	348	1,509	1,889	1,152
Parts return assets	201	149	52	167	138
Total	**5,858**	**1,822**	**4,036**	**5,835**	**7,235**

Contract assets are recognized within other receivables and include revenue that has been recognized but not yet invoiced for work performed.

Right of return assets and parts return assets represents the product cost for the assets that might be returned to the Volvo Group.

7:4

Contract and refund liabilities	Dec 31, 2022	Of which due within 12 months	Of which due after 12 months	Dec 31, 2021	Dec 31, 2020
Contract liabilities					
Deferred service revenue	21,939	4,446	17,493	18,155	15,826
Advances from customers	8,985	5,892	3,093	7,435	8,010
Other deferred income	2,237	1,829	408	1,928	1,570
Accrued expenses for dealer bonuses and rebates	5,789	5,767	23	5,009	5,255
Refund liabilities	2,483	783	1,700	2,435	1,543
Total	**41,433**	**18,716**	**22,717**	**34,962**	**32,204**

Contract liabilities are recognized within other liabilities and include advance payments received from customers, e.g. advance payments for service contracts and extended coverage, for which revenue is recognized when the service is provided. Refund liabilities related to the right to return products and residual value guarantees are included with an amount that is expected to be paid to the customer if the vehicle or spare part is returned. In service contracts, the revenue expected to be recognized over the remaining term of the contract for services not yet delivered amounted to SEK 28,187 M (23,732) as of December 31, 2022. Approximately 34% are expected to be recognized as revenue during 2023 and the remaining 66% as revenue during 2024–2026. The change in contract and refund liabilities are mainly due to increased deferred service revenue. During 2022, revenue has been recognized with SEK 19,745 M (16,692) that was included in the contract liabilities at the beginning of the period.

8 Other operating income and expenses

8:1

Other operating income and expenses	2022	2021
Gains/losses on divestment of group companies[1]	–	1,643
Change in allowances and write-offs for doubtful customer-financing receivables[2]	–3,412	–266
Change in allowances and write-offs for other doubtful receivables[3]	–842	–263
Damages and litigations[4]	–2,733	–775
Other income and expenses	–387	–93
I/S **Total**	**–7,374**	**246**

1 In 2021, a capital gain of SEK 1,653 M from the divestment of UD Trucks was included.

» Read more in Note 3 Acquisitions and divestments of operations.

2 Including a provision regarding assets related to Russia.

» Read more in Note 15 Customer-financing receivables.

3 » Read more in Note 16 Receivables.

4 Includes costs for claims arising from the European Commission's 2016 antitrust settlement decision and costs for a civil penalty from the National Highway Traffic Safety Administration in the US.

» Read more in Note 21 Other provisions.

9 Other financial income and expenses

ACCOUNTING POLICY

In other financial income and expenses unrealized revaluation on derivatives used to hedge interest rate exposure as well as realized result and unrealized revaluation on derivatives used to hedge future cash flow exposure in foreign currency are recognized. The derivatives are recognized at fair value through the income statement and no hedge accounting is applied. The unrealized revaluation on derivatives used to hedge interest rate exposure is mainly related to the debt portfolio within Industrial Operations and customer-financing portfolio within Financial Services where fluctuating interest rate levels has a major impact.

» Read more in Note 1 Accounting policies about receivables and liabilities in foreign currency.

» Read more in Note 30 Financial instruments regarding the accounting policy and effects on net income and cash flow for financial assets at fair value through the income statement.

9:1

Other financial income and expenses	2022	2021
Unrealized revaluation of derivatives used to hedge interest rate exposure	18	924
Realized result and unrealized revaluation on derivatives used to hedge future cash flow exposure in foreign currency	1	32
Financial instruments at fair value through income statement	**19**	**956**
Exchange rate gains and losses on financial assets and liabilities	–332	–56
Financial income and expenses related to taxes	107	281
Costs for Treasury function, credit facilities, etc.	–231	–256
I/S **Total**[1]	**–437**	**926**

1 Other financial income and expenses attributable to financial instruments amounted to SEK –313 M (900). The amount is specified in note 30 Financial instruments in table 30:3.

10 Income taxes

ACCOUNTING POLICY

Income tax for the period includes current and deferred taxes. Current taxes are calculated on the basis of the tax regulations prevailing in the countries where the group companies have operations.

Deferred taxes are recognized on differences that arise between the taxable value and carrying value of assets and liabilities as well as on tax-loss carryforwards. Deferred tax assets are recognized to the extent it is probable that they will be utilized against future taxable profits.

Deferred tax liabilities related to temporary differences on investments in subsidiaries, joint ventures and associated companies are recognized in the balance sheet except when the Volvo Group controls the timing of the reversal of the temporary difference related to accumulated undistributed earnings and it is probable that a reversal will not be done in the foreseeable future.

Tax laws in Sweden and certain other countries allow companies to defer payment of taxes through allocations to untaxed reserves. In the Volvo Group financial statements, untaxed reserves give rise to temporary differences which are recognized as deferred tax liabilities.

Tax liabilities are recognized for income tax charges that are probable as a result of identified tax risks. Hence, when it is probable that the taxation authority or court will not accept an uncertain income tax treatment under tax law, adjustments of the tax liability are made for the estimated outcome. Tax claims for which no adjustment of the tax liability is considered required are generally reported as contingent liabilities.

» Read more in Note 24 Contingent liabilities and contingent assets.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Deferred taxes

The Volvo Group recognizes deferred tax assets related to tax-loss carryforwards. The deferred tax assets are recognized based on a thorough assessment in order to ensure that it is probable that sufficient taxable profits will be generated in the coming years that will enable the tax-loss carryforwards to be utilized. The assessment is based on an evaluation of business plans. In addition, the possibility to offset tax assets and tax liabilities and the fact that the major part of the tax-loss carryforwards is related to countries with long or indefinite periods of utilization is considered.

If deferred tax assets related to tax-loss carryforwards are not expected to be realized based on current business plans, valuation allowances are recognized. If actual results differ from the business plans, or if business plans for future periods are adjusted, changes in the valuation allowance may be required. Such recognitions and adjustments could have an impact on the financial position and the income for the period.

Uncertainty over income tax treatments and claims

The Volvo Group regularly evaluates income tax positions to determine if a tax liability or a contingent liability shall be recognized. The judgment is based on several factors, such as changes in facts and circumstances, the progress of the case and experience in similar cases. The actual outcome of income tax positions may deviate from the expected outcome and materially affect future financial statements.

10:1

Distribution of income taxes	2022	2021
Current taxes relating to the period	–15,081	–9,132
Adjustment of current taxes for prior periods	12	393
Deferred taxes originated or reversed during the period	2,712	–960
Remeasurements of deferred tax assets	249	–248
I/S **Total income taxes**	**–12,108**	**–9,947**

The Swedish corporate income tax rate amounted to 21% (21) in 2022. **Table 10:2** explains the major reasons for the difference between the Swedish corporate income tax rate and the Volvo Group's effective tax rate, based on income after financial items.

10:2

Reconciliation of effective tax rate %	2022	2021
Swedish corporate income tax rate	**21**	**21**
Difference between corporate tax rate in Sweden and other countries	4	3
Non-taxable income	–1	–2
Non-deductible expenses	3	0
Current taxes related to prior years	0	–1
Remeasurement of deferred taxes	–1	2
Other differences	1	1
Effective tax rate for the Volvo Group	**27**	**23**

The effective tax rate for the Volvo Group, as of December 31, 2022, was mainly impacted by the country mix in the Volvo Group's earnings and the provisioning of assets related to Russia.

10:3

Specification of deferred tax assets and liabilities	Dec 31, 2022	Dec 31, 2021
Deferred tax assets:		
Unused tax-loss carryforwards	1,208	1,066
Other unused tax credits	633	479
Intercompany profit in inventories	1,473	994
Write down of inventories	574	494
Valuation allowance for doubtful receivables	1,618	1,251
Provisions for warranties	3,941	3,241
Provisions for residual value risks	428	341
Lease liabilities	1,300	1,146
Provisions for post-employment benefits	2,415	3,186
Provisions for restructuring measures	29	50
Other deductible temporary differences	8,915	6,563
Deferred tax assets before deduction for valuation allowance	**22,533**	**18,810**
Valuation allowance	–692	–527
Deferred tax assets after deduction for valuation allowance	**21,841**	**18,283**
Netting of deferred tax assets and liabilities	–7,652	–7,336
B/S **Deferred tax assets, net**	**14,189**	**10,947**
Deferred tax liabilities:		
Accelerated depreciation on property, plant and equipment	2,148	1,832
Accelerated depreciation on leasing assets	2,362	2,138
Right-of-use assets, leased	1,243	1,104
LIFO valuation of inventories	552	418
Capitalized product and software development	2,557	2,177
Untaxed reserves	1,693	2,239
Other taxable temporary differences	2,581	2,348
Deferred tax liabilities	**13,137**	**12,255**
Netting of deferred tax assets and liabilities	–7,664	–7,329
B/S **Deferred tax liabilities, net**	**5,472**	**4,926**
Deferred tax assets and liabilities, net[1]	**8,717**	**6,021**

1 The deferred tax assets and liabilities are recognized in the balance sheet partially on a net basis, after taking into account offsetting possibilities. Deferred tax assets and liabilities have been measured at the tax rates that are expected to be applied during the period when the asset is realized or the liability is settled, according to the tax rates and tax regulations that have been resolved or enacted at the balance sheet date.

The total valuation allowance for deferred tax assets amounted to SEK 692 M (527) as of December 31, 2022, whereof SEK 559 M (405) consisted of an allowance for a tax credit in Brazil.

As of December 31, 2022, the Volvo Group's gross unused tax-loss carryforwards amounted to SEK 4,638 M (4,096) pertaining to deferred tax assets of SEK 1,208 M (1,066) recognized in the balance sheet. Out of the total deferred tax assets attributable to unused tax-loss carryforwards, SEK 505 M (685) pertained to France and SEK 338 M (76) to Canada.

The gross unused tax-loss carryforwards will expire according to **table 10:4.**

10:4

Due date, unused tax-loss carryforwards, gross	Dec 31, 2022	Dec 31, 2021
after 1 year	0	7
after 2 years	0	25
after 3 years	30	14
after 4 years	14	11
after 5 years	297	10
after 6 years or more[1]	4,297	4,029
Total	**4,638**	**4,096**

1 Tax-loss carryforwards with long or indefinite periods of utilization were mainly related to France and Canada. Tax-loss carryforwards with indefinite periods of utilization amounted to SEK 2,904 M (3,524) which corresponded to 63% (86) of the total unused tax-losses carryforward.

10:5

Changes in deferred tax assets and liabilities, net	2022	2021
Deferred tax assets and liabilities, net, opening balance	**6,021**	**7,330**
Recognized in income statement	2,961	–1,208
Recognized in other comprehensive income, whereof:		
Remeasurements of defined-benefit pension plans	–1,109	–1,699
Translation differences and other changes	844	1,598
Deferred tax assets and liabilities, net, as of December 31	**8,717**	**6,021**

The cumulative amount of undistributed earnings in foreign subsidiaries, which the Volvo Group currently intends to indefinitely reinvest outside of Sweden and which no deferred income tax have been accounted for, amounted to SEK 28 billion (28) at year end. Undistributed earnings pertaining to countries where the dividends are not taxable are excluded.

» Read more in Note 4 Goals and policies in financial risk management about how the Volvo Group handles currency exposure of equity.

11 Non-controlling interest

ACCOUNTING POLICY

Owners with a non-controlling interest have a limited ownership of shares and voting rights in a subsidiary, thereby also limited rights to the subsidiary's equity. Non-controlling interest equity is presented separately from equity attributable to owners of AB Volvo. In acquisitions, non-controlling interests are valued either at fair value or to a proportionate share of the acquired company's net assets. Ownership changes in non-controlling interests, not resulting in change of control, are recognized within equity.

The Volvo Group has a few non-wholly owned subsidiaries, of which Shandong Lingong Construction Machinery Co. (Lingong), in China, is the largest company with non-controlling interest. Owners with non-controlling interests hold a 30% shareholding in the company. During 2022, the profit allocated to the non-controlling interest in Lingong amounted to SEK 214 M (430). The accumulated amount allocated to the non-controlling interest within equity of Lingong amounts to SEK 3,390 M (3,000).

The following tables present summarized financial information for Shandong Lingong Construction Machinery Co.

11:1

Summarized income statement	2022	2021
Net sales	19,838	24,319
Operating income	731	1,515
Income for the period	**715**	**1,435**
Other comprehensive income[1]	586	1,231
Total comprehensive income for the period[1]	**1,301**	**2,666**
Dividend to non-controlling interest	0	606

11:2

Summarized balance sheet	Dec 31, 2022	Dec 31, 2021
Non-current assets	2,794	3,166
Marketable securities, cash and cash equivalents	4,933	4,831
Other current assets	16,679	17,918
Total assets	**24,406**	**25,915**
Non-current liabilities	2,311	86
Current liabilities	10,794	15,829
Total liabilities	**13,105**	**15,915**
Equity attributable to:		
Owners of AB Volvo[1]	7,910	7,000
Non-controlling interest[1]	3,390	3,000

1 Includes exchange differences from translating equity in foreign subsidiaries in the Volvo Group.

12 Intangible assets

ACCOUNTING POLICY

Volvo Group applies the cost method for recognition of intangible assets, consisting of goodwill, capitalized product and software development and other intangible assets.

» **Read more in Sustainability notes** and section EU Taxonomy regulation disclosures about taxonomy eligible capital expenditure.

Goodwill

Goodwill is recognized as an intangible asset with indefinite useful life. For non-depreciable assets such as goodwill, impairment tests are performed annually, as well as if there are indications of impairments during the year. Goodwill is allocated and tested at the level of cash-generating units which are identified as the Volvo Group's operating segments. However, in the segment Group Functions & Other three cash-generating units, Nova Bus, Designwerk and Arquus are included. If the carrying amount of the tested cash-generating unit exceeds the calculated recoverable amount, an impairment loss is recognized for the difference. The recoverable amount for a cash-generating unit is determined by the value in use, which is based on a discounted cash flow model with a forecast period of five years. The valuation is based on a business plan which is an integral part of the Volvo Group's financial planning process and represents management's best estimate of the development of the operations. The ongoing transition of the transport sector towards new technologies and new service-based business models bring business opportunities but also transitional risks for the Volvo Group, which have been integrated into the strategy and business plans. Assumption of 2% (2) long-term market growth beyond the forecast period and the expected development of the operations in relation to this environment is a basis for the valuation. In the model, the Volvo Group is expected to maintain stable capital efficiency over time. Other parameters considered in the calculation are operating income, mix of products and services and the shift towards electrified and other lower emission technology vehicles, expenses and level of capital expenditures. Macroeconomic risks and opportunites are reflected in the estimated future cash flows for each cash-generating unit. The Volvo Group uses a discount rate at 10% (10) before tax for 2022.

In 2022, the recoverable amount of Volvo Group's operations exceeded the carrying amount for all cash-generating units, thus no impairment was recognized. The Volvo Group has also analyzed whether a negative adjustment of several percentage points on the used assumptions for discount rate and operating income would result in impairment for goodwill, however none of the cash-generating units would be impaired as a result of this analysis. The operating parameters applied in the valuation are based on management's strategy and could indicate higher value than historical performance for each cash-generating unit. Furthermore, the Volvo Group is operating in a cyclical industry why performance could vary over time.

Headroom differs between the cash-generating units and they are sensitive to changes in the assumptions described above to a varying degree. Therefore, the Volvo Group continuously follows the performance of the cash-generating units whose headroom is dependent on the fulfillment of the Volvo Group's assessments. Instability in the recovery of the market and volatility in interest and currency rates may lead to indications of a need for impairment. The most important factors for the future operations of the Volvo Group are described in the Volvo Group's operating segments, as well as in the Risk management section.

Research and development

Expenditures for the development of new products and software are recognized as intangible assets if such expenditures, with a high degree of certainty, will result in future economic benefits for the company. Intangible assets are amortized over its estimated useful life.

The rules require stringent criteria to be met for these development expenditures to be recognized as assets. For example, it must be possible to prove the technical feasibility of completing the new product or software, so that it will be available for use or sale, before its development expenditure is recognized as an asset. In normal cases, this means that expenditures are capitalized only during the industrialization phase of a product development project. Other research and development costs are recognized in the income statement as incurred.

The Volvo Group has developed a process for conducting product development projects, which has six phases focused on separate parts of the project. Every phase starts and ends with a reconciliation point, known as a gate, for which the criteria must be met for the project's decision making committee to allow the project to progress to the next phase. During the industrialization phase, the industrial system is prepared for serial production and the product is launched. A corresponding process is developed for software development.

A substantial part of investments is directed towards low-carbon technology, which is expected to increase over time. As the transition will take place gradually, the running fleets in the transportation sector are likely to include different technologies for vehicle and machinery propulsion that can be powered by renewable energy such as battery-electric, fuel cell-electric or internal combustion powered by lower carbon fuels. Existing products is therefore expected to generate economic benefits during the transition period and be used during its remaining useful life.

Other intangible assets

Other intangible assets include trademarks, distribution networks, licenses and other rights. When participating in industrial projects in partnership with other companies the Volvo Group in certain cases pays an entrance fee to participate, which is capitalized as an intangible asset.

Amortization and impairment with finite useful life

Intangible assets with finite useful life are amortized on a straight line basis over their estimated useful life. Amortization is based on the cost of the assets, adjusted by impairments when applicable and estimated useful lives. Amortization is recognized in the respective function to which it belongs, meaning that amortization of product development is part of the research and development expenses in the income statement. Impairment tests for amortizable assets are performed if there are indications of impairment. In addition, impairment tests are performed annually for capitalized development cost for products and software not yet in use by calculating the recoverable amount. The recoverable amount is the higher of the fair value less costs of disposal and the value in use. The value in use is measured as the discounted future cash flows, which the asset is expected to generate either by itself or from the lowest cash-generating unit to which the asset belongs. If the recoverable amount is less than the carrying amount, an impairment is recognized and the carrying amount of the asset is reduced to the recoverable amount.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Impairment of goodwill and other intangible assets

When conducting impairment tests of goodwill and other intangible assets, estimates have to be made to determine the recoverable amounts of cash-generating units. The recoverable amount is based upon management's projections of future cash flows and are to a varying degree sensitive to changes in assumptions and the business environment. The broadening of the customer offer with focus to switch to more sustainable solutions accelerates investments in research and development. The magnitude of investments and the assessment of future useful life is uncertain due to technology and infrastructure development, emission regulations, government incentives and customer demand. While management believes that estimates of future cash flows and other assumptions made are reasonable, there are uncertainties which could materially affect the valuations.

12:1

Intangible assets as of Dec 31, 2022	Goodwill	Capitalized product and software development	Other intangible assets	Total
Acquisition cost				
Opening balance 2022	**23,924**	**49,723**	**6,833**	**80,480**
Investments	–	4,786	604	**5,390**
Sales/scrapping	–	–34	–67	**–102**
Acquired and divested operations[1]	146	8	98	**251**
Translation differences	1,567	250	379	**2,196**
Reclassification at divestment[1]	–	–	–	**–**
Reclassifications and other	–	20	25	**45**
Acquisition cost as of Dec 31, 2022	**25,636**	**54,753**	**7,872**	**88,261**
Accumulated amortization and impairment				
Opening balance 2022	**–**	**–38,325**	**–5,086**	**–43,411**
Amortization	–	–2,852	–118	**–2,970**
Impairment	–	–	–1	**–1**
Sales/scrapping	–	21	67	**88**
Acquired and divested operations[1]	–	–1	–	**–1**
Translation differences	–	–204	–218	**–422**
Reclassification at divestment[1]	–	–	–	**–**
Reclassifications and other	–	–	–	**–**
Accumulated amortization and impairment as of Dec 31, 2022	**–**	**–41,361**	**–5,356**	**–46,717**
B/S **Carrying amount as of Dec 31, 2022**	**25,636**	**13,393**	**2,516**	**41,544**

12:2

Intangible assets as of Dec 31, 2021	Goodwill	Capitalized product and software development	Other intangible assets	Total
Acquisition cost				
Opening balance 2021	**22,228**	**46,661**	**6,846**	**75,735**
Investments	–	3,078	644	**3,722**
Sales/scrapping	–	–137	–8	**–144**
Acquired and divested operations[1]	–236	–4,120	–2,627	**–6,983**
Translation differences	692	85	129	**906**
Reclassification at divestment[1]	1,229	4,147	1,960	**7,336**
Reclassifications and other	11	9	–110	**–91**
Acquisition cost as of Dec 31, 2021	**23,924**	**49,723**	**6,833**	**80,480**
Accumulated amortization and impairment				
Opening balance 2021	**–**	**–35,725**	**–5,432**	**–41,157**
Amortization	–	–2,659	–135	**–2,793**
Impairment	–	–	–	**–**
Sales/scrapping	–	126	7	**133**
Acquired and divested operations[1]	–	2,828	1,837	**4,664**
Translation differences	–	–67	–101	**–168**
Reclassification at divestment[1]	–	–2,827	–1,365	**–4,192**
Reclassifications and other	–	–2	104	**102**
Accumulated amortization and impairment as of Dec 31, 2021	**–**	**–38,325**	**–5,086**	**–43,411**
B/S **Carrying amount as of Dec 31, 2021**	**23,924**	**11,399**	**1,748**	**37,070**

1 » **Read more in Note 3** Acquisitions and divestments of operations, for a description of acquired and divested operations as well as assets and liabilities held for sale.

12:3

Goodwill per cash-generating unit	Dec 31, 2022	Dec 31, 2021
Trucks	13,237	12,620
Construction Equipment	9,814	8,923
Buses	865	826
Volvo Penta	382	356
Other cash-generating units	1,337	1,198
Total goodwill value	**25,636**	**23,924**

12:4

Estimated useful life	
Trademarks	Max 5 years
Distribution networks	10 years
Product and software development	3–8 years
Other intangible assets	3–5 years

13 Tangible assets

ACCOUNTING POLICY

The Volvo Group applies the cost method for measurement of tangible assets, consisting of property, plant, equipment and investment property as well as assets under operating leases.

Buildings include owner-occupied properties and investment properties. Investment properties are properties owned for the purpose of obtaining rental income and appreciation in value. Investment properties are recognized at cost. For disclosure purposes, information regarding the estimated fair value of investment properties is based on an internal discounted cash flow projection as relevant observable market inputs for the assets are not available. The required return is based on current property market conditions for comparable properties in comparable locations. Hence, the applied valuation method to measure fair value is classified as level 3 of the fair value hierarchy and there have not been any changes in valuation method during the year. Land contains land and land improvements. Machinery and equipment consist of production related assets such as machinery, type-bound tools and other equipment. Investments in property, plant and equipment will increase in connection with building up capacity for electrified and other lower emission technology vehicles. However, both electric trucks and trucks with combustion engines can be produced on the same assembly lines, thus limiting the investments needed for this transition in the industrial system. Construction in progress are assets under construction and advanced payments. Right-of-use assets relates to lease contracts with the Volvo Group as a lessee.

Assets under operating leases are mainly owned by the Volvo Group. These transactions are accounted for as operating lease transactions and consists of contractual operating lease agreements with customers within Financial Services and rental fleet which are assets used in a fleet for rental business within Industrial Operations. Some rental fleet assets are leased by the Volvo Group and later sub-leased to customers as operating leases. Sales with residual value commitments within Industrial Operations are also recognized within assets under operating leases.

» **Read more in Note 7** Revenue about sales with residual value commitments.

» **Read more in Note 14** Leasing about right-of-use assets and assets under operating leases.

» **Read more in Sustainability notes** and section EU Taxonomy regulation disclosures about taxonomy eligible capital expenditure.

Depreciation and impairment

Property, plant, equipment and investment property are depreciated over their estimated useful lives. Land is not depreciated. Depreciation is recognized on a straight-line basis based on the cost of the assets, adjusted by residual value when applicable, and estimated useful lives. Right-of-use assets are generally depreciated over the lease term on a straight-line basis. Assets under operating leases are depreciated on a straight-line basis over the contract period. During the contract period, the depreciable amount is adjusted by accelerated depreciation and/or write-downs. The adjustment is recognized through the income statement to correspond to estimated future net realizable value to continuously reflect potential residual value risks at the end of the contract period. The net realizable value is impacted by value of optional equipment, mileage, current condition, expected future price development, change of market conditions including the shift towards electrified and other lower emission technology vehicles, alternative distribution channels, inventory lead-time, repair and reconditioning costs, handling costs, indirect costs associated with the sale of used vehicles and legislative demands. Some of the locations may also be subject to increased risks from physical weather events depending on climate developments. These risks are monitored and reflected when estimating the useful life. The depreciation is recognized in the respective function to which it belongs. Impairment tests are performed if there are indications of impairment by calculating a recoverable amount which is the higher of the asset's fair value less cost of disposal and its value in use.

13:1

Estimated useful life	
Type-bound tools	3–8 years
Operating leases, rental fleet	3–5 years
Sales with residual value commitments	3–5 years
Machinery and equipment	5–20 years
Buildings and investment properties	20–50 years
Land improvements	20 years

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Impairment of tangible assets

Impairment tests are performed if there is any indication that a tangible asset has been impaired. The impairment tests are based on estimation of the recoverable amount of the asset, or the cash-generating unit to which the asset belongs. To determine the recoverable amount, projections of future cash flows are used, which are based upon internal business plans and forecasts. The ongoing transition of the transport sector towards new technologies with electrified and other lower emission technology vehicles bring uncertainties regarding current and future investments in production facilities as well as estimated useful life. Also, some of the production sites are located in areas with physical climate risks and may in the long run be subject to increased stress from physical weather events. Physical risks bring uncertainties when estimating useful life and indication of impairment. While management believes that estimates of future cash flows and other assumptions made are reasonable, there are uncertainties which could materially affect the valuations.

Residual value risks

Volvo Group is exposed to residual value risks related to assets under operating leases which are the risks that the Volvo Group in the future would have to dispose used vehicles at a loss if the price development of these products is worse than what was expected when the contracts were entered. The assessment of residual value risks is based upon an estimation of the used vehicle's future net realizable value (fair market value) and a declined value may negatively affect the Volvo Group's operating income. High inventories in the truck industry and the construction equipment industry and low demand may have a negative impact on the prices of new and used vehicles. The estimated future net realizable value of the vehicles at the end of the contract period is monitored individually on a continuing basis. In monitoring the estimated net realizable value of each vehicle, management considers current price level of the used vehicle, supply chain and production disturbances and the transition to electrified and other lower emission technology vehicles which imply to some extent uncertainties in the assessment.

Reclassifications

Reclassifications and other presented in the **tables 13:2** and **13:3** mainly consist of construction in progress, rental fleet and assets related to sales with residual value commitments (buyback and tradebacks).

For construction in progress, reclassification occurs when the asset is available for use by transferring the assets to the respective category within property, plant and equipment.

For rental fleet and sales with residual value commitments, reclassifications occur when the vehicle is sold or rented out to customers by transferring the vehicle from inventory to assets under operating leases. If the vehicle is returned by the end of the residual value commitment period or the leasing period, the vehicle is reclassified back to inventory.

Investment properties

The acquisition value of investment properties at year-end amounted to SEK 93 M (95). Reclassifications amounted to SEK 0 M (1). Accumulated depreciation amounted to SEK 39 M (38) at year-end, of which SEK 3 M (4) refers to 2022. The net carrying value amounted to SEK 54 M (57). The estimated fair value of investment properties amounted to SEK 102 M (102) at year-end and 97% (97) of the area available for lease was leased out during the year. Operating income was affected by rental income from investment properties that amounted to SEK 11 M (10) and direct costs that amounted to SEK 1 M (6).

13:2

Tangible assets as of Dec 31, 2022	Property, plant, equipment and investment property					Assets under operating leases[1]			
	Buildings	Land	Machinery and equipment	Construction in progress	Right-of-use assets[1]	Operating leases	Rental fleet	Sales w. residual value commitments[2]	Total
Acquisition cost									
Opening balance 2022	**34,705**	**7,107**	**82,209**	**8,792**	**10,965**	**28,770**	**4,660**	**25,095**	**202,304**
Investments	498	103	2,575	8,125	1,475	9,155	–	–	**21,930**
Sales/scrapping	–173	–91	–1,866	–39	–521	–9,540	–	–	**–12,230**
Acquired and divested operations[3]	–	–	22	3	–1	–	13	–	**37**
Translation differences	2,880	583	5,150	710	907	2,699	433	2,042	**15,403**
Reclassified at divestments[3]	–	–	–	–	–	–	–	–	**–**
Reclassifications and other	1,775	205	3,403	–5,318	679	657	–357	304	**1,347**
Acquisition costs as of Dec 31, 2022	**39,685**	**7,906**	**91,493**	**12,273**	**13,504**	**31,740**	**4,749**	**27,442**	**228,792**
Accumulated depreciation and impairments									
Opening balance 2022	**–18,516**	**–1,406**	**–64,446**	**–**	**–5,006**	**–9,131**	**–1,568**	**–7,856**	**–107,930**
Depreciation	–1,333	–112	–4,376	–	–2,144	–4,741	–677	–3,039	**–16,423**
Impairment	–448	–30	–165	–3	–14	20	–4	–691	**–1,336**
Sales/scrapping	130	21	1,730	–	450	4,588	–	–	**6,918**
Acquired and divested operations[3]	–	–	–7	–	1	–	–5	–	**–11**
Translation differences	–1,527	–109	–4,011	–	–425	–843	–145	–642	**–7,701**
Reclassified at divestments[3]	–	–	–	–	–	–	–	–	**–**
Reclassifications and other	4	–2	14	–	34	–241	841	3,722	**4,372**
Accumulated depreciation and impairments as of Dec 31, 2022	**–21,691**	**–1,638**	**–71,262**	**–3**	**–7,105**	**–10,348**	**–1,558**	**–8,506**	**–122,111**
B/S **Carrying amount as of Dec 31, 2022**	**17,994**	**6,268**	**20,231**	**12,270**	**6,399**	**21,392**	**3,191**	**18,936**	**106,681**

1 » Read more in Note 14 Leasing about right-of-use assets and assets under operating leases.

2 » Read more in Note 7 Revenue about sales with residual value commitments.

3 » Read more in Note 3 Acquisitions and divestments of operations, for a description of acquired and divested operations as well as assets and liabilities held for sale.

13:3

Tangible assets as of Dec 31, 2021	Property, plant, equipment and investment property					Assets under operating leases[1]			
	Buildings	Land	Machinery and equipment	Construction in progress	Right-of-use assets[1]	Operating leases	Rental fleet	Sales w. residual value commitments[2]	Total
Acquisition cost									
Opening balance 2021	**31,655**	**6,544**	**75,964**	**6,617**	**9,452**	**27,734**	**4,701**	**23,332**	**185,998**
Investments	371	110	2,031	6,297	1,211	9,271	–	–	**19,292**
Sales/scrapping	–271	–63	–1,363	–	–707	–10,063	–	–	**–12,468**
Acquired and divested operations[3]	–8,160	–5,809	–6,964	–102	–648	–	2	–379	**–22,060**
Translation differences	1,301	189	2,234	334	414	1,585	204	807	**7,068**
Reclassified at divestments[3]	8,460	5,862	7,389	168	831	–	–	363	**23,074**
Reclassifications and other	1,350	275	2,919	–4,522	411	242	–247	973	**1,400**
Acquisition cost as of Dec 31, 2021	**34,705**	**7,107**	**82,209**	**8,792**	**10,965**	**28,770**	**4,660**	**25,095**	**202,304**
Accumulated depreciation and impairments									
Opening balance 2021	**–16,688**	**–1,276**	**–59,656**	**0**	**–3,498**	**–8,511**	**–1,632**	**–7,662**	**–98,923**
Depreciation	–1,182	–92	–4,061	–	–1,931	–4,320	–704	–2,995	**–15,286**
Impairment	–	–	1	–	1	–35	5	–613	**–640**
Sales/scrapping	182	7	1,267	–	536	4,601	–	–	**6,593**
Acquired and divested operations[3]	5,161	194	5,954	–	316	–	–2	57	**11,680**
Translation differences	–714	–39	–1,717	–	–154	–491	–64	–254	**–3,433**
Reclassified at divestments[3]	–5,285	–199	–6,251	–	–376	–	–	–57	**–12,168**
Reclassifications and other	10	–1	16	–	100	–375	828	3,668	**4,247**
Accumulated depreciation and impairments as of Dec 31, 2021	**–18,516**	**–1,406**	**–64,446**	**–**	**–5,006**	**–9,131**	**–1,568**	**–7,856**	**–107,930**
B/S **Carrying amount as of Dec 31, 2021**	**16,189**	**5,701**	**17,763**	**8,792**	**5,959**	**19,638**	**3,092**	**17,239**	**94,374**

1 » **Read more in Note 14** Leasing about right-of-use assets and assets under operating leases.

2 » **Read more in Note 7** Revenue about sales with residual value commitments.

3 » **Read more in Note 3** Acquisitions and divestments of operations, for a description of acquired and divested operations as well as assets and liabilities held for sale.

14 Leasing

ACCOUNTING POLICY

Volvo Group as the lessor
Leasing contracts are defined in two categories, operating and finance leases, depending on the contracts' financial implications.

Operating leases are offered from Financial Services (contractual operating leases) and from Industrial Operations (rental fleet agreements). Sales with residual value commitments (buybacks and tradebacks) are also accounted for as operating lease transactions when the customer has a significant economic incentive to exercise the option to return the vehicle and the control therefore has not been transferred to the customer. Operating lease agreements are recognized as tangible assets in assets under operating leases and are valued at cost less accumulated depreciation and impairment, if needed. The cost of an asset comprises the acquisition value and any initial direct costs related to the contract. Depreciation of the asset is recognized on a straight-line basis over the contract period. During the period the depreciable amount is adjusted through the income statement by depreciations or write-downs to correspond to the estimated future realizable value and reflect residual value risks at the end of the contract period. Lease income is equally distributed over the contract period and recognized within net sales.

» **Read more in Note 7** Revenue, about sales with residual value commitments.

» **Read more in Note 13** Tangible assets, about residual value risks related to assets under operating lease.

Finance leases are offered from Financial Services. As Industrial Operations manufacture the vehicles which are leased from Financial Services to the customers, the Volvo Group is acting as a manufacturer lessor. Hence, a finance lease asset gives rise to a selling profit which is recognized within Industrial Operations. Finance lease contracts are mainly recognized as non-current and current customer-financing receivables within Financial Services. The asset is measured at an amount equal to the net investment in the finance lease contract corresponding to the gross investment (future minimum lease payments and unguaranteed residual value) discounted with the rate in the finance lease contract and reduced by unearned finance income and allowance for expected credit losses. Assessment of allowance for expected credit losses is reflected in the valuation of customer-financing receivables and recorded at initial recognition and reassessed during the contract period. Lease income is recognized as interest income within net sales in Financial Services. Variable lease payments not dependent on an index or rate are recognized as income as they occur. Payments received from finance lease contracts are distributed between interest income and amortization of the receivable.

» **Read more in Note 15** Customer-financing receivables, about finance leases.

Volvo Group as the lessee
Lease contracts are recognized as right-of-use (RoU) assets as well as interest-bearing lease liabilities in the balance sheet. Lease liabilities are recognized within other loans and are measured by the present value of future lease payments. The lease payments are discounted by using a rate reflecting what the Volvo Group would have to pay to borrow funds to acquire a similar asset, with similar collateral and similar term. RoU assets are presented as tangible assets and are valued at cost less accumulated depreciation and impairment, if needed. The cost of an RoU asset contains the initial amount of the lease liability adjusted for any lease payments made before the commencement date, less any lease incentives received. Moreover, any initial direct costs are included, as well as an estimate of costs to be incurred in dismantling, removing or restoring the underlying asset. The leased asset is depreciated on a straight-line basis over the lease term, or over the useful life of the underlying asset if the ownership is transferred to the Volvo Group at the end of the lease term. The lease expense is recognized as depreciation of the asset within operating income and interest expense within the finance net. Payments made are distributed between interest paid and amortization of the lease liability.

Lease contracts with the Volvo Group as the lessee are primarily contracts for real estate (such as office buildings, warehouses and dealer premises), company cars and production related assets. For real estate and company car leases, service components are normally a considerable portion of the contracts and are therefore separated. The service components are recognized as operating expenses and not included in the RoU asset and the lease liability. For other lease contracts, both the leased asset and services are included in the RoU asset and the lease liability.

If a lease contract includes variable lease payments not dependent on an index or rate, or include a low value asset or has a lease term that is twelve months or less, the lease payments are recognized as operating expenses as they occur.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Measurement of lease liabilities and right-of-use assets
When entering a lease contract, judgments related to contract scope, lease term and interest rate to be used when discounting future lease payments are made which affect the measurement of the lease liability and the RoU asset.

Assessment of contract scope includes judgments whether a leased asset and/or a service component is identified in the contract. In combined contracts, the total contract amount is allocated between the leased asset and the service by using a market stand-alone price.

When determining the lease term of a contract, judgments are also required. The lease term includes the non-cancellable period. If the Volvo Group is reasonably certain to use an option to extend the lease, or not to use an option to terminate the lease in advance, this is also considered. The contracts contain a range of different conditions. Extension and termination options are mainly related to real estate leases. Thus, all relevant facts and circumstances that create an economic incentive to include optional periods are evaluated. The importance of the underlying asset in the operations and its location, availability of suitable alternatives, significant leasehold improvements, level of rentals in optional periods compared to market rates as well as past practice are examples of factors included in the assessment. Lease terms are negotiated on an individual basis and are reassessed if an option is exercised.

Judgments are also required to determine the interest rate when discounting future lease payments and whether the interest rate implicit in the lease can be readily determined and thereby used, or if the Volvo Group's incremental borrowing rate should be used.

Volvo Group as the lessor

14:1

Lease income	Dec 31, 2022	Dec 31, 2021
Finance leases		
Finance income on customer-financing receivables	2,766	2,516
Total	**2,766**	**2,516**
Operating leases		
Lease income on assets under operating lease	11,317	10,937
Total	**11,317**	**10,937**

During 2022, the profit from sale of vehicles subject to finance leases amounted to SEK 6,280 M (3,624) and was recognized within Industrial Operations.

As of December 31, 2022, future lease income from non-cancellable finance and operating leases (minimum lease fees excluding sales with residual value commitments) amounted to SEK 89,441 M (77,181).

» **Read more in Note 15** Customer-financing receivables about finance leases.

14:2

Maturity analysis of lease payments receivable	Finance leases	Operating leases
2023	24,321	8,765
2024	17,822	5,998
2025	12,738	3,758
2026	7,613	1,750
2027	3,711	968
2028 or later	1,660	337
Total undiscounted lease payments	**67,865**	**21,576**
Unguaranteed residual value	1,231	
Unearned finance income	–5,098	
Allowance for expected credit losses	–4,598	
Customer-financing receivables (current and non-current)	**59,400**	

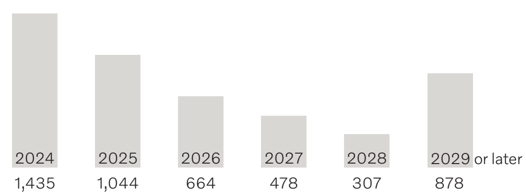
Volvo Group as the lessee

14:3

Lease liabilities	Dec 31, 2022	Dec 31, 2021
Non-current lease liabilities	4,806	4,469
Current lease liabilities	1,777	1,632
Total lease liabilities	**6,583**	**6,101**

14:4

Non-current lease liabilities maturities, SEK M



During 2022, total cash outflow related to leases amounted to SEK 3,162 M (2,922), with a distribution of SEK 888 M (834) within operating cash flow and SEK 2,274 M (2,088) within financing activities.

14:5

Right-of-use assets as of Dec 31, 2022	Buildings	Land	Machinery and equipment	Company cars	Asset under operating lease and rental fleet[1]	Total
Acquisition cost						
Opening balance 2022	8,048	674	967	1,276	423	**11,388**
Additions to right-of-use assets[2]	1,881	37	340	281	11	**2,550**
Acquisition cost as of Dec 31, 2022	**9,929**	**711**	**1,307**	**1,557**	**434**	**13,938**
Accumulated depreciation and impairments						
Opening balance 2022	–3,550	–125	–510	–821	–157	**–5,163**
Depreciation and impairment	–1,494	–39	–232	–393	–63	**–2,221**
Other changes	–90	2	3	144	38	**97**
Accumulated depreciation and impairments as of Dec 31, 2022	**–5,134**	**–162**	**–739**	**–1,070**	**–182**	**–7,287**
Carrying amount as of Dec 31, 2022	**4,795**	**549**	**568**	**487**	**252**	**6,651**

Right-of-use assets as of Dec 31, 2021	Buildings	Land	Machinery and equipment	Company cars	Asset under operating lease and rental fleet[1]	Total
Acquisition cost						
Opening balance 2021	6,841	579	801	1,231	439	**9,891**
Additions to right-of-use assets[2]	1,207	95	166	45	–16	**1,497**
Acquisition cost as of Dec 31, 2021	**8,048**	**674**	**967**	**1,276**	**423**	**11,388**
Accumulated depreciation and impairments						
Opening balance 2021	–2,341	–99	–366	–693	–141	**–3,640**
Depreciation and impairment	–1,313	–29	–190	–399	–64	**–1,995**
Other changes	104	3	46	271	48	**472**
Accumulated depreciation and impairments as of Dec 31, 2021	**–3,550**	**–125**	**–510**	**–821**	**–157**	**–5,163**
Carrying amount as of Dec 31, 2021	**4,498**	**549**	**457**	**455**	**266**	**6,225**

1 Refers to assets leased by the Volvo Group which are later sub-leased to customers as operating lease.

2 Additions to RoU assets mainly relate to new lease contracts signed.

14:6

Recognized in the income statement	2022	2021
Interest expense on lease liabilities within Financial Services	–3	–1
Depreciation and impairment of right-of-use assets	–2,221	–1,995
Short term lease expense	–528	–462
Low value asset expense	–66	–91
Variable lease expense	–41	–39
Income from sub-leasing right-of-use assets	168	155
Gains or losses arising from sale and leaseback transactions	–	13
Gains or losses on right-of-use assets	–2	5
Recognized in operating income	**–2,693**	**–2,415**
Interest expense on lease liabilities within Industrial Operations	–252	–237
Recognized in net financial items	**–252**	**–237**

15 Customer-financing receivables

ACCOUNTING POLICY

Installment credits, dealer financing and other receivables within customer-financing receivables are held as part of a business model whose objective is of collecting contractual cash flows. The contractual cash flows are solely payments of principal and interest and are measured at amortized cost in accordance with the effective interest method. Finance lease contracts are valued at amortized cost, for further information on recognition and classification see note 14 Leasing.

The Volvo Group is applying the simplified expected credit loss model for customer-financing receivables, under which the loss allowance is measured at an amount equal to lifetime expected credit losses. The allowance is recorded at initial recognition and is reassessed during the contract period.

Interest income on customer-financing receivables is recognized within net sales, mainly within Financial Services. Changes to the allowance for expected credit losses are recognized in other operating income and expense.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Allowance for expected credit losses

The assessment of allowances for expected credit losses on customer-financing receivables is dependent on estimates including assumptions regarding past dues, repossession rates and quality level of repossessed collateral.

A collective assessment is made for customer-financing receivables that are not credit impaired by using a vintage layer analysis. The vintage layer analysis is based on historical loss experience within a homogenous pool of assets that are collectively assessed. The assets are grouped based on shared risk characteristics such as type of customer, geographical area, initial credit risk rating, collateral type and date of initial recognition to evaluate the credit losses collectively. The historical loss experience is used to forecast future losses, adjusted for current and forecasted conditions in the different markets based on management's evaluation of macro-level and portfolio-level factors, such as GDP, oil prices, unemployment rates etc. Climate-related risk, such as the transition to electric vehicles, are closely monitored, and reflected in management's evaluation of current and forecasted conditions in assessing expected credit losses. Volvo Group has not identified material credit impairment related to transitional and physical climate risks that would require a significant adjustment to the credit risk.

An individual assessment is made for credit impaired customer-financing receivables based on the financial condition of the customers and the value of the underlying collateral and guarantees. The Volvo Group considers a financial asset credit impaired if it meets one or more of the following criteria; when there are indications that the customer is unlikely to pay, such as bankruptcy filing, unauthorized transfer of collateral, at surrender of collateral etc. or, at the latest, when the customer fails to make contractual payment within 90 days of when the receivable falls due.

Risk management practices

Other than the dealer financing, customer-financing receivables extend over several years, but normally the customers make monthly payments throughout the term to reduce the outstanding exposure. The customer-financing receivables are secured by the financed commercial vehicles and equipment. However, in the case of customer default, the value of the repossessed commercial vehicles and equipment may not necessarily cover the outstanding financed amount. In order to mitigate this risk, Financial Services has strong portfolio management processes based on prudent credit approval, active monitoring of individual loan performance, utilization of in-house and external collections, portfolio segmentation analysis, and on-going monitoring of the economic, political and industry conditions in each market. In addition, other credit enhancements such as down payments, personal guarantees, credit insurance, liens on other property owned by the borrower etc. may be required at the time of origination or when there are signs of impairment. When customer-financing receivables exceed 90 days of overdue collateral repossession is initiated, although there may be circumstances where repossession is initiated earlier. When the collateral is repossessed, the net realizable value is established, and the vehicle is transferred to inventory and becomes part of the Volvo Group's normal business activity of selling used vehicles and equipment and the expected loss on the customer-financing receivable is written off. If repossession has not occurred on customer-financing receivables exceeding 180 days of overdue the expected loss on the receivable is written off. Financial Services continues to engage in enforcement activity on all customer financing-receivables written off during the year to attempt to recover the contractual amount not previously received from the customer.

» **Read more in Note 4** Goals and policies in financial risk management, for a description of credit risks, interest risks and currency risks.

As of December 31, 2022, the total allowances for impairment in Financial Services amounted to 3.00% (1.82) of the total credit portfolio in the segment. The total allowances for impairment excluding the impact related to the credit provisions recorded in connection with the Russian invasion of Ukraine amounted to 1.64%. This reserve ratio is used as an important measure for Financial Services and includes operating leases and inventory. Allowances for expected credit losses for customer-financing receivables has increased since the beginning of the year from SEK 3,308 M to SEK 6,930 M primarily due to an increase in expected credit losses in Russia due to the war in Ukraine. Higher volume in the credit portfolio has also increased expected credit losses, which was partly offset by a decrease in the level of expected credit losses, due to improved financial performance of the customers within Financial Services and the mix of the portfolio.

During 2022 customers continued to perform well and were able to make payments on time due to the increased demand for transport and construction services. However, the uncertainties in the macroeconomic environment due to the war in Ukraine, higher inflation, increase in interest rates and supply chain constraints have contributed to the reserve on customer-financing receivables not credit impaired remaining at a higher level compared to before the pandemic.

» **Read more in Note 30** Financial instruments, for information on the gain or loss recognized in the operating income arising from derecognition of customer-financing receivables in **table 30:3**.

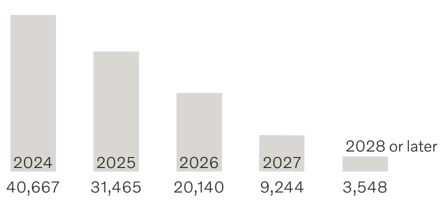
15:1

Non-current customer-financing receivables	Dec 31, 2022	Dec 31, 2021
Installment credits	64,600	49,081
Finance leases	38,122	32,279
Other receivables	2,342	2,026
B/S Non-current customer-financing receivables	**105,064**	**83,386**

The effective interest rate for non-current customer-financing receivables amounted to 5.90% (4.92) as of December 31, 2022.

15:2

Non-current customer-financing receivables maturities, SEK M



15:3

Current customer-financing receivables	Dec 31, 2022	Dec 31, 2021
Installment credits	35,677	26,183
Finance leases	21,278	20,823
Dealer financing	28,863	18,952
Other receivables	3,046	2,160
B/S Current customer-financing receivables	**88,864**	**68,118**

The effective interest rate for current customer-financing receivables amounted to 5.88% (4.77) as of December 31, 2022.

15:4

Credit risk in customer-financing receivables	Dec 31, 2022	Dec 31, 2021
Customer-financing receivables gross	200,858	154,812
Allowance for expected credit losses for customer-financing receivables	–6,930	–3,308
Whereof allowance for credit impaired	*–573*	*–617*
Whereof allowance for not credit impaired	*–6,357*	*–2,691*
Customer-financing receivables, net of allowance	**193,928**	**151,504**

15:5

Change of allowance for expected credit losses for customer-financing receivables	2022		2021	
	Not credit impaired	Credit impaired	Not credit impaired	Credit impaired
Opening balance	**2,691**	**617**	**2,289**	**611**
New valuation allowance charged to income	3,574	103	519	238
Reversal of valuation allowance charged to income	–115	–80	–65	–76
Utilization of valuation allowance related to actual losses	–0	–125	–0	–386
Movements between not credit impaired/credit impaired[1]	24	–24	–188	188
Translation differences	327	82	129	43
Reclassification[2]	–	–	111	–
Syndication transactions and other	–144	–	–104	–
Allowance for expected credit losses for customer-financing receivables as of December 31	**6,357**	**573**	**2,691**	**617**

1 When a receivable becomes credit impaired a transfer of allowance is made to allowance for credit impaired receivables.

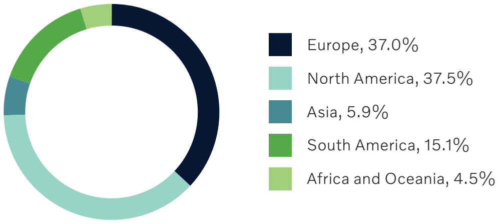
2 Change in accounting treatment for operating leases within Financial Services in 2021.

15:6

Customer-financing receivables, gross exposure	Dec 31, 2022					Dec 31, 2021				
	Not due	1–30 days	31–90 days	>90 days	Total	Not due	1–30 days	31–90 days	>90 days	Total
Customer-financing receivables, gross	186,755	10,090	2,999	1,014	**200,858**	141,281	7,915	4,803	813	**154,812**
Whereof not credit impaired	*185,958*	*9,767*	*2,455*	*326*	*198,506*	*140,441*	*7,415*	*4,390*	*113*	*152,359*
Whereof credit impaired	*797*	*323*	*544*	*688*	*2,352*	*840*	*500*	*413*	*700*	*2,454*

Table 15:6 represents the gross credit exposure on customer-financing receivables within the Volvo Group per age interval. The lifetime expected credit loss allowance for customer-financing receivables not credit impaired amounted to SEK 6,357 M (2,691) and allowance for customer-financing receivables credit impaired amounted to SEK 573 M (617), included in **tables 15:4** and **15:5**. The remaining exposure was secured by liens on the financed commercial vehicles and equipment and, in certain circumstances, other credit enhancements such as personal guarantees, credit insurance, liens on other property owned by the borrower etc. Collaterals taken in possession that meet the criteria for recognition in the balance sheet amounted to SEK 202 M (104) as of December 31, 2022.

15:7
Geographic market, percentage of customer-financing portfolio (%)



Concentration of credit risk

Customer concentration

The ten largest customers within Financial Services account for 6.5% (5.7) of the total asset portfolio. The rest of the portfolio is attributable to a large number of customers and the credit risk is therefore spread across many customers. During 2022 SEK 12.2 billion (9.8) of customer financing receivables were syndicated in order to reduce concentration risks.

Concentration by geographical market

Graph 15:7 discloses the concentration of Financial Services portfolio divided into geographical markets.

» **Read more in Note 4** Goals and policies in financial risk management about credit risks.

» **Read more in the Board of Directors' report** about Financial Services' development during the year.

16 Receivables

ACCOUNTING POLICY

Receivables are measured at amortized cost. The Volvo Group is applying the simplified expected credit loss model for accounts receivables, under which the loss allowance is measured at an amount equal to lifetime expected credit losses. The allowance is recorded at initial recognition and is reassessed during the contract period. Changes to the allowance for expected credit losses for accounts receivables are recognized in other operating income and expense.

» **Read more in Note 30** Financial instruments in section derecognition of financial assets, about receivables subject to discounting activities.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Allowance for expected credit losses

Accounts receivables are short term by nature and consequently the risk assessment horizon is short. A collective assessment is made on accounts receivables not credit impaired. Historical information regarding credit loss experience is used to forecast future losses, adjusted for current and forecasted conditions. An individual assessment is made on credit impaired accounts receivables based on the financial condition of the customer.

The past years have been affected by the covid-19 pandemic. Most countries have now eased their restrictions and made changes to the government support programs previously implemented. However, the duration and future development of the pandemic is still unknown. In addition to this the past year has also been affected by the war in Ukraine and the ensuing sanctions as well as high inflationary pressure in many regions which might increase the risk for customer default. Based on this the assessment process for valuation allowances for expected credit losses for accounts receivables continues to be in focus in order to ensure allowances are in alignment with the new phase of the economic environment.

Risk management practices

Credit risks are managed through active credit monitoring and follow-up routines in accordance with the Volvo Group Credit management directive. This directive includes different steps to perform when an invoice is not paid at due date. When an increased credit risk is verified, for example through a bankruptcy, or when an allowance has been unchanged for two years and it can be demonstrated that all required steps have been performed, the allowance is reversed and the accounts receivables are written off. Apart from certain exceptions the Volvo Group continues to engage in enforcement activity even after a write-off in order to recover the contractual amount not previously received.

Due to the prevailing business model in the construction equipment industry in China, with longer payment terms to customers, a substantial part of the Volvo Groups accounts receivable is related to customers in this market. The weakened Chinese construction equipment market is currently impacting customers' and dealers' profitability negatively. This might affect their ability to honor their obligations to the Volvo Group and may consequently have a material adverse effect on the Volvo Group's financial result and position.

Renegotiated receivables are on a slightly lower level than last year, with the majority of the exposure related to renegotiated receivables within Construction Equipment in China. Renegotiated receivables continue to be closely monitored for on-going payment performance and signs of impairment.

As of December 31, 2022, the total allowance for expected credit losses for accounts receivables amounted to 3.02% (2.03) of total accounts receivables. The increase in allowances is primarily due to the weaker construction equipment market in China this year compared to last year.

» Read more in Note 4 Goals and policies in financial risk management, regarding credit risk.

16:1

Non-current receivables	Dec 31, 2022	Dec 31, 2021
Other interest-bearing receivables[1]	676	436
Interest and currency risk derivatives[2]	4,991	2,090
Contract and right of return assets[3]	4,036	4,195
Other receivables	3,122	4,257
Non-current receivables	**12,825**	**10,978**

1 The amount is the non-current part of other interest-bearing receivables in note 30 Financial instruments, table 30:1.

2 The amount is the non-current part of interest and currency risk derivatives in note 30 Financial instruments, table 30:1.

3 » Read more in Note 7 Revenue, about contract and right of return assets.

16:2

Current receivables	Dec 31, 2022	Dec 31, 2021
Other interest-bearing receivables[1]	5,062	1,255
Tax assets	2,059	1,708
Accounts receivables	48,220	40,776
Prepaid expenses and accrued income	3,624	3,225
VAT receivables	5,917	4,205
Interest and currency risk derivatives[2]	760	840
Contract and right of return assets[3]	1,822	1,641
Other receivables	7,852	7,526
Current receivables, after deduction of allowance for expected credit losses on accounts receivables	**75,316**	**61,176**

1 The amount is the current part of other interest-bearing receivables in note 30 Financial instruments, table 30:1.

2 The amount is the current part of interest and currency risk derivatives in note 30 Financial instruments, table 30:1.

3 » Read more in Note 7 Revenue, about contract and right of return assets.

16:3

Change of allowance for expected credit losses on accounts receivables	2022	2021
Opening balance	**846**	**771**
New allowance charged to income	991	433
Reversal of allowance charged to income	–162	–177
Utilization of allowance related to actual losses	–94	–144
Translation differences	53	61
Reclassifications, etc[1]	–133	–99
Allowance for expected credit losses on accounts receivables as of December 31	**1,501**	**846**

1 Whereof reclassification to other non-current receivables of SEK –127 M (–104).

16:4

Age analysis of accounts receivables	Dec 31, 2022					Dec 31, 2021				
	Not Due	1–30	31–90	>90	Total	Not Due	1–30	31–90	>90	Total
Accounts receivables, gross	43,023	2,279	2,086	2,334	**49,721**	37,173	1,813	1,258	1,377	**41,622**
Allowance for expected credit losses on accounts receivables	–678	–65	–54	–704	**–1,501**	–241	–59	–53	–493	**–846**
B/S **Accounts receivables, net**	**42,345**	**2,214**	**2,032**	**1,630**	**48,220**	**36,932**	**1,753**	**1,205**	**885**	**40,776**

17 Inventories

ACCOUNTING POLICY

Inventories are measured at the lower of cost and net realizable value. The cost is established by using the first-in, first-out principle (FIFO) and is based on a standard cost method, including costs for all direct manufacturing expenses and the attributable share of capacity and other manufacturing-related costs. The standard costs are reviewed regularly and adjustments are made based on current conditions. Manufacturing costs are based on normal capacity utilization which are allocated to inventory while unabsorbed cost due to changes in production volume are recognized in the income statement as incurred. Costs for research and development, selling, administration and financial expenses are not included.

Net realizable value is calculated as the selling price less costs attributable to the sale.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Write-down of inventories

The calculation of net realizable value involves estimation of a future sales price, which is dependent on several parameters, such as market demand, model changes and development of used products prices. If the estimated net realizable value is lower than cost, a write down of inventories is made.

17:1

Inventories	**Dec 31, 2022**	Dec 31, 2021
Finished products	37,854	32,297
Production materials etc.	37,835	31,619
B/S Inventories	**75,689**	**63,916**

The total value of inventories, net after write-downs, was SEK 75,689 M (63,916) as of December 31, 2022. Inventories recognized as cost of sold products during the period amounted to SEK 346,539 M (273,872).

17:2

Change in write-down of inventories	**2022**	2021
Opening balance	**3,581**	**3,452**
Change in write-down of inventories charged to income	380	334
Scrapping	–259	–373
Translation differences	322	171
Reclassifications etc.	–3	–3
Write-down of inventories as of December 31	**4,021**	**3,581**

18 Cash and cash equivalents

ACCOUNTING POLICY

Cash and cash equivalents include highly liquid interest-bearing securities that are considered easily convertible to cash. These include marketable securities, with a date of maturity less than three months at the time of investment. Interest-bearing securities with a date of maturity exceeding three months at the time of investment are recognized as marketable securities.

» **Read more in Note 30** Financial instruments, about accounting policies for financial instruments.

18:1

Cash and cash equivalents	**Dec 31, 2022**	Dec 31, 2021
Cash in banks	54,636	46,286
Marketable securities with original duration less than 3 months[1]	5,109	1,803
Time deposits in banks	24,141	14,038
B/S **Cash and cash equivalents**	**83,886**	**62,126**

1 Additionally the Volvo Group recognized outstanding marketable securities with original duration exceeding 3 months of SEK 93 M (167) in government securities as of December 31, 2022.

Cash and cash equivalents as of December 31, 2022, include SEK 2.3 billion (2.8) that is not available for use by the Volvo Group and SEK 14.5 billion (8.7) where other limitations exist, mainly cash and cash equivalents in countries where exchange controls or other legal restrictions apply. Therefore, it is not possible to immediately use these cash and cash equivalents in other parts of the Volvo Group, however there is normally no limitation to use them for the Volvo Group's operation in the respective country.

19 Equity and number of shares

ACCOUNTING POLICY

Dividend resolutions are approved at the annual general meeting or, in certain cases, during an extraordinary general meeting. When the decision has been approved, equity is reduced and the dividend is reported as a liability to the shareholders in the balance sheet until the payment has taken place.

Earnings per share before dilution is calculated as income for the period, attributable to the owners of AB Volvo, divided by AB Volvo's average number of outstanding shares for the fiscal year. Diluted earnings per share is calculated as income for the period attributable to the owners of AB Volvo, divided by AB Volvo's average number of outstanding shares after dilution for the fiscal year. If during the year there were potential shares redeemed or expired, they are included in the average number of shares used to calculate the earnings per share after dilution.

The Annual General Meeting, held on April 6, 2022, resolved that an ordinary dividend of SEK 6.50 (6.00) per share and an extraordinary dividend of SEK 6.50 (18.50) per share, totaling SEK 13.00 (24.50) per share should be paid to shareholders. During 2022, the Volvo Group distributed SEK 26.4 billion (49.8) to the shareholders.

The share capital of the Parent company amounted to SEK 2,562 M (2,562) on December 31, 2022 and is divided into two series of shares, A and B. Both series carry the same rights, except that each Series A share carries the right to one vote and each Series B share carries the right to one tenth of a vote. The shares' quota value is SEK 1.26 (1.26). During 2022 AB Volvo converted a total of 71 Series A shares to Series B shares. Unrestricted equity in the Parent company as of December 31, 2022 amounted to SEK 59,504 M (61,311).

For the year 2022, the Board of Directors proposes an ordinary dividend of SEK 7.00 per share and an extraordinary dividend of SEK 7.00 per share, a total of SEK 14.00 per share amounting to SEK 28.5 billion.

» **Read more in** Changes in equity in the Parent company about AB Volvo's share capital.

19:1

Change in other reserves	Holding of shares at fair value
Opening balance 2022	**8**
Remeasurements of holdings of shares at fair value	–45
Disposal	–
Balance as of December 31, 2022	**–37**

19:2

Information regarding number of shares	**Dec 31, 2022**	Dec 31, 2021
Own Series A shares	–	–
Own Series B shares	–	–
Total own shares	**–**	**–**
Own shares in % of total registered shares	–	–
Outstanding Series A shares	444,987,875	444,987,946
Outstanding Series B shares	1,588,464,209	1,588,464,138
Total outstanding shares	**2,033,452,084**	**2,033,452,084**
Total registered Series A shares	444,987,875	444,987,946
Total registered Series B shares	1,588,464,209	1,588,464,138
Total registered shares	**2,033,452,084**	**2,033,452,084**
Average number of outstanding shares	2,033,452,084	2,033,452,084

19:3

	Series A shares		Series B shares		Total	
Outstanding shares	**2022**	2021	**2022**	2021	**2022**	2021
Outstanding shares opening balance	444,987,946	448,113,346	1,588,464,138	1,585,338,738	2,033,452,084	2,033,452,084
Converting Series A shares to Series B shares	–71	–3,125,400	71	3,125,400	–	–
Outstanding shares as of December 31	**444,987,875**	**444,987,946**	**1,588,464,209**	**1,588,464,138**	**2,033,452,084**	**2,033,452,084**

19:4

Information regarding shares	**2022**	2021
Number of outstanding shares, December 31, in millions	2,033	2,033
Average number of shares before dilution in millions	2,033	2,033
Average number of shares after dilution in millions	2,033	2,033
Average share price, SEK	179.32	208.80
Net income attributable to owners of AB Volvo, SEK M	32,722	32,787
Basic earnings per share, SEK	16.09	16.12
Diluted earnings per share, SEK	16.09	16.12

20 Provisions for post-employment benefits

ACCOUNTING POLICY

The Volvo Group's post-employment benefits, such as pensions, healthcare and other benefits are mainly settled by means of regular payments to independent authorities or bodies that assume pension obligations and administer pensions through defined contribution plans. For defined contribution plans, expenses for premiums are recognized in the income statement as incurred.

Part of the post-employment benefits are defined benefit plans where the obligations remain within the Volvo Group and are secured primarily by proprietary pension foundations. The Volvo Group's largest defined benefit plans relate to subsidiaries in the USA and comprise both pensions and other benefits, such as healthcare. Other large-scale defined benefit plans apply to white collar employees in Sweden (mainly through the ITP pension plan) and employees in Great Britain, Belgium and France.

Actuarial calculations are made for all defined benefit plans, subject to materiality, in order to determine the present value of the obligation for benefits vested by its current and former employees. The actuarial calculations are prepared annually and are based upon actuarial assumptions that are determined at the end of the reporting period. Changes in the present value of obligations due to revised actuarial assumptions and experience adjustments constitute remeasurements.

Provisions for post-employment benefits in the Volvo Group's balance sheet correspond to the present value of obligations at year-end, less fair value of plan assets. All changes in the net defined liability (asset) are recognized when they occur. Service cost and net interest expense (income) are recognized in the income statement, while remeasurements such as actuarial gains and losses are recognized in other comprehensive income. Special payroll tax is included in the pension liability in pension plans in Sweden and Belgium.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

Assumptions when calculating post-employment benefits

Provisions and costs for post-employment benefits, mainly pensions and health care benefits, are dependent on actuarial assumptions. The actuarial assumptions and calculations are made separately for each defined benefit plan. The most significant assumptions are discount rate and inflation. Inflation assumptions are generally set as a long term assumption based on an evaluation of external market indicators. A sensitivity analysis is included in **graph 20:6** and shows the effect on the defined benefit obligations if significant assumptions are changed. There are also other assumptions made such as salary increases, retirement rates, mortality rates, health care cost trends rates and other factors. The salary increase assumptions reflect the historical trend, the near-term and long-term outlook and assumed inflation. Retirement and mortality rates are based primarily on officially available mortality statistics. Healthcare cost trend assumptions are based on historical data as well as the near-term outlook and an assessment of likely long-term trends. The Volvo Group has engaged a global actuary in order to ensure that a professional assessment is made and that assumptions are consistently developed across jurisdictions. The actuarial assumptions are reviewed annually by the Volvo Group and modified when deemed appropriate.

A sharp rise in actual and expected inflation has led to tighter monetary policy actions by central banks globally, with few exceptions. Long and short term interest rates have generally experienced sharp upward movements during the year, and in many cases with speed and volatility not seen in several decades. The value of risk assets has been negatively impacted given the circumstances. Funding levels for the Volvo Group's pensions plans remain strong despite challenging financial market conditions.

The following tables disclose information about defined benefit plans. The Volvo Group recognizes the difference between the obligations and the plan assets, adjusted for potential asset ceilings, in the balance sheet. The disclosures refer to assumptions applied for actuarial calculations, recognized costs during the financial year and the value of obligations and plan assets at year-end. The tables also include a reconciliation of obligations and plan assets during the year.

20:1

Assumptions applied for actuarial calculations	Dec 31, 2022	Dec 31, 2021
Sweden		
Discount rate, %[1]	3.95	2.00
Inflation, %[2]	2.00	1.75
Expected salary increase, %	2.65	2.40
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	22.2/24.4	20.9/23.5
Retiring in 25 years (member age 40 today), year	24.6/26.8	22.7/24.6
USA		
Discount rate, %[1,3]	5.00–5.35	1.15–2.81
Inflation, %	2.50	2.20
Expected salary increase, %	3.68	3.50
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	20.5/22.4	20.5/22.3
Retiring in 25 years (member age 40 today), year	22.4/24.2	22.4/24.1
Great Britain		
Discount rate, %[1]	4.95	1.80
Inflation, %	3.15	3.30
Expected salary increase, %	0.00	0.00
Assumed life expectancy on retirement at age 65 (Male/Female)		
Retiring today (member age 65), year	22.2/23.9	22.1/23.8
Retiring in 25 years (member age 40 today), year	24.3/26.7	23.9/26.4
Belgium		
Discount rate, %[1]	4.17	1.21
Inflation, %	2.00	1.50
Expected salary increase, %	2.86	2.51
France		
Discount rate, %[1]	4.19	1.19
Inflation, %	2.00	1.50
Expected salary increase, %	3.01	2.50

1 The discount rate for each country is determined by reference to market yields on high quality corporate bonds. In countries where there is no functioning market in such bonds, the market yields on government bonds are used. The discount rate for the Swedish pension obligation is determined by extrapolating current market rates along the yield curve of mortgage bonds.

2 The long term inflation assumption is 2.00%. The pension obligations in Sweden have been adjusted for short-term inflation for the year 2023.

3 For all plans except three the discount rate used is within the range 5.15–5.22% (2.47–2.81).

20:2

Summary of provisions for post-employment benefits	**Dec 31, 2022**	Dec 31, 2021
Obligations	–52,862	–65,122
Fair value of plan assets	46,844	55,317
Net provisions for post-employment benefits	**–6,018**	**–9,805**

20:3

Pension costs	**2022**	2021
Current year service costs	1,553	1,943
Interest costs	1,325	1,062
Interest income	–1,255	–917
Past service costs	13	–67
Gain/loss on settlements	–22	–51
Pension costs for the period, defined benefit plans	**1,614**	**1,971**
Pension costs for defined contribution plans	3,653	2,958
Total pension costs for the period	**5,267**	**4,928**

20:4

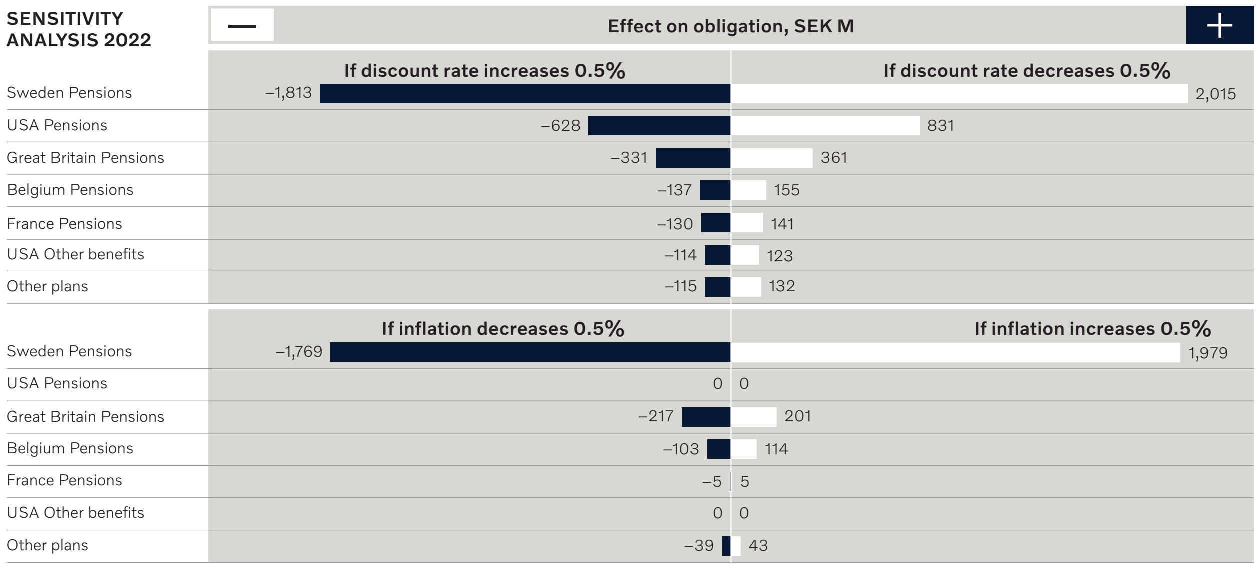
Costs for the period, post-employment benefits other than pensions	**2022**	2021
Current year service costs	106	110
Interest costs	134	104
Interest income	–31	–28
Past service costs	0	4
Gain/loss on settlements	–	–
Remeasurements	99	148
Total costs for the period	**308**	**338**

20:5

	Sweden Pensions	USA Pensions	Great Britain Pensions	Belgium Pensions	France Pensions	USA Other benefits
Average duration of the obligations, years	19.8	8.8	12.6	10.2	11.2	8.5

The analysis in **graph 20:6** presents the sensitivity of the defined benefit obligations when changes in the applied assumptions for discount rate and inflation are made. The sensitivity analysis for the discount rate is based on a change in the assumption while holding all other assumptions constant. In practice, this is not probable, and a change in the assumption may be correlated. The sensitivity analysis for a change in long-term inflation correlates with other inflation linked assumptions. Depending on specific plan and benefit design, the sensitivity effect on the obligation differs for the respective assumptions.

20:6



20:7

Obligations in defined benefit plans	Sweden Pensions	USA Pensions	Great Britain Pensions	Belgium Pensions	France Pensions	USA Other benefits	Other plans	Total
Obligations opening balance 2021	**26,677**	**20,273**	**7,533**	**3,750**	**2,680**	**3,363**	**3,644**	**67,920**
Acquisitions, divestments and other changes	0	–6	–	–3	–	0	66	**56**
Current year service costs	861	547	0	213	170	51	211	**2,053**
Interest costs	385	459	123	31	24	70	74	**1,165**
Past service costs	69	55	–	–106	–	0	–19	**–1**
Settlements	–	–1,140	–	–	–	–	–2	**–1,142**
Employee contributions	–	–	–	–	–	29	53	**82**
Remeasurements[1]:								
– Effect of changes in demographic assumptions	–	59	–	–	0	–23	–37	**–1**
– Effect of changes in financial assumptions	–3,255	–1,155	–179	–186	–109	–172	–130	**–5,185**
– Effect of experience adjustments	–238	–37	–	–59	–111	152	27	**–267**
Exchange rate translation	–	2,154	742	73	52	348	135	**3,505**
Benefits paid	–551	–1,389	–286	–106	–106	–338	–288	**–3,064**
Obligations as of December 31, 2021	**23,948**	**19,819**	**7,934**	**3,607**	**2,600**	**3,480**	**3,735**	**65,122**
of which								
Funded defined benefit plans	–23,517	–19,088	–7,934	–3,579	–15	–	–2,567	**–56,699**
Acquisitions, divestments and other changes	0	0	–	0	–	0	–6	**–5**
Current year service costs	819	225	–	205	167	39	203	**1,659**
Interest costs	475	581	144	44	32	95	89	**1,460**
Past service costs	25	0	–	–	–	–	–12	**12**
Settlements	–	–934	–	–	–	–	–143	**–1,077**
Employee contributions	–	0	–	0	0	20	58	**79**
Remeasurements[1]:								
– Effect of changes in demographic assumptions	602	–	–	–	17	–20	0	**598**
– Effect of changes in financial assumptions	–6,516	–5,034	–3,027	–1,002	–810	–777	–800	**–17,967**
– Effect of experience adjustments	590	–209	426	165	106	136	20	**1,234**
Exchange rate translation	–	3,047	276	316	225	524	312	**4,701**
Benefits paid	–587	–1,306	–287	–132	–73	–364	–203	**–2,953**
Obligations as of December 31, 2022	**19,357**	**16,190**	**5,465**	**3,203**	**2,264**	**3,132**	**3,252**	**52,862**
of which								
Funded defined benefit plans	–18,984	–15,542	–5,465	–3,203	–12	–	–2,268	**–45,475**

1 Out of the total remeasurement of the defined benefit obligation, SEK 16,227 M (5,601) has been recognized in Other Comprehensive Income, and –92 M (–148) in the Income Statement.

20:8

Fair value of plan assets in funded plans	Sweden Pensions	USA Pensions	Great Britain Pensions	Belgium Pensions	France Pensions	USA Other benefits	Other plans	Total
Plan assets opening balance 2021	**17,892**	**20,917**	**7,480**	**2,804**	**15**	**33**	**2,063**	**51,203**
Acquisitions, divestments and other changes	0	–3	–	0	–1	–	51	**47**
Interest income	264	478	123	23	0	–	56	**944**
Settlements	–	–1,090	–	–	–	–	–	**–1,090**
Remeasurements[1]	2,368	–119	–561	171	0	–	–46	**1,813**
Asset ceiling	–	–	464	–	–	–	16	**479**
Employer contributions	322	–	65	163	–	–	215	**766**
Employee contributions	–	30	–	–	–	–	54	**84**
Exchange rate translation	–	2,188	740	54	0	3	85	**3,070**
Benefits paid	–1	–1,387	–286	–102	0	0	–223	**–2,000**
Plan assets as of December 31, 2021	**20,845**	**21,013**	**8,024**	**3,113**	**14**	**37**	**2,271**	**55,317**
Acquisitions, divestments and other changes	0	0	–	0	1	0	0	**2**
Interest income	417	617	146	39	0	–	67	**1,286**
Settlements	–	–901	–	–	–	–	–154	**–1,055**
Remeasurements[1]	–2,274	–5,484	–3,349	–480	–	–	–239	**–11,826**
Asset ceiling	–	–	481	–	–	–	14	**495**
Employer contributions	–156	16	66	158	–	–	328	**411**
Employee contributions	–	34	–	0	–	–	58	**93**
Exchange rate translation	–	3,225	281	275	1	5	202	**3,989**
Benefits paid	–1	–1,302	–287	–132	–1	–	–144	**–1,867**
Plan assets as of December 31, 2022	**18,831**	**17,218**	**5,362**	**2,972**	**15**	**42**	**2,403**	**46,844**

1 Out of the total remeasurement of the plan assets, SEK –11,331 M (2,292) has been recognized in Other Comprehensive Income.

20:9

Net provisions for post-employment benefits	Sweden Pensions	USA Pensions	Great Britain Pensions	Belgium Pensions	France Pensions	USA Other benefits	Other plans	Total
Net provisions for post-employment benefits as of December 31, 2021	**–3,102**	**1,194**	**91**	**–494**	**–2,586**	**–3,443**	**–1,464**	**–9,805**
of which reported as:								
B/S Net pension assets	–	2,234	104	–	–	34	–	**2,372**
B/S Provisions for post-employment benefits	–3,102	–1,040	–13	–494	–2,586	–3,477	–1,464	**–12,177**
Net provisions for post-employment benefits as of December 31, 2022	**–525**	**1,029**	**–103**	**–231**	**–2,249**	**–3,089**	**–849**	**–6,018**
of which reported as:								
B/S Net pension assets	389	2,005	25	–	–	42	266	**2,727**
B/S Provisions for post-employment benefits	–914	–976	–128	–231	–2,249	–3,132	–1,115	**–8,745**

Sweden

The main defined benefit plan in Sweden is the ITP2 plan which is based on final salary. The plan is semi-closed, meaning that only new employees born before 1979 enters the ITP2 solution. The Volvo Group's pension foundation in Sweden was formed in 1996 to secure obligations relating to retirement pensions for white collar workers in Sweden in accordance with the ITP plan. The plan assets in the Volvo Group's Swedish pension foundation are mainly invested in interest-bearing securities and in alternative assets, in accordance with a strategic allocation that is determined by the foundation's Board of Directors. As of December 31, 2022, the fair value of the foundation's plan assets amounted to SEK 18,810 M (20,822), of which 6% (35) was invested in equity instruments. At the same point in time, retirement pension obligations attributable to the ITP plan amounted to SEK 18,970 M (23,496).

Swedish companies can secure new pension obligations through balance sheet provisions or pension fund contributions. Furthermore, a credit insurance policy must be taken out for the value of the obligations. In addition to benefits relating to retirement pensions, the ITP plan also includes, for example, a collective family pension, which the Volvo Group finances through an insurance policy with the Alecta insurance company. According to an interpretation from the Swedish Financial Reporting Board, this is a multi-employer defined benefit plan. For the fiscal year 2022, the Volvo Group did not have access to information from Alecta that would have enabled this plan to be recognized as a defined benefit plan. Accordingly, the plan has been recognized as a defined contribution plan. The Volvo Group estimates it will pay premiums of about SEK 210 M to Alecta in 2023. The collective consolidation level measures the apportionable assets in relation to the insurance commitment. According to Alecta's consolidation policy for defined benefit pension insurance, the collective consolidation level is normally allowed to vary between 125% and 175%. Alecta's preliminary consolidation ratio amounts to 172% (172). If the consolidation level falls short or exceeds the normal interval, one measure may be to increase the contract price for new subscription or to introduce premium reductions.

The Volvo Group's share of the total saving premiums for ITP2 in Alecta as of December 31, 2022 amounted to 0.23% (0.24) and the share of the total number of active policy holders amounted to 1.77% (1.72).

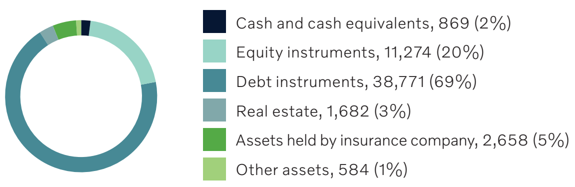
All employees in Sweden benefit from a jubilee awards plan according to which they receive a certain number of shares after they have rendered 25, 35 and 45 years of services. This plan is accounted for as a share-based payment program, where the fair value of the equity-settled payments is determined at the grant date. The plan is recognized as other liabilities.

USA

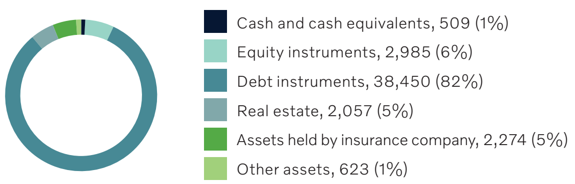
In the USA, the Volvo Group has tax qualified pension plans, post-retirement medical plans and non-qualified pension plans. The tax qualified pension plans are funded while the other plans are generally unfunded. There are five funded defined benefit plans, whereof all are closed to new entrants. Three out of five plans are open for future accruals. The Volvo Group's subsidiaries in the USA mainly secure their pension obligations through transfer of funds to pension plans. The US Retirement Trust manages the assets related to the five funded plans. The strategic allocation of plan assets must comply with the investment policy as decided by the Board of Directors of the Trust. All members of the board are nominated by the company although each member is subject to strict regulatory requirements on fiduciary responsibility. As of December 31, 2022, the total value of pension obligations secured by pension plans of this type amounted to SEK 15,542 M (19,088). At the same point in time, the total value of the plan assets in these plans amounted to SEK 17,218 M (21,013), of which 8% (13) was invested in equity instruments. The regulations for securing pension obligations stipulate certain minimum levels concerning the ratio between the value of the plan assets and the value of the obligations. During 2022 and 2021 no contributions were made by the Volvo Group to the USA pension plans.

20:10

Plan assets by category as of December 31, 2021[1]



Plan assets by category as of December 31, 2022[1]



20:11

Fair value of plan assets	Dec 31, 2022	Dec 31, 2021
Cash and cash equivalents	509	869
With a quoted market price		
Equity instruments	553	8,476
Debt instruments	38,013	38,413
Real estate	0	20
Derivatives	13	–15
Other	1,092	1,001
With an unquoted market price		
Other	6,717	7,074
Total[1]	**46,898**	**55,838**

1 Excluding asset ceiling of SEK 54 M (521).

Great Britain

In Great Britain, the Volvo Group has five defined benefit pension plans, which are all funded. The pension funds are set up as separate legal entities, which are governed by a professional trustee. All plans are closed to new entrants and closed for future accruals to existing members. The allocation of plan assets must comply with the investment strategy agreed between the company and the professional trustee. For three of the plans, if a net surplus is recognized in the balance sheet when the pension scheme runs-off, the Volvo Group has an unconditional right to the surplus of that plan or plans. For two plans this is not strictly legally the case and therefore an asset ceiling is applied. As of December 31, 2022, the total value of pension obligations amounted to SEK 5,465 M (7,934). At the same point in time, the total value of the plan assets in these plans amounted to SEK 5,362 M (8,024), of which 4% (5) was invested in equity instruments. During 2022, the Volvo Group contributed SEK 66 M (65) to the Great Britain pension plans.

Belgium

In Belgium, the Volvo Group has four traditional defined benefit pension plans based on final salary, whereof all are closed to new entrants. All plans are open for future accruals. Two plans are funded via an external pension fund with a legally ringfenced Volvo section and two are funded via the group insurance product referred to in Belgium as Branch 21. Benefits are paid as a lump sum at retirement. There is also an open defined contribution pension plan as well as a local profit sharing program whereby any pay-outs are contributed to a defined contribution pension plan managed by the own pension fund or through a group insurance. All defined contribution pension plans in Belgium have a statutory minimum return guarantee and are therefore accounted for as defined benefit plans. The strategic asset allocation of plan assets must comply with the investment policy as proposed by the Volvo Group and formally adopted by the Board of Directors of the pension fund. As of December 31, 2022, the total value of pension obligations amounted to SEK 3,203 M (3,607). At the same point in time, the plan assets of these plans amounted to SEK 2,972 M (3,113), of which 9% (27) was invested in equity instruments. During 2022, the Volvo Group contributed SEK 158 M (163) to the Belgium pension plans.

France

In France, the Volvo Group has two types of defined benefit plans, Indemnité de Fin de Carrière (IFC) and jubilee awards plan. The plans are unfunded. The IFC is compulsory in France. The benefits are based on the Collective Bargaining Agreement applicable in the company, on the employee's seniority at retirement date and on the final pay. The benefit payment is due only if employees are working for the company when they retire. The jubilee award plan is an internal agreement and the benefit is based on the employee's seniority career at 20, 30, 35 and 40 years. As of December 31, 2022, the total value of pension obligations amounted to SEK 2,264 M (2,600).

Investment strategy and risk management

The Volvo Group manages the allocation and investment of pension plan assets with the purpose of meeting the long term objectives. The main objectives are to meet present and future benefit obligations, provide sufficient liquidity to meet such payment requirements and to provide a total return that maximizes the ratio of the plan assets in relation to the plan liabilities by maximizing return on the assets at an appropriate level of risk. The final investment decision often resides with the local trustee, but the investment policy for all plans ensures that the risks in the investment portfolios are well diversified. The primary risk mitigating activity in the long run is to close defined benefit plans to new entrants or to future accruals for existing members and replace these plans with defined contribution plans when and where possible. The risks related to already accrued pension obligations, e.g. longevity and inflation, as well as buy out premiums and matching strategies are monitored on an ongoing basis in order to further limit the Volvo Group's exposure where and when possible.

In the last couple of years, some of the defined benefit plans have been closed to new entrants and replaced by defined contribution plans in order to reduce risk for the Volvo Group.

In Sweden, the minimum funding target is decided by PRI Pensionsgaranti. This is mandatory in order to stay in the system and get insurance for the pension liability. The contributions usually represent one year's new accrued benefits plus any shortfall towards the minimum funding target unless there is a surplus according to local scheme valuation principles.

In the USA, the minimum funding target is decided by the company in order to avoid penalties, keep flexibility and avoid extensive filing with the Internal Revenue Service and participants in the pension plan. The minimum contributions usually represents one year's accrued benefits plus a seventh of any deficit unless a scheme is showing a surplus according to local scheme valuation principles.

In Great Britain, there is no minimum funding ratio. There is a regulatory requirement for each scheme to perform triennial valuations whereby any scheme showing a deficit must develop a recovery plan that returns the scheme to a fully funded basis within a reasonable time frame. The recovery plan shall be agreed with the company and submitted to the regulator for approval.

In Belgium, the minimum funding level is regulated by law and monitored by the financial supervisory authority, FSMA. The framework for the minimum funding requirement is based on a discount rate, which is based on the expected return of the plan assets. The pension fund must be fully funded on this basis at all times. The contribution policy of the pension fund is designed to provide stability in contributions over the duration of the plan.

In 2023, the Volvo Group estimates to transfer an amount of SEK 300–500 M to pension plans.

21 Other provisions

ACCOUNTING POLICY

Provisions are recognized in the balance sheet when a legal or constructive obligation exists as a result from a past event, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. When these criteria are not met, a contingent liability may be recognized.

Provisions for product warranty
Provisions for product warranty are recognized as cost of sales and include contractual warranty and campaign warranty. Provisions for contractual warranty are recognized when the products are sold. Provision for campaigns in connection with specific quality problems are recognized when the campaign is decided.

Provisions for technical goodwill
Technical goodwill is coverage in excess of contractual warranty or campaigns in order to maintain a good business relation with the customer. The provisions for technical goodwill are determined based on historical statistics for customers where an element of constructive obligation exists.

Provisions for extended coverage
An extended coverage is a product insurance sold to a customer to cover a product according to specific conditions for an agreed period as an additional insurance to the factory contractual warranty. The provision is intended to cover the risk that the expected cost of providing services under the extended coverage contract exceed the expected revenue.

Provisions in insurance operations
Volvo Group has a captive insurance company and the provisions in insurance operations are related to third party claims addressed to companies within the Volvo Group. The claims reserve also includes a provision for unreported losses based on past experience. The unearned premium reserve is reported within other current liabilities.

Provisions for restructuring costs
A provision for decided restructuring measures is recognized when a detailed plan for the implementation of the measures is complete and when this plan is communicated to those who are affected. A provision and costs for termination benefits as a result of a voluntary termination program is recognized when the employee accepts the offer. Normally restructuring costs are included in other operating income and expenses.

Provisions for residual value risks
Residual value risks are the risks that the Volvo Group in the future would have to dispose used vehicles at a loss if the price development of these products is worse than expected when the contracts were entered. The residual value risks pertain to operating lease contracts and sales transactions with residual value commitments (buybacks and tradebacks) where the Volvo Group has a residual value commitment. The majority of these contracts are recognized as assets under operating leases or as right of return asset in the balance sheet. During the period, the depreciable amount is adjusted through the income statement to correspond to estimated future net realizable value to continuously reflect potential residual value risks at the end of the contract period.

» **Read more in Note 13** Tangible assets about residual value risks.

Residual value commitments that are independent from the sales transaction are not recognized as assets under operating leases or as right of return in the balance sheet, hence the potential residual value risks related to these contracts are recognized as provisions. To the extent the residual value exposure does not meet the definition of a provision, the gross exposure is reported as a contingent liability.

» **Read more in Note 24** Contingent liabilities and contingent assets.

Provisions for service contracts
Service contracts offer the customer preventive maintenance according to an agreed service plan. The provision is intended to cover the risk that the expected cost of providing services and repairs under the service contract exceeds the expected revenue.

Other provisions
Other provisions mainly includes provisions for legal disputes, provisions for externally issued credit guarantees and other provisions, unless separately specified.

Long-term provisions as above are mainly expected to be settled within 2 to 3 years.

SOURCE OF ESTIMATION UNCERTAINTY AND CRITICAL JUDGMENTS

The uncertainties about the amount or timing of outflows vary for different kind of provisions. Regarding provisions for product warranty, extended coverage, residual value risks and service contracts, the provisions are based on historical statistics and estimated future costs, which is why the provided amount has a high correlation with the outflow of resources. Regarding provisions for disputes, like tax and legal disputes, the uncertainty is higher.

Provisions for product warranty
Warranty provisions are estimated with consideration of historical statistics with regard to known changes in warranty claims, warranty periods, the average time-lag between faults occurring until claims are received by the company and anticipated changes in quality indexes. The actual outcome of product warranties may deviate from the expected outcome and materially affect the warranty costs and provisions in future periods. Refunds from suppliers, that decrease the Volvo Group's warranty costs, are recognized to the extent these are considered to be certain.

Other provisions
The Volvo Group works actively to ensure compliance with applicable environmental laws and regulations, which are often complex and uncertain. If the Volvo Group fails to meet climate related targets or regulatory requirements it could be subject to significant penalties and other sanctions which could materially affect the financial statements.

Provisions for legal proceedings
The Volvo Group regularly reviews the development of significant outstanding legal disputes in which the Volvo Group companies are parties, both regarding civil law and tax disputes, in order to assess the need for provisions and contingent liabilities in the financial statements. Among the factors that the Volvo Group considers in making decisions on provisions and contingent liabilities are the nature of the dispute, the amount claimed, the progress of the case, the opinions of legal and other advisers, experience in similar cases, and any decision of the Volvo Group's management as to how the Volvo Group intends to handle the dispute. The actual outcome of a legal dispute may deviate from the expected outcome of the dispute. The difference between actual and expected outcome of a dispute might materially affect future financial statements, with an adverse impact upon the Volvo Group's operating income, financial position and liquidity.

Provisions for legal disputes are included within other provisions in **table 21:1**.

» **Read more in Note 24** Contingent liabilities and contingent assets.

21:1

	Carrying value as of Dec 31, 2021	Provisions	Reversals	Utilizations	Acquired and divested operations[2]	Translation differences	Other reclassi-fications[2]	**Carrying value as of Dec 31, 2022**	Of which due within 12 months	Of which due after 12 months
Provisions for product warranty[1]	15,170	9,850	–2,173	–7,229	1	1,251	–29	16,841	8,264	8,577
Provisions for technical goodwill	660	3	–22	–354	–	69	–10	346	346	–
Provisions for extended coverage	505	496	–174	–275	–	55	85	692	247	445
Provisions in insurance operations	740	283	–190	–69	–	84	–	848	–	848
Provisions for restructuring costs	605	7	–89	–339	–	28	0	212	205	7
Provisions for residual value risks	334	683	–290	–458	–	47	–57	259	143	116
Provisions for service contracts	406	673	–293	–278	–	42	8	558	247	311
Other provisions[3,4]	4,750	6,276	–1,291	–3,576	3	521	–924	5,759	3,667	2,092
B/S **Total**	**23,170**	**18,271**	**–4,522**	**–12,578**	**4**	**2,097**	**–927**	**25,515**	**13,119**	**12,396**

1 Including a provision for emission control component. For more information see below.

2 **Read more in Note 3** Acquisitions and divestments of operations, for a description of acquired and divested operations as well as assets and liabilities held for sale.

3 A reclassification to other liabilities regarding deferred leasing income was made during 2022 amounting to SEK 940 M.

4 Includes costs for claims arising from the European Commission's 2016 antitrust settlement decision and costs for a civil penalty from the National Highway Traffic Safety Administration in the US. **Read more in Note 24** Contingent liabilities and contingent assets about the European Commission's 2016 antitrust settlement decision.

The Volvo Group has detected that an emissions control component used in certain markets and models, may degrade more quickly than expected, affecting the vehicles emission performance negatively. The Volvo Group made a provision of SEK 7 billion impacting the operating income in 2018, relating to the estimated costs to address the issue. Negative cash flow effects started in 2019 and will continue in the coming years. The Volvo Group will continuously assess the size of the provision as the matter develops.

22 Liabilities

ACCOUNTING POLICY

Loans are measured at amortized cost using the effective interest rate method. A hybrid bond issued by the Volvo Group is classified as debt in the Volvo Group's financial reporting as it constitutes a contractual obligation to make interest payments and repay the nominal amount of the debt to the holder of the instrument.

» Read more in Note 30 Financial instruments for accounting policies related to financial instruments.

Non-current liabilities

The tables below disclose the Volvo Group's non-current liabilities with the largest loans listed by currency. Loans in the Volvo Group's subsidiaries are mainly denominated in local currencies through Volvo Group Treasury which minimizes the currency exposure in the individual companies. Volvo Group Treasury uses various derivatives to facilitate lending and borrowing in different currencies without increasing the risk for the Volvo Group.

» Read more in Note 4 Goals and policies in financial risk management on how the funding for Industrial operations and Financial Services respectively is managed and presented in the Volvo Group's balance sheet.

22:1

Non-current bond loans and other loans Currency/start year/maturity	**Actual interest rate Dec 31, 2022, %**	**Effective interest rate Dec 31, 2022, %**	**Dec 31, 2022**	Dec 31, 2021
Bond loans				
EUR 2012–2022/2024–2078[1]	0.00–4.79	0.00–4.79	78,319	50,052
SEK 2020–2022/2024–2027	0.50–4.29	0.50–4.29	18,054	24,282
NOK 2019–2020/2024	4.39–4.45	4.46–4.52	1,691	2,820
HKD 2019/2024	2.31	2.31	969	840
USD 2019–2022/2029	2.10–2.96	2.10–2.96	730	452
GBP 2022/2026	4.77	4.77	3,125	–
JPY			–	919
B/S **Total bond loans[2, 3]**			**102,887**	**79,365**
Other loans				
USD 2014–2020/2024	0.49–3.00	0.71–3.00	830	2,875
EUR 2016–2022/2024–2028	0.15–3.06	0.15–3.08	5,832	4,031
MXN 2020–2022/2024–2026	11.11–12.18	11.69–12.89	2,302	1,449
JPY 2019/2024	0.37	0.37	792	1,570
BRL 2013–2022/2024–2029	9.88–13.65	9.88–13.65	8,526	5,258
AUD 2020–2022/2024–2026	3.77–4.52	3.84–4.61	658	119
CNY 2021–2022/2024–2026	2.61–4.40	2.61–4.40	2,673	1,222
SEK 2022/2024	2.44	2.46	1,998	–
CAD 2022/2024	5.57	5.68	771	–
Loans in other currencies			2,318	1,901
Lease liabilities			4,806	4,469
Revaluation of outstanding derivatives to SEK[4]			4,179	1,917
B/S **Total other loans[2, 3]**			**35,684**	**24,812**

22:2

Other non-current liabilities	**Dec 31, 2022**	Dec 31, 2021
Deferred leasing income[5, 6]	6,928	5,129
Residual value liabilities[6]	9,747	9,049
Deferred service revenue[6]	17,493	14,440
Refund liabilities[6]	1,700	1,698
Advances from customers[6]	3,093	2,923
Outstanding interest and currency risk derivatives[4]	3,011	80
Other liabilities	3,577	3,512
B/S **Total other liabilities**	**45,549**	**36,831**

1 Including the remaining tranche of the hybrid bond of EUR 0.6 billion.
2 Loans to finance the credit portfolio in Financial Services amounted to SEK 96,129 M (73,180) in bond loans and SEK 23,751 M (18,141) in other loans.
3 Non-current loans of SEK 1,093 M (3,030) were secured by assets pledged. » Read more in Note 23 Assets pledged.
4 » Read more in Note 30 Financial instruments, table 30:1 regarding non-current part of outstanding interest and currency risk derivatives.
5 A reclassification from other provisions regarding non-current deferred leasing income was made during 2022 amounting to SEK 557 M.
6 » Read more in Note 7 Revenue regarding contract and refund liabilities, and sales with residual value commitments.

22:3

Maturity Year	Bond loans and other loans	Not utilized non-current credit facilities
2024	59,949	22,249
2025	36,372	1,000
2026	22,772	22,257
2027	10,200	–
2028	717	–
2029 or later	8,562	–
Total	**138,571**	**45,505**

» **Read more in Note 14** Leasing, **table 14:4** for maturities of non-current lease liabilities.

The Volvo Group issued a hybrid bond in 2014 of EUR 1.5 billion. The first tranche of EUR 0.9 billion was repaid in 2020. After the publishing of the Volvo Group report on the fourth quarter and full year 2022 a decision has been made to call the second tranche of EUR 0.6 billion on the call date in March, 2023. This will have no impact on the financial position of the Volvo Group.

The predominant part of loans that mature in 2024 is an effect of the Volvo Group's normal business cycle, with shorter duration in the Financial Services portfolio compared to Industrial Operations.

Granted but not utilized credit facilities consist of stand-by facilities for loans. A fee is charged for granted credit facilities and recognized in the income statement within other financial income and expenses.

» **Read more in Note 9** Other financial income and expenses.

Current liabilities

22:4

Current bond loans and other loans	Dec 31, 2022	Dec 31, 2021
Bond loans	37,794	21,747
B/S **Total bond loans**[1, 2]	**37,794**	**21,747**
Other loans	31,084	25,812
Lease liabilities	1,777	1,632
Revaluation of outstanding derivatives to SEK[3]	1,722	255
B/S **Total other loans**[1, 2]	**34,583**	**27,700**

1 Loans to finance the credit portfolio in Financial Services amounted to SEK 37,776 M (21,747) in bond loans and SEK 28,019 M (21,819) in other loans.

2 Current loans of SEK 1,994 M (3,138) were secured by assets pledged. » **Read more in Note 23** Assets pledged.

3 » **Read more in Note 30** Financial instruments, **table 30:1** regarding current part of outstanding interest and currency risk derivatives.

Other current loans include current maturities of non-current loans of SEK 24,726 M (12,112).

22:5

Other current liabilities	Dec 31, 2022	Dec 31, 2021
Trade payables	90,177	76,745
Tax liabilities	6,907	4,287
Advances from customers[1]	5,892	4,511
Wages, salaries and withholding taxes	14,805	13,287
VAT liabilities	5,717	4,447
Accrued expenses for dealer bonuses and rebates[1]	5,767	4,998
Other accrued expenses	15,071	11,744
Deferred leasing income[1, 2]	3,852	3,250
Deferred service revenue[1]	4,446	3,715
Other deferred income[1]	1,829	1,599
Residual value liabilities[1]	4,559	4,882
Refund liabilities[1]	783	737
Other financial liabilities	330	237
Interest and currency risk derivatives[3]	64	127
Other liabilities	6,403	6,444
Current liabilities	**166,601**	**141,010**

1 » **Read more in Note 7** Revenue, regarding contract and refund liabilities, and sales with residual value commitments.

2 A reclassification from other provisions regarding current deferred leasing income was made during 2022 amounting to SEK 383 M.

3 » **Read more in Note 30** Financial instruments, **table 30:1** regarding current part of outstanding interest and currency risk derivatives.

Non-interest-bearing current liabilities amounted to SEK 166,601 M (141,010), or 70% (74) of the Volvo Group's total current liabilities.

23 Assets pledged

23:1

Assets pledged	Dec 31, 2022	Dec 31, 2021
Property, plant and equipment mortgages	60	48
Assets under operating leases	249	246
Customer-financing receivables	3,273	6,449
Total assets pledged	**3,582**	**6,742**

Non-current and current loans of SEK 3,087 M (6,168) were secured by assets pledged to an amount of SEK 3,582 M (6,742).

Under the terms of asset-backed securitizations, SEK 2,783 M (5,977) of securities have been issued tied to US-based loans, secured by customer-financing receivables, SEK 3,273 M (6,449), with trucks and construction equipments as collaterals. In 2022 no securities were signed (0).

» **Read more in Note 22** Liabilities.

24 Contingent liabilities and contingent assets

ACCOUNTING POLICY

A contingent liability is recognized for a possible obligation, for which it is not yet confirmed that a present obligation exists that could lead to an outflow of resources. Alternatively, there is a present obligation that does not meet the definitions of a provision or a liability as it is not probable that an outflow of resources will be required to settle the obligation or a sufficiently reliable estimate of the amount of the obligation cannot be made.

A contingent asset is a possible asset that arises from past events that will be confirmed by uncertain future events not wholly within the control of the Volvo Group. A contingent asset is disclosed where an inflow of economic benefits is probable.

24:1

Contingent liabilities	**Dec 31, 2022**	Dec 31, 2021
Credit guarantees issued for customers and others	5,947	7,421
Tax claims	5,661	4,926
Residual value commitments	342	402
Other contingent liabilities	6,251	5,222
Total contingent liabilities	**18,201**	**17,971**

Total contingent liabilities at December 31, 2022, amounted to SEK 18,201 M (17,971).

Credit guarantees issued amounted to SEK 5,947 M (7,421). The recognized amount for credit guarantees corresponds to the gross exposure and has not been reduced by the value of counter guarantees received or other collaterals such as the right to repossess products. The value of counter guarantees and other collaterals reducing the exposure is dependent on the development of used products prices and on the possibility to repossess products.

A major part of the credit guarantees pertains to the credit guarantees related to Chinese dealers and retail customers within Construction Equipment.

Tax claims amounted to SEK 5,661 M (4,926) and pertain to charges against the Volvo Group for which the criteria for recognizing a tax liability or a provision were not met. Global companies such as the Volvo Group are occasionally involved in tax processes of varying scope and in various stages. Volvo Group regularly assesses these tax processes. When it is probable that additional taxes must be paid and the outcome can be reasonably estimated, the required provision is made. Out of total tax claims, SEK 1.7 billion (1.3) is related to a transfer price audit in Brazil and SEK 2.5 billion (2.2) are related to two custom duties audits in India.

Residual value commitments amounted to SEK 342 M (402) and were attributable to sales transactions with residual value commitments (buybacks and tradebacks) that are independent from the sales transaction and therefore not recognized as assets in the balance sheet. The amount corresponds to the gross exposure and has not been reduced by the estimated net selling price of used products taken as collaterals. To the extent the used products pertaining to those transactions are expected to be disposed at a loss, a provision for residual value risk is recognized.

» **Read more in Note 21** Other provisions about provisions for residual value risks.

Other contingent liabilities amounted to SEK 6,251 M (5,222) and include for example bid and performance clauses and legal proceedings.

Legal proceedings
Starting in January 2011, the Volvo Group, together with a number of other truck manufacturers, was investigated by the European Commission in relation to a possible violation of EU antitrust rules. In July 2016 the European Commission adopted a settlement decision against the Volvo Group and other truck manufacturers finding that they were involved in an antitrust infringement which, in the case of the Volvo Group, covered a 14-year period from 1997 to 2011. The Volvo Group paid a monetary fine of EUR 670 million.

Following the adoption of the European Commission's settlement decision, the Volvo Group has received and is defending itself against a significant number of private damages claims brought by customers and other third parties alleging that they suffered loss, directly or indirectly, by reason of the conduct covered in the decision. The claims relate primarily to Volvo Group trucks sold during the 14-year period of the infringement and, in some cases, to trucks sold in certain periods after the infringement ended. Some claims have also been made against the Volvo Group that relate to trucks sold by other manufacturers. The truck manufacturers subject to the 2016 settlement decision are, in most countries, jointly and severally liable for any losses arising from the infringement.

In the region of 3,000 claims are being brought in over 20 countries (including EU Member States, the United Kingdom, Norway and Israel) by large numbers of claimants either acting individually or as part of a wider group or class of claimants. Further claims may be commenced. The litigation in many countries can be expected to run for several years.

Several hundred thousand trucks sold by the Volvo Group are currently subject to claims against it or other truck manufacturers, with claimants alleging that the infringement resulted in an increase in the prices paid for Volvo Group trucks which directly or indirectly caused them loss.
The Volvo Group maintains its firm view that no damage was caused to its customers or any third party by the conduct set out in the settlement decision, and in fact, the Commission did not assess any potential effects on the market. The transaction prices our customers paid for their trucks were unaffected by the infringement and were the outcome of individual negotiations across all elements of their purchasing requirements, including not only the prices for new trucks but also (where relevant) associated products and services sold together with new trucks such as service contracts, financing, buy-back guarantees etc.

Litigation developments so far have been mixed with some adverse developments, although uncertainty remains high and it is inherent in complex litigation that outlooks and risks fluctuate over time.

At this stage it is not possible to make a reliable estimate of the total liability that could arise from such proceedings given the complexity of the claims and the different (and in some cases relatively early) stages to which national proceedings have progressed. However, the litigation is substantial in scale and any adverse outcome or outcomes of some or all of the litigation, depending on the nature and extent of such outcomes, may have a material negative impact on the Volvo Group's financial results, cash flows and financial position. To date, the Volvo Group has recognized a cost of SEK 630 M, which relates to certain limited aspects of the litigation that are currently capable of estimation. This is Volvo Group's current assessment, which may change depending on the progress of the litigation.

The Volvo Group is also involved in a number of legal proceedings other than those described above. The Volvo Group's assessment is that such other legal proceedings in aggregate are not likely to entail any risk of having a material effect on the Volvo Group's financial position.

» **Read more in Note 21** Other provisions.

There were no contingent assets as of December 31, 2022 (–).

25 Transactions with related parties

ACCOUNTING POLICY

The Volvo Group engages in transactions with some of its related parties, such as associated companies and joint ventures. The transactions arise in the ordinary course of business and are conducted on commercial terms and market prices. They mainly consist of sales of vehicles, parts, equipment and services as well as purchases of parts, engines and vehicles for resale. Transactions between AB Volvo and its subsidiaries have been eliminated in the consolidated financial statements and transactions with the Board of Directors and the Group Executive Board consist of remunerations, which are not disclosed in this note.

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations.

» **Read more in Note 27** Personnel about remunerations to the Board of Directors and the Group Executive Board.

» **Read more in Corporate Governance Report** about Board of Directors and Group Executive Board.

The Volvo Group's transactions with related parties are presented in **table 25:1** and **25:2**.

25:1

	Sales of goods, services and other income		Purchases of goods, services and other expense	
	2022	2021	**2022**	2021
Associated companies	1,557	899	145	60
Joint ventures	2,336	1,575	1,260	935

25:2

	Receivables		Payables	
	Dec 31, 2022	Dec 31, 2021	**Dec 31, 2022**	Dec 31, 2021
Associated companies	113	48	63	30
Joint ventures	472	353	122	69

26 Government grants

ACCOUNTING POLICY

Government grants are financial grants from governmental or supranational bodies that are received in exchange for fulfillment of certain conditions by the Volvo Group. The financial grants are recognized in the financial statement when there is a reasonable assurance that the conditions will be complied with and that the grants will be received.

Government grants related to assets are presented in the balance sheet either as deferred income or as a deduction of the carrying amount of the related assets. Government grants related to income are reported as a deferred income in the balance sheet and recognized in the income statement to match the related costs. If the costs incurred before the grants have been received, but there is an agreement that grants will be received, grants are recognized in the income statement to match the related costs.

In 2022, government grants of SEK 689 M (895) were received, and SEK 701 M (936) were recognized in the income statement.

Government grants includes tax credits of SEK 312 M (309) related to product development, which were primarily received in France and in the United States. Other grants were mainly received from Swedish, Chinese and US governmental organizations and from the European Commission.

27 Personnel

ACCOUNTING POLICY

Incentive programs
The Volvo Group has a long-term and a short-term incentive program that is accounted for in accordance with IAS 19 Employee benefits. During the vesting period, the incentive program is recognized as an expense and as a short-term liability.

Policy for remuneration to senior executives, approved by the Annual General Meeting on 6 April 2022
The Annual General Meeting 2022 decided upon the following policy on remuneration and other terms of employment for the members of the Volvo Group Executive Board.

These guidelines are forward-looking, i.e. they are applicable to remuneration agreed, and amendments to remuneration already agreed, after the proposed adoption of these guidelines by the 2022 annual general meeting. These guidelines do not apply to any remuneration decided or approved by the general meeting. Any new share-based incentive plans will, where applicable, be resolved by the general meeting, but no such plan is currently proposed.

The guidelines' promotion of the Volvo Group's business strategy, long-term interests and sustainability
It is a prerequisite for the successful implementation of the Volvo Group's business strategy and safeguarding of its long-term interests, including its sustainability, that the Group can recruit, retain and develop senior management. These guidelines enable AB Volvo to offer Executives a competitive total remuneration. More information regarding the Volvo Group's business strategy is available in the Volvo Group Annual and Sustainability Report.

Types of remuneration
Volvo Group remuneration to Executives shall consist of the following components: base salary, short-term and long-term variable incentives, pension benefits and other benefits.

Short-term incentives may, for the President and CEO, amount to a maximum of 100 per cent of the base salary and, for other Executives, a maximum of 80 per cent of the base salary.

Long-term incentives may, for the President and CEO, amount to a maximum of 150 per cent of the base salary and, for other Executives, a maximum of 80 per cent of the base salary. The current long-term incentive plan for the Group's senior management, including the Executives, was introduced in connection with the 2016 annual general meeting. The objective of the program is to drive long-term value creation and align the interests of the senior management with those of the shareholders. To achieve this, the program operates on a four-year cycle; with a performance based annual award, which is invested in Volvo shares with a mandatory lock-in period of three years. There will be no payout under the long-term incentive program if the Annual General Meeting that is held in the year following the performance year, decides not to distribute any dividends to the shareholders. The program is funded on an annual basis by an award, measured against performance criteria established by the Board of Directors. The after-tax portion of this payment must be immediately invested in AB Volvo shares which must be held for a minimum of three years. In this way, the Executives will build up a shareholding in the company and have a vested interest over the longer-term development in the value of the shares. At the end of the three year period, the Executives may sell their shares, if they meet the requirement for owning shares valued at two years of the pre-tax base salary for the President and CEO and one year of the pre-tax base salary for the other Executives. The holding requirements for the Executives shall cease upon termination of an Executive's employment, and the Board of Directors may grant such other exceptions to the requirements as the Board deems appropriate.

Further cash remuneration may be awarded in extraordinary circumstances, provided that such extraordinary arrangements are limited in time and only made on an individual basis, either for the purpose of recruiting or retaining Executives, or as remuneration for extraordinary performance beyond the individual's ordinary tasks. Such remuneration may not exceed an amount corresponding to 100 per cent of the annual base salary. Any resolution on such remuneration shall be made by the Board of Directors based on a proposal from the Remuneration Committee.

For the President and CEO, pension benefits shall be granted on the basis of a defined contribution plan. The pensionable salary shall include base salary only. The pension contributions for the President and CEO attributable to the annual base salary shall amount to not more than 35 per cent of the base salary.

Other benefits may include, for example, life insurance, medical and health insurance, and company cars. Premiums and other costs relating to such benefits may amount to not more than 3 per cent of the annual base salary for the President and CEO.

For other Executives, pension benefits shall be granted on the basis of a defined contribution plan except where law or collective agreement require a defined benefit pension. The pensionable salary shall include base salary and, where required by law or collective agreement, incentives. The total pension contributions for other Executives shall amount to not more than 35 per cent of base salary, unless a higher percentage results from the application of law or collective agreement.

Other benefits may include, for example, life insurance, medical and health insurance, and company cars. Premiums and other costs relating to such benefits may amount to not more than 10 per cent of the annual base salary for other Executives.

Remuneration for Executives that reside outside Sweden or reside in Sweden but having a material connection to or having been residing in a country other than Sweden may be duly adjusted to comply with mandatory rules or local practice, taking into account, to the extent possible, the overall purpose of these guidelines.

In addition to remuneration set out above, Executives who relocate for the purposes of the position or who work in other multiple countries may also receive such remuneration and benefits as are reasonable to reflect the special circumstances associated with such arrangements, taking into account the overall purpose of these guidelines and alignment with the general policies and practices within the Volvo Group applicable to cross border work.

Termination of employment
Upon termination of an Executive's employment, the notice period may not exceed twelve months. Base salary during the notice period and severance pay may not together exceed an amount corresponding to the base salary for two years.

Executives that reside outside Sweden or reside in Sweden but having a material connection to or having been residing in a country other than Sweden may be offered notice periods for termination and severance payment as are reasonable to reflect the special circumstances, taking into account the overall purpose of these guidelines and alignment with the general policies and practices within the Volvo Group.

Criteria for awarding variable cash remuneration, etc.
Short-term and long-term incentives shall be linked to predetermined and measurable criteria. The criteria – which for example may relate to EBIT, cash flow, return on capital employed or similar ratios, or sustainability tar-

gets – shall be devised to promote the Volvo Group's strategy and long-term value creation and strengthen the link between achieved performance targets and reward. The criteria for short-term and long-term incentives shall be determined by the Board of Directors annually. The satisfaction of the criteria shall be measured over periods of one year each.

To which extent the criteria for awarding variable remuneration has been satisfied shall be determined when the relevant measurement period has ended. The Board of Directors is responsible for the determination of variable remuneration to all Executives.

Claw-back and adjustments

Executives participating in the Volvo Group's current short-term and long-term incentive plans are obliged, in certain circumstances and for specified periods of time, to repay, partially or in its entirety, variable incentive awards already paid if payments have been made by mistake or been based on intentionally falsified data or in the event of material restatement of the Volvo Group's financial results. Furthermore, the Board of Directors may decide on adjustments of pay-out under the incentive plans (before payment has been made) in case of extraordinary circumstances or to adjust for unforeseen one-timers.

Salary and employment conditions for employees

In the preparation of the Board of Directors' proposal for these remuneration guidelines, the Board has considered that the various benefits offered to the Executives need to be aligned with the general structures applicable for employees of AB Volvo at levels that are competitive in the market. Thus, salary and employment conditions for other AB Volvo employees have been taken into account by including information thereon in the Remuneration Committee's and the Board of Directors' basis of decision when evaluating whether the guidelines and the limitations set out herein are appropriate.

The decision-making process to determine, review and implement the guidelines

The Board of Directors has established a Remuneration Committee. The Committee's tasks include preparing the Board of Directors' decision to propose guidelines for executive remuneration. The Board of Directors shall prepare a proposal for new guidelines at least every fourth year and submit it to the general meeting. The guidelines shall be in force until new guidelines are adopted by the general meeting. The Remuneration Committee shall also monitor and evaluate plans for variable remuneration for Executives, the application of the guidelines for executive remuneration as well as the current remuneration structures and compensation levels in the Group. The members of the Remuneration Committee are independent of AB Volvo and its executive management. The President and CEO and other members of the executive management do not participate in the Board of Directors' processing of and resolutions regarding remuneration-related matters in so far as they are affected by such matters.

Derogation from the guidelines

The Board of Directors may temporarily resolve to derogate from the guidelines, in whole or in part, if in a specific case there is special cause for the derogation and a derogation is necessary to serve the Volvo Group's long-term interests, including its sustainability, or to ensure the Group's financial viability. As set out above, the Remuneration Committee's tasks include preparing the Board of Directors' resolutions in remuneration-related matters. This includes any resolutions to derogate from the guidelines.

Description of material changes to the guidelines and how the views of shareholders' have been taken into consideration

In order to bring the total remuneration towards more market competitive level, it is proposed to increase the maximum long-term incentive opportunity level for the President and CEO, from maximum 100% of base salary as of today to maximum 150% of the base salary. In addition, increasing the long-term incentive where the pay-out is 100% invested into Volvo shares subject to a three-year holding period will further strengthen the alignment with long-term shareholder interest. The only further changes proposed to the Remuneration Policy are editorial changes as well as a clarification on pensionable salary in relation to incentives. During 2021, the company has carefully considered feedback received from shareholders and proxy advisors in connection with the Annual General Meeting 2021 and otherwise during the year. For further information, please refer to the section Looking ahead to 2022 in the Remuneration Report 2021.

Fees paid to the Board of Directors

According to a resolution adopted at the Annual General Meeting 2022, fees to the Board of Directors appointed at the Annual General Meeting for the period until the close of the Annual General Meeting 2023 shall be paid as follows: The Chairman of the Board should be awarded SEK 3,850,000 (3,700,000) and each of the other members SEK 1,150,000 (1,100,000) with exception of the President and CEO of AB Volvo, who does not receive a director's fee. In addition, SEK 405,000 (390,000) should be awarded to the Chairman of the Audit Committee and SEK 190,000 (180,000) to each of the other members of the Audit Committee, and SEK 170,000 (165,000) to the Chairman of the Remuneration Committee and SEK 125,000 (118,000) to each of the other members of the Remuneration Committee, and SEK 200,000 (-) to the Chairman of the Volvo CE

27:1

Remuneration to the Group Executive Board SEK	Fixed remuneration		Variable remuneration			
	Fixed salary	Other benefits[1]	Short-term incentives	Long-term incentives	Other remunerations[2]	Pension premiums
President and CEO	17,496,875	279,057	13,910,861	19,183,651	1,198,758	6,035,732
Deputy CEO	9,543,330	210,731	6,051,464	5,563,479	531,456	3,231,198
Other members of the Group Executive Board[3]	95,635,834	14,565,147	51,590,551	51,916,788	1,434,960	30,022,143
Total 2022	**122,676,039**	**15,054,935**	**71,552,876**	**76,663,918**	**3,165,174**	**39,289,073**
Total 2021	**111,546,898**	**18,698,388**	**77,889,953**	**60,433,152**	**1,742,236**	**38,044,393**

1 Other benefits mainly pertain to company cars and, various insurances and expatriate support costs.

2 Other remunerations include payments to Swedish individuals in the Group Executive Board in connection to a change in their pension benefits.

3 The Group Executive Board comprised, excluding the President and CEO and Deputy CEO, of 13 (13) members at the end of the year.

Transformation Committee and SEK 170,000 (-) to each of the other members of the Volvo CE Transformation Committee.

Terms of employment and remuneration to the President and CEO
Fixed salary, short-term and long-term incentives
The President and CEO is entitled to a remuneration consisting of a fixed annual salary and short-term and long-term incentives. During the financial year 2022, the short-term incentive is based on operating income, operating cash flow and electric vehicle volume for the Volvo Group; the long-term incentive is based on operating income and return on capital employed. The short-term incentive amounts to a maximum of 100% of the annual base salary and the long term incentive amounts to a maximum of 150% of the annual base salary.

For the financial year 2022, the President and CEO received a fixed salary including vacation payment of SEK 17,496,875 (16,308,335) and a short-term incentive of SEK 13,910,861 (14,157,306). The short-term incentive was 80.7% (88.1) of the annual base salary.

As part of the agreement to change the pension set-up as per July 1, 2021, a final lump sum cash payment of SEK 1,198,758 (745,091) was paid out during the year. Other benefits, mainly pertaining to a company car and insurance benefits, amounted to SEK 279,057 (299,575).

The President and CEO was also participating in the long-term incentive program decided by the Board of Directors in 2022. During the financial year the outcome of the long-term incentive program amounted to SEK 19,183,651 (10,608,905), which was 111.3% (66.1) of the base salary. The full net amount shall be invested in Volvo B shares. There is to be no pay-out of the amount if the Annual General Meeting held in 2023 decides not to distribute any dividends to the shareholders for 2022.

Pensions
The President and CEO was covered by a pension benefit in the form of a defined contribution (DC) plan with a contribution amounting to 35% of the annual base salary. There were no commitments other than the payment of the contributions.

Total pension premiums for the President and CEO amounted to SEK 6,035,732 (7,218,565) in 2022.

Severance payments
The President and CEO has a 12 months' notice period upon termination by AB Volvo and a 6 months' notice period upon termination on his own initiative. If terminated by the company, the President and CEO is entitled to a severance payment equivalent to 12 months’ salary. In the event of new employment during the severance period, the severance pay is reduced with an amount equal to 100% of the income from the new employment.

Terms of employment and remuneration to the Deputy CEO
Fixed salary, short-term and long-term incentives
The Deputy CEO receives short-term and long-term incentives in addition to a fixed salary. During the financial year 2022, the short-term incentive is based on operating income, operating cash flow and electric vehicle volume for the Volvo Group; the long-term incentive is based on operating income and return on capital employed. In 2022, short-term and long-term incentives, for the Deputy CEO, could each amount to a maximum of 80% of the annual base salary.

For the financial year 2022, the Deputy CEO received a fixed salary including vacation payment of SEK 9,543,330 (8,843,217) and a short-term incentive of SEK 6,051,464 (6,132,094). The short-term incentive was 64.6% (70.5) of the annual base salary.

As part of the agreement to change the pension set-up as per July 1, 2021, a final lump sum cash payment of SEK 531,456 (343,792) was paid out during the year. Other benefits, mainly pertaining to company car and insurance benefits, amounted to SEK 210,731 (151,640).

The Deputy CEO also participated in the long-term incentive program decided by the Board of Directors in 2022. The long-term incentive amounted to SEK 5,563,479 (4,595,140), which was 59.4% (52.8) of the annual base salary and the full net amount shall be invested in Volvo B shares. There is to be no pay-out of the amount if the Annual General Meeting held in 2023 decides not to distribute any dividends to the shareholders for 2022.

Pensions
The Deputy CEO participated in the collective bargain agreement (ITP) and the Volvo Executive Pension (VEP) plan. The VEP plan is a defined contribution (DC) plan with a contribution amounting to 35% of the annual base salary exceeding 30 income base amounts (SEK 2,130,000 in 2022). For VEP, there were no commitments other than the payment of the contributions.

Total pension premiums for the Deputy CEO amounted to SEK 3,231,198 (3,624,790) in 2022.

Severance payments
The employment contract for the Deputy CEO contains rules governing severance payments when AB Volvo terminates the employment. The notice period upon termination by the company shall not exceed 12 months and the notice period upon termination by the Deputy CEO shall not exceed 6 months. In addition, in the event of termination by the company, the Deputy CEO is entitled to a maximum of 12 months’ severance pay.

Remuneration to the Group Executive Board
Fixed salary, short-term and long-term incentives
Members of the Group Executive Board receive short-term and long-term incentives in addition to fixed salaries. During the financial year 2022, the short-term incentive is based on operating income, operating cash flow and electric vehicle volume for the Volvo Group; the long-term incentives are based on operating income and return on capital employed. In 2022, short-term and long-term incentives, for Group Executive Board members excluding the President and CEO, could each amount to a maximum of 80% of the annual base salary.

For the financial year 2022, fixed salaries amounted to SEK 95,635,834 (86,395,346) for the Group Executive Board members excluding the President and CEO and the Deputy CEO. The short-term incentive amounted to SEK 51,590,551 (57,600,553) for the Group Executive Board members excluding the President and CEO and the Deputy CEO. Short-term incentive was in average 59.0% (68.3) of the annual base salary. As part of the agreement to change the pension set-up as per July 1, 2021, for the Group Executive Board members in the Swedish pension plan, final lump sum cash payments were made during the year in a total amount of SEK 1,434,960 (653,353). Other benefits, including company cars, housing, and expatriate support costs, amounted to SEK 14,565,147 (18,247,173).

The Group Executive Board also participated in the long-term incentive program decided by the Board of Directors in 2022. The long-term incentive amounted to SEK 51,916,788 (45,229,106) for the Group Executive Board members, excluding the President and CEO and the Deputy CEO, which was 59.4% (52.8) of the annual base salaries. The full net amount shall be invested in Volvo B shares. There is to be no pay-out of the amount if the Annual General Meeting held in 2023 decides not to distribute any dividends to the shareholders for 2022.

Pensions
The Group Executive Board members enrolled in the Swedish pension plan participated in the collective bargain agreement (ITP), as well as the Volvo Executive Pension (VEP) plan. The VEP plan is a defined contribution (DC) plan with a contribution amounting to 35% of the annual base salary exceeding 30 income base amounts (SEK 2,130,000 in 2022). For VEP, there were no commitments other than the payment of the contributions.

Pension premiums for the Group Executive Board, excluding the President and CEO and the Deputy CEO, amounted to SEK 30,022,143 (27,201,038) in 2022.

Severance payments
The employment contracts for Group Executive Board members contain rules governing severance payments when AB Volvo terminates the employment. For Executives resident in Sweden, the notice period upon termination by the company shall not exceed 12 months and the notice period upon termination by the Executive shall not exceed 6 months. In addition, in the event of termination by the company, the Executive is entitled to a maximum of 12 months' severance pay.

Executives resident outside Sweden or resident in Sweden but having a material connection to or having been resident in a country other than Sweden may be offered notice periods for termination and severance payment that are competitive in the country where the Executives are or have been resident or to which the Executives have a material connection, preferably solutions comparable to the solutions applied to Executives resident in Sweden.

Volvo Group's total cost for remuneration and benefits to the Group Executive Board
The total cost for remuneration and benefits to the Group Executive Board amounted to SEK 411 M (380) and pertained to fixed salaries, short-term and long-term incentives, other benefits and pensions. It also included social fees on salaries and benefits, special payroll tax and additional costs for other benefits.

Long-term incentive programs
Long-term incentive program from 2016
In 2016, the Board of Directors approved a long-term cash-based incentive program comprising the top 300 persons from senior management, including Executives, in the Volvo Group. For more information, please refer to *Types of remuneration* on page 125. During 2022, it was decided to increase the program size with an additional 100 slots to accommodate attraction and retention of employees with rare and/or deep expertise and skills that are hard to find in the external market and are key to the Volvo Group's transformation journey.

27:2

Average number of employees	2022		2021	
	Number of employees	of which women, %	Number of employees	of which women, %
AB Volvo				
Sweden	282	50	283	49
Subsidiaries				
Sweden	22,013	25	20,538	24
Western Europe (excl. Sweden)	20,817	18	20,383	17
Eastern Europe	6,224	22	6,584	20
North America	17,459	21	16,301	21
South America	7,110	19	6,358	17
Asia	10,137	18	11,384	16
Other countries	2,275	19	2,128	19
Volvo Group total	**86,316**	**21**	**83,958**	**20**

27:3

Board members and other senior executives	2022		2021	
	Number at year-end	of which women, %	Number at year-end	of which women, %
AB Volvo				
Board members[1]	11	45	11	45
CEO, Deputy CEO and other senior executives	15	33	15	27
Volvo Group				
Board members	561	25	555	25
Presidents and other senior executives	613	28	597	27

1 Board members elected by the Annual General meeting.

27:4

Wages, salaries and other remunerations SEK M	2022			2021		
	Board and Presidents	of which variable salaries	Other employees	Board and Presidents	of which variable salaries	Other employees
AB Volvo[1]	88.0	41.8	399.9	73.5	34.4	404.9
Subsidiaries	816.4	216.3	48,226.6	706.2	184.9	41,404.9
Volvo Group total	**904.4**	**258.0**	**48,626.4**	**779.7**	**219.3**	**41,809.8**

27:5

Wages, salaries and other remunerations and social costs SEK M	2022			2021		
	Wages, salaries remuneration	Social costs	Pension costs	Wages, salaries remuneration	Social costs	Pension costs
AB Volvo[2]	487.9	140.2	121.6	478.4	138.8	156.0
Subsidiaries	49,043.0	10,541.4	5,145.9	42,111.1	9,287.3	4,772.0
Volvo Group total[3]	**49,530.9**	**10,681.6**	**5,267.5**	**42,589.5**	**9,426.1**	**4,928.0**

1 Including current and former Board members, President and CEO and Deputy CEO.

2 The parent company's pension costs, pertaining to Board members and Presidents are disclosed in note 3 Administrative expenses in the annual report of the parent company.

3 Of the Volvo Group's pension costs, SEK 93 M (89) pertain to Board members and Presidents, including current and former Board members, Presidents and CEO, Deputy CEO and other senior executives. The Volvo Group's outstanding pension obligations to these individuals amount to SEK 567 M (625). The cost for non-monetary benefits in the Volvo Group amounted to SEK 3,409 M (2,877) of which SEK 33 M (30) pertained to Board members and Presidents. The cost for non-monetary benefits in the parent company amounted to SEK 7.4 M (6.0) of which SEK 0.4 M (0.0) to Board members and President.

28 Fees to the auditors

28:1

Fees to the auditors	2022	2021
Deloitte		
– Audit fees	122	105
whereof to Deloitte AB	*41*	*35*
– Audit-related fees	8	6
whereof to Deloitte AB	*3*	*2*
– Tax advisory services	–	1
whereof to Deloitte AB	–	–
– Other fees	5	6
whereof to Deloitte AB	–	–
Total	**135**	**118**
Audit fees to others	2	3
Volvo Group Total	**137**	**121**

The audit assignment involves review of the Annual report and financial accounting and the administration by the Board and the President. Audit-related assignments mean quality assurance services required by enactment, articles of association, regulations or agreement. The amount includes the fee for reviewing the half-year report. Tax services include both tax consultancy and tax compliance services. All other tasks are defined as other services.

29 Cash flow

ACCOUNTING POLICY

Cash flow statement

The cash flow statement is prepared in accordance with the indirect method. The cash flows of foreign group companies are translated at average rates. Changes in group structure, acquisitions and divestments are recognized gross and are included in cash flow from investing activities, in the items Acquired operations and Divested operations.

Operating cash flow

The operating cash flow is a measure of the amount of cash generated by the Volvo Group's regular business operations. The operating cash flow also includes investments and disposals of intangible and tangible assets, which are part of the investing activities.

» **Read more in Note 18** Cash and cash equivalents.

29:1

Other non-cash items	2022	2021
Allowance for expected credit losses on accounts receivables/customer-financing receivables[1]	4,260	534
Gains/losses on divested operations[2]	–	–1,643
Unrealized exchange rate gains/losses on accounts receivables and payables	455	34
Unrealized exchange rate gains/losses on other operating assets and liabilities	283	114
Provision for incentive programs	1,761	1,523
Gains/losses on disposals of in-/tangible assets	–232	27
Gains/losses on divestments of shares and participations	–109	15
Results from investments in joint ventures	1,333	67
Service cost related to pensions	1,659	2,053
Deferred sales with residual value commitments	–3,957	–3,154
Provision for restructuring	–	–160
Other changes[3]	1,512	–409
Total other non-cash items	**6,964**	**–998**

1 The increase mainly refers to the financial impact related to Russia.

2 In 2021 Volvo Group divested the UD Trucks operations with a capital gain of SEK 1.7 billion.

3 includes costs for claims arising from the European Commission's 2016 antitrust settlement decision and costs for a civil penalty from the National Highway Traffic Safety Administration in the US.

29:2

Changes in loans 2022		Cash flows		Non-cash items			
	December 31, 2021	New borrowings	Repayment of borrowings	Reclassifications and other changes[1]	Unrealized currency effects	Currency translation	December 31, 2022
Current bond loans and other loans	49,447	100,699	−136,196	51,763	131	6,532	72,377
Non-current bond loans and other loans	104,177	74,108	−1,970	−50,958	2,259	10,955	138,571
Interest and currency risk derivatives	−2,013	–	–	–	306	−23	−1,730
Realized derivatives	–	–	2,605	–	–	–	–
Cash transfers[2]	–	4,191	−7,990	–	–	–	–
Other	–	−1,466[3]	–	–	–	–	–
Cash flow impact from changes in loans		**177,532**	**−143,551**				

Changes in loans 2021		Cash flows		Non-cash items			
	December 31, 2020	New borrowings	Repayment of borrowings	Reclassifications and other changes[1]	Unrealized currency effects	Currency translation	December 31, 2021
Current bond loans and other loans	58,258	54,274	−88,200	27,772	−5,127	2,470	49,447
Non-current bond loans and other loans	95,166	36,101	−5,981	−26,913	1,501	4,302	104,177
Interest and currency risk derivatives	−5,496	–	–	–	3,484	–	−2,013
Realized derivatives	–	–	−766	–	–	–	–
Cash transfers[2]	–	–	−1,160	–	–	–	–
Other	–	−1,234[3]	−5	–	–	–	–
Cash flow impact from changes in loans		**89,141**	**−96,113**				

1 Includes remeasurements of lease liabilities which had no impact on cash flow.

2 Cash transfers for Credit Support Annex (CSA) agreements are used to reduce the exposure from net open positions on interest and currency risk derivatives. The netting agreements have no effect on the financial performance or the net financial position of the Volvo Group.

3 During 2022, new lease liabilities of SEK 1.5 billion (1.2), included in non-current other loans, were adjusted as non-cash items.

Net borrowings increased by SEK 34.0 billion (–7.0), mainly as an effect of higher new business volume in Financial Services.

Syndications were performed in Financial Services to an amount of SEK 12.2 billion (9.8). All syndications impacted cash flow this year.

» **Read more in Note 4** Goals and policies in financial risk management about Credit Support Annex (CSA) agreements.

» **Read more in Note 22** Liabilities regarding Current loans and Non-current loans.

» **Read more in Board of Director's report** about Cash flow statement and Financial position.

30 Financial instruments

ACCOUNTING POLICY

Financial assets and liabilities are recognized on the transaction date according to the contractual terms of the instrument. Transaction costs are included in the assets' fair value, except in cases in which the change in value is recognized in the income statement. The transaction costs that arise in conjunction with the admission of financial liabilities are amortized over the term of the loan as financial cost.

A financial asset is derecognized from the balance sheet when the rights to the cash flows from the asset have expired at maturity or when all significant risks and rewards related to the asset have been transferred to a third party.

The fair value of financial assets is determined based on valid market prices, when available. If market prices are unavailable, the fair value is determined for each asset through the use of various measurement techniques. The fair value of financial instruments is classified based on the degree that market values have been utilized when measuring fair value. The majority of financial instruments measured at fair value held by Volvo Group is classified as level 2. The valuation of level 2 instruments is based on market conditions using quoted market data existing at each balance sheet date. The basis for the interest is the zero-coupon-curve in each currency which is used to calculate the present value of all the estimated future cash flows.

For forward exchange contracts the basis is the forward premium based on current spot rate for each currency and future date. The fair value is then discounted based on the forward rates as per the balance sheet date. Holding of shares are classified as level 1 for listed shares and level 3 for non-listed shares. Call options are classified as level 3 and are based on the Black & Scholes option pricing formula.

Financial assets and liabilities measured at fair value through the income statement

Volvo Group's financial assets and liabilities held for trading are recognized at fair value through the income statement. As presented in **table 30:1**, these instruments are derivatives, used for hedging interest and currency risks and marketable securities, further presented in note 18 Cash and cash equivalents.

Derivatives used for hedging interest rate exposure financing the customer financing porfolio within Financial Services as well as the debt portfolio in Industrial Operations are included in this section. Unrealized gains and losses from fluctuations in the fair value of the financial instruments are recognized in other financial income and expenses. The Volvo Group intends to hold these derivatives to maturity, which is why, over time, the market valuation will have no impact on financial performance or cash flow.

Financial instruments used for hedging currency risks arising from future firm commercial cash flows are also recognized in this section. During 2022 no hedging has been performed on future firm commercial cash flows. When hedging future cash flows for specific orders the classification in the income statement is decided on a case by case basis. In 2022, gains and losses from derivatives hedging currency risks for specific orders of SEK 44 M (–3) have been recognized in operating income and SEK 1 M (32) in other financial income and expenses.

» Read more in Note 4 Goals and policies in financial risk management.

» Read more in Note 9 Other financial income and expenses.

Financial assets measured at fair value through other comprehensive income

In this category the Volvo Group includes holding of shares in listed companies as the shares are not held for trading. Changes in fair value is measured through other comprehensive income and amounted to SEK –45 M (48).

» Read more in Note 5 Investments in joint ventures, associated companies and other shares and participations.

Financial assets measured at amortized cost

Customer-financing receivables are held as part of a business model whose objective is to collect contractual cash flows. The contractual cash flows are solely payments of principal and interest and are valued at amortized cost in accordance with the effective interest method. In this category the Volvo Group also includes accounts receivables and holding of shares in non-listed companies for which a fair value cannot reasonably be determined. The carrying value has been analyzed and compared with an estimated fair value. The carrying value is a reasonable approximation of the fair value.

» Read more in Note 5 Investments in joint ventures, associated companies and other shares and participations.

» Read more in Note 15 Customer-financing receivables.

» Read more in Note 16 Receivables.

Hedge Accounting is not applied by the Volvo Group.

Information regarding carrying amounts and fair values

In table 30:1, carrying amounts are compared with fair values for all of the Volvo Group's financial instruments.

30:1

Carrying amounts and fair values on financial instruments		Dec 31, 2022 Carrying value	Dec 31, 2022 Fair value	Dec 31, 2021 Carrying value	Dec 31, 2021 Fair value
Assets					
Financial assets measured at fair value through the income statement					
Interest and currency risk derivatives[1]	Note 16	5,751	5,751	2,930	2,930
Other derivatives[2]		564	564	564	564
B/S Marketable securities	Note 18	93	93	167	167
		6,408	6,408	3,661	3,661
Financial assets measured at fair value through other comprehensive income					
Holding of shares in listed companies	Note 5	6	6	51	51
Financial assets measured at amortized cost					
B/S Accounts receivables	Note 16	48,220	48,220	40,776	40,776
Customer-financing receivables	Note 15	193,928	193,928	151,504	151,504
Holding of shares in non-listed companies	Note 5	599	599	488	488
Other interest-bearing receivables[3]	Note 16	5,738	5,738	1,692	1,692
		248,485	248,485	194,460	194,460
B/S **Cash and cash equivalents**	Note 18	83,886	83,886	62,126	62,126
Liabilities	Note 22				
Financial liabilities measured at fair value through the income statement					
Interest and currency risk derivatives[4]		8,975	8,975	2,379	2,379
Financial liabilities measured at amortized cost[5]					
Non-current bond loans and other loans		134,392	130,794	102,259	103,536
Current bond loans and other loans		70,655	70,475	49,192	49,329
B/S Trade Payables		90,177	90,177	76,745	76,745
		295,224	291,446	228,197	229,610

1 The Volvo Group's gross exposure from derivatives reported as assets was reduced by 79% (80) by netting agreements and cash deposits to SEK 1,223 M (588).

2 The input data used in the valuation model for calculating the fair value has not changed during 2022.

3 The amount includes Cash deposits for Credit Support Annex (CSA) agreements, where the receivable amounted to SEK 4,959 M (1,160). The agreements have no effect on the financial performance or net financial position of the Volvo Group.

4 The Volvo Group's gross exposure from derivatives reported as liabilities was reduced by 98% (94) by netting agreements and cash deposits to SEK 189 M (148).

5 In the Volvo Group balance sheet, financial liabilities include loan-related derivatives amounting to SEK –5,900 M (–2,173). The credit risk is included in the fair value of loans.

» Read more in Note 4 Goals and policies in financial risk management about Credit Support Annex (CSA) agreements.

Derecognition of financial assets

The Volvo Group is involved in discounting activities to reduce financial risks. An evaluation is performed to establish whether substantially all the risks and rewards have been transferred to an external party when entering into an agreement. The Volvo Group's intention is not to be involved in discounting activities if not substantially all the risks and rewards can be transferred to an external party. As of December 31, 2022, there were no transferred financial assets in the Volvo Group that did not fulfill the requirements for derecognition.

Financial assets are derecognized from the balance sheet when the rights to the cash flows from the assets have expired or when substantially all risks and rewards have been transferred. Involvement in these assets is reflected in the Volvo Group's balance sheet as part of the external credit guarantees. They are valued at best estimate and recognized as provisions in the balance sheet to an amount of SEK 0.2 billion (0.2).

The Volvo Group's maximum loss exposure is considered being the total recourse relating to transferred and derecognized assets that are part of the recognized credit guarantees, i.e. the total amount the Volvo Group would have to pay in case of default of the customers. The likelihood for all customers going into default at the same time is considered to be low. The gross exposure for the Volvo Group amounted to SEK 5.9 billion (7.4) related to credit guarantees issued for customers and others and is part of the Volvo Group's contingent liabilities. This amount has not been reduced by the value of counter guarantees received or other collaterals such as the right to repossess the products.

» **Read more in Note 21** Other provisions.

» **Read more in Note 24** Contingent Liabilities.

Gains, losses, interest income and interest expenses from financial instruments

Table 30:3 shows how gains and losses, as well as interest income and interest expenses have affected income after financial items in the Volvo Group divided by the different categories of financial instruments.

In **table 30:2**, outstanding derivatives hedging currency and interest rate risks are presented.

30:2

Outstanding derivative instruments	Dec 31, 2022		Dec 31, 2021	
	Nominal amount	Carrying value	Nominal amount	Carrying value
Interest-rate swaps				
– receivable position	217,951	5,532	112,571	2,779
– payable position	162,277	–8,616	202,829	–2,265
Forward and futures				
– receivable position	–	–	–	0
– payable position	–	–	–	–
Foreign exchange derivatives				
– receivable position	33,932	218	13,457	150
– payable position	30,486	–359	10,719	–114
Options purchased				
– receivable position	56	0	5,068	1
Options written				
– payable position	56	0	–	–
Total		**–3,224**		**551**

30:3

Recognized in operating income	2022			2021		
	Gain/ Loss	Interest income	Interest expense	Gain/ Loss	Interest income	Interest expense
Financial assets and liabilities at fair value through the income statement						
Currency risk derivatives[1, 2]	133	–	–	–264	–	–
Marketable securities	16	–	–	13	–	–
Financial assets measured at amortized cost						
Accounts receivables/trade payables[3]	–1,600	–	–	32	–	–
Cash and cash equivalents	77	–	–	46	–	–
Customer-financing receivables[4]	145	10,005	–	366	7,020	–
Holding of shares in listed companies[5]	0	–	–	0	–	–
Holding of shares in non-listed companies	132	–	–	–16	–	–
Financial liabilities measured at amortized cost[6]	**–**	**–**	**–4,599**	**–**	**–**	**–2,451**
Impact on operating income	**–1,099**	**10,005**	**–4,599**	**177**	**7,020**	**–2,451**

Recognized in net financial items[7, 8]	2022			2021		
	Gain/ Loss	Interest income	Interest expense	Gain/ Loss	Interest income	Interest expense
Financial assets and liabilities at fair value through the income statement						
Marketable securities	3	1	–	0	0	–
Interest and currency rate risk derivatives[1, 2]	–4,816	–35	–1,470	–2,784	–7	–1,075
Financial assets measured at amortized cost						
Cash and cash equivalents	–	1,042	–	–	365	–
Financial liabilities measured at amortized cost	**4,499**	**–**	**432**	**3,684**	**–**	**126**
Impact on net financial items[7, 8]	**–313**	**1,008**	**–1,038**	**900**	**358**	**–949**

1 Accrued and realized interest related to financial assets and liabilities measured at fair value through the income statement is included in the amounts for gains and losses.

2 The Volvo Group uses forward contracts and currency options to hedge the value of future cash flows in foreign currency. Both unrealized and realized result of currency risk contracts is included in the table. The amount includes gains/losses of SEK 177 M (–261) due to hedging of cash flow in foreign currency from dividends paid to group companies.

3 Information regarding changes in allowance for expected credit losses on accounts receivables is provided in note 16 Receivables and note 8 Other operating income and expenses. The amount includes gains/losses of SEK –199 M (228) from revaluation of receivables in foreign currency related to dividends paid to group companies.

4 The amount includes gains/losses due to derecognition of assets where SEK –11 M (266) is related to the sale of customer-financing receivables and SEK 155 M (99) is related to early buy-out revenue. Information regarding changes in allowance for expected credit losses on customer-financing receivables is provided in note 15 Customer-financing receivables and note 8 Other operating income and expenses.

5 Changes in fair value on shares and participations in listed companies through other comprehensive income amounted to SEK –45 M (48).

» **Read more in Note 5** Investments in joint ventures, associated companies and other shares and participations.

6 Interest expenses attributable to financial liabilities measured at amortized cost recognized in operating income include interest expenses for financing operating lease activities, which are not classified as financial instruments.

7 In gain/loss, interest income and expenses related to financial instruments recognized in net financial items, SEK –313 M (900) was recognized in other financial income and expenses.

» **Read more in Note 9** Other financial income and expenses.

8 Interest expenses attributable to pensions reported in net financial items of SEK –167 M (–219) are not included in this table.

PARENT COMPANY AB VOLVO

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Parent company AB Volvo

Corporate registration number 556012-5790.

The amounts within parentheses refer to the preceding year.

Board of Directors' report

AB Volvo is the parent company of the Volvo Group and is headquartered in Gothenburg, Sweden. The operations comprise of the Volvo Group's headquarters with staff, together with some corporate functions.

Income from investments in group companies include dividends amounting to SEK 5,177 M (48,654).

The carrying value of shares and participations in group companies amounted to SEK 70,987 M (67,683), of which SEK 70,022 M (66,720) pertained to shares in wholly owned subsidiaries. The corresponding shareholders' equity in the subsidiaries (including equity in untaxed reserves but excluding non-controlling interests) amounted to SEK 158,195 M (129,512).

Investments in joint ventures and associated companies amounted to SEK 8,946 (8,946), whereof SEK 8,938 M (8,938) belongs to companies which are accounted to the equity method in the consolidated accounts. The equity portion of these companies amounted to SEK 10,986 M (11,150).

Financial net debt amounted to SEK 22,213 M (42,877).

AB Volvo's risk capital (equity plus untaxed reserves) amounted to SEK 76,903 M (81,210) corresponding to 70% (60) of total assets.

Income statement			
SEK M	Note	**2022**	2021
Net sales	2	**258**	**266**
Cost of sales	2	–258	–485
Gross income		**0**	**–219**
Administrative expenses	2, 3	–1,469	–1,329
Other operating income and expenses	4	–132	101
Operating income		**–1,601**	**–1,447**
Income from investments in group companies	5	5,177	44,931
Income from investments in joint ventures and associated companies	6	34	787
Income from other investments	7	–	–1
Interest income and similar credits		52	1
Interest expenses and similar charges	8	–750	–546
Other financial income and expenses	9	107	–17
Income after financial items		**3,019**	**43,708**
Appropriations	10	26,798	15,813
Income taxes	11	–5,188	–3,190
Income for the period		**24,629**	**56,331**

Other comprehensive income		
Income for the period	**24,629**	**56,331**
Other comprehensive income, net of income taxes	**–**	**–**
Total comprehensive income for the period	**24,629**	**56,331**

Balance sheet			
SEK M	Note	**Dec 31, 2022**	Dec 31, 2021
Assets			
Non-current assets			
Tangible assets		7	7
Financial assets			
Shares and participations in group companies	12	70,987	67,683
Investments in joint ventures and associated companies	12	8,946	8,946
Other shares and participations	12	2	1
Other non-current receivables	13	593	487
Deferred tax assets	11	217	242
Total non-current assets		**80,752**	**77,366**
Current assets			
Current receivables			
Receivables group companies		29,316	56,546
Other receivables	14	251	1,235
Total current assets		**29,567**	**57,781**
Total assets		**110,319**	**135,147**
Equity and liabilities			
Equity			
Restricted equity			
Share capital		2,562	2,562
Statutory reserve		7,337	7,337
Unrestricted equity			
Non-restricted reserves		390	390
Retained earnings		34,485	4,590
Income for the period		24,629	56,331
Total equity		**69,403**	**71,210**
Untaxed reserves	15	**7,500**	**10,000**
Provisions			
Provisions for post-employment benefits	16	259	275
Other provisions		0	–
Total provisions		**259**	**275**
Non-current liabilities	17		
Liabilities to group companies		400	5,739
Other liabilities		5	6
Total non-current liabilities		**405**	**5,745**
Current liabilities			
Trade payables		195	133
Other liabilities to group companies		28,819	45,414
Tax liabilities		3,235	1,836
Other liabilities	18	503	534
Total current liabilities		**32,752**	**47,917**
Total equity and liabilities		**110,319**	**135,147**

Cash flow statement			
SEK M	Note	**2022**	2021
Operating activities			
Operating income		–1,601	–1,447
Depreciation and amortization		–	0
Other non-cash items	20	90	69
Total change in working capital whereof		1,093	625
Change in accounts receivable		*–3*	*14*
Change in trade payables		*71*	*55*
Other changes in working capital		*1,025*	*556*
Interest and similar items received		50	1
Interest and similar items paid		–749	–546
Other financial items		–37	–16
Dividends received from group companies	5	37,380	15,933
Dividends received from joint ventures and associated companies	6	34	1,213
Group contributions received		15,813	1,020
Income taxes paid		–3,764	–2,261
Cash-flow from operating activities		**48,309**	**14,591**
Investing activities			
Disposals of in-/tangible assets		–	0
Investments of shares in group companies	12	–1,604	–4,580
Divestments of shares in group companies	5, 12	–	4,504
Investments of shares in non-group companies	12	–1	–1
Interest-bearing receivables	13	–105	–150
Cash-flow after net investments		**46,599**	**14,364**
Financing activities			
New borrowings	20	250	35,456
Repayment of borrowings	20	–20,414	–
Dividends to owners AB Volvo		–26,435	–49,820
Other		0	0
Change in cash and cash equivalents		**0**	**0**
Cash and cash equivalents, beginning of year		**–**	**–**
Cash and cash equivalents, end of year		**–**	**–**

Changes in equity

	Restricted equity		Unrestricted equity			
SEK M	Share capital	Statutory reserve	Share premium reserve	Retained earnings	Total	Total equity
Balance at December 31, 2020	**2,562**	**7,337**	**390**	**54,410**	**54,800**	**64,699**
Income for the period	–	–	–	56,331	56,331	56,331
Other comprehensive income						
Other comprehensive income for the period	–	–	–	–	–	–
Total comprehensive income for the period	**–**	**–**	**–**	**56,331**	**56,331**	**56,331**
Transactions with shareholders						
Dividends to owners of AB Volvo	–	–	–	–49,819	–49,819	–49,819
Share based payments	–	–	–	–1	–1	–1
Transactions with shareholders	–	–	–	–49,820	–49,820	–49,820
Balance at December 31, 2021	**2,562**	**7,337**	**390**	**60,921**	**61,311**	**71,210**
Income for the period	–	–	–	24,629	24,629	24,629
Other comprehensive income						
Other comprehensive income for the period	–	–	–	–	–	–
Total comprehensive income for the period	**–**	**–**	**–**	**24,629**	**24,629**	**24,629**
Transactions with shareholders						
Dividends to owners of AB Volvo	–	–	–	–26,435	–26,435	–26,435
Share based payments	–	–	–	–1	–1	–1
Transactions with shareholders	–	–	–	–26,436	–26,436	–26,436
Balance at December 31, 2022	**2,562**	**7,337**	**390**	**59,114**	**59,504**	**69,403**

» **Read more in Note 19** Equity and number of shares in the consolidated financial statements about the share capital of the parent company.

Notes to financial statements

The amounts within parentheses refer to the preceding year.

1 Accounting policies

The parent company has prepared its financial statements in accordance with the Swedish Annual Accounts Act (1995:1554) and RFR 2, Accounting for legal entities. According to RFR 2, the parent company shall apply all the International Financial Reporting Standards endorsed by the EU as far as this is possible within the framework of the Swedish Annual Accounts Act.

The changes in RFR 2 applicable to the fiscal year beginning January 1, 2022, has not had any significant impact on the parent company.

There are no announced changes in RFR 2 applicable to the fiscal year beginning January 1, 2023 or later.

The accounting policies applied by the Volvo Group are described in the respective notes in the consolidated financial statements. The main deviations between the accounting policies applied by the Volvo Group and the parent company are described below.

Shares and participations in group companies and Investments in joint ventures and associated companies are recognized at cost in the parent company and test for impairment is performed annually. In accordance with RFR 2, the parent company includes costs related to acquisition of a business in the acquisition value. Dividend is recognized in the income statement. All holding of shares are recognized as financial assets and the result is reported in the income from financial items.

The parent company applies the exception in the application of IFRS 9 which concerns accounting and measurement of financial contracts of guarantee in favor of subsidiaries and associated companies. The parent company recognizes the financial contracts of guarantee as contingent liabilities.

RFR 2 includes an exception in regard to IFRS 16, allowing all lease contracts to be accounted for as operational lease contract when the parent company is a lessee.

Group contributions are recognized in accordance with the alternative rule in RFR 2 and are presented as appropriations.

According to RFR 2, application of the regulations in IAS 19 regarding defined benefit plans is not mandatory for legal entities. However, IAS 19 shall be applied for supplementary disclosures when applicable. RFR 2 refers to the Swedish law on safeguarding of pension commitments (“tryggandelagen”) related to recognition of provisions for post-employment benefits in the balance sheet and of plan assets in pension foundations.

Volvo Group applies IAS 19 Employee Benefits in the consolidated financial statements. This implies differences, which may be significant, in the accounting of defined benefit pension plans as well as in the accounting of plan assets invested in the Volvo Pension Foundation.

The accounting principles for defined benefit plans differ from IAS 19 mainly relating to:

- Pension liability calculated according to Swedish accounting principles does not take into account future salary increases.
- The discount rate used in the calculations is set by PRI Pensionsgaranti and Finansinspektionen, respectively.
- Changes in the discount rate, actual return on plan assets and other actuarial assumptions are recognized directly in the income statement and in the balance sheet.
- Deficit must be either immediately settled in cash or recognized as a liability in the balance sheet.
- Surplus cannot be recognized as an asset, but may in some cases be refunded to the company to offset pension costs.

2 Revenue and intra-group transactions

The recognized net sales of SEK 258 M (266) pertain mainly to revenues from sale of services to group companies SEK 242 M (238). Revenue is recognized when the control of the service has been transferred to the customer, which is when the parent company incurs the associated cost to deliver the service and the customer can benefit from the use of the delivered services.

Purchases from group companies amounted to SEK 422 M (322).

3 Administrative expenses

Personnel

Wages, salaries and other remunerations amounted to SEK 488 M (478), social costs to SEK 140 M (139) and pension costs to SEK 61 M (143). Pension cost of SEK 12 M (14) pertained to Board Members and the President. The parent company has outstanding pension obligations of SEK 7 M (5) to these individuals.

The number of employees at year end was 279 (284).

» **Read more in Note 27** Personnel in the consolidated financial statements about the average number of employees, wages, salaries and other remunerations including incentive program as well as Board members and senior executives by gender.

3:1

Fees to the auditors	2022	2021
Deloitte AB		
– Audit fees	27	17
– Audit-related fees	1	9
Total	**28**	**26**

» **Read more in Note 28** Fees to the Auditors in the consolidated financial statements for a description of the different categories of fees.

4 Other operating income and expenses

4:1

Other operating income and expenses	2022	2021
Royalties received	41	107
Write-offs of receivables	–184	0
Realized and unrealized exchange rates gains and losses	30	14
Donations, grants and Volvo Profit sharing program	–17	–9
Other income and expenses	–2	–11
I/S **Total**	**–132**	**101**

5 Income from investments in group companies

5:1

Income from investments in group companies	2022	2021
Dividends received		
VNA Holding Inc., USA	3,814	2,678
Volvo China Investment Co. Ltd, China	1,099	3,064
Volvo Group UK Ltd., Great Britain	70	109
Volvo Malaysia Sdn Bhd, Malaysia	62	80
Volvo Danmark A/S, Denmark	63	20
Volvo Norge AS, Norway	52	–
VFS Servizi Finanziari Spa, Italy	17	–
Volvo Business Services International AB (former Volvo Autonomous Solutions AB), Sweden	–	21,176
Volvo Construction Equipment AB, Sweden	–	5,779
Volvo Treasury AB, Sweden	–	5,000
Volvo Lastvagnar AB, Sweden	–	2,550
Volvo Powertrain AB, Sweden	–	1,800
Volvo Investment AB, Sweden	–	1,700
JSC Volvo Vostok, Russia	–	1,308
Volvo Penta AB, Sweden	–	1,030
Volvo Information Technology AB, Sweden	–	1,000
Volvo Group Venture Capital AB, Sweden	–	650
Volvo Financial Services AB, Sweden	–	500
Volvo Group Italia SpA, Italy	–	132
Volvo Group Insurance Försäkrings AB, Sweden	–	75
Volvo Information Technology GB Ltd., Great Britain	–	3
Subtotal	**5,177**	**48,654**
Reversal impairment of shares		
UD Trucks Corporation, Japan	–	1,260
Subtotal	**–**	**1,260**
Gains/losses from divestment of shares		
UD Trucks Corporation, Japan	–	−4,980
Volvo Logistic UK Ltd., Great Britain	–	0
Volvo Information Technology GB Ltd., Great Britain	–	−3
Subtotal	**–**	**−4,983**
Income from investments in group companies	**5,177**	**44,931**

6 Income from investments in joint ventures and associated companies

Income from investments in joint ventures and associated companies includes dividend from Dongfeng Commercial Vehicles Co., Ltd. by SEK – M (767) and from VE Commercial Vehicles, Ltd. by SEK 34 M (20).

7 Income from other investments

AB Volvo has not had any transactions from other investments which have had a significant impact on the financial statements.

8 Interest expenses and similar charges

Interest expenses and similar charges totaling SEK 750 M (546) include interest of SEK 750 M (546) to group companies.

9 Other financial income and expenses

Other financial income and expenses include exchange rate gains and losses received by SEK 128 M (2) and costs for credit rating and stock exchange listing cost by SEK 18 M (18).

10 Appropriations

Appropriations include a net of group contributions of SEK 24,298 M (15,813) and reversal of tax allocation reserve of SEK 2,500 M (–).

11 Income taxes

Income taxes were distributed as follow:

11:1

Income taxes	2022	2021
Current taxes relating to the period	–5,163	–3,078
Adjustment of current taxes for prior period	0	–56
Deferred taxes	–25	–56
I/S **Total income taxes**	**–5,188**	**–3,190**

The main reasons for the difference between the corporate income tax of 20.6% and the income tax for the period are disclosed in **table 11:2**.

Deferred taxes relate to estimated tax on temporary differences. The revaluation of deferred taxes is based on the tax rate that is expected for the period when the asset is realized or the liability is adjusted.

11:2

Income taxes for the period	2022	2021
Income before taxes	29,817	59,521
Income tax according to applicable tax rate	–6,142	–12,261
Capital gains/losses	–	–1,072
Non-taxable dividends	1,073	10,185
Other non-deductible expenses	–29	–14
Other non-taxable income	0	281
Withholding tax	–58	–259
Adjustment of current taxes for prior period	0	–56
Other taxable not recorded income	–31	–
Remeasurement of deferred tax assets	9	–4
Current tax on standardized method	–10	10
Income taxes for the period	**–5,188**	**–3,190**

11:3

Specification of deferred tax assets	Dec 31, 2022	Dec 31, 2021
Provisions for post-employment benefits	217	242
B/S **Deferred tax assets**	**217**	**242**

12 Investments in shares and participations

Shares and participations in group companies
During 2022 investment in VFS Renting Sociedade Unipessoal Lda. has been made by SEK 3 M and in Rental Business Solution S.R.L. by SEK 2 M. Shareholder´s contribution has been provided to Volvo Treasury AB by SEK 1,700 M, to Volvo Autonomous Solutions AB by SEK 1,240 M, to Volvo Group Venture Capital AB by SEK 350 M and to VFS Renting Sociedade Unipessoal Lda. by SEK 9 M.

During 2021 investment in Volvo Fuel Cell Holding AB was made by SEK 3,000 M and in Volvo Energy AB including a shareholder´s contribution by SEK 200 M. Shareholder´s contribution was also provided to Volvo Investment AB by SEK 1,380 M. Shares in UD Trucks was divested by SEK 8,928 M. Shares in Volvo Equipamentos de Construcao Latin America was received in form of dividend from Volvo Autonomous Solutions AB by SEK 176 M. The whole investment in Volvo Equipamentos de Construcao Latin America was transferred to Volvo Construction Equipment AB in form of shareholder´s contribution by SEK 516 M.

Investments in joint ventures and associated companies
No significant transactions have affected the value of investment in joint ventures and associated companies during 2022 and 2021.

Other shares and participations
No significant transactions have affected the value of other shares and participations during 2022 and 2021.

12:1

Changes in AB Volvo´s holding of shares and participations	Group companies		Joint ventures and associated companies		Other shares and participations	
	2022	2021	**2022**	2021	**2022**	2021
Opening balance	**67,683**	**71,857**	**8,946**	**8,946**	**1**	**1**
Acquisitions/New issue of shares	5	3,176	–	–	–	–
Divestments/Redemption of shares	–	–11,196	–	–	–	–
Shareholder's contribution	3,299	2,096	–	–	1	1
Impairment of shares and participations	–	–	–	–	–	–1
Reversal impairment of shares and participations	–	1,750	–	–	–	–
B/S **Carrying value, as of December 31**	**70,987**	**67,683**	**8,946**	**8,946**	**2**	**1**

12:2

Holding of shares in joint ventures, associated companies and other shares and participations	Registration number	Dec 31, 2022 Percentage holding[1]	Dec 31, 2022 Carrying value[2]	Dec 31, 2021 Carrying value[2]
Dongfeng Commercial Vehicles Co. Ltd., China	–	45.0	7,197	7,197
VE Commercial Vehicles Ltd., India[3, 4]	–	34.7	1,616	1,616
World of Volvo AB, Sweden[4]	559233-9849	50.0	125	125
Other investments	–		10	9
Total carrying value, joint ventures, associated companies and other shares and participations			**8,948**	**8,947**

1 The percentage holding refers to the parent company AB Volvo's holding.

2 Refers to AB Volvo's carrying value of its holding.

3 The total holding by Volvo Lastvagnar AB and AB Volvo is 45.6%.

4 In Volvo Group the companies are reported as joint ventures, consolidated according to equity method.

AB Volvo owns, directly or indirectly, 290 (279) legal entities. The direct owned entities are listed in below table.

12:3

Holding of shares in group companies		Dec 31, 2022		Dec 31, 2021
	Registration number	Percentage holding[1]	Carrying value[2]	Carrying value[2]
Volvo Lastvagnar AB, Sweden	556013-9700	100	8,711	8,711
Volvo Business Services International AB (former Volvo Autonomous Solutions AB), Sweden	556539-9853	100	8,134	8,134
Volvo Bussar AB, Sweden	556197-3826	100	3,033	3,033
Volvo Construction Equipment AB, Sweden	556021-9338	100	8,076	8,076
AB Volvo Penta, Sweden	556034-1330	100	586	586
VNA Holding Inc., USA	–	100	3,688	3,688
Volvo Financial Services AB, Sweden	556000-5406	100	2,667	2,667
Volvo Treasury AB, Sweden	556135-4449	100	14,744	13,044
Volvo Investment AB, Sweden	556519-4494	100	4,268	4,268
Volvo Lastvagnar Sverige AB, Sweden	556531-8572	100	2,355	2,355
Volvo Fuel Cell Holding AB, Sweden	559275-6729	100	3,000	3,000
Volvo China Investment Co Ltd., China	–	100	1,302	1,302
Volvo Automotive Finance (China) Ltd., China	–	100	491	491
Volvo Group UK Ltd., Great Britain[3]	–	35	350	350
Volvo Group Mexico SA, Mexico	–	100	543	543
Volvo Group Venture Capital AB, Sweden	556542-4370	100	719	369
Volvo Powertrain AB, Sweden	556000-0753	100	898	898
Volvo Information Technology AB, Sweden	556103-2698	100	1,511	1,511
Volvo Parts AB, Sweden	556365-9746	100	200	200
Volvo Group Insurance Försäkrings AB, Sweden	516401-8037	100	182	182
Volvo Business Services AB, Sweden	556029-5197	100	118	118
Volvo Danmark A/S, Denmark	–	100	157	157
VFS Servizi Financiari Spa, Italy[4]	–	25	101	101
Kommersiella Fordon Europa AB, Sweden	556049-3388	100	2,693	2,693
Volvo Norge AS, Norway	–	100	50	50
Volvo Malaysia Sdn Bhd., Malaysia	–	100	48	48
JSC Volvo Vostok, Russia[5]	–	75	177	177
Volvo Group Italia Spa, Italy[6]	–	65	335	335
Volvo Logistics AB, Sweden	556197-9732	100	385	385
VFS Latvia SIA, Latvia	–	100	9	9
VFS Int Romania Leasing Operational, Romania	–	100	2	2
Volvo Energy AB, Sweden	559285-4169	100	200	200
VFS Renting Sociedade Unipessoal Lda., Portugal	–	100	12	–
Rental Business Solution S.R.L., Italy[4]	–	49	2	–
Volvo Autonomous Solutions AB (former Volvo Lindholmen AB), Sweden	559285-4219	100	1,240	–
Other holdings	–		0	0
Total carrying value group companies[7]			**70,987**	**67,683**

1 The percentage holding refers to the parent company AB Volvo's holding.
2 Refers to AB Volvo's carrying value of its holding.
3 Total holding by Volvo Lastvagnar AB and AB Volvo is 100%.
4 Total holding by Volvo Group Italia Spa and AB Volvo is 100%.
5 Total holding by AB Volvo and Volvo Trucks Region Central Europe GmbH is 100%.
6 Total holding by Renault Trucks (SAS), Volvo Lastvagnar AB, Volvo Bussar AB, AB Volvo Penta and AB Volvo is 100%.
7 AB Volvo´s share of shareholder´s equity in subsidiaries (including equity in untaxed reserves) was SEK 158,195 M (129,512).

13 Other non-current receivables

13:1

	Dec 31, 2022	Dec 31, 2021
Other non-interest bearing receivables	193	337
Other interest bearing receivables	400	150
B/S **Total non-current receivables**	**593**	**487**

Other non-interest bearing receivables include an amount of SEK 193 M (337) and refers to an earnout connected to the divestment of UD Trucks which was completed in 2021.

» **Read more in Note 3** Acquisitions and divestments of operations in the consolidated financial statements about the divestment of UD Trucks.

14 Other receivables

14:1

	Dec 31, 2022	Dec 31, 2021
Accounts receivable	6	5
Prepaid expenses and accrued income	172	172
Other receivables	73	1,058
B/S **Total other receivables**	**251**	**1,235**

Prepaid expenses and accrued income include an amount of SEK 144 M (144) and refers to an earnout connected to the divestment of UD Trucks which was completed in 2021.

There is no valuation allowance for doubtful receivables at the end of the year. Fair value is not considered to differ from carrying value.

15 Untaxed reserves

Untaxed reserves include tax allocation reserve of SEK 7.500 M (10.000).

16 Provisions for post-employment benefits

The parent company has two types of pension plans, defined contribution plans and defined benefit plans.

Defined contribution plans: post-employment benefit plans where the company makes regular payments to separate entities and has no legal or constructive obligation to pay further contributions. The expenses for defined contribution plans are recognized during the period when the employee provides service.

Defined benefit plans: post-employment benefit plans where the company's undertaking is to provide predetermined benefits that the employee will receive on or after retirement. These benefit plans are secured through balance sheet provisions or pension fund contributions. Furthermore, a credit insurance policy has been taken out for the value of the obligations. The main defined benefit plan is the ITP2 plan which is based on final salary. The plan is semi-closed, meaning that only new employees born before 1979 have the possibility to choose the ITP2 solution. The ITP2 plan for the company is funded in Volvo Pension Foundation. Pension obligations are calculated annually, on the balance sheet date, based on actuarial assumptions.

The defined benefit obligations are calculated based on the actual salary levels at year-end and based on a discount rate of 2.85% (3.84) for the ITP2 plan and 0.2% (–0.1) for other pension obligations. Assumptions for discount rates and mortality rates are determined annually by PRI Pensionsgaranti for ITP2 and Finansinspektionen for other pension obligations, respectively.

Provisions for post-employment benefits in the parent company's balance sheet correspond to the present value of obligations at year end, less fair value of plan assets.

16:1

Obligations in defined benefit plans	Funded	Unfunded	Total
Obligations opening balance 2021	**731**	**268**	**999**
Service costs	24	20	44
Interest costs	29	0	29
Benefits paid	–25	–13	–38
Obligations as of December 31, 2021	**759**	**275**	**1,034**
Service costs	134	–4	130
Interest costs	24	1	25
Benefits paid	–28	–13	–41
Obligations as of December 31, 2022	**889**	**259**	**1,148**

16:2

Fair value of plan assets in funded plans	
Plan assets opening balance 2021	**1,057**
Actual return on plan assets	153
Contributions and compensation to/from the fund	0
Plan assets as of December 31, 2021	**1,210**
Actual return on plan assets	–130
Contributions and compensation to/from the fund	0
Plan assets as of December 31, 2022	**1,080**

16:3

Provisions for post-employment benefits	Dec 31, 2022	Dec 31, 2021
Obligations[1]	–1,148	–1,034
Fair value of plan assets	1,080	1,210
Surplus (+) / deficit (–)	**–68**	**176**
Limitation on assets in accordance with RFR2 (when plan assets exceed corresponding obligations)	–191	–451
B/S **Net provisions for post-employment benefits**[2]	**–259**	**–275**

1 The ITP2 obligations amount to SEK –874 M (–746).

2 ITP2 obligations, net, amount to SEK 0 M (0).

16:4

Pension costs	2022	2021
Service costs	130	44
Interest costs[1]	25	29
Interest income[1]	–132	–27
Pension costs for defined benefit plans	**23**	**46**
Pension costs for defined contribution plans	**32**	**44**
Special payroll tax/yield tax[2]	6	50
Cost for credit insurance FPG	0	3
Total costs for the period	**61**	**143**

1 Interest income, net of SEK 24 M (29) is included in financial items.

2 Special payroll tax/yield tax are calculated according to Swedish Tax law and accrued for in current liabilities.

17 Non-current liabilities

17:1

Maturity	
2024–2028	402
2029 or later	3
B/S **Total non-current liabilities**	**405**

18 Other liabilities

18:1

	Dec 31, 2022	Dec 31, 2021
Wages, salaries and withholding taxes	327	324
Accrued expenses and prepaid income	169	204
Other liabilities	7	6
B/S **Total other liabilities**	**503**	**534**

No collateral is provided for current liabilities.

19 Contingent liabilities

Contingent liabilities as of December 31, 2022, amounted to SEK 332,755 M (284,913) of which SEK 332,694 M (284,861) pertained to group companies.

Credit guarantees are included to an amount corresponding to the credit limits. Credit guarantees amounted to SEK 317,482 M (272,306). The total amount pertained to group companies.

The utilized portion at year-end amounted to SEK 187,824 M (135,841), of which SEK 187,807 M (135,826) pertained to group companies.

20 Cash flow

20:1

Other non-cash items	2022	2021
Gains/losses on divestment of shares and participations	–	219
Transfer price adjustments	–35	–160
Realized currency effect related to dividends	152	–
Other changes	–27	10
Total other non-cash items	**90**	**69**

20:2

Change in loans	Non-current liabilities to group companies Loan Volvo Treasury AB	Current liabilities to group companies Loan/Cashpool Volvo Treasury AB
December 31, 2020	**5,589**	**1,708**
Cash flows new borrowings	150	35,306
Other	–	–1
December 31, 2021	**5,739**	**37,013**
Cash flows new borrowings	250	–
Cash flows repayments of borrowings	–	–20,414
Reclassification	–5,589	5,589
Other	–	–144
December 31, 2022	**400**	**22,044**

SUSTAINABILITY NOTES

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About the report
These Sustainability notes include the Volvo Group's collected sustainability disclosures. As sustainability topics are top strategic issues and well integrated in the business and operating model of the Volvo Group, additional disclosures relevant for sustainability are found in other parts of the Annual Report and included by reference.

UN GLOBAL COMPACT
COMMUNICATION ON PROGRESS

This is our **Communication on Progress** in implementing the principles of the **United Nations Global Compact** and supporting broader UN goals.

We welcome feedback on its contents.

Reporting standards used
This report has been prepared in accordance with the Global Reporting Initiative's (GRI) Standards 2021. GRI is complemented by other relevant frameworks where stated, including the Task Force on Climate-related Financial Disclosures (TCFD). Relevant disclosures have been translated to the UN Sustainable Development Goals (SDGs) using the report guide *Business Reporting on the SDGs* by the GRI and UN Global Compact's

Topics related to this report
Complementary information is available on volvogroup.com/report2022. This includes:
- SASB index, Industrial Goods and Machinery
- Locations of major operations
- Membership in associations
- Code of Conduct and related policies

Impacts, stakeholders and material topics

Business model
The Volvo Group´s strategy includes sustainability priorities and is presented on pages 10-29. The Group's business model is outlined on pages 22-27. With business operations in more than 190 countries of which many are classified as high-risk countries from an environmental, human rights or corruption perspective we need to ensure that we pursue our business operations in a responsible manner. Environmental, social and financial sustainability aspects as well as ethical business conduct are integrated into the Volvo Group overall strategy and business model and also incorporated into our processes and policies.

Strategic framework for sustainable development
The Volvo Group's framework to drive sustainability and performance revolves around people, climate and resources, and is aligned with the Sustainable Development Goals and Targets from the United Nations. Our sustainability priorities have been established in dialogue with a network of sustainability professionals and management of all Truck Divisions, Business Areas as well as the Executive Management of the Volvo Group and the Board of Directors.

As described in the CEO letter on pages 6-9 and further outlined in the Group's strategy section and explained in detail in these sustainability statements, the Volvo Group is determined to drive the transition to sustainable transport and infrastructure solutions. This means improving our positive impacts and reducing negative impacts.

Policies and commitments
The Volvo Group Code of Conduct is a Group-wide policy that sets the standards on how we conduct business – ethically and in compliance with applicable laws and regulations. It applies everywhere we operate, for our employees and everyone else who works on our behalf. In addition to the Code of Conduct, the Volvo Group's policies on competition, human rights, data privacy, anti-corruption and export control, tax and environment are complemented with compliance programs and management systems for effective policy deployment. Policies are further supported by programs including due diligence procedures. In line with our decentralized model each business area is responsible for ensuring compliance with the Volvo Group's minimum requirements and standards for sustainable and responsible business conduct. Business areas are also free to complement existing policies and compliance programs with more stringent requirements.

Risks and mitigation
The Volvo Group's enterprise risk management process includes sustainability-related risks. Principal risks, including several sustainability-related risks, are reported in the overall Risks and uncertainties section, see pages 68–73. These Sustainability notes include more details on risks and mitigation activities and complement information where a specific topic has not yet been qualified as a principal Group-wide risk.

Key Performance Indicators
KPI's in relation to the environment, employees, social factors, human rights and business ethics are reported for each material topic in these Sustainability notes.

Governance
The overall governance of sustainability is described in the Corporate Governance report on page 189 and 199. Some disclosures in that section are repeated in these statements under relevant topics, or are further explained and highlighted.

Materiality
The Volvo Group's strategy responds to a range of sustainability-related issues. This means considering the impact on the world around us as an integral part in the long-term success of our business. In 2022, sustainability impacts and associated risks were reviewed for each sustainability topic in this report. In this work, the scale and scope of the impact was assessed.

- Scope is defined as breadth of impact – number of people or size of areas positively or potentially negatively impacted.
- Scale is defined as depth of impact – importance of the Volvo Group's contribution, or connection to potential impact.

Risk and opportunities are gathered from the Group's Enterprise Risk process and business strategy. The result is used as an overall indicator of materiality.

As input to the materiality review, we use internal and external knowledge and experience on life-cycle assessments and GHG emissions inventory, external risk mapping on environmental and social impacts, human rights reviews, supplier self-assessment and audits finding, and other sources of information.

Stakeholder feedback
Stakeholder perspectives are always considered in strategy updates and major decisions and material sustainability aspects are considered as part of any other strategic matter. The approach is to have an open dialogue with relevant stakeholders, prior to e.g., organization changes or establishment on new sites, to ensure relevant views are considered.

We also consider stakeholder views in reporting processes. In this work, input from stakeholders includes views from customers, investors, employees, supply chain partners and stakeholders in the community. These views are mainly used to validate that we report on the right matters. While different stakeholders raise concerns or ask for specific information on different topics certain sustainability topics are common for most stakeholder groups. During 2022, such topics have revolved mainly around climate impacts and mitigations. Other issues that have been discussed relate to human rights, health, employment and reskilling, and diversity.

Customers feedback has been gathered via the Volvo Group's Business Areas who responds to a range of sustainability-related matters. Business Areas also follow up specific sustainability issues with selected accounts. In addition, questionnaires from customers to Volvo Group via third parties have become more widely used. These third party hosted questionnaires seek to track effectiveness of a wide range of sustainability topics, each specifying feedback or improvement potential. This type of feedback is used a relevant proxy for customer requirements in our main sectors.

Employee feedback has been sought via a Group-wide pulse survey and in dialogues related to internal summits. An open survey focusing on sustainability topics was also made available to some employees during the year to track anonymized feedback on material issues.

Shareholder and investor feedback has been gathered from direct dialogues, and events coordinated by the Group's Investor Relations function. During the year, many dialogues have focused directly on sustainability impacts.

We also reviewed reports on the Group's and peers' sustainability performance as a proxy for the expectations from stakeholder perspectives. Such reports include risk assessments, comparison with industry peers and materiality heat maps, sometimes including double materiality perspectives. While the reports may differ in method, the overall input from the reports is used to assess strengths and weaknesses to the Group's sustainability priorities and where reporting can be improved.

Supply partners' feedback is sought in direct contact via Volvo Group's procurement staff, this can include assessments of sustainability risks conducted by Volvo Group, but also expectations from suppliers on Volvo Group. Conferences and summits with supply partners are also organized to formalize joint strategies and ways of working.

Other stakeholders are often represented by authorities and other organizations and to some extent media. Topic-specific feedback from such stakeholders and individuals is also gathered by functions within Group, Divisions and Business Areas as explained in topic-specific disclosures on pages 150-181. This can be done through projects, collaboration, or memberships of associations. In addition, the Group's communication function monitor matters of interest via media and social media. In 2022, the Group also used an open survey in social media channels and its web-pages to retrieve input on materiality.

Most matters are reported in accordance with the GRI Standards, while some are more briefly described. See GRI-index on page 182-184 for details.

Report content

The Volvo Group applies GRI's reporting principles on stakeholder inclusiveness, sustainability context, materiality and completeness and works to implement the recommendations of the TCFD. Sustainability topics have been structured in six main areas – Climate and environment, Employees and development, Safety, Human rights, Supply partners and responsible purchasing, and Business ethics and compliance, reflecting our priorities and ways of working.

Area	Comment on content, boundaries, and impacts
Climate and environment	We believe the most meaningful effort we can do in the global climate transition is to drive decarbonization of the transport and other sectors of society where the Group is active. The transition to a low carbon economy relies on reduced environmental impacts from customer use phase, production and value chain.
Employees and development	A number of employee-related topics are key to deliver on the Group's strategy, mission and vision, and to create engaging work environments. This includes job creation and employee retention, social dialogue for better workplaces, diversity, and competency development.
Safety	Our vision is 100% safe products and operations. This includes occupational health and safety in our operations as well as the health and safety of customers, business partners and road users.
Human rights	We are committed to respecting internationally recognized human rights. Human rights impacts may materialize not only within our own organization, but also through our business relationships and in the value chain.
Supply partners and Responsible purchasing	Our supply partners play an integral role in realizing our sustainability strategy across the full value chain. Volvo Group has the opportunity to influence the sustainability transformation throughout the supply network beyond tier one suppliers.
Business ethics and compliance	We believe in treating others with respect and in fair competition, because in transparent markets without corruption, the best solutions win and companies dare to invest for the future. This includes compliance with laws and regulations, as well as the standards and ambitions that we set for our work.

Climate and environment

GOVERNANCE, STRATEGY, OPPORTUNITIES AND RISKS

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets
7.3 Double energy efficiency
11.2 Sustainable transport systems
12.2 Sustainable management of natural resources
13.3 Knowledge and capacity building to meet climate change

Referenced reporting standards
GRI 201 – Economic performance
TCFD recommendations

The Volvo Group supports the implementation of the recommendation of the Task Force on Climate-Related Financial Disclosures (TCFD). The below is the third time the Group is reporting having regard to TCFD and this report sets forth the Group's disclosures on its overall governance, strategy and management of climate related risks and opportunities, including relevant climate related metrics and targets, see TCFD index on page 185. The Volvo Group recognizes that there continues to be more work to be done in developing the disclosures to align with each of the recommendations of the TCFD and to take account of all guidance on metrics, targets and transition plans. The Group also follows the development of the European and International reporting standards on the topic and activities are gradually being initiated to further develop these disclosures.

Strategy

The Volvo Group supports the ambitions of the Paris Agreement – to keep the increase of the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C. To this end, the Group believes the most meaningful effort it can do in the global climate transition is to drive decarbonization of the transport- and other sectors of society where the Group is active.

The Group's longer-term goal is to help customers reach net-zero greenhouse gas (GHG) emissions by 2050. Given that the average lifetime of the Group's products is approximately 10 years, the Group is targeting net-zero value chain emissions by 2040. The Group has committed to the SBTi Business Ambition for 1.5 °C and set ambitious science-based targets in relation to its emissions in pursuit of its net-zero targets. The Group has also set milestone targets along the way. Please see pages 153-156 for details on the 2030 GHG targets and other Group metrics applied.

The ambition to drive decarbonization affects all aspects of Group operations, including sourcing, logistics, research and product development, production, sales and co-operations. A key driver for achieving targets is to put electric trucks, buses, construction equipment and drivelines in use, but the Group believes transition will include different technologies that can be powered by renewable energy. These solutions can be battery-electric, fuel cell-electric or vehicles propelled with low GHG intensity energy sources for combustion engine drivelines. The picture on the next page illustrates a possible transition path for this driveline technology.

The Group expects electrification and other transition towards decarbonization to happen segment by segment, market by market and region by region. The possibility to successfully introduce transitionary products and services will depend on the competitiveness of the Group's offer, but also on several external factors, such as customers' climate ambitions, regulatory developments, public subsidies to different sectors of the economy and availability of low-carbon energy. It is currently not possible to make reliable predictions of transition pace or technology preferences in the longer term in a particular market or region, however, the Group aims to drive transformation in business segments where it is active, regardless of whether it will happen at a faster or slower pace than expected. Overall, significant effects on GHG emissions of fully electric vehicles are expected during the second half of this decade.

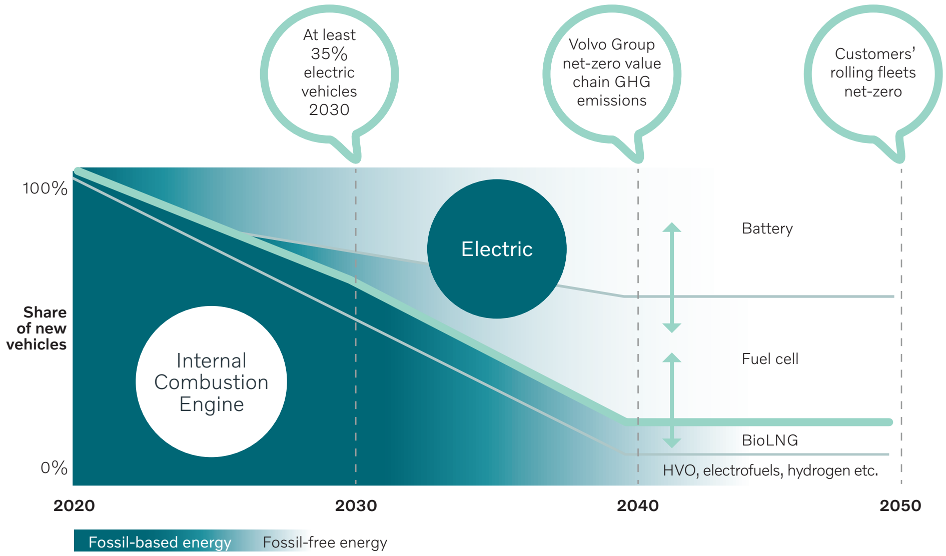
Advocacy
As part of its science-based targets and business plan, the Volvo Group advocates for a transition in line with the Paris Agreement. The Group assesses the overall positions and lobbying activities of trade organizations in which the Group is a member. During 2021 and 2022, 21 organizations have been reviewed on their public positions on the Paris Agreement and matters closely related to climate change mitigation, read more in the section Public Policy on page 179.

Governance

The AB Volvo Board of Directors and the Executive Board are ultimately responsible for the oversight of the Volvo Group's climate-related risks and opportunities and are responsible for setting the strategic direction of the Group, as further detailed on page 189 in the Corporate Governance Report.

A number of cross-functional working groups consolidate and prepares information for consideration in strategic decision-making at the Board of Director and Executive Board level. Groups with representation from executive management meet regularly during the year, focusing on the Group's climate goals and on sustainability disclosures. The Volvo Group follows up on revenues and investments related to fully electric vehicles monthly, and every quarter the Executive Board reviews the Group's progress on science-based targets. The Executive Board reports this progress to the AB Volvo Board regularly.

Remuneration
A key driver for achieving our Science-Based targets is to put electric trucks, buses, construction equipment and drivelines in use. Sales volume of fully electric vehicles and machines has therefore been included in the Volvo Group's short-term incentive program to drive a rapid climate transition. Read more in note 27 on page 127.



Technology roadmap illustrating the decarbonization of customers' use-phase. In addition to the technology development and Volvo Group offer, the needed decarbonization of energy is illustrated in the background. The arrows illustrate an uncertainty in future preferences and viability of propulsion alternatives.

Metrics and targets

This section summarizes the main relevant climate related metrics and targets for the Volvo Group. More context and details are found in additional parts of this reports according to GRI standards and reporting on the EU Taxonomy regulation.

Greenhouse gas emissions, scope 3
A key element to achieve the ambition of net-zero greenhouse gas emissions by 2040, is to develop products that help reduce our customers' emissions – as over 95% of life-cycle emissions occur during the use of sold products. Developing products and solutions that reduce the GHG footprint of our customers is a significant priority in the Volvo Group's strategy, and science-based targets have been set per operating segment.

Targets *(relative to baseline 2019)*
- Trucks: reduce emissions per vehicle-km by 40% by 2030
- Buses: reduce emissions per vehicle-km by 40% by 2030
- Construction equipment: reduce absolute emissions 30% by 2030
- Volvo Penta: reduce absolute emissions by 37.5% by 2034

Actions and follow up on page 155

Greenhouse gas emissions, Scope 1 and 2
Emissions from our own operations and from purchased energy make up a relatively low proportion of the total life-cycle emissions – less than 1% – yet they are important due to the direct operational control. Targets are set to increase energy efficiency in operations and to reduce the carbon intensity of the energy used.

Targets *(relative to baseline 2019)*
- Own operations: reduce absolute GHG emission by 50% by 2030

Actions and follow up on page 155-156

Other climate and environmental metrics
A range of environmental and efficiency metrics are followed up as part of the Group's operational performance. These revolve around energy conservation, freight CO_2 efficiency and minimizing waste.

Targets
- Energy in own operations: Saving initiatives of 150 GWh implemented 2021–2025

Energy and emissions >> page 155-156

Electric vehicle sales
The Volvo Group is introducing electric and other solutions helping to decarbonize customers' operations. The ambition is illustrated above.

Targets
- Increase fully electric sales to at least 35% by 2030

Volvo Group strategy >> page 16

Capital deployment
Share of research and development to low-carbon products and services **>> page 153**

Internal carbon pricing
The Volvo Group is exploring different approaches to internal carbon pricing and in 2022, a number of pilots have been initiated to capture learnings and determine next steps.

Climate related risks and opportunities

The transition of the transport sector offers significant challenges for the Volvo Group, but it also offers a number of business opportunities.

Climate-related risks

Climate-related risks can be divided into two categories, transitional climate risks and physical climate risks. Transitional climate risks include for instance technology-related risks, policy- and legal-related risks, market risks and reputational risks. Physical climate risks include both acute physical risks, such as extreme weather events, and chronic physical risks, for instance those arising due to changing weather patterns, rising mean temperature and rising sea levels. The Volvo Group is exposed to a number of climate-related risks, as set out below.

Transitional risks

A number of climate-related transitional risks have been identified, which are incorporated in the Volvo Group Enterprise Risk Management process. Transitional risks may be material for the Volvo Group in the short, medium and long term. These risks, including their potential impact, are described in more detail on page 68–73 under the following risk categories:

- Regulations, page 69
- Transformation and technology, page 69-70
- New business models, page 70
- Suppliers and materials, page 70

Physical risks

Physical risks, including climate risks, in relation to main sites where the Group is operating are reviewed on a regular basis as part of the Group's property management and insurance programs. Longer term climate risk analysis has also been performed for selected sites, as part of the Taxonomy implementation work. Different physical risks are an inherent part of operations at all Group sites. Some of the locations may also be subject to increased risks from physical weather events in the longer term, depending e.g. on climate developments. The Group intends to continue monitoring these risks, and take actions to seek to mitigate them when considered to be appropriate. Reporting on physical risks will also be expanded, if such risks were to emerge as material from a Group perspective in the future.

Climate-related opportunities

The Volvo Group strives to lead the development of new technologies and is continuing to develop an extensive portfolio of products and services using new technologies. We aim to continue to provide high quality products and services to our customers, while at the same time enabling our customers to reduce their environmental impact.

To this end, the Volvo Group is broadening its offer of products that can be powered by renewable energy through the introduction of battery-electric vehicles as described on pages 12-16. The Group also invests in fuel cell technology with the ambition to have a heavy-duty hydrogen offer available during the second half of this decade and continues to offer products that can be powered by renewable liquid and gaseous fuels like HVO (hydrogenated vegetable oil) and biogas. In addition to new technology products, the Volvo Group has developed a range of service solutions that help to reduce the number of transports needed by optimizing fill rates, consolidating transports and choosing the most effective routing.

Customer demand for products and solutions with lower environmental impact is increasing, although the transition pace differs between business areas and regions. When using electricity as main power source in transport operations, the operational costs are in general reduced. At the same time, the capital cost increases. This rebalancing can represent an increasingly more attractive use case for fully electric vehicles in several segments. More and more companies, with transport emissions making up a significant part of their total GHG emissions, are establishing net-zero commitment and science-based targets. This presents an opportunity for the Volvo Group in providing solutions that enable the reduction of such emissions (read more on page 12). The Volvo Group estimates that there is a potential to increase revenues by over 50% over the lifecycle when comparing an electric vehicle to a conventional version. This is primarily based on the higher sales value of an electric vehicle but also on increased revenues from autonomous solutions, new digital services and services connected energy solutions. Other factors expected to drive growth are increased service contract penetration and an increase in the duration of the contracts.

These opportunities are associated with investment costs, both in R&D as well as property plant and equipment in the short to medium term. Volvo Group also engages in partnerships and collaboration with other companies, whose core competencies are needed to develop new technology for transport and infrastructure solutions.

External dependencies and collaborations

The transition to net-zero emissions in the transport sector depends on a variety of factors, but we believe the main long-term solutions are electrification and development of other zero emission technology. Electrification depends not only on the product and service offering but also on external factors such as the existence of a functioning charging infrastructure and access to renewable energy sources to power battery electric and fuel cell electric products. Customer demand in different markets is also dependent on factors such as availability of the necessary infrastructure and energy, governmental incentives for green technologies and the price of fossil fuel. The Volvo Group strives to have products and solutions available in pace with customer demand by using a highly flexible production system.

Recognizing the need for collaboration on a system-wide basis, the Volvo Group has taken part in a number of multi-stakeholder initiatives. One such initiative is the First Movers' Coalition, which assembles cross-industry purchasing commitments to drive development of low-carbon technologies. The Volvo Group is also investing in joint ventures and strategic partnerships in adjoining sectors, such as energy, steel, charging infrastructure and energy storage, which seek to develop, or facilitate the use of, transitionary technologies and products.

Scenario analysis

The Volvo Group has initiated work with scenario analysis to better understand potential development of climate related uncertainties. This includes exploring climate scenarios from the International Energy Agency and International Panel on Climate Change (IPCC), as well as secondary sources interpreting those scenarios specifically in relation to the transport sector. A normative scenario analysis was conducted in the establishment of the Group's science-based targets. As part of establishing strategies and plans in line with the Group's net-zero commitment, analyses have been performed to understand the level of emission reductions needed to follow the pathways aligned with the ambitions in the Paris Agreement. The analyses provide input on important factors such as modelling customer demand, regulatory requirements, infrastructure roll-out, access to renewable energy and governmental incentives for clean technologies which in turn are essential inputs to the respective Business Areas' plans.

In addition to this transition scenario, the Volvo Group analyzed physical risks for the Group's main locations based on different representative concentration pathway (RCP) scenarios developed by the IPCC. In this work, RCP 2.6, RCP 4.5 and RCP 8.5 were used.

Risk management

In accordance with the decentralized Volvo Group governance model, each Business Area and Truck Division is accountable for its own risk management. Once risks have been identified, Truck Divisions, Business Areas and Group functions report them in the ERM process using an integrated multi-disciplinary approach. The ERM process includes all types of risks for the Volvo Group, so the processes for identifying, assessing and managing climate and other sustainability related risks are fully integrated into the Volvo Group's wider risk management.

The risks identified in the ERM process undergo a materiality analysis. The Group recognizes that some externalities impact the business in several ways and climate change is a good example of this as it poses both long-term strategic risks, for instance as a result of technology shifts and increasing government regulations, and short to medium term risks, for example in relation to customer satisfaction, physical disruptions of the production system and requirements of environmental regulation. The materiality analysis is conducted with internal and external stakeholders, and the risks that are classified as material are risks which can, separately or in combination, have a material adverse effect on the Group's business, strategy, financial performance, cash flow, shareholder value or reputation. See page 68-73 for more information.

In addition to the ERM process, climate risks are also considered and managed in other Group processes, such as the scenario analysis work (see above) and in the business continuity and risk mitigation planning for the Group's operational sites.

Financial planning

The Volvo Group's investment plan includes a technology roadmap to increase zero-emission vehicles or low-emission vehicles that can enable net-zero transport solutions. These include solutions based on electric and renewable liquid and gaseous fuels.

Investments in property, plant and equipment will increase in connection with the Group building up capacity for the above activities. However, thanks to the Group's modular product architecture CAST (read more on page 18) both electric trucks and trucks with combustion engines can be produced on the same assembly lines, thus limiting the investments needed for this transition in the industrial system.

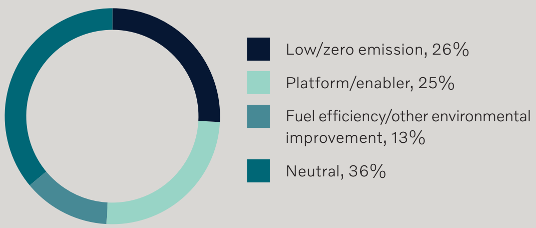
Part of the investments in R&D, as well as in property plant and equipment, is directly invested in the Group's current industrial system and tools at suppliers. Beyond this, the Volvo Group is collaborating in joint ventures and strategic partnerships where additional significant investments are made.

DISCLOSURES ON RESEARCH AND DEVELOPMENT INVESTMENTS

The Volvo Group's total investments in R&D, excluding the effects from the net of capitalized and amortized R&D, amounted to SEK 24.6 billion. The Group's R&D project portfolio has been categorized into four main categories to provide a more transparent overview of the Group's R&D investments during the year. The classification of R&D expenses in this section is based on a Group internal categorization of investments. Hence it does not align directly with the EU Taxonomy or other external standard.

- **Low- and zero-emission projects** – directly associated with products with low or zero tailpipe emissions, following the definitions of the substantial contribution criteria in the EU Taxonomy.
- **Platform and enabler projects** – associated with the development of technology common to both conventional products as well as low or zero emission vehicles based on the Group's modular architecture (CAST). This includes development of technologies such as common electrical architecture, cabs, aerodynamics, connectivity and safety features.
- **Fuel efficiency and other environmental improvement projects** – associated with the improvement of the environmental performance of internal combustion engine vehicles, e.g. fuel efficiency, emissions reduction, bio-LNG and other low-carbon fuel projects. These investments are important for the transition to lower GHG emissions in addition to electrification.
- **Neutral projects** – all the remaining projects. Some of these investments may result in certain environmental benefits, but they have not been assessed as significant, for example a quality update to an existing asset.

R&D expenses



In 2022, approximately 26% of the Volvo Group's gross R&D expenses[1] were considered low- and zero-emission, an additional 38% were related to fuel efficiency and pollution prevention, or projects in shared technology projects.

1 Excluding effects from capitalization and amortization.

ENERGY AND EMISSIONS

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets
7.3 Double rate of energy efficiency
8.4 Resource efficiency in production
11.2 Sustainable transport systems
12.2 Sustainable management of natural resources

7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Referenced reporting standards
GRI 302 – Energy
GRI 305 – Emissions
TCFD recommendations

The Volvo Group's Environmental Policy is the steering document addressing risks and opportunities in areas such as emissions, resource use, chemicals and residuals. Strategic priorities related to environment and climate are based on product life cycle assessments and aim to reduce emissions and other climate-related risks where they make the most impact.

Emissions metrics, targets and disclosures are based on the Greenhouse Gas (GHG) Protocol corporate standard. Emissions from use of sold products – scope 3.11 of the GHG protocol – is identified as the main material category in the baseline GHG inventory, representing over 95% of the total emission footprint. When nothing else is stated, GHG emissions are adjusted for acquisitions and divestments according to the accounting principles of the GHG protocol. The Volvo Group has reported climate-related information, targets and results since the beginning of the 2000s. The approach of managing climate-related risks has served the Volvo Group well, both in terms of reducing emissions in line with targets set and in terms of developing new technologies and business plans to meet the transition towards fossil-free transports.

Science-based targets for Scope 1, 2 and 3 emissions

The Volvo Group committed to the Science-Based Targets initiative (SBTi) "Business Ambition for 1.5 °C" in 2020 and validated its set targets in June 2021. The Volvo Group is targeting a net-zero value chain offer by 2040. Given that the average life-time of the Group's products is approximately 10 years, this should allow the Group's customers to achieve net-zero value chain greenhouse gas emissions by 2050. The pace of change is particularly important, and the Group has set ambitious milestone targets along the way.

The targets are set in different ways for the Group's different segments. What they have in common is that they are all contributing to the ambitions of the Paris Agreement.

Methods and data collection

Scope 1 and 2 emissions method and data collection

Environmental impacts and greenhouse gas inventory are established according to the Greenhouse Gas Protocol's Corporate Accounting and Reporting Standard, which is a standardized framework for quantifying and reporting GHG emissions in CO_2-equivalents (CO_2e).

Part of value chain	Scope 1, 2 or 3	Approximate share based on baseline GHG inventory	2019 Baseline	2022
			Mton	
Production, technical centers, warehouses and dealerships	**Scope 1** Direct emissions	<0.5%	0.250	0.243
	Scope 2 Indirect emissions from purchased energy	<0.5%	0.125	0.081
Use of sold products	**Scope 3.11 use phase** Indirect emissions from use of sold products	~95%	323	287
Other indirect emissions	**Other Scope 3** Approximately 4% of the greenhouse gas inventory are related to purchased goods and services, transportation and distribution, waste generated in operations business travel, employee commuting etc.			

Volvo Group's Science Based Targets are set to reach net-zero value chain GHG emissions by mid-century at the latest. The ambition is to reach this already by 2040.

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

These other indirect emission are not yet included in the report. However, internal targets exists for certain areas such as goods transportation.

Less than 1% of the total emission inventory are connected to Scope 1 and 2, including production plants, engineering centers, offices and dealerships. These are under the Volvo Group's direct management and higher level of control.

Scope 3 use phase emissions method and data collection
Scope 3 emission results are reported to indicate the progress toward the net-zero SBTi targets for the Volvo Group products. The methodology for calculating emissions from use of sold products has been designed to meet the requirements provided in the relevant standards of the GHG Protocol; namely the GHG Protocol Corporate Standard, the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, and Technical Guidance for Calculating Scope 3 Emissions, which includes expected lifetime emissions from all applicable products sold in the reporting period.

The target methodology and boundaries are following the SBTi Transport Science Based Target setting guidance and the target setting requirements and tools from the SBTi. The methodology is based on activity data on product annual usage, years in service, energy consumption and associated well to wheel GHG emission factors for the different energy sources utilized (diesel, electricity etc.). For product annual usage, data is in six months arrear for trucks and buses to due to a time lag in obtaining logged usage data.

In absence of a standardized test procedure for trucks, as well as other Volvo Group products, manufacturers are invited to present and justify their own estimates or simulations based on fuel consumption and specific activity data. The applied expected activity data and other parameters are associated with a level of uncertainty and may be subject to change due to implementation of regulations or global, regional, or national policy changes, or improved data quality. From a sensitivity analysis perspective, changes in any of the parameters will impact outcome, but changes of assumptions of products' years in service currently have more significant impact on calculated results.

Furthermore, the calculations do not take into account all aspects of e.g. the efficiency improvements in increased load in tones per vehicle km which is an important measure to increase the efficiency in the transport sector and reduce emissions of GHG. Since the calculation methodology is being developed, and e.g. different sources for emission factors and methods may be used for determining the activity data (annual usage, distance travelled etc.), the Volvo Group's emission data may not be fully comparable to that of other entities. We also expect that the Group's method to calculate the emission footprint may be developed further over time, and this may well alter results and, to ensure proper comparison, the baseline. If the calculation method is developed or assumptions used are adjusted in any material way, we intend to report on that in a transparent manner. As matters currently stand, the data is directionally useful but is subject to the limitations expressed above.

SBTi approved targets, from baseline 2019

Scope 1–2 OWN OPERATIONS	Target 2030 **–50%** absolute emissions	**Status 2022** **–13%**
Scope 3 use phase TRUCKS	Target 2030 **–40%** emissions per vehicle-km	**Status 2022** **–4%**
Scope 3 use phase BUSES	Target 2030 **–40%** emissions per vehicle-km	**Status 2022** **–7%**
Scope 3use phase CONSTRUCTION EQUIPMENT	Target 2030 **–30%** absolute emissions	**Status 2022** **–11%**
Scope 3 use phase VOLVO PENTA	Target 2034 **–37.5%** absolute emissions	**Status 2022** **+5%**

Other scope 3 emissions
The remaining part of indirect emissions based on 2019 baseline inventory account for approximately 4% of emissions in scope. These are included in the work for net-zero value chain greenhouse gas emissions, but they are not yet subject to validated science-based targets. For some areas, targets are already existing, for example freight transports.

Targets and results 2022

Own operations scope 1 and 2
The Volvo Group's total own scope 1 and 2 emissions make up less than 1% of total GHG inventory. The main ways to reduce these emissions are continuous work with energy efficiency improvements and sourcing of more renewable energy where possible. Initiatives to reduce energy use by 18 GWh were implemented during 2022 and the target is to implement saving worth of 150 GWh between 2021 and 2025.

The GHG emission from own operations were 13% lower 2022 compared to 2019. Direct emissions (scope 1) were at a similar level to previous year despite higher production volumes of trucks. The indirect emissions from own operations (scope 2) were reduced as a result of increased share of renewable energy sources, but also due to reduced volumes in regions with higher GHG intensity of purchased electricity.

Use phase, scope 3
Calculated GHG emissions from use of sold products amounted to approximately 287 million tons 2022 compared with 323 million tons in 2019. The calculated reduction in total GHG emissions is a combination of impacts from energy efficiency measures, changes in sales volumes and product mix.

Trucks
The reduction in 2022 amounted to –4% (–2%) vs 2019 baseline for the –40% intensity target. The reduction is mainly a result of products with lower greenhouse gas intensity. However volumes and product mix have somewhat decreased the overall total improvement of emissions per vehicle-kilometer.

Buses
The result for buses in 2022 was –7% (+7%) vs 2019 baseline for the –40% intensity target. The reduction is mainly due to product mix effects with more products with relatively low greenhouse gas intensity being placed on the market in both main segments, city and coach buses.

Construction equipment
For construction equipment, the result was –11% (+17%) vs 2019 baseline on the absolute emissions target. While a range of more energy efficient products have been launched, the most significant effect is explained by lower sales volumes, most notably in Asia.

Volvo Penta
The result for Volvo Penta was +5% (–5%) vs 2019 baseline on the absolute emissions target. The result is mainly driven by product mix and volumes, with increased volume demands particularly on engines and solutions with high power.

Overall, different regulatory requirements, availability of low GHG energy sources and associated infrastructure impacts the market conditions and customer demands. These market factors have significant impact on average GHG intensity of products sold and used in different countries and regions. At the same time, the Volvo Group is operating in cyclical industries which are linked to economic activity, such as the GDP development and sales volumes and mix, which can vary considerably from one year to the next. These factors can together significantly impact the result in the total calculated GHG emissions.

Detailed energy and emission performance
Several data points and tables are restated. These restatements are marked with an asterisk (*) and are mainly related to refinements in reporting methodologies for the Group's foundry operations and improvements in reporting from certain smaller entities.

The baseline 2019 is included in tables where relevant for tracking on established Group targets. Longer time series are found on page 220.

Calculated scope 3 emissions, category 11, use of sold products

Metric tons x1,000,000 CO_2e	**2022**	2021	2019
Trucks total	198	180	219
Buses total	6	5	14
Construction Equipment	62	82	70
Volvo Penta	21	19	20
Total use of sold product	**287**	**286**	**323**

Scope 1 and 2 GHG emissions and sources of emissions*

Metric tons x1,000 CO_2e		**2022**	2021	2019
Natural gas	Scope 1	104	115	116
Diesel	Scope 1	78	82	82
Other	Scope 1	61	55	52
Total scope 1	**Scope 1**	**243**	**252**	**250**
Electricity	Scope 2	71	103	107
District heating	Scope 2	10	12	18
Total scope 2, market based	**Scope 2**	**81**	**115**	**125**
Total scope 2, location based	Scope 2	180	204	215
Total Scope 1 and 2		**324**	**367**	**375**

Scope 1, 2 GHG emissions intensity*

Scope 1 and 2	**2022**	2021	2019
Net sales, Industrial operations, SEK M	460	361	418
Products delivered, (x1,000)	319	307	329
CO_2 (scope 1 and 2) by net sales	0.70	1.02	0.90
CO_2 (scope 1 and 2) by products delivered	1.02	1.20	1.14

Out of scope CO_2 emissions*

Metric tons x1,000	**2022**	2021	2019
Biogenic CO_2	9	8	3

Energy use within the organization*
(Connected to scope 1 and 2 emissions)

Energy GWh		**2022**	2021	2019
Natural gas	Scope 1	514	561	565
Diesel	Scope 1	304	317	312
Other	Scope 1	222	203	190
Electricity	Scope 2	1,093	1,101	1,089
District heating	Scope 2	234	255	216
Total		**2,367**	**2,437**	**2 372**
Of which renewable energy %		48%	40%	35%

Relative energy use		**2022**	2021	2019
Net sales, Industrial operations,	SEK bn	460	361	418
Energy / net sales	MWh / SEK M	5.1	6.8	5.7

Energy saving initiatives
The target is to implement energy saving initiatives 2021–2025 that together save 150 GWh per year from 2025.

Energy savings		**2022**	2021	2020
Annual implemented initiatives	GWh	18	15	37

Other emissions to air*
Nitrogen oxides (NO_x), sulphur oxides (SO_x) and solvents

Metric tons		**2022**	2021	2020
NO_x	tons	198	221	190
SO_x	tons	2.9	5.0	3.7
Solvents (VOC)	tons	1,398	1,309	1,224

ENVIRONMENTAL MANAGEMENT

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets

6.4 Increase water use efficiency
8.4 Improve resource efficiency in production
12.2 Sustainable management of natural resources
12.4 Responsible management of chemicals
12.5 Reduce waste generation

6 CLEAN WATER AND SANITATION
8 DECENT WORK AND ECONOMIC GROWTH
12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Referenced reporting standards
GRI 307 – Environmental Compliance 2016

The Volvo Group's Environmental Policy is the steering document for managing risks in areas such as emissions from production, resource use, chemicals and residuals. It is based on the principles of lifecycle management and continuous improvement.

The Group's ISO 14001 certified environmental management system covers approximately 95% of production facilities and 90% of distribution centers. The management system is used in a hierarchical way to deploy effective environmental work in the Group's divisions and business areas. This means that the Business Areas and Truck Divisions are all responsible for their environmental performance in the same way as for financial or other performance. Environmental management is also part of supplier assessments, read more on page 176–177.

In 2021 and 2022, the Volvo Group has reviewed its environmental management from the requirements of the relevant Do no significant harm criteria outlined in the EU Taxonomy Climate Delegated Act pertaining to the Group's activities.

Water

Risks of effluents are mitigated through active environmental management and control in the Group's operations. The Volvo Group management system sets certain minimum requirements. Water use has not been deemed as a highly material topic in the Group's materiality assessment, however it is included in this report due to specific interest and tracking from certain stakeholders.

Water consumption in production

	2022	2021	2020
Total water consumption, Mega-liters	4,566	4,628	4,856
Relative water consumption, Cubic meters/SEK M net sales	9.9	12.8	14.9

At Group level, only total water consumption is available, not by source.

Waste and recycling

The Volvo Group has established waste reduction strategies with the long-term objective to become landfill free. Volvo Group's sites either have in place or are in the process of developing landfill-free objectives. This work is supported by a directive and guidelines setting out the criteria for when a Volvo Group site can be considered a landfill-free site. As part of this the Group's operating sites apply the waste hierarchy, which prioritizes reuse and recycling over disposal, but also minimization and prevention of waste.

The increase in material to landfill was due to higher degree of construction and soil remediation projects.

Waste by type and disposal method

Metric tons	**2022**	2021	2020
Recycling, metal scrap from operations	113,781	111,260	82,076
Recycling, other metal scrap	23,877	16,865	13,338
Recycling, non-metal	153,932	158,776	139,272
% recycling of total	*84%*	*86%*	*86%*
Composting	2,624	2,433	1,868
Incineration with energy recovery	29,278	23,269	18,171
% recycled, composted or energy recovery	*93%*	*94%*	*93%*
Incineration without energy recovery	1,774	2,027	1,634
Treatment by professional waste contractor	11,493	11,116	9,943
Landfill	6,705	5,858	6,043
Landfill, only inert material	4,827	470	691
Total residuals	**348,292**	**332,075**	**273,037**
Whereof hazardous wastes	**36,800**	**53,314**	**51,712**

Transition to a circular economy
Circularity includes a range of issues relating to product design, manufacturing and ways of doing business. It has been recognized that circularity and moving upwards in the waste hierarchy is challenging. Where relevant, environmental design tools are used that further outline ways to support the transition towards circular economy. This includes evaluations of design criteria for durability, recyclability and remanufacturing as well as avoiding certain substances that would hinder reuse and recycling at the end of the use phase. The environmental design tools used are furthering the Group's environmental policy.

Substances and materials of concern
Some of the materials used in Volvo Group's products come in scarce supply and some materials and substances are potentially hazardous. The Group works to reduce its dependency on such materials and substances with the aim to protect both people and the environment and to secure sustainable supply. In collaboration with partners, the Volvo Group proactively evaluates alternatives in the design and supply processes to minimize and eliminate use of scarce materials and substances of concern. During 2022, the Group has continued to screen the use of chemicals and substances in product, components, and production to secure that pollution is prevented as part of aligning with the EU Taxonomy, see page 159.

Scarce materials may lead to a variety of difficulties such as higher costs and increased risk for corrupt behavior or adverse human rights impacts when sourced from high-risk areas. Volvo Group is running a dedicated supplier Sustainable Minerals Program, currently focusing on tin, tungsten, tantalum, gold and cobalt, to support sourcing of materials in a responsible way. The program is built on the five-step framework of the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-affected and High-risk Areas* with respect to social and environmental topics, as well as on the tools of the Responsible Minerals Initiative, to which the Volvo Group is a member, read more on page 177.

Environmental compliance
No significant environmental incidents or spills were recorded during 2022. In 2022 the Volvo Group had 12 licensed facilities in Sweden. For some facilities the environmental permits are under review due to planned changes.

Biodiversity
The Volvo Group strives to consider and manage both direct and indirect environmental impacts. Regarding biodiversity, the value chain perspective can be divided in three main areas – our own operations, supplied material and impact during use of sold products.

Within the own operations, risks are considered both for the establishment of new operations as well as for the ongoing operation. The Group has implemented minimum environmental requirements helping to prevent negative environmental impact from material environmental aspects. The requirements are applicable for all operations in absence of more stringent regulatory requirements. The Group's operating sites are typically located in since long established industrial areas. In the event of new establishments, procedures are followed to mitigate potential negative impacts on protected areas and species.

Upstream in the value chain, Group supply chain partners are evaluated with similar requirements.

One of the biodiversity risks in the transport sector is the production of fuels. Biobased fuels continue to be important alternatives to conventional diesel in several markets to reduce fossil greenhouse gas emissions in the short term. However, the availability of sustainable biofuels does not meet demand in all areas.

EU TAXONOMY REGULATION DISCLOSURES

The EU Taxonomy Regulation EU 2020/852 ('the EU Taxonomy') is a classification system for sustainable economic activities in relation to the European Union's six environment objectives:
1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystems.

An activity is considered sustainable according to the EU Taxonomy when it contributes substantially to one or several of the objectives, without causing significant harm to the others, and at the same time meets certain defined minimum safeguards. In 2021, the taxonomy reporting covered eligible economic activities. Eligible in this context means activities identified in the technical screening criteria, so far only available for the first two environmental objectives on climate. In 2022, the reporting on taxonomy alignment has been added to the disclosure requirements.

In absence of regulatory guidance in many respects, the Volvo Group has found that there is a large scope for interpretation in relation to several aspects of the Taxonomy. We have therefore deemed it necessary to develop our own internal considerations. Our disclosure in 2022 is based on our current understanding of the rules and may be amended in the future to align with new regulatory guidance provided, as market practice develops and as the general knowledge of the Taxonomy requirements matures.

Methodology to identify eligible activities

The Volvo Group has identified that a proportion of its economic activities qualify as eligible under the Taxonomy Regulation EU 2020/852 (Annex 1 to Commission Delegated Regulation (EU) 2021/2139) the "Delegated Climate Act".

- The Group develops and manufactures trucks and buses, which are eligible pursuant to section 3.3 Manufacture of low-carbon technologies for transport of the Delegated Climate Act ('3.3 Activities').
- The Group develops and manufactures construction machinery and engines, part of which are eligible pursuant to section 3.6 Manufacture of other low-carbon technologies of the Delegated Climate Act ('3.6 Activities').

Both activities are defined as enabling activities in relation to the climate change mitigation objective and are of strategic importance in the Volvo Group's transition towards a net-zero greenhouse gas emissions value chain. See more on pages 151 and 155-156.

Eligible activities of the Volvo Group are based on guidance provided under the Commission notice on the interpretation of certain legal provisions of the Disclosures Delegated Act under Article 8 of EU Taxonomy

Turnover KPI

Table 1	Codes	Absolute turnover SEK M	Proportion of turnover, %	Significant contribution: Climate change mitigation, %	Do no significant harm: Climate change adaptation, Y/N	Water and marine resources, Y/N	Circular economy, Y/N	Pollution prevention, Y/N	Biodiversity and ecosystems, Y/N	Minimum safeguards, Y/N	Taxonomy-aligned proportion, 2022, %	Category (Enabling or Transition)
Economic activities												
A. TAXONOMY-ELIGIBLE ACTIVITIES %												
A.1. Environmentally sustainable activities (taxonomy-aligned)												
Manufacturing of low carbon technology for transportation	3.3	4,023	0.8	100%	Y	Y	Y	Y	Y	Y	0.8	E
Manufacturing of other low carbon technology	3.6	273	0.1	100%	Y	Y	Y	Y	Y	Y	0.1	E
Turnover of taxonomy- aligned (A.1)		**4,296**	**0.9**	**100%**							**0.9**	
A.2 Taxonomy-eligible (but not taxonomy-aligned activities)												
Manufacturing of low carbon technology for transportation	3.3	332,716	70									
Manufacturing of other low carbon technology	3.6	432	0.1									
Turnover of taxonomy-eligible (but not taxonomy-aligned activities) (A.2)		**333,148**	**70**									
Total eligible + aligned (A.1 + A.2)		**337,444**	**71**									
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES												
Turnover of taxonomy-non-eligible activities (B)		136,035	29									
Total (A + B)		**473,479**	**100**									

Table 2. Voluntary information*			
Manufacturing of other low carbon technology (not aligned)		119,676	25

Qualitative information related to turnover

The total turnover reported covers the revenue recognized, as explained in Note 7, (page 94), and includes revenues from the Volvo Group's Industrial Operations as well as from financial and operating leases. The Taxonomy disclosures on eligible turnover includes net sales from vehicles and services, including repair, maintenance and spare parts. Compared to 2021, the scope of eligible activity has been broadened with the inclusion of spare parts and certain used vehicles and services. Spare parts are considered aligned when they are used in or linked to an aligned vehicle. The eligible activities under 3.6 include net sales from low-carbon machines, i.e. only machines that enable zero tailpipe emission operations. The aligned turnover derives from the part of the eligible scope which fulfills all the technical screening criteria.

*** Voluntary information**

The voluntary information in Table 2 applies the same interpretation of the eligibility scope for 3.6 Activities as for 3.3 Activities. See explanation of mandatory and voluntary information on page 162.

Regulation on the reporting of eligible economic activities and assets, dated October 6, 2022 (the "Commission Notice") with respect to the Taxonomy-eligibility requirements. However, as alternative approaches to determining eligibility exist, additional Taxonomy-eligibility information have on a voluntary basis been included for transparency purposes. In 2022, the Group has broadened its reporting of eligible 3.3 Activities to include a larger share of related repair and maintenance activities.

Methodology to identify aligned activities

For an economic activity to be considered taxonomy-aligned – and hence environmentally sustainable – it needs to substantially contribute to at least one of the EU's six environmental objectives and not significantly harm any of the others. In addition, it needs to be carried out in adherence with certain minimum safeguards as regards social and governance aspects of sustainability.

Substantial contribution

The Volvo Group has identified a number of activities, by product, that fulfil the technical screening criteria of substantially contributing to climate change mitigation. These are referred to as potentially taxonomy-aligned and consist of trucks and buses with zero tailpipe emissions, as well as low emission buses (3.3 Activities), construction machines and other zero tailpipe emission technology (3.6 Activities).

Doing no significant harm

Potentially taxonomy-aligned products and relevant manufacturing sites have been assessed against each of the do no significant harm (DNSH) criteria, as further detailed below. As previously noted, in absence of regulatory guidance and market practice, we have found that there is a large scope for interpretation of the DNSH criteria and have therefore deemed it necessary to interpret and concretize the set-out criteria based on the

CapEx KPI

Table 1	Codes	Absolute CapEx SEK M	Proportion of CapEx, %	Significant contribution: Climate change mitigation, %	Do no significant harm: Climate change adaptation, Y/N	Water and marine resources, Y/N	Circular economy, Y/N	Pollution prevention, Y/N	Biodiversity and ecosystems, Y/N	Minimum safeguards, Y/N	Taxonomy-aligned proportion, 2022, %	Category (Enabling or Transition)
Economic activities												
A. TAXONOMY-ELIGIBLE ACTIVITIES %												
A.1. Environmentally sustainable activities (taxonomy-aligned)												
Manufacturing of low carbon technology for transportation	3.3	2,452	13	100%	Y	Y	Y	Y	Y	Y	13	E
Manufacturing of other low carbon technology	3.6	96	1	100%	Y	Y	Y	Y	Y	Y	1	E
Taxonomy- aligned (A.1)		**2,548**	**14**	**100%**							**14**	
A.2 Taxonomy-eligible (but not taxonomy-aligned activities)												
Manufacturing of low carbon technology for transportation	3.3	11,626	64									
Manufacturing of other low carbon technology	3.6	2	0									
Taxonomy-eligible (but not taxonomy-aligned activities) (A.2)		**11,628**	**64**									
Total eligible + aligned (A.1 + A.2)		**14,176**	**78**									
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES												
Taxonomy non-eligible activities (B)		4,120	22									
Total (A + B)		**18,296**	**100**									

Table 2. Voluntary information*			
Manufacturing of other low carbon technology		1,758	10

Qualitative information related to capital expenditures

The taxonomy disclosure on eligible capital expenditures (CapEx) for, 3.3 Activities, includes CapEx for product development and additions to property, plant and equipment. As for the 3.6 Activities the eligible CapEx include the same categories as for 3.3 Activities but is restricted to low-carbon machines. Capitalized product and software development, other intangible assets, and investments in property, plant and equipment are included in the information provided, see Note 12 and 13 (page 98-102 for details).

Reported aligned investments consist of research and development (R&D) projects directly related to taxonomy-aligned products (low-carbon technologies), which are part of a plan to grow the aligned activities or to make eligible activities aligned. For CapEx related to property, plant and equipment, the part of the investment that is related to taxonomy-aligned activities are added. A large portion of the CapEx investments benefit both taxonomy aligned and non-aligned vehicles and machines, developed on the same technology platform and manufactured in the same sites. For these types of investments, an allocation key is used based on the split of volumes between taxonomy aligned and non-aligned products. CapEx related to the purchase of output from taxonomy-aligned economic activities are not part of the report 2022 as they are not deemed material related to other eligible activities.

***Voluntary information**

The voluntary information in Table 2 applies the same interpretation of the eligibility scope for 3.6 Activities as for 3.3 Activities. See explanation of mandatory and voluntary information on page 162.

specific context of the Group, thereby creating our own detailed guidance. The reporting of aligned activities is thus, to a certain degree, based on an adopted interpretation of the DNSH criteria applicable to Volvo Group eligible activities.

Overall, there are challenges related to the global scope of the Group's operations and variances in the regulatory landscape of different jurisdictions. Activities within the EU have been prioritized to secure alignment with the DNSH criteria. Activities outside the EU have been prioritized based on size of turnover and complexity in translating the demands to a local context. A minor part of the potentially aligned activities by turnover are not yet fully screened for the DNSH criteria. The methodology to assess alignment will be evaluated as regulatory guidance and general reporting practices evolve.

In conclusion, all activities reported as aligned have been assessed to meet all DNSH criteria, as set out below.

Climate change adaptation

Physical risks are reviewed on a regular basis as part of the Group's property management and insurance programs. In our assessment of compliance with the DNSH criteria, relevant sites have carried out local risk assessments on relevant climate hazards. In addition, an overall inventory of potential climate hazards has been performed based on the geographical location of relevant Volvo Group sites and potential development in different climate scenarios as presented by the UN Intergovernmental Panel on Climate Change.

Sustainable use and protection of water and marine resources

With respect to the criteria for water, the Volvo Group has identified a limited number of activities with direct emissions of industrial wastewater or being subject to water stress, which have been deemed relevant for the alignment criteria. In such cases, environmental impact assessments and water management plans have been reviewed with respect to relevant sites.

OpEx KPI

Table 1	Codes	Absolute OpEx SEK M	Proportion of OpEx, %	Significant contribution: Climate change mitigation, %	Do no significant harm: Climate change adaptation, Y/N	Water and marine resources, Y/N	Circular economy, Y/N	Pollution prevention, Y/N	Biodiversity and ecosystems, Y/N	Minimum safeguards, Y/N	Taxonomy-aligned proportion, 2022, %	Category (Enabling or Transition)
Economic activities												
A. TAXONOMY-ELIGIBLE ACTIVITIES %												
A.1. Environmentally sustainable activities (taxonomy-aligned)												
Manufacturing of low carbon technology for transportation	3.3	4,136	18	100%	Y	Y	Y	Y	Y	Y	18	E
Manufacturing of other low carbon technology	3.6	785	3	100%	Y	Y	Y	Y	Y	Y	3	E
Taxonomy- aligned (A.1)		**4,921**	**21**	**100%**							**21**	
A.2 Taxonomy-eligible (but not taxonomy-aligned activities)												
Manufacturing of low carbon technology for transportation	3.3	13,892	59									
Manufacturing of other low carbon technology	3.6	21	0.1									
Taxonomy-eligible (but not taxonomy-aligned activities) (A.2)		**13,913**	**59**									
Total eligible + aligned (A.1 + A.2)		**18,834**	**80**									
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES												
Taxonomy non-eligible activities (B)		4,673	20									
Total (A + B)		**23,507**	**100**									

Table 2. Voluntary information*		
Manufacturing of other low carbon technology (not aligned)	4,335	18

Qualitative information related to operational expenses

Most of the taxonomy disclosure on eligible operating expenses (OpEx) includes non-capitalized R&D expenses for new product development. In addition, for 2022, costs for the repair and maintenance of property, plant and equipment and short-term leases are included. For 3.3 Activities, all expenses related to transport vehicles are included but as for the activities eligible under 3.6, only expenses related to low-carbon machines are included. In this KPI, R&D is the material part in terms of aligned expenses. R&D expenses in 2022 amounted to almost SEK 20 billion and the taxonomy-aligned part was approximately 25%. Aligned R&D expenses are identified as projects which can be directly related to already taxonomy-aligned products, be part of a plan to grow aligned activities or to make eligible activities aligned. For the R&D expenses benefitting both taxonomy-aligned as well as non-aligned activities an allocation key is used based on the same principles as for CapEx investments. The other part of OpEx – repair and maintenance related to the functioning of the plants and short-term leases – amounted to approximately SEK 3.6 billion. The proportion of such aligned OpEx is based on share of aligned revenues during the year, which reflects the resources used by taxonomy-aligned production in the plants.

***Voluntary information**

The voluntary information in Table 2 applies the same interpretation of the eligibility scope for 3.6 Activities as for 3.3 Activities. See explanations of mandatory and voluntary information on page 162.

Transition to a circular economy
As it relates to transition to a circular economy, the assessments made have identified several such practices implemented in the Group, where feasible. This includes applying the waste hierarchy and establishing waste reduction targets in manufacturing, as well as product design processes where considerations have been made on durability, recyclability and choice of materials and other strategies to facilitate transition to a circular economy.

Pollution prevention and control
The pollution prevention and control criteria both refers to and builds upon existing EU substance regulations. Further to referencing existing EU prohibitions and limitations on the use of certain substances, the EU Taxonomy sets out that the use of certain additional substances (substances on the EU REACH Candidate List and substances with similar characteristics), which are not currently restricted in EU substance regulations, are to be acceptable only if the use is 'essential for society'.

In absence of further regulatory guidance, the Volvo Group has developed its own set of criteria for determining the type of uses that are 'essential for society' and how to identify the substances which are to be made subject to this test. Our essential use test builds upon existing essential use concepts found in EU substance regulations and international treaties (most notably the Montreal Protocol) and considers, inter alia, safety and regulatory requirements relevant for our products, product performance and the availability of commercially viable alternatives. A materiality threshold has been applied. Assessments have been carried out by way of comparing our inventory of substances used in products and manufacturing processes to the substances of high concern referenced in the EU Taxonomy.

Protection and restoration of biodiversity and ecosystems
With respect to the criteria for biodiversity, the Volvo Group has screened its activities at each relevant site based on the significance of impact on biodiversity and protected areas or species. The Volvo Group's manufacturing sites have not been deemed to have a significant direct impact and hence the further assessment regarding biodiversity has been limited to recently developed activities in exploration or activities located at such a distance that they could impact protected areas.

Minimum safeguards
It is understood that the minimum safeguard criteria mean that procedures are to be in place as regards Anti-Corruption, Fair Competition, Taxation and Human Rights, and that the Group is not to be exposed to 'controversial weapons,' which refers to anti-personnel mines, cluster munitions, chemical weapons and biological weapons.

The minimum safeguard criteria have been assessed at Group level, and when doing so it has been concluded that all wholly owned entities of the Group, and thus all economic activities identified as potentially taxonomy-aligned, are covered by our Group-wide policies and procedures. For more information on relevant policies and procedures, see Human Rights (page 170), Anti-Corruption (page 178), Competition Law (page 178) and Tax Policy (page 179). We have furthermore concluded that the Volvo Group does not manufacture or sell any vehicles or attributes specifically designed to carry or otherwise deal with controversial weapons (as defined above).

Reporting
None of the activities of, or Volvo Group investments in, joint ventures and associated companies are included in this report, see Note 5 on page 86 for more information about joint ventures.

As the Volvo Group so far considers its eligible activities pursuant only to the climate change mitigation objective, and as 3.3 Activities and 3.6 Activities are conducted in different operating segments of the Group, no activities should have been double counted when calculating the Taxonomy KPIs presented. For the same reason, the reporting template is also simplified.

Mandatory and voluntary information
The mandatory disclosure in Table 1 is based on the guidance provided by The Commission Notice, referred to in the eligibility section above. In relation to 3.3 Activities, the Commission notice sets forth that the reference to "low carbon" should not be considered when determining Taxonomy-eligibility. This interpretation therefore takes into account that most of the Group's transport vehicles are Taxonomy-eligible. For 3.6 Activities, eligibility depends on the objective of the activity, which should be aimed at substantial savings of life cycle greenhouse gas emissions in other sectors of the economy. The implication of this is that a truck or bus (3.3 Activity) with an internal combustion engine is in scope of eligibility, but an excavator or hauler (3.6 Activity) with the same type of combustion engine is not eligible. To enable a transparent view of all manufacturing activities in the Volvo Group, a voluntary disclosure has been added to the reporting scope. Table 2 for each KPI includes voluntary reported information applying the same interpretation of the eligibility scope for 3.6 Activities as for 3.3 Activities. The voluntary information does not impact the alignment reporting, only eligibility.

Investment plan (CapEx plan)
The Volvo Group has an overall ambition to reduce greenhouse gas emissions in its value chain. Development of vehicles and machines with zero tailpipe emissions is a key driver in this overall strategy (read more on pages 150-151). A substantial part of investments is directed towards zero tailpipe emissions technology, which is expected to increase over time. Investment plans are subject to continuous evaluation, which may affect share of alignment reported in the future. Based on the guidance provided at the time of this report's publication, we have concluded that aligned investments are those that are part of the plan to expand taxonomy-aligned business, or to make an eligible activity aligned. All investments in R&D, property, plant and equipment made to enable and develop vehicles and machines fulfilling the technical screening are included. These are mainly related to vehicles and machines with zero tailpipe emissions. The DNSH criteria are assessed on product level, according to the technical screening criteria. The Volvo Group may also investigate closing potential gaps relating to the DNSH criteria. Such investments will also be included in the plan for taxonomy-alignment.

In 2022, the taxonomy-aligned investments amounted to SEK 7.5 billion. These investments are expected to grow as the Volvo Group progresses towards its target of 35% of vehicle sales being fully electric by 2030 (read more on page 16), and the Group's commitment and action plan for net-zero value chain greenhouse gas emissions.

Employees and development

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets

4.3 Equal access to affordable, technical, vocational and higher education
4.4 Increase the number of people with relevant skills
5.1 End discrimination against women and girls
5.5 Ensure women's full participation in leadership and decision making

4 QUALITY EDUCATION
5 GENDER EQUALITY

Referenced reporting standards

GRI 401 – Employment 2016
GRI 402 – Labor management relations 2016
GRI 404 – Training and education 2016
GRI 405 – Diversity and equal opportunities 2016

The Volvo Group Code of Conduct is the foundation for responsible business conduct that builds trust with stakeholders in societies where the Group operates. As an integral part of daily operations, the leaders of Business Areas, Truck Divisions and Group Functions are accountable for areas such as employment practices, labor relations, people development and diversity. To do this effectively, they are supported by both local and central HR professionals, experts and leaders. In addition to the topics listed herein, different countries, regions and units may address specific areas in line with the local context and needs.

EMPLOYMENT

To create an inclusive, safe, and engaging work environment built on care for people is an essential focus area for Volvo Group. The view on people as the company's most valuable asset will not diminish with increasing automation and digitalization. Instead, a competence shift with upskilling and reskilling in multiple dimensions is fundamental for Volvo Group's perform and transform strategy. The approach is to invest in people, to encourage lifelong learning, to grow talent, and to create an inclusive and people centric culture where everyone is encouraged to contribute.

The topics in this section are viewed under one common management approach to increase positive impacts on employees as well as reduce potential negative ones. Performance indicators are followed in all areas and targets are established for a selected few.

- Health and safety – to reduce lost time accidents by 50% by 2030 from 2019.
- Diversity – to have at least 35% female employees in general and in leadership position by 2030.
- Wellbeing at work – to have at least 85% employee engagement and at least 85% of employees recommending Volvo Group as a great place to work, by 2030.

Employee turnover and new employee hires

Employee turnover[1], % Per age, gender and total	**2022** Age and total			2021 Age and total		
	<40	40+	All	<40	40+	All
Europe	**11**	**7**	**8**	**10**	**7**	**8**
Men	*11*	*7*	*8*	*10*	*7*	*8*
Women	*10*	*7*	*8*	*9*	*8*	*8*
North America	**20**	**11**	**14**	**17**	**9**	**12**
Men	*20*	*10*	*14*	*16*	*9*	*12*
Women	*20*	*12*	*15*	*19*	*8*	*12*
South America	**8**	**5**	**6**	**8**	**5**	**7**
Men	*7*	*5*	*6*	*9*	*5*	*7*
Women	*9*	*5*	*8*	*8*	*6*	*7*
Asia/Pacific	**14**	**8**	**8**	**12**	**8**	**7**
Men	*13*	*8*	*7*	*12*	*8*	*7*
Women	*16*	*8*	*11*	*12*	*7*	*9*
Africa	**9**	**6**	**8**	**6**	**7**	**7**
Men	*10*	*6*	*8*	*6*	*7*	*7*
Women	*4*	*8*	*6*	*4*	*9*	*6*
Group total	**13**	**8**	**9**	**11**	**8**	**9**
Men	*13*	*8*	*9*	*11*	*8*	*9*
Women	*12*	*8*	*10*	*11*	*8*	*9*

New hires Per age, gender and total	**2022** Age and total			2021 Age and total		
	<40	40+	All	<40	40+	All
Europe	**4,513**	**1,735**	**6,248**	**3,816**	**1,292**	**5,110**
Of which women	*30%*	*28%*	*30%*	*31%*	*23%*	*29%*
North America	**2,413**	**1,218**	**3,631**	**2,374**	**1,127**	**3,501**
Of which women	*25%*	*28%*	*26%*	*21%*	*24%*	*22%*
South America	**689**	**166**	**855**	**1,164**	**227**	**1,392**
Of which women	*27%*	*25%*	*27%*	*20%*	*25%*	*21%*
Asia/Pacific	**1,651**	**212**	**1,863**	**1,148**	**149**	**1,300**
Of which women	*30%*	*22%*	*29%*	*23%*	*16%*	*22%*
Africa	**33**	**20**	**53**	**84**	**11**	**96**
Of which women	*36%*	*30%*	*34%*	*32%*	*27%*	*31%*
Group total	**9,299**	**3,351**	**12,650**	**8,586**	**2,806**	**11,399**
Of which women	*29%*	*27%*	*28%*	*26%*	*23%*	*25%*

1 The total employee turnover rate is the proportion of employees who left Volvo Group both voluntary (such as retirements and resignations) and involuntary (including due to redundancy).

Additional indicators tracked on Group level without outcome-oriented targets are retention rates, employee turnover, coverage of collective bargaining and access to training.

Over time, Volvo Group has developed pragmatic solutions and ways of working to adjust according to changing demands. Volvo Group works in close dialogue with employee representatives for the deployment of solutions that help to maintain and strengthen the competence needed for the Group as well as reducing negative social consequences. This can include utilizing time-banks to reduce labor time, furlough, re-skilling or upskilling for continued employability, early retirement, financial compensation, internal mobility programs and outplacement via third parties.

EMPLOYEE RELATIONS

Volvo Group bases the relation between the company and employees, including employee representatives and unions, on honesty, transparency, fairness and creativity. These basic principles were jointly developed with the Global Works Council members and guide how to act together when maneuvering Volvo Group through necessary business changes. For Volvo Group it is essential to secure a good dialogue with all employees. To ensure a structured dialogue, Volvo Group uses the yearly Pulse survey, frequent performance touchpoints and regular department or town-hall meetings. Another fundamental element is the yearly Volvo Global Dialogue in which about 50 employee representatives from over 20 different countries meet with the CEO and Volvo Group Management members to discuss the current business situation and strategic initiatives of the Group, but also specific future opportunities in respect of new Business Areas, digitalization and needed competence shifts.

In 2022, the Volvo Global Dialogue meeting was conducted as a face-to-face meeting to discuss e.g., the industry transformation efforts, as well as the actual business situation for the brands and the Group.

In addition, three ordinary and two deputy members appointed by employee organizations are part of the AB Volvo Board of Directors and thus involved in the strategic direction of the Group.

DIVERSITY AND EQUAL OPPORTUNITIES

Volvo Group considers diversity and inclusion as critical to its ability to perform in current operations and transform into a long-term sustainable business. The Group's work includes a wide range of aspects, such as culture, generations, competence, background and gender. Recognizing that different regions and countries have individual challenges, the ambition is to actively work with locally relevant and authentic diversity vectors.

Globally, gender diversity has been identified as the main strategic vector. The Group's operations and main sectors served have traditionally been characterized by relatively low representation of women. This challenge has also been recognized in technology and engineering professions and education. Volvo Group has the target of reaching at least 35% women in the workforce, both in general and in management positions by 2030. Using a broad set of metrics to understand how the Group is attracting, utilizing, and retaining talent allows for a better understanding of systemic barriers. Data and insights are used to create focus and make meaningful progress to drive sustainable change. There is a conviction that continuous efforts to create a highly inclusive work culture, can unleash the full potential of the diverse population of people. With this approach Volvo Group is seeing acceleration in areas traditionally more difficult to attract and retain women, including industrial and workshop environments.

As part of a broader approach to diversity and inclusion, Volvo Group is also expanding the scope of diversity. This work is more distinct at local units and sites and the efforts are not limited to the global metrics used but acknowledges the evolving nature of diversity and the significant impact local cultural context plays. To stay globally aligned but locally authentic, the Group is leveraging increased support and structure through global company frameworks and principles, that are executed in the context of local entities' culture. Internal networks for and best practice sharing across the organisation put focus on inclusion as a means to drive diversity, which is believed to accelerate the work. The main active networks in the area of diversity and inclusion are for women, women in engineering, LGBTQI+, diverse Abilities, multiculturalism and young professionals.

Process regarding operational changes

Prior to major organizational changes, the employee representatives and relevant authorities are informed and consulted in accordance with legal and contractual requirements. In 2022, the Group conducted eight information meetings with the European Works Council, complemented by 150 meetings with local employee representatives and unions in different countries to consult on changes and their specific impact on a local level.

An estimated 41% of regular employees around the world are members of an independent trade union. Approximately 72% of employees globally are covered by Collective Bargaining Agreements. This shows a significantly higher union density rate or coverage of collective bargaining than the average compared to the International Labor Organization statistics, especially in the Group's major markets like Sweden, the US, Poland and Brazil.

Diversity of governance bodies and employees

Age diversity of the Volvo Group workforce, %	**2022 <40/40+**	2021 <40/40+	2020 <40/40+
Europe	37/63	36/64	36/64
North America	38/62	36/64	33/67
South America	60/40	61/39	61/39
Asia/Pacific	58/42	57/43	51/49
Africa	53/47	54/46	54/46
Group average	**41/59**	**40/60**	**40/60**

Gender diversity of the Volvo Group workforce, %	**2022 Women/ Men**	2021 Women/ Men	2020 Women/ Men
Europe	23/77	22/78	21/79
North America	22/78	21/79	21/79
South America	19/81	18/82	17/83
Asia/Pacific	22/78	17/83	14/86
Africa	24/76	26/74	24/76
Group average	**22/78**	**21/79**	**19/81**

Gender diversity over time, share of women, %

	2022	2021	2020	2019	2018
All employees	22	21	19	19	18
Manager (all levels)	24	23	20	20	19
Presidents and other senior executives	28	27	26	26	25
AB Volvo Board (Elected by the AGM)	45	45	36	40	40

Female Mechanic and Driver Development Programs in South Korea
Starting in late 2021 and throughout 2022, the Volvo Trucks organization in South Korea led two competence development programs specifically for women. A technical truck program aimed at the development of female truck mechanics and the Iron Woman program for the development of female truck drivers.

These programs have been developed to deal with ongoing labor issues in the industry. South Korea, like many markets globally, has traditionally not seen many women participate in the transport industry. Feedback from customers as well as internal mechanic shortages, led the team in South Korea to identify a key opportunity to attract and retain more women into these roles. Through the leadership of GS Park, Managing Director of Volvo Trucks South Korea, these initiatives are driving almost instant outcomes, benefiting the South Korea organization and its customers, and also supporting broader societal change in South Korea.

The 2022 program developed 14 female mechanics and truck drivers who are now working throughout the Volvo Trucks' service workshops and on the roads around South Korea. In January 2023, the next round of apprentices for the Volvo female mechanic development program began, and Volvo Trucks South Korea is proud to continue to lead the way in this development.

TRAINING AND EDUCATION

Leadership, learning and development is a vital contributor to the transformation of the Group and to employees' employability. Raised awareness about lifelong learning in the teams and organization helps bring forward both needs and tangible progress. Volvo Group University is focused on providing high quality training across business areas, divisions or functions. The ambition is to provide training and development opportunities for all employees in all locations, with a consistent and quality assured learning portfolio. This spans from leadership development, across key competences such as sales and price management for commercial areas, to technologies related to electrification, automation and agile ways of working. Compliance and IT security training is enforced to raise awareness of risks and highlight the need for caution for all employees.

Volvo Group applies a 70:20:10* approach when it comes to learning, and most of employees' development takes place during the course of a working day, in the teams. To ensure access to training, a large part of instructor led programs are made available virtually. This allows employees outside the major sites to join training activities and build networks across the Group.

Business operations drive development of the competences specific to their needs and learning opportunities are made available on site. Training is closely linked to the transformation journey and carefully timed with e.g. the introduction of new products or new working procedures. A "Click'n'Learn" concept gives employees access to a multitude of digital training opportunities - both local and global. This approach allows for a large number of employees to continuously expand their knowledge in critical areas and provides a base for individual development, as well as learning and reflecting together. Information on the investment in training for business areas, divisions and functions is captured through a learning management system that provides different perspectives on how well Volvo Group reaches its ambitions.

***70:20:10 approach to learnings**
Surveys and research have shown that approximately 70% of learning occurs through experience and practice on the job; about 20% through other people – in conversations, networking, asking the right questions of the right people; and about 10% of learning comes formally as knowledge base. In the design of formal training solutions, Volvo Group gives due consideration to the 70 and 20 by e.g. connecting work related assignments, coaching, mentoring and active networking.

Servitization Learning Expedition
Servitization creates new opportunities to move beyond selling products to selling integrated packages of products and digital services tailored to the specific needs of customers. The Volvo Group has set a bold vision, where 50% of the revenues should come from services and solutions by 2030.

But how to shift the mindset and ways of working to achieve the goal? This important question prompted an intense cross-functional effort to create a foundational training program, suitable for all Volvo Group employees. The Servitization Learning Expedition that resulted from this collaboration aims to trigger awareness and dialogue. The course is a 7-module eLearning path with a practical approach that allows participants to become acquainted with the key concepts, new business and service/product models, and examples already underway within the company.

All Volvo Group, employees are encouraged to complete the training program to discover why services and solutions will become an increasingly important revenue stream for the company. Participants will also gain new views on how to create services and solutions for the future, discover possibilities to apply agile ways of working, and utilize a design thinking approach to expand existing services.

Upskill @GTO program
Continuous learning has been a Volvo Group priority for a long time. It is important for the company to have people with the rights skills, and equally important for employees to access the right development for long term employment, engagement and life-long learning.

The Upskill @GTO program sponsored by Volvo Group North America celebrates its second year following the initial pilot in 2021. Aligned with Volvo Group's strategic 2030 goals, this multi-site collaborative program features a total of ten teams. In total, 48 early adopters of emerging technologies – both office-based and industrial workers – from six different US based sites participated.

Over an eight-month period, the teams met for 5-day immersive learning sessions of academic studies mixed with hands-on application. In addition to receiving training in the areas of Artificial Intelligence & Machine Learning (AI/ML), Industrial Internet of Things (IIOT), and Virtual Reality, participants spent many hours applying what they learned, assisted by university interns specializing in these areas of expertise.

Each team was challenged to solve a current business problem and propose a viable solution and accompanying prototype. Some teams attempted to achieve "moonshot" goals, moving beyond the task at hand by continuously applying agile and design-thinking methodology alongside use of emerging technologies.

The Upskill @GTO program culminated in a traveling roadshow in which teams stopped at multiple sites to demonstrate their prototypes, share knowledge, and engage in meaningful dialogue with colleagues about using emerging technologies to solve business challenges.

Vocational training is an important factor in driving prosperity. In addition to training for employees and distributors, the Group initiates, supports or runs vocational training programs across the world focusing on practical skills for mechanics, bus or truck drivers and machine operators. Volvo Group specialists can be directly involved as teachers or trainers and in some countries the Group cooperates with technical colleges and universities.

In several markets, the Volvo Group and its customers have experienced a mismatch between skills and business needs. In many of these markets the Volvo Group therefore works together with national and international aid agencies to provide the education needed for increasing employment and opportunities for people to be self-sufficient.

Such projects aim at creating employment opportunities in the heavy-duty machinery and commercial vehicles industry. The projects are designed to improve the relevance and quality of technical and vocational training and education in our sector and to ensure that experienced and new professionals are equipped with marketable skills that enhance their employability. Read more on volvogroup.com

Safety

OCCUPATIONAL HEALTH AND SAFETY

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets
3.3 End epidemics of communicable diseases
8.8 Promote safe working environments

3 GOOD HEALTH AND WELL-BEING
8 DECENT WORK AND ECONOMIC GROWTH

Referenced reporting standards
GRI 403 – Occupational health and safety 2018

In the Volvo Group, we know that it is our people who will move the company ahead. To make it happen, we strive for a workplace where all colleagues come home safe - every day. The Volvo Group Health and Safety Policy gives direction on how workplace safety, health and wellbeing shall be handled within the Group. The policy covers both direct employees, consultants and other people working on Volvo Group sites.

Safety culture

In 2022, the Group's Health and Safety vision for 2030 was redesigned to emphasize on a health and safety culture of care. The aim is to reach a truly integrated safety culture that represents a transition from a systems-based, management-led safety culture to one that is focused on people. In this culture, near misses and errors are used to improve. People are made aware of what to do and how to act in situations that may impact their well-being, but most importantly – we take care of ourselves and of others. To strengthen this culture and systematic approach, prioritized actions have been selected based on lessons learnt across the organization.

Defining common measurements
The Volvo Group is in the process of defining common measurements to strengthen the health and safety culture. A key element is to address risks as early as possible. Prevention of serious injuries and fatalities, with targeted approaches towards high-risk activities, has been a focus area during this year. Shared awareness of the most significant risks is the cornerstone of the company's safety culture.

Mental health
More focus is shifted to actions towards a higher level of well-being, as opposed to health problems. In this work, we have identified needs to develop a more structured process to follow up on mental health suitable for our widespread global operations.

Leadership
Safety leadership is a key component in a successful safety culture. Safety leadership is oriented towards learning and continuous improvement, spending time in the field, and on dialogue. Leaders are equipped to be on top of the health and safety matters in their teams.

These priorities are supported by a global network of over 200 expert practitioners on occupational health and safety – including doctors, nurses, safety engineers, psychologists, and ergonomists who collaborate to find and share best practices. One of the Group activities to spread good practices is the Volvo Group Health & Safety Award, an annual event recognizing achievements and efforts across the organization. In 2022, more than 80 applications were submitted, read more in the strategy section on page 41.

Occupational health and safety management system

Each business area, division and function is accountable and responsible for managing health, safety and well-being. Volvo Buses and Volvo Construction Equipment have continued to certify their parts of the management systems according to ISO 45001. Others Business Areas have been developing internal safety management systems with regular assessments and coaching as an integral part the Volvo Group Management System (VGMS) and Volvo Production System (VPS). This helps to ensure that there are written procedures, internal controls, clear ownership and management review, and that deviations are acted upon. The scope of prevention work includes both physical and psychological health, and workplace safety. It covers all employees working for Volvo Group on- or off-site, as well as the time spent commuting to and from work.

Hazard identification, risk assessment and incident investigation

Volvo Group and its subsidiaries apply tools and processes to manage risk and create productive working environments. Risk assessments are carried out on a regular basis at all levels from shop floor to office. Health and safety professionals ensure the quality of risk assessments and involve line management and union representatives in this work. Potential risks are in focus during internal assessments and external audits, where typically a sample of risk assessments and corrective and preventative actions are reviewed.

Managers and employees are reviewed in their knowledge of their own major risks. Measures to mitigate or eliminate the identified risks are defined and implemented, and risk assessments are reviewed and updated periodically or after any incident has occurred. The Group is in the process of developing a more systematic approach to serious incidents with focus on the most significant risks.

Recordable accidents are reported and followed up at the unit level and further up in the organization, continuing up to the Group level. Investigations resulting in corrective and preventative actions must be deployed after each recordable accident. In cases where the issue is linked to risks that may be relevant for other units – the causes of the accident and the corrective and preventative measure to avoid a repeat are shared with other relevant units within the global health and safety network. In certain cases, directives are built to be deployed throughout the company as part of a preventative measure.

Based on the risk assessment carried out for a specific machine, process or work area, employees receive training, so they understand the risks and how to manage them – through following defined procedures or wearing personal protective equipment, for example.

When defining corrective or preventative actions in response to identified risk, the Volvo Group Health and Safety Policy requires that the hierarchy of control measures principles be applied. The first option is hazard elimination. If hazard elimination is not possible, substitution, engineering controls, administrative controls and personal protective equipment are applied. The policy is distributed and made visible on the walls of factories and offices within the company.

Employees are asked to report accidents, incidents and unsafe acts and conditions – as they are a vital source of improvements and highlight opportunities to better control the associated risk. The Volvo Group's Code of Conduct and related processes make it clear that any management reprisals against individuals making such reports in good faith are not tolerated. If a manager or colleague acts against the Code of Conduct – a whistle blower process can be used to escalate this.

Health and safety coordinators are employed to support team leaders and managers in the organization. Periodic training is also organized on health and safety procedures, roles and responsibilities for managers and health and safety coordinators.

Ergonomics in focus

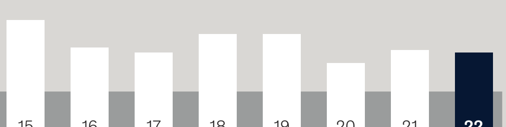
Ergonomics is a prioritized area across the Volvo Group and individual workstations are regularly assessed for improvements. Operators, employees and consultants also receive training on occupational ergonomics tailored to specific areas, whether manufacturing, administration or when working from home. Training centers on many of the Group's sites also offer and promote training courses opportunities on focused themes within ergonomics.

Ergonomics guidelines exist for specific roles. In manufacturing for example, guidelines summarize the main ergonomics specifications and provide general principles for an ergonomic-based approach to workstations design and layout.

Occupational health services

Occupational health services are provided to employees at most units and vary from one country to another depending on the specific needs of the unit, the level of health service provided and local legislation. In many countries and locations, health services are supported by company doctors and nurses, psychologists, physiotherapists and ergonomists.

Rates of injury and number of work-related fatalities 2014–2022



	15	16	17	18	19	20	21	22
Lost time accident rate (LTAR) per 200,000 worked hours.	1.38	1.06	1.00	1.22	1.22	0.87	1.03	**1.00**
Number of accidents with lost time	980	809	789	972	1,004	656	735	786
Number of fatalities Employees	0	0	3	1	0	0	0	0
Number of fatalities Contractors	0	0	0	2	0	0	0	0

In some countries/organizations such services can be supplied by third parties. If so, they are required to ensure data privacy in accordance with applicable regulations. Occupational health services play a major role in health promotion. These service providers manage confidential databases and can help to provide anonymized reports about relevant health aspects – diabetes, cardiovascular disease, stress levels, etc. – to implement relevant preventive and corrective actions.

In 2022, the Group continued to deal with the effects of the covid-19 pandemic. Significant efforts were put in place to hinder and slow down the spread of the pandemic and protect employees. In many countries, Volvo Group has arranged on-site vaccination via third party health service providers.

Worker participation, consultation and communication on occupational health and safety

Worker representatives are appointed to health and safety committees by employees. Depending on the type of business area, health and safety committees operate on the factory level, retail office level or unit level. The main objective of the committees is to bring together worker and management representatives, define actions and jointly agree on measures needed to improve health and safety performance. Committees meet on a regular basis and decisions taken shall be communicated to the workforce, acted upon and followed up. The committees could also be involved in accident and incident investigations and support in additional corrective or preventative measures.

Worker training on occupational health and safety

All employees and consultants are provided health and safety training as well as other Code of Conduct training as part of their induction training. More specific training is provided depending on the job responsibilities. Specific training for potentially hazardous jobs – such as working with electricity or hazardous substances, at heights and in high heat conditions – is mandatory for employees working in these environments and needs to be repeated on a regular basis. All training is provided during working hours. The effectiveness of these trainings is assessed locally depending on each organization and country.

Workers covered by an occupational health and safety management system

The Volvo Group Management System includes health and safety management based on legal requirements and covers all employees and consultants, and these are all included in the safety reporting presented below.
The percentage of employees and consultants who have been covered by an internal audit cannot be reported. The data is not available.

By December 2022, 60 sites covering around 30% of Volvo Group's employees have chosen to certify their operations according to ISO 45001. Volvo Buses and Volvo Construction Equipment are two business areas that have chosen to certify their entire operations.

Work-related injuries

Volvo Group tracks the accidents and accident rates in all locations including plants, workshops and offices in all countries of operations. In 2022, the accident rate was 1.00 per 200,000 worked hours.

Health and safety data is reported at operating unit level and consolidated at Business Area/Truck Division and Group level. The data is collected quarterly at the Group level and on a monthly basis by several Business Areas and Truck Divisions. Work is ongoing to facilitate consolidation of data across the Group. While many different KPIs are reported for different needs, lost time accidents and lost time accident rate are the outcome oriented KPIs used on Group level. Work is ongoing to identify other global KPIs.

Measurements of high-consequence or serious work-related injuries and related hazards are used in many parts of the organization but without common definitions and consolidation systems so far. As such, they are not consolidated at Group level but are shared in health and safety networks for learning purposes and risk mitigation.

Promotion of worker health

The Volvo Group has for a long time provided various health promoting activities beyond occupational safety. These programs are often provided by external partners. Health promotion programs may cover topics such as preventing communicable diseases, substance abuse, obesity, healthy lifestyle, physical exercise, nutrition, sleep and stress management. The psychological work environment is growing in focus, and many tools are available to support in preventing issues and promoting good mental health. There are various types of tools that can be used depending on specific and individual needs. The confidentiality of individuals is protected in line with general data privacy laws. Throughout the year many countries have used pulse surveys and engagement tools to understand attitudes and feelings in general, and in particular to a shift where work-life is affected by remote work and social distancing. This approach has been useful and actions have been taken in response.

Prevention and mitigation of occupational health and safety impacts directly linked by business relationships

In accordance with the Volvo Group's Supplier Code of Conduct, on-site audits are performed at suppliers on a wide variety of sustainability topics. Health and safety are central elements to this process. Read more about this on page 176–177 – Supplier social assessments.

Occupational safety, as well as road safety, are central elements in the Group's offer to end-users. Volvo Group provides customer solutions and training to increase safe behavior and safe product use. Please read more about customer health and safety below.

CUSTOMER HEALTH AND SAFETY

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets

3.6 Halve road traffic accidents
8.8 Promote safe working environments
11.2 Provide access to safe, affordable and sustainable transport systems for all, improving road safety.

3 GOOD HEALTH AND WELL-BEING
8 DECENT WORK AND ECONOMIC GROWTH
11 SUSTAINABLE CITIES AND COMMUNITIES

Referenced reporting standards

GRI 416 – Customer health and safety 2016

Volvo Group has a value chain approach to customer health and safety that considers the effects on customers, end users and indirect stakeholders. The Group's business and the products it offers target a wide range of application areas and impact many categories of people, such as drivers and operators, commuters, as well as other traffic system users like cyclists and pedestrians.

The vision is zero accidents with Volvo Group products, and the offering of world-leading products and solutions for sustainable transports is an important part of getting closer to our vision.

Volvo Group's products are used in complex and challenging environments. Every year, an estimated 1.3 million people lose their lives in road traffic accidents worldwide, and many millions are seriously injured. In addition, there are occupational health and safety risks in and around vehicles and machines, both on the road and in construction and work sites. Issues such as noise and air pollution are also considered in customer health and safety.

A holistic approach means addressing all these concerns in a proactive and systematic way. Volvo Group works systematically with in-depth accident research to understand the context and challenges facing customers in their operations. This knowledge is then used in product development to achieve continuous improvements. Volvo Group also works with partners in academia and policy makers to promote progress in road traffic safety and enable safer solutions to be brought to the market. By designing the best solutions to address these global health and safety challenges the Volvo Group both contributes to the Sustainable Development Goals and delivers on its commitment to offer the most competitive solutions to customers and business partners. The knowledge gained on safety is shared via communication and training programs in many markets where the Group operates to raise awareness and promote a safe driving behavior.

Assessment of the health and safety impacts

Product safety makes up the foundation for the Group's safety vision. A safe product is free of safety-related defects, compliant with relevant regulations and industry standards, and safe to use during its normal life cycle.

Proactively, all product lines are assessed for health and safety impacts with the purpose of securing that it is designed to be safe and to find quality improvements. After the product has been released to the market, safety assessments include continuous audits in production as well as investigations of real accidents. Issues that are identified in the assessments are further investigated. Issues that after investigation are judged as safety-related defects lead to a recall of the product so that the issue can be rectified.

Human rights

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets

5.1 End discrimination against women and girls

8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking

8.8 Protect labor rights and promote safe and secure working environments for all workers

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

Referenced reporting standards

GRI 406 – Non-discrimination 2016
GRI 407 – Freedom of association and collective bargaining 2016
GRI 408 – Child labor 2016
GRI 409 – Forced or compulsory labor 2016
GRI 412 – Human rights assessments 2016
UN Guiding Principles Reporting framework

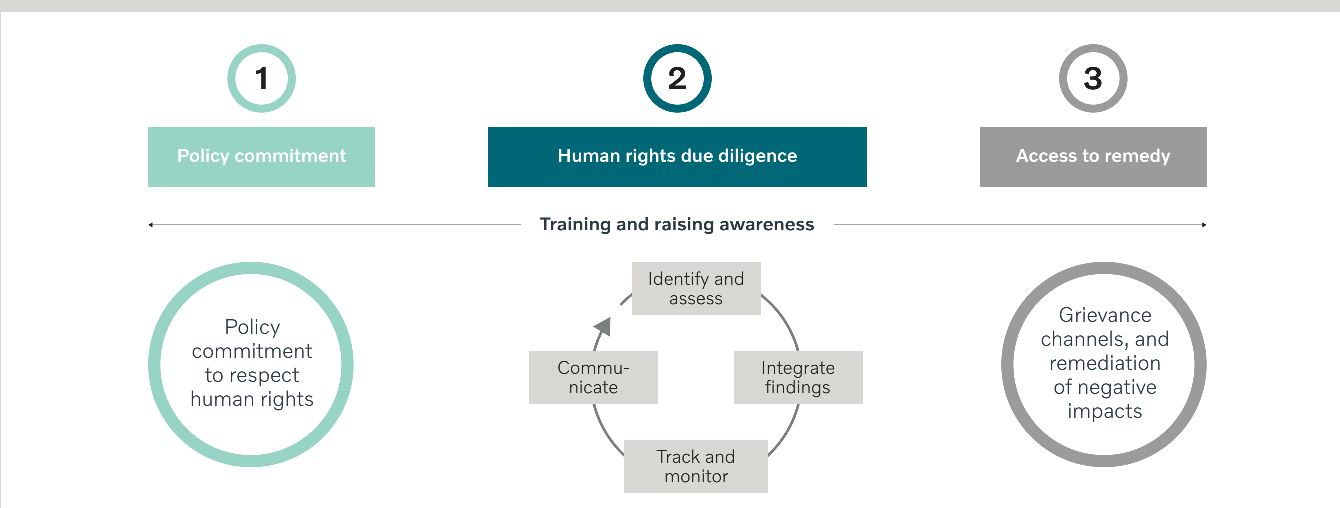
The Volvo Group is committed to respecting internationally recognized human rights. Negative human rights impacts may potentially materialize not only within our own organization, but also through our business relationships and in the value chain. We also seek to address adverse human rights impacts with which the Volvo Group is involved. We are continuing to strengthen and align our human rights work with the following international frameworks:

- UN International Bill of Human Rights.
- ILO's fundamental conventions.
- UN Global Compact.
- UN Guiding Principles on Business and Human Rights.
- OECD Guidelines for Multinational Enterprises.
- Children's Rights and Business Principles.

This is an ongoing journey and the Volvo Group has adopted a risk-based approach where we prioritize and focus on the areas where we consider that we have the highest risks for adverse human rights impacts. We also recognize that a core tenet of many of these frameworks is tracking and monitoring performance to drive continuous improvement and using experiences as a source of continuous learning. This report sets out our progress to date, but we acknowledge there is more to be done.

The Volvo Group reports on its human rights related work under applicable laws and regulations, including national laws under the EU's non-financial reporting directive, and the Modern Slavery legislation in Australia and the United Kingdom. In 2022, we published Modern Slavery Statements for relevant companies within the Volvo Group in line with these legal disclosure requirements.

VOLVO GROUP HUMAN RIGHTS PROGRAM – MAIN ELEMENTS



Human rights governance and oversight

The Volvo Group's human rights governance follows our allocation of business accountability and includes several cross-functional governance fora across the company. At the Group level, the strategic direction on human rights is overseen by the Volvo Group Human Rights Board composed of relevant members of the Executive Board.

Implementation of the Human Rights Program is supported by a cross-functional reference group and a working group with members from relevant Group functions, Truck Divisions and Business Areas.

Human Rights program

In 2022, the Volvo Group Executive Board adopted a Group-wide Human Rights Program. The Volvo Group Human Rights Program describes how we implement our commitment to respect human rights as set out in our Human Rights Policy. The purpose of the Human Rights Program is to ensure that Volvo Group can systematically identify, mitigate and address human rights risks and ensure continuous improvement in our processes. The program provides further clarity to the organization on the Volvo Group's ambition on human rights, applicable standards, salient human rights risks, human rights due diligence strategy, and human rights governance across various levels of the Volvo Group.

In the process of implementing the Human Rights Program, we have identified the need to further strengthen and develop central tools and processes to manage the Group's human rights work. This work is underway and intends to facilitate greater harmonization, accountability and Group-wide awareness.

Human Rights Policy commitment

The Volvo Group launched a standalone Human Rights Policy in 2021. This policy sets the common threshold for our commitment to respect human rights and applies to all Volvo Group entities, employees and others working at our sites. The Human Rights Policy is complemented by the Volvo Group's Code of Conduct, the Volvo Group Human Rights Program and specific policies, directives and guidelines developed by our Truck Divisions and Business Areas in several human rights-related areas. These include health and safety, responsible purchasing through our Supply Partner Code of Conduct (updated in 2021), human resources, responsible sales, and whistleblowing.

Salient human rights risks

The Human Rights Policy is based on the Group's sustainability priorities and highlights risks related to people, climate and resources. Human rights risks may be associated with our activities and business relationships in all of these areas. The Human Rights Policy describes the Volvo Group's ten salient human rights risks across these three areas, see illustration.

CLIMATE	RESOURCES	PEOPLE
Climate & environmental impacts	Hazardous materials & substances	Health, safety & facilities
	Minerals & metals from conflict-affected and high-risk areas	Fair employment & working conditions
		Freedom of association & collective bargaining
		Non-discrimination & fair treatment
		Forced labor & modern slavery
		Child labor & children's rights
		Sales to conflict-affected & high-risk areas

The human rights due diligence and mitigation efforts adopt a risk-based approach considering country-specific risk levels and our operational context in the country, inherent risks in certain purchasing categories and sales segments, and potential concerns brought to our attention by internal and external stakeholders. This means that our divisions managing research and development, manufacturing and procurement focus on certain human rights risks, and our business areas and market companies focus on others. The most important risks for our divisions and business areas make up the Group's salient issues.

Human rights due diligence across the value chain

Our human rights work aims to identify, prevent, and mitigate potential or actual adverse human rights risks and impacts. The Volvo Group's scope of responsibility, influence, and leverage varies across different parts of the value chain and operational contexts. Therefore, our human rights related processes and activities should be adopted to reflect the context of our role within the respective parts of our value chain including own operations, the supply chain, business partners and sales deals.

To help facilitate systematic and ongoing human rights due diligence throughout the Volvo Group, each year we adopt and implement a Human Rights Plan listing prioritized activities for the year to come.

Our own operations

At a Group level, country-by-country human rights reviews are carried out with the ambition to cover all operations, employees, and other personnel at our sites in the reviewed country. These reviews are conducted using a methodology developed in accordance with internationally recognized practices and includes the following main elements:

- Desktop analyses based on internal data such as workforce data, local policies, internal expert interviews, employee survey responses and collective bargaining agreement, and external sources such as country human rights reports and human and labor rights laws.
- Self-assessments by country management teams and local human resources departments.
- On-site visits with country management and human resources, and local internal subject matter experts, employees and third party personnel onsite. If appropriate also including external expert organizations.
- Corrective actions and follow-up after each review with agreed action plans and accountability within the local management and communication to relevant members of the Executive Board.

Human rights reviews are often overlapping with several other internal processes, such as those related to non-discrimination, health and safety, employee relations, quality and environmental management. Findings from reviews within the respective areas can highlight improvement areas in other processes, including human rights work.

Reviews in own operations have been performed in India (2017), South Africa (2018), and Mexico (2019). This type of review activities had to be paused in 2020 and 2021 due to the covid-19 pandemic. Following a revision of the process and methodology we restarted the review processes and in 2022, with reviews initiated in Turkey, UAE, Algeria and Morocco. The target is to perform human rights reviews covering all own operations in countries with elevated human rights concerns by 2025.

Our supply network

The Volvo Group's Supply Partner Code of Conduct sets minimum requirements, and aspirations for our suppliers in the areas of climate, resources and people, including human and labor rights, health and safety, responsible sourcing of raw materials, environmental performance, and business ethics. While issues differ across the supply chain depending on countries and processes, a number of risks related to human rights has been identified, which are addressed through the Group's responsible purchasing program, read more on page 176.

Business partners – truck assembly and bus body building

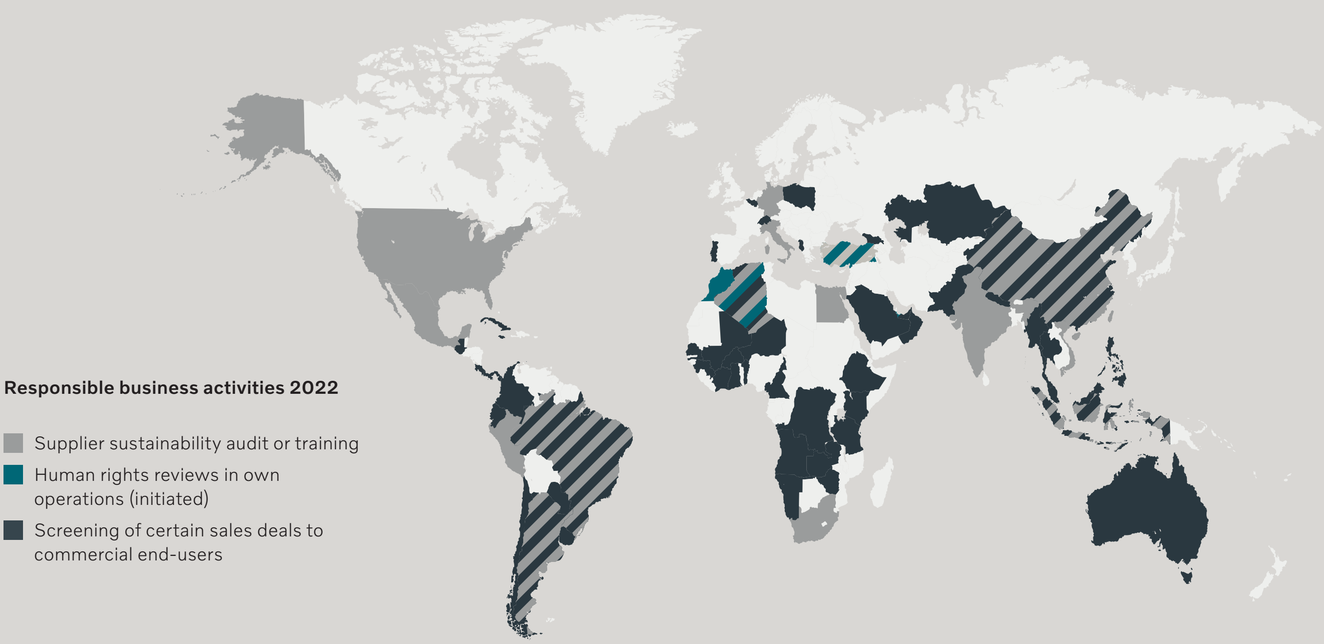
In addition to our owned manufacturing operations, the Volvo Group collaborates with private business partners to assemble trucks and build bus bodies on our chassis in line with customer specific requirements. Some of these partners are located in countries with elevated human rights risks. Ongoing activities to secure that business partners operate in line with Group requirements include e.g. to implement social and environmental requirements in contractual agreements, requirements on self-assessments and on-site reviews.

In 2021 a follow-up review was conducted at a truck assembly partner in Malaysia focusing on employment practices. The review was completed in 2022 and learnings from the reviews feed into our continued work with human rights due diligence.

In 2021, Volvo Buses analyzed the risk profiles of its bus body builders from a human rights perspective and included human and labor rights related requirements in contractual agreements with body builders identified as high risk. In 2022, Volvo Buses initiated human rights training with business partners.

In addition, risks have also been identified related to employment conditions for truck drivers in the road transport sector in Europe. Even though the Supply Partner Code of Conduct sets out minimum requirements for all partners, including logistics service providers, the varying regulation in Europe as regards drivers' employment conditions requires broader industry collaboration. Consequently, the Volvo Group is involved in CSR Europe's Responsible Trucking Initiative, which aims to improve employment and working conditions for truck drivers in the road transport sector across Europe. The initiative has released social guidelines for common expectations towards suppliers and sub-contractors on human rights, working conditions and business ethics, read more at www.csreurope.org/.

Responsible business activities 2022



Our sales channels and the use of products

Certain sales deals are assessed for risks related to human rights, primarily in connection with direct sales deals involving customer financing and support from export credit guarantees as well as sales to certain high-risk end users such as the military and law enforcement. Certain sales deals are also assessed in specific customer segments such as the fossil fuels sector, mining, and sales to conflict-affected areas with particular human rights risks. This part of the human rights and related sustainability assessment is further described in a separate section on Responsible sales on page 175.

Human rights awareness

Training and raising awareness for our colleagues and relevant business partners is a key element of our human rights work and an area where it is recognized that continued improvement is needed. In addition to the Group's overall Code of Conduct training which includes certain aspects of human rights, many parts of the organization have held human rights awareness sessions during the year. In total, some 2,000 individuals, many of which in sales areas and market management, have been trained in such human rights, including specific sessions directed to management teams. These overall human rights awareness initiatives complement other specific training on related topics such as diversity and inclusion, health and safety, non-discrimination and anti-harassment, equal pay and living wage, responsible purchasing and responsible sales.

Stakeholder engagement related to human rights

Our human rights work includes ongoing dialogues with unions, and engagements with employees, customers and investors, as well as NGOs, and other societal actors on our human rights approach and performance. In 2022, our engagement with external stakeholders primarily related to our overall human rights governance and policy, sourcing from conflict-affected areas, and sales to military end-users and to customers in certain markets. See pages 175 for more details on Responsible sales including our response and actions on stakeholder concerns.

Grievance channels and access to remedy

Employees, representatives of the Volvo Group, and external stakeholders can report any instances of breach of our Code of Conduct and other policies, including human rights violations, where the Volvo Group or any of its representatives are believed to be involved. Grievances can be reported through internal and publicly available grievance channels described in our Code of Conduct, including the Volvo Group Whistle. Reports can be made anonymously wherever permitted by local law.

The Volvo Group aims to provide for or cooperate in the remediation of negative human rights impacts if our activities have caused or contributed to them and seek to play a role in the remediation of negative human rights impacts that we may be directly linked to in our operations, products, services, or business relationships.

See page 179 for more information on our grievance channels and the types of concerns reported in 2022.

Specific disclosures on salient human rights risks

Climate and environmental impacts

We recognize the importance of the transition to a low carbon economy envisaged by the Paris Agreement, and that a safe and clean environment is essential for the full enjoyment of human rights. **> Read more on page 150-156**

We are actively working to reduce climate and negative environmental impacts in our operations and our value chain. Our ongoing environmental work includes impact assessments and continuous improvements **> Read more on page 157–158**

Hazardous materials and substances

We have a target to phase out potentially hazardous materials and substances, where possible, and to secure their safe and responsible handling throughout the value-chain **> Read more on page 158**

Minerals and metals from conflict-affected and high-risk areas

A dedicated Sustainable Minerals Program supports our efforts to pursue due diligence for supply chain transparency and to promote responsible sourcing, extraction, and handling of such materials. **> Read more on page 177**

Health and safety

As a human centric company, safety is a priority in everything we do. We have a vision for zero accidents with Volvo Group products and in our workplaces. **> Read more on page 167–168**

Fair employment and working conditions

The Volvo Group assesses potential gaps in employment and working conditions in our due diligence activities in own operations and in the supply chain. Our policies such as the Code of Conduct, Human Rights Policy, Supplier Code of Conduct, and global and local human resources guidelines spell out our expectations.

In 2022 we began to define what fair living wages mean to the Volvo Group. This was done with guidance from the Fair Wage Network and by reviewing the approach of other large organizations and their experiences. With this input, work was initiated in twelve countries to identify potential gaps. Similar activities are expected in 2023 with the remaining 45 countries where the Volvo Group has employees, in order to have a full view of any potential living wage gaps, to then agree on any necessary mitigation plans.

Specific disclosures on salient human rights risks

Freedom of association and collective bargaining

Legal compliance is the foundation for Volvo Group's activities. Varying country legislation on union independence means the approach to managing freedom of association and collective bargaining may differ from one country to another. The Volvo Group respects the right of all employees to form and join an association to represent their interests as employees, to organize, and to bargain collectively or individually, as well as the right to refrain from joining a union.

We assess risks related to freedom of association and collective bargaining as part of our overall human rights due diligence in our own operations and in the supply chain. Human and labor rights issues, as well as other relevant topics, can also be raised during the Volvo Global Dialogue – a global forum where employee representatives engage in discussions with the Volvo Group's executive management. Such concerns can also be raised at any time to managers, to manager's managers or through the Volvo Group Whistle.

As reported in the section on Labor-management relations, an estimated 41% of regular employees around the world are members of an independent trade union. Approximately 72% of employees globally are covered by Collective Bargaining Agreements.

Our Supplier Code of Conduct requires suppliers to respect their employees' right to freedom of association and their right to collective bargaining. It also provides that where local law sets restrictions on the right to freedom of association and collective bargaining, the supplier shall allow alternative forms of worker representation, association, and bargaining.

> Read more on employee relations on page 165 and responsible purchasing on page 176.

Non-discrimination and fair treatment

At the Volvo Group, we do not tolerate harassment and or discrimination and aim to mitigate unconscious bias.

In 2022, 39 allegations perceived as related to discrimination or harassment were reported via the Volvo Group Whistle, included in the category Fair Workplace Management on page 179. All reports were investigated, with eight being in progress at year-end. Four of the closed reports were substantiated. Most cases resulted in corrective actions, such as training, coaching or changes to processes or routines. Moreover, seven cases alleging sexual harassment were reported in 2022 which are included in the category Violations of privacy or private sphere. Of these, three were substantiated and followed with disciplinary measures, one was unsubstantiated with further corrective actions and three were in progress at year-end.

The Volvo Group provides awareness trainings to prevent harassment and discrimination. This is done with the Volvo Group Code of Conduct as the core foundation. In addition, special courses on prevention of harassment and discrimination are offered for managers in some jurisdictions, for example the training Civil Treatment for Leaders in the US.

> Read more about our approach on diversity, equity, and inclusion on page 164.

Forced labor and modern slavery

The Volvo Group assesses risks related to forced and compulsory labor as part of our overall human rights due diligence in our own operations and relevant parts of the value chain. In 2022, no cases of forced or compulsory labor were identified at own operations or during supplier sustainability audits. During the year, we published Modern Slavery Statements for relevant companies within the Volvo Group in line with legal disclosure requirements.

> Read more about Code of Conduct training on page 178-179.

Child labor and children's rights

The Volvo Group assesses risks related to child labor and children's rights as part of our overall human rights due diligence in our own operations and relevant parts of the value chain. In 2022, no cases of child labor were identified at own operations or in supplier sustainability audits.

When considering human rights, we look at a range of aspect where we can have an impact. On road traffic safety, one area close to our business is road traffic safety and in this context, children's rights as road users are emphasized. Our global campaign Stop. Look. Wave. is designed to teach children all around the world about traffic safety and to spread the awareness of the rights of all road users.

In connection with our Sustainable Minerals Program in the supply chain, we are also considering how the Volvo Group can be more involved on the ground to prevent child and forced labor in the conflict minerals supply chains through collaboration with local civil society organizations.

> Read more about road and traffic safety on page 169, and responsible purchasing on pages 176–177.

Sales to conflict-affected and high-risk areas

The sale and use of our products in conflict and other high-risk contexts could result in potential adverse human rights impacts. Therefore, we make extended reviews of certain sales deals – involving customer financing and support from export credit guarantees, sales to certain high-risk end users such as military and law enforcement end-users, and sales to conflict-affected areas.

> Read more about responsible sales activities on next page.

RESPONSIBLE SALES

The Volvo Group has processes and policies with the aim to ensure that our business is conducted in compliance with applicable laws and regulations, including sanctions and export control regimes. In addition, we assess certain sales deals for risks related to human rights, environmental factors and business ethics as part of knowing the customer or end-user processes. These assessments are primarily carried out in connection with direct sales involving customer financing and support from export credit guarantees, sales to certain high-risk end users, such as the military, and sales to conflict-affected areas.

Assessment of commercial sales deals

When assessing sales deals, we use external risk databases and tools such as Verisk Maplecroft, and RepRisk for risk identification. The findings are assessed, described, and escalated to relevant fora within our Business Areas or to Group Functions. Actions for identified findings typically include engagement with our customers with the aim to support them to mitigate identified risks. In some cases, we may also engage with other external organizations such as embassies or NGOs. If the risks are considered too high and difficult to mitigate, we may decide not to proceed. In our assessments, we consider country risk levels, customer segments, end-users and intended end-use of our products. Our Business Areas have the responsibility to perform these assessments, with support from Group Functions when needed.

In 2022, 145 such assessments have been performed by the Group's Business areas, mainly related to customer financing and sales to certain high-risk markets. Some of these assessments identified issues related to potential adverse impacts on the environment and communities, lack of respect for human and labor rights, poor employment conditions, occupational health and safety, and unethical business behavior.

Sales to military end-users

The Volvo Group's Business Areas are required to escalate potential sales to military end-users in certain countries for assessment by Group Functions before submitting an offer. Military end-users include the armed forces and other armed law enforcement agencies. Factors such as the existence of arms embargoes, armed conflicts, political instability, and human rights-related risks are considered in this assessment. This process is governed by an internal directive on military sales and is on top of any export license requirements from national authorities. The European Union's common rules governing control of exports of military technology and equipment include several criteria on respect for human rights and international humanitarian law, which member states are expected to consider when granting such export licenses.

In 2022, Volvo Group assessed 46 potential transactions to selected military and government end-users in various countries. Depending on the country of end-use, sales deals either require a decision by the Volvo Group's Military Sales Committee (comprising relevant members of our executive management) or a recommendation from Group Functions to the Business Area for its own decision.

Stakeholder questions on sales to certain markets

In addition to questions around our approach on sales to military end-users, the Volvo Group has received specific questions on use of the Group's products in Israel and in jade mining in northern Myanmar. These questions were raised several years back, but we still keep dialogue with interested stakeholders.

In Israel, the sale of our trucks, buses, construction equipment and other products is made via a private importer. These sales are not targeted towards any specific areas within Israel and the products could be used in many different applications by different users. Further, our products have a long-life span and may be rented out and change ownership many times during their life cycle and we are limited in our possibilities to influence how and where our products will be used throughout their entire life cycle.

In 2018, a Swedish NGO published a report on environmental and human rights-related risks in the jade mining sector in northern Myanmar also featuring our products. Volvo Construction Equipment has since then engaged with an external organization to assess human rights risks in the country. The efforts were acknowledged by the NGO's follow-up report in 2020. Since 2020, our dealer is no longer selling to the jade mining sector. Together with our dealer, we have intensified due diligence of sales deals focusing on the end-user and intended end-use.

Governance and awareness

As part of the continuous improvement, the Volvo Group's business areas continued to strengthen their approach to responsible sales including governance, screening procedures, and training and awareness. In 2022, a new online training focusing on responsible sales was made available and finalized by approximately 300 individuals in the Volvo Group.

In addition, a number of in-depth awareness sessions on responsible sales were held, recorded and distributed on Volvo Group's internal webpages.

Supply partners and responsible purchasing

SUPPLIER SOCIAL AND ENVIRONMENTAL ASSESSMENTS

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets
8.8 Protect labor rights and promote safe working environments
12.4 Responsible management of chemicals and waste
13.3 Knowledge and capacity building to meet climate change mitigation

Referenced reporting standards
GRI 414 – Supplier social assessment 2016
GRI 308 – Supplier environmental assessment 2016

The Volvo Group supply partners play an integral role in realizing our sustainability strategy across the full value chain. With more than 50,000 tier one supply partners worldwide delivering 2.5 billion parts, Volvo Group has the opportunity to influence the sustainability transformation throughout the supply network beyond tier one suppliers.

The foundation of the Volvo Group Responsible Purchasing program is our supply partner due diligence activities based on commitment, assessment, action and reporting.

Commitment
The Supply Partner Code of Conduct is the platform for our collaboration in building sustainable supply networks. Not only does it outline our current sustainability requirements, which supply partners shall comply with. It also includes aspirations through which supply partners are encouraged to evolve to further advance sustainable performance and impact in the areas covered by the Code of Conduct. The Supply Partner Code of Conduct is based on the Volvo Group's sustainability ambitions in the areas of people, resources, and climate and outlines amongst other the mandatory pathway for all supply partners to establish net-zero greenhouse gas emission supply networks by 2040 at the latest, and their commitment towards circularity. It is also guided by the Automotive Industry Guiding Principles of Drive Sustainability as well as frameworks such as the OECD Guidelines for Multinational Enterprises, the UN Guiding Principles of Business and Human Rights and other international frameworks as explained in the section on human rights, see more on page 170.

Assessment
The sustainability assessments of the supply partners cover primarily tier one suppliers and are conducted through supply partners' self-assessments as well as targeted in depth on-site audits. A risk-based approach is used, where prioritization of audits is made by reviewing risks by country or market, commodities, processes or work areas of the suppliers. The risk assessment is based on external tools bringing an updated view of risks related to human and labor rights, environmental and business ethics risk across the globe. As a complement, risks can be flagged during any type of supplier audit, training or visit. The Volvo Group carries out most audits and reviews with internal resources with a shared responsibility between procurement staff and specialized auditors, whose tasks it is to ensure that proper actions are taken to resolve identified gaps.

Self-assessments
Volvo Group utilizes a standardized questionnaire for the automotive industry focused on sustainability in the supply network. The self-assessment questionnaire (SAQ), considers sustainability performance within human rights, working conditions, as well as environmental and responsible supply chain management. Potential supply partners are invited to conduct the SAQ and the result is used in the supply partner selection process. For a selected partner, the self-assessment result will result in a corrective action plan if it falls below a risk threshold. To drive continuous improvement the rating is valid for three years, thereafter a new assessment is needed.

In total, 1,530 sustainability self-assessments were performed in 2022. From a total Volvo Group direct material spend perspective 89% of the supply partners had conducted the assessment, out of which over 99% had a recorded approved rating. In high-risk areas, the corresponding result was 93%, out of which 95% had a recorded approved rating.

On-site audits
New supply partners of direct material in high-risk countries are subject to additional due diligence assessments through on site audits. Indirect material supply partners are audited when the suppliers are located in a high-risk country and the annual spend exceeds a pre-defined threshold.

After some time of lower audit activity due to travel and meeting restrictions due to the covid-19 pandemic, the number of audits has increased as restrictions in many countries have been removed. In 2022, 137 on-site audits were carried out. The Code of Conduct audit procedure is focused on a wide range of aspects, such as human rights, working conditions, environment and business ethics. The responsibility of improvements and corrective actions always lies with the supply partners themselves, where non-compliance cases are managed by the responsible buyer together with the auditor until resolved.

Overall, the sustainability assessment of supply partners focuses on developing a sustainable supply base and establishing a strong partnership. The results are used in the sourcing decisions. Those who fail to address critical issues risk not to be rewarded with a contract or having their contracts terminated.

Building knowledge
Volvo Group Purchasing employees receive regular mandatory trainings on the concept of sustainability and on the content of our Code of Conduct. In collaboration with Drive Sustainability, Volvo Group continuously work to also train and develop supply partners in sustainability and responsible purchasing. In 2022, Volvo Group invited and onboarded supply partners located in USA, Germany, and Italy to participate in live sustainability trainings. We have also actively participated and invited suppliers to the Drive Sustainability e-learning, offering a basic introduction to Drive Sustainability and sustainable purchasing. During 2022, representatives from 85 supply partners completed the e-learning.

Social impacts in the supply network and actions taken
In 2022, deviations were found within the areas of health and safety, working hours and sustainability communication towards sub-suppliers. In the area of health and safety, the deviations related mainly to emergency and fire preparation as well as management of hazardous waste. In the area of working hours, the findings were related to excessive working hours. Within the area of supplier communication, the deviations were found around inconsistent sub-supplier Codes of Conduct, as well as lack of cascading requirements, information and training to sub-contractors about social, environmental or business ethics requirements. The findings from the audits are communicated to the supply partners, which are expected to set up and implement a corrective action plan in a timely manner. Such corrective actions are then monitored by the responsible buyer in cooperation with the auditor and the Responsible Purchasing Team. All have confirmed corrective actions to be taken.

Environmental impacts in the supply network and actions taken
In 2022, minor deviations related to hazardous waste management were found, these were connected to the deviations above. All have confirmed corrective actions to be taken.

Specific supply network topics
Considering common supply network challenges in the Group's sector we have identified some areas important to address in addition to the above. This is especially relevant for certain minerals and materials and greenhouse gas (GHG) emissions embedded in purchased goods and services.

Sustainable Minerals Program
As part of the Supply Network Due Diligence program, the Volvo Group has a specific focus on a range of selected minerals and materials. The Group's ambition is to support its supply partners to secure sustainable supply networks and the ultimate aim is to secure an environmentally and socially sound supply network of components and minerals. Tin, tantalum, tungsten, gold (3TG) and cobalt are the main focus of our Sustainable Minerals Program, where we accelerate the supply chain activities even more and go deeper and wider to make risk assessments and drive sustainable corrective actions. In addition, we also include other minerals of strategic importance such as lithium, nickel and graphite. These materials are part of our global supply chains and are used in a variety of materials and components. As part of this work, Volvo Group is a member of Responsible Minerals Initiative (RMI), see information below.

In 2022, 834 tier one supply partners were included in the Volvo Group's sustainable minerals program. With this as a base, 802 of them were identified as relevant for 3TG minerals, and 334 for cobalt. The majority of the invited companies already collaborate and all invited have been assessed on the parameters of (a) strength of Human Rights Due Diligence program and (b) association with smelters or refiners of concern in their supply network. As a result, 335 smelters or refiners (SORs) were identified to be included in the Volvo Group's supply network. Approximately 73% of them have been certified "conformant" by the Responsible Minerals Assurance Process (RMAP), on behalf of the global organization RMI. Volvo Group co-funds independent third-party audits of SORs due diligence practices through a partnership with RMI and finances the RMAP. The ambition of the Volvo Group's Sustainable Minerals program is to drive full transparency by 2025, where all supply partners in scope are to be compliant with our Responsible Purchasing standards and requirements.

GHG emissions embedded in purchased goods and services
Volvo Group has a clear ambition for net-zero value chain and greenhouse gas emissions by 2040. Reducing indirect emissions from purchased goods and services includes working with partners to decarbonize the Volvo Group supply network, shifting to fossil-free materials, working with circular business models and recycling, as well as ensuring the use of renewable energy in the process and production of materials. In 2022, a thorough cradle-to-gate* analysis was performed of GHG emissions related to purchased goods and services for the Group's truck products. The analysis has been utilized to set decarbonization targets for Volvo Group Trucks upstream emissions from now and the trajectory to 2040 net-zero. Transformational activities have been initiated, to gradually reduce the greenhouse gas emissions, and these will be accelerated from 2023 and towards 2040. Targets are not yet consolidated for the full Volvo Group GHG scope 3.1. In parallel, Volvo Group Purchasing has during 2022 been strengthened by establishing a dedicated team with experts of fossil-free material as well as a team focusing on circularity and remanufacturing to support the implementation of a decarbonized supply network.

* Cradle-to-gate is the part of the product life-cycle before transferred to the customer. In the Volvo Group's overall GHG emission inventory, the use-phase emissions make up over 95% of the total life-cycle emission and is therefore top priority for decarbonization. The cradle- to-gate makes up approximately 4% of which the main part is made up by GHG scope 3.1: purchased goods and services.

Examples of industry collaborations for sustainable supply networks

The Responsible Minerals Initiative (RMI)
RMI is a collaborative platform addressing responsible mineral sourcing issues in global supply networks. Volvo Group is working with RMI with the aim to ensure responsible and sustainable sourcing of tin, tantalum, tungsten and gold (sometimes referred to as conflict minerals), as well as cobalt. Through RMI, participants develop and gain access to tools and resources to ensure regulatory compliance and support responsible sourcing of minerals from conflict-affected and high-risk areas.

DRIVE Sustainability
DRIVE Sustainability is a network of eleven leading automotive companies working towards enhancing sustainability throughout the automotive industry by leveraging a common voice and by engaging with our supply chain partners, stakeholders and related sectors on impactful activities. Volvo Group is active in several working groups within the initiative to leverage a circular and sustainable automotive value chain.

The First Movers Coalition
The First Movers Coalition (FMCis a coalition of companies formed using their purchasing power to create early markets for innovative clean technologies across eight of the hard to abate sectors – aluminium, aviation, chemicals, carbon removal, concrete, shipping, steel and trucking. These sectors are responsible for 30% of global emissions–a proportion expected to rise to over 50% by mid-century without urgent progress on clean technology innovation. More than 60 companies and countries make up the FMC, of which Volvo Group is a founding member. Volvo Group has as member pledged e.g. that by 2030 at least 10% of the primary aluminium purchases will have near-zero carbon emissions. A similar target is placed on steel. These pledges can only be achieved by purchasing advanced technology that in many cases is not yet commercially available. Commitments such as these will create a market tipping point that accelerates the affordability of clean technologies and drives long-term transformation.

Global Battery Allicance
The Global Battery Alliance a public-private collaboration platform under the umbrella of the World Economic Forum. The vision is to create a circular and sustainable battery value chain set on ten guiding principles covering issues from the circular recovery of battery materials, ensuring transparency of greenhouse gas emissions and their progressive reduction, to eliminating child and forced labor.

Business ethics and compliance

Connection to Agenda 2030 and reporting standards

SUSTAINABLE DEVELOPMENT GOALS

Main connections to the UN SDGs and targets
16.5 Substantially reduce corruption and bribery

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

Referenced reporting standards
GRI 205 – Anti-corruption 2016

COMPLIANCE PROGRAMS

Our Code of Conduct states that we earn our business fairly and lawfully. Conducting business in line with applicable laws and regulations is the best basis for sustainable success and the best way to protect our reputation. A dedicated Group Compliance function oversees the implementation of a compliance management system approach for core compliance areas, such as competition and anti-corruption laws, export control regulations and data privacy. The different business areas have established compliance functions to manage the implementation of the compliance management system in their areas and cover additional compliance areas, such as anti-money laundering or emission compliance, to the extent needed. The Volvo Group's compliance management system amongst other things includes policies, guidelines and procedures, regular compliance communication and training, as well as assurance activities such as effectiveness testing and auditing. The Volvo Group has further implemented group-wide Whistleblowing channels that can be used by internal and external parties for all compliance areas. In 2022, no cases of significant non-compliances with laws and regulations have been recorded.

ANTI-CORRUPTION

The Volvo Group strictly prohibits and condemns all forms of corruption, including bribery. This is not only because it is illegal, but also because corruption distorts the market, interferes with free competition, and undermines social development. Volvo Group employees at all levels are prohibited from participating, or otherwise becoming involved, in any form of corruption, including offering or accepting, directly or indirectly, bribes, excessive gifts or hospitality or facilitation payments. The Volvo Group expects all its business partners to adopt and enforce comparable anti-corruption principles and does not tolerate that they get involved in corruption in any form.

The exposure of the Volvo Group and its employees to corruption risks stems from various risk factors. For instance, the company has a global footprint with business operations in many countries, including countries that are high-risk from a corruption perspective. The Volvo Group business involves high-value contracts and direct and indirect participation in private and public tender procedures. Further, the company is exposed to third-party compliance risks due to its interactions with a broad range of business partners and other third parties, such as officials or representatives of government bodies or institutions.

The Volvo Group has supplemented the anti-corruption principles in the Code of Conduct with a dedicated anti-corruption policy and detailed instructions and guidelines. Among other things, these include books and records requirements, a mandatory risk-based anti-corruption due diligence process for new and existing third party intermediaries, a prohibition for facilitation payments, and rules and procedures for gift and hospitality, third party remuneration, sponsorships and charitable donations. Where deemed necessary, we have further documents in adjacent areas such as anti-money laundering and fraud reporting.

Group Compliance is responsible for designing and developing the Volvo Group anti-corruption compliance program and monitoring the implementation across the Group. A network of compliance officers in the business areas and divisions work closely with Group Compliance to ensure the implementation in their respective areas.

COMPETITION LAW

The Volvo Group strictly prohibits any conduct that would violate competition laws and regulations. The Volvo Group competes on the merit of its products and services and trusts that its products and services will succeed in a fair and competitive marketplace. Employees at all levels are prohibited from participating, or otherwise becoming involved, in any conduct – particularly anti-competitive agreements with competitors – that would violate competition laws. The Volvo Group also expects its business partners to adopt and enforce comparable competition law principles and includes these requirement in contractual agreements.

The Group's exposure to competition law risks stems from various factors. First, the Volvo Group has a global footprint with diverse business operations in multiple countries, most of which have competition law regimes in place. Second, Volvo Group employees interact with employees of competitors in a range of different contexts, including via trade associations, industry gatherings, trade fairs, publicly funded projects, benchmarking activities, M&A projects, etc. Each interaction carries inherent competition law risk in the form of collusion with competitors, for instance through exchange of commercially sensitive information. Third, relationships with third party business partners can expose the Volvo Group to competition law risk, e.g., in the form of anti-competitive agreements with customers or suppliers (vertical and horizontal restraints).

The Volvo Group has supplemented the principles of fair competition in the Code of Conduct with a dedicated competition law policy, as well as detailed instructions and best practice guidelines. These include guidelines on commercially sensitive information, trade associations, benchmarking, document creation and retention, private dealers, suppliers and body builders, and employment information, as well as a comprehensive handbook on collaborations with competitors.

Group Compliance is responsible for designing and developing the Volvo Group competition law compliance program and monitors the implementation across the Group. A network of compliance officers in the business areas and divisions work closely with Group Compliance to ensure the implementation in their respective area.

Compliance communication and training

Volvo Group's top management, Group Compliance and other internal stakeholders regularly communicate the importance of compliance with all applicable laws in various forms. To ensure that all employees have the required knowledge, the Volvo Group has developed a compliance training strategy that tailors training to individual training needs in a risk-based manner. This includes eLearning courses for competition law, anti-corruption, export control and data privacy for a broad basis of employees as well as targeted instructor led training in these compliance areas for employees working in roles with elevated risk levels. In 2022, 58,892 employees completed the Volvo Group's annual Code of Conduct e-learning. Based on identified risk exposure the Volvo Group further provided targeted instructor-led training. In 2022, this included 1,477 individuals attending in-depth anti-corruption training and 1,520 individuals attending in-depth competition law training.

WHISTLEBLOWER REPORTING

In Volvo Group, we believe that a vivid speak-up culture is a crucial element for the company's success, can help uncover misconduct, and prevent violations of the law. We also believe in the open-door policy and encourage employees to report their concerns to their local organization first. We offer group-wide reporting channels, including the Volvo Group Whistle, hosted by a third party and open to anyone within or outside the company to ask a question or report a concern related to the Volvo Group Code of Conduct. We regularly communicate about our whistleblowing channels internally and provide detailed information about our whistleblowing channels on our public website.

The Whistleblowing and Global Investigations function is an independent unit within Group Compliance. In 2022, Group Compliance received 171 concerns through several available reporting channels. All reports were investigated. 16 of the reported cases were categorized as suspected corruption or conflict of interest of which three were closed substantiated, with appropriate disciplinary and remediation actions taken. investigations were in progress as at year-end.

Whistleblower concerns escalated to Group Compliance

	2022		2021	
Type of concerns reported	No.	%	No.	%
Fair workplace violations	79	46%	48	40%
Offences against company assets	31	18%	24	20%
Business conduct offences	24	14%	25	21%
Offenses endangering the environment or health and safety	11	7%	13	11%
Violations of privacy or private sphere	9	5%	4	3%
Offenses against financial integrity	1	1%	0	0%
Inquiries	16	9%	7	6%
	171	**100%**	**121**	**100%**

TAX POLICY – KEY PRINCIPLES

The Volvo Group has a clear policy on how to manage tax across the organization. The policy is adopted by the Volvo Board of Directors and establishes the following key principles:

The Volvo Group shall comply with the tax laws and regulations in all countries where we operate. Tax compliance is a matter of legal adherence and responsible business behavior. Tax compliance therefore requires consideration of both the wording and the spirit of the law. Where tax laws and regulations are unclear, prudence shall be observed by applying a high standard of professional integrity to maintain the Volvo Group's reputation as a compliant taxpayer contributing to society wherever operations take place.

The Volvo Group strives to comply with domestic and international tax reporting requirements and shall act transparently towards Tax Authorities, by providing them with all relevant information requested to assess the Group's compliance with tax laws and regulations.

The Volvo Group seeks to ensure that taxes are paid where value is created by adhering to applicable transfer pricing rules and guidelines as developed by the OECD and other standard setting and regulatory bodies.

The Volvo Group shall manage its operations in a tax conscious manner, notably by avoiding double taxation, safeguarding its deferred tax assets and applying tax consolidation according to local legislations. The Volvo Group shall not engage in aggressive tax planning activities through structures in tax havens or otherwise.

The average corporate tax rate of the Volvo Group for the last five years is 23% (23).

PUBLIC POLICY

The Volvo Group has a continuous dialogue with authorities, regulators and policymakers on issues relevant for us and our customers' business and operations. The dialogue is guided by yearly priorities approved by the Executive Board. The Group is engaged in direct and indirect advocacy related to public policy, mainly in the EU and the US. Associated costs are reported to lobby registers for transparency. In 2022, the cost reported for lobbying in the EU and the US was approximately SEK 14 M.

The Volvo Group observes neutrality with regard to political parties and their representatives. The Volvo Group Code of Conduct and related policies serve as the foundation for our position on public policy.

The Volvo Group's advocacy efforts are based on the following guiding principles, set by the Executive Board:

- In line with the Paris Climate Agreement
- Based on level playing field via fair and free trade
- Supporting technology neutrality and global standards
- With long term prerequisites for clarity and predictability

Volvo Group holds a vast number of memberships via trade associations, other organizations and sponsorships providing possibilities to evaluate and provide input on proposed regulations and policies. The Group does not consider a membership being equal to aligning with all positions, but cares to secure that the views do not oppose the Volvo Group's ambition or hinder its development.

Volvo Group has continued reviewing certain memberships and their positions on climate change. In total, 21 organizations have been reviewed based on their importance for Volvo Group's business and industry, that they operate in regions or countries where Volvo Group has significant business, and the possibility for Volvo Group to influence the position of the association. All the evaluated organizations were aligned or partly aligned with Volvo Group's ambitions for progress in line with the Paris Climate agreement. A non-exhaustive list of memberships is available on volvogroup.com/advocacy.

Complementary disclosures

Organizational details

Name of the organization

The name of the company issuing this report is AB Volvo (publ). The company is the parent company of the Volvo Group.

Ownership and legal form

AB Volvo (publ) is a publicly held company, and its shares are listed on the stock exchange Nasdaq Stockholm, Sweden.

Location of headquarters and operations

The Volvo Group is headquartered in Gothenburg, Sweden, has production in 18 countries and sells its products in almost 190 markets. The company was founded in Sweden in 1927 where the Volvo Group still operates a significant part of its operations. Other significant operations are found in the US, Brazil, India, France and China.

For more information about major production facilities, please refer to volvogroup.com/report2022.

Entities included in the report

See pages 144, in the financial statements. The Volvo Group used the same scope for the sustainability reporting as for the audited consolidated financial statements. No specific entities categorically excluded. Some smaller sites may be excluded in emissions reporting due to materiality.

Reporting period, frequency and contact point

Reporting cycle

The reporting cycle is annual. No significant restatements have been made. The reporting period is January 1, 2021 to December 31, 2022. The date of the most recent report was February 25, 2022.

Contacts

See page 223.

Restatements

Several data points have been restated for emission-related data on page 156. These are mainly related to refinements in reporting methodologies for the Group's foundry operations and improvements in reporting from certain smaller entities. It impacts datapoints from 2019-2021 on energy usage, CO_2e, NOx and solvents. The restatements are not considered material. As an example, GHG scope 1 and 2 for 2019 was adjusted from 369 to 375 thousand tons.

External assurance

The Volvo Group's sustainability disclosures has been subject to limited assurance in accordance with ISAE 3000. Refer to the Auditor's statement of the Limited assurance on page 211. The Group's auditors also issue a statutory opinion in accordance with the audit standard RevR 12 as defined on page 211 under the title The auditor's opinion regarding the statutory sustainability report.

Activities and workers

Activities, value chain and other business relationships

The Volvo Group is one of the world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines. The Group also provides complete solutions for financing and service. The Volvo Group's brand portfolio consists of Volvo, Volvo Penta, Rokbak, Renault Trucks, Prevost, Nova Bus, Mack and Arquus. We partner in alliances and joint ventures with the SDLG, Milence, Eicher, Dongfeng and cellcentric brands. Refer to page 221 for a summary of products delivered.

Own operations

The Volvo Group own operations as made of around 60 larger manufacturing plants across the world. The most significant operations are in Sweden, the US, Brazil, India, France and China. See more details on volvogroup.com/report2022.

Information on employees and other workers

Total number of employees by employment contract, by gender and region

	Permanent		Temporary		Agency/consultants	Total workforce
	Total employees	Of which women, %	Total employees	Of which women, %		
Europe	51,153	22%	1,667	35%	9,191	62,011
North America	17,815	22%	530	31%	745	19,090
South America	6,665	19%	627	25%	162	7,454
Asia and Pacific	11,112	17%	678	30%	837	12,627
Africa	941	23%	27	44%	5	973
Group total	**87,686**	**21%**	**3,529**	**32%**	**10,940**	**102,155**

Total number of employees by employment type, by gender

	Full time		Part time		Agency/consultants	Total workforce
	Total employees	Of which women, %	Total employees	Of which women, %		
Group total	**86,990**	**21%**	**4,225**	**40%**	**10,940**	**102,155**

Supply chain

As one of the world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines, the Volvo Group is highly reliant on robust global and local supply chains to deliver components, parts and complete services and systems. The Group's supply network is made up of more than 50,000 supplier locations globally. The supply chain includes material such as steel, aluminum and plastic, components and systems used in machinery and vehicles, many of which are sub-assembled outside the Volvo Group's own operation. The Volvo Group utilized truck assembly partners and bus body builders to carry out certain assembly processes for the final product.

In 2022, the Volvo Group bought goods and services for SEK 333 billion.

Downstream value chain

The Volvo Group's Business Areas support customers in the main segments, Trucks, Buses, Construction Equipment, Marine drive systems and industrial motors. Customers and end users are extremely wide. Direct customers are typically operating smaller or larger transport vehicles fleets, construction machinery fleets, public transportation, or individual vehicles. Among end-users are transport buyers, freight companies, municipalities, operators of construction sites, quarries, and mining companies. More information on products, services and segments and markets served are presented on paged 5 and 54-65.

Significant changes to the organization and its supply chain

In 2022, there were no significant changes.

Precautionary principle or approach

A precautionary principle is applied. This is exemplified by the life-cycle management approach taken when developing trucks, buses, construction equipment and other vehicles and machinery. Applying life-cycle approach provides insights for decision making on environmental gains and potential trade-offs. This approach is the foundation for the Volvo Group Environmental Policy.

Data collection

Quantitative data for the sustainability disclosures are consolidated in different systems.

Environmental data is reported at site level following the setup of the environmental management system. The data is controlled internally by an environmental coordination network and consolidated at Business Area, Truck Division and Group level.

Health and safety data is reported at operating unit level and consolidated at Business Area, Truck Division and Group level.

Other employee-related data is reported and quality assured at legal entity level, consolidated and quality assured at a shared service center and controlled and reviewed at Group level.

Compliance-related information is gathered using a case management system from the Code of Conduct help and whistleblower reporting line provided by a third party.

Qualitative data is collected from a range of functions responsible for driving each material sustainability topic.

Governance disclosures

The Volvo Group's reporting approach is to include disclosures related to governance in the Corporate Governance Report which is based on the reporting requirements from the The Swedish Corporate Governance Code. The GRI-index on next page included page references to the place where each relevant governance disclosure is addressed.

Annual total compensation ratio

This disclosure cannot be reported fully according to the definition in the GRI standard. The Group is in the process of updating systems to collect the data in a more effective way and the metric will be included in future reports. Until then, average annual compensation is used as an indicator for compensation ratio.

	2022	2021	2020
Wages, salaries & other remunerations, SEK M	54,798	47,518	44,517
Average employees	86,316	83,958	89,573
Average cost per employee, SEK	634,853	565,968	496,996
Total cost CEO, SEK M	58.1	49.3	43.9
Ratio of CEO to average employee	92	87	88

GRI INDEX 2022

This report has been prepared in accordance with GRI Standards 2021.
This index is part of the GRI disclosure format.

GENERAL DISCLOSURES		Page	Omission/comment
Standard: GRI 2 General Disclosures 2021			
2-1	Organizational details	180	
2-2	Entities included in the organization's sustainability reporting	180, 144	
2-3	Reporting period, frequency and contact point	180	
2-4	Restatements of information	180	
2-5	External assurance	180	
2-6	Activities, value chain and other business relationships	180–181	
2-7	Employees	180	
2-8	Workers who are not employees	180	
2-9	Governance structure and composition	187–192	
2-10	Nomination and selection of the highest governance body	187–189	*The Corporate Governance Report is primarily based on the Swedish Corporate Governance Code. Hence all disclosures are not fully according to the GRI Standards.*
2-11	Chair of the highest governance body	189, 194–195	
2-12	Role of the highest governance body in overseeing the management of impacts	189, 199	
2-13	Delegation of responsibility for managing impacts	187	
2-14	Role of the highest governance body in sustainability reporting	191	
2-15	Conflicts of interest	189	
2-16	Communication of critical concerns	179	
2-17	Collective knowledge of the highest governance body	194	
2-18	Evaluation of the performance of the highest governance body	190	
2-19	Remuneration policies	190, 204–205	
2-20	Process to determine remuneration	190, 126	
2-21	Annual total compensation ratio	181	*Average cost per employee has been used in the calculation as data on median cannot be made available in a practical way.*
2-22	Statement on sustainable development strategy	6–9, 148	
2-23	Policy commitments	170	
2-24	Embedding policy commitments	171	
2-25	Processes to remediate negative impacts	173	
2-26	Mechanisms for seeking advice and raising concerns	173, 179	
2-27	Compliance with laws and regulations	179	
2-28	Membership associations		*volvogroup.com/report2022*
2-29	Approach to stakeholder engagement	148–149	
2-30	Collective bargaining agreements	164	
MATERIAL TOPICS			
3-1	Process to determine material topics	148–149	
3-2	List of material topics	149, 183–184	

SPECIFIC DISCLOSURES		Page	Omission/comment
ECONOMIC CATEGORIES			
Standard: Economic performance 2016			
3-3	Management of material topics	150–153	
201-2	Financial implications and other risks and opportunities due to climate change	150–153	*The report is structured on the recommendations by the TCFD, see index on page 185.*
Standard: Anti-corruption 2016			
3-3	*Management of material topics*	178	
205-2	Communication and training about anti-corruption policies and procedures	178–179	*All details proposed by GRI are not reported. Data are not aggregated in the way proposed by the standard.*
205-3	Confirmed incidents of corruption and actions taken	179	
ENVIRONMENTAL CATEGORIES			
Standard: Energy 2016			
3-3	*Management of material topics*	154	
302-1	Energy consumption within the organization	156	
302-3	Energy intensity	156	
Standard: Emissions 2016			
3-3	*Management of material topics*	154	
305-1	Direct (Scope 1) GHG emissions	155–156	
305-2	Energy indirect (Scope 2) GHG emissions	155–156	
305-3	Other indirect (Scope 3) GHG emissions	155–156	
305-4	GHG emissions intensity	155–156	
Standard: Environmental compliance 2016			
3-3	*Management of material topics*	157–158	
307-1	Non-compliance with environmental laws and regulations	158	
Standard: Supplier environmental assessment 2016			
3-3	*Management of material topics*	176	
308-1	New suppliers that were screened using environmental criteria	176	*Percentage of total cannot be reported. The data is not available. 1,530 suppliers were screened.*
308-2	Negative environmental impacts in the supply chain and actions taken	177	
SOCIAL CATEGORIES			
Standard: Employment 2016			
3-3	*Management of material topics*	163	
401-1	New employee hires and employee turnover	163	
Standard: Labor management relations 2016			
3-3	*Management of material topics*	164	
402-1	Minimum notice periods regarding operational changes	164	*Number of weeks notice provided is not reported. Data is not available on aggregated Group level. The disclosure explains the process regarding operational changes.*

Standard: Occupational health and safety 2018			
3-3	*Management of material topics*	167	
403-1	Occupational health and safety management system	167	
403-2	Hazard identification, risk assessment, and incident investigation	167	
403-3	Occupational health services	168	
403-4	Worker participation, consultation, and communication on	168	
403-5	Worker training on occupational health and safety	168	
403-6	Promotion of worker health	169	
403-7	Prevention and mitigation directly linked by business relationships	169	
403-8	Workers covered by an occupational health and Safety management system	168	*Data on coverage by a system that has been internally audited is not available.*
403-9	Work-related injuries	168	*Data is not available on Group level for all detailed disclosures. Work is in progress to develop reporting.*
Standard: Training and education 2016			
3-3	*Management of material topics*	165	
404-2	Programs for upgrading employee skills and transition assistance programs	165–166	
Standard: Diversity and equal opportunities 2016			
3-3	*Management of material topics*	164	
405-1	Diversity of governance bodies and employees	164–165	
Human rights			
3-3	*Management of material topics (combined for all human rights topics)*	170–172	*The reporting structure is based on The UN Guiding Principles Reporting framework.*
406-1	Incidents of discrimination and corrective actions taken	174	
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	173	
408-1	Operations and suppliers at significant risk for incidents of child labor	173	*Operations reviewed are prioritized based on risk. Therefore, the percentage of total operations reviewed is not available.*
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	174	
412-1	Operations that have been subject to human rights reviews or impact assessments	174	
Standard: Supplier social assessment 2016			
3-3	*Management of material topics*	176	
414-1	New suppliers that were screened using social criteria	176	*Percentage of total cannot be reported, the data is not available. 1,530 suppliers were screened.*
414-2	Negative social impacts in the supply chain and actions taken	176–177	
Standard: Customer health and safety 2016			
3-3	*Management of material topics*	169	
416-1	Assessment of the health and safety impacts of product and service categories	169	
Other disclosure: EU Taxonomy regulation disclosures			
3-3	*Management of material topics*	159	
	Taxonomy-eligible and aligned Turnover, CapEx, OpEx	159–161	

TCFD INDEX

Information relevant to the recommendations from TCFD is integrated in different parts of the report. This index includes references to relevant part on governance, strategy och and management of climate-related risks and opportunities, including climat-relaterad metrics and targets. Most of the information is included in the section on climate and environment on page 150-156, but there is also relevant information in the sections on risk and corporate governance.

Index of TCFD recommended disclosures		Page reference
Governance The organizations governance around climate-related issues and opportunities	The Board's oversight of climate-related risks and opportunities.	150, 189
	The Management's role in assessing and managing climate-related risks and opportunities.	150, 199
Strategy Actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning where such information is material	The climate-related risks and opportunities the organization has identified over the short, medium and long term.	152–153
	The impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.	152–153
	The resilience of the organization's strategy taking into consideration different climate-related scenarios, including a 2 °C or lower scenario.	150–153
Risk Management Actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning where such information is material	The company's processes for identifying and assessing climate-related risks.	68, 152–153
	The organization's processes for managing climate-related risks.	68, 152–153
	The processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	68, 152–153
Metrics and targets Actual and potential impacts of climate-related risks and opportunities on the organization's business, strategy and financial planning where such information is material	The metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	151, 153, 154
	The Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions and the related risks.	154–155
	The targets used by the organization to manage climate-related risks and opportunities and performance against targets.	155–156

CORPORATE GOVERNANCE REPORT

The Volvo Group appreciates sound corporate governance as a fundamental base in promoting its long-term strategic objectives and in achieving a trusting relation with shareholders and other key stakeholders. High standards when it comes to transparency, reliability and ethical values are guiding principles within the Volvo Group's operations.

The Swedish Corporate Governance Code

AB Volvo's shares are admitted to trading on the stock exchange Nasdaq Stockholm's main market. As a listed company, Volvo applies the Swedish Corporate Governance Code (the Code), which is available at www.corporategovernanceboard.se.

This Corporate Governance Report has been prepared in accordance with the Swedish Annual Accounts Act and the Code, and is separate from the Annual Report. The report has been reviewed by, and includes a report from, Volvo's auditors.

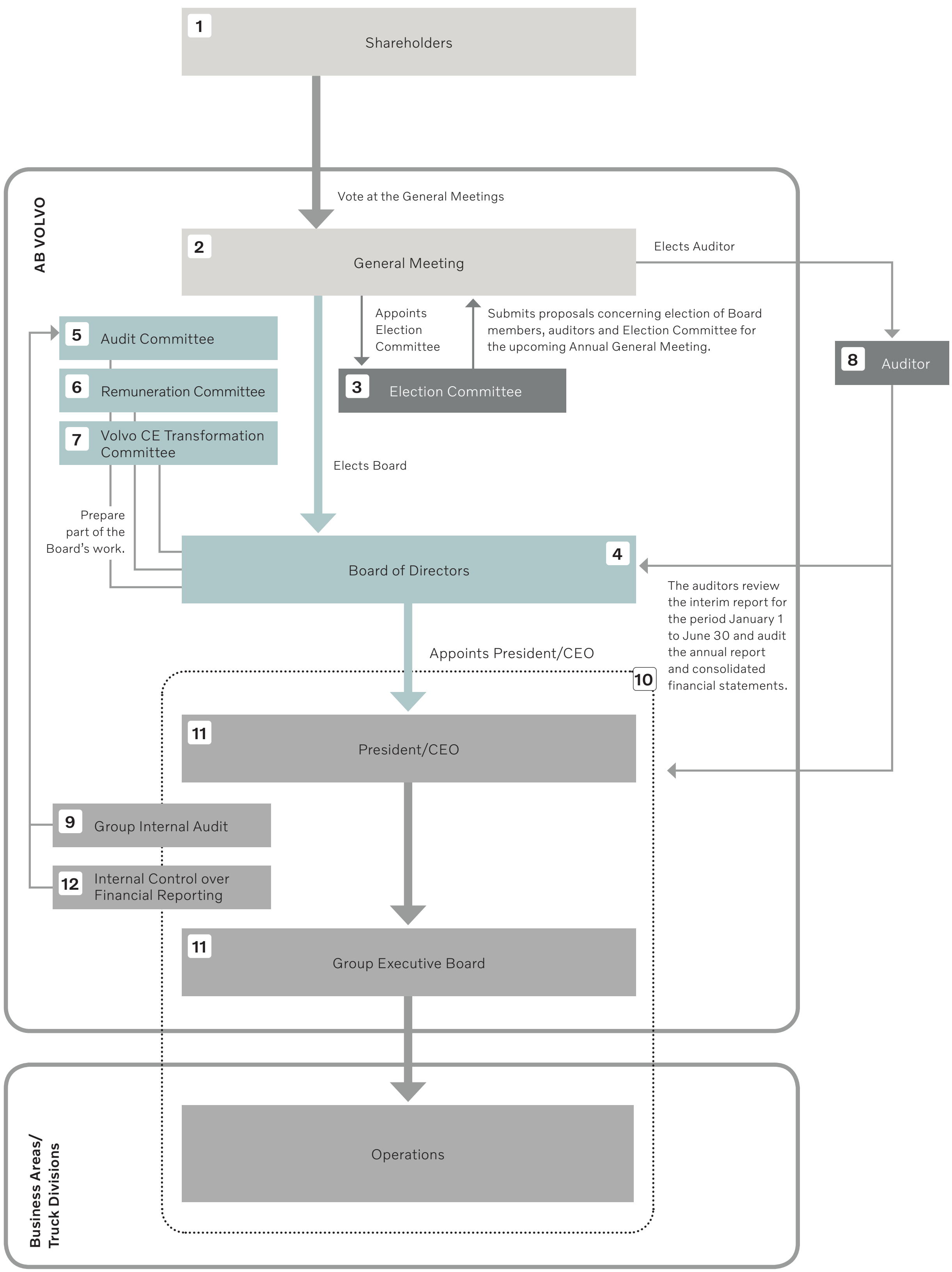
Corporate Governance Model

At the General Meetings of AB Volvo, which is the parent company of the Volvo Group, the shareholders exercise their voting rights with regard to for example the composition of the Board of AB Volvo and the election of auditors.

An Election Committee, appointed by the Annual General Meeting, submits proposals to the General Meeting concerning the election of Board members and Chairman of the Board as well as proposals for resolutions concerning remuneration of the Board. When applicable, the Election Committee also submits proposals to the General Meeting for the election of external auditors and for resolutions concerning fees to the auditors.

The Board is ultimately responsible for Volvo's organization and the management of its operations.

In addition, the Board appoints the President and CEO of AB Volvo. The CEO is in charge of the daily management of the Group in accordance with the guidelines provided by the Board.


1 Shareholders
Vote at the General Meetings
AB VOLVO
2 General Meeting
Elects Auditor
Appoints Election Committee
Submits proposals concerning election of Board members, auditors and Election Committee for the upcoming Annual General Meeting.
3 Election Committee
5 Audit Committee
6 Remuneration Committee
7 Volvo CE Transformation Committee
8 Auditor
Elects Board
Prepare part of the Board's work.
4 Board of Directors
The auditors review the interim report for the period January 1 to June 30 and audit the annual report and consolidated financial statements.
Appoints President/CEO
10
11 President/CEO
9 Group Internal Audit
12 Internal Control over Financial Reporting
11 Group Executive Board
Business Areas/ Truck Divisions
Operations

1 SHARES AND SHAREHOLDERS

Volvo has issued two classes of shares: series A and series B. At a General Meeting, series A shares carry one vote and series B shares one-tenth of a vote. The two share classes carry equal rights in the assets and earnings of the company. According to a special share conversion clause in the Articles of Association, holders of series A shares are entitled to request that their series A shares be converted to series B shares. Implementation of such conversions, which occurs on a regular basis, entail that the total number of votes in the company decreases.

The share register of AB Volvo is maintained by Euroclear Sweden AB. On December 31, 2022, Volvo had 373,101 shareholders according to the share register. The largest shareholder, in terms of votes on that date was AB Industrivärden, with 27.8 percent of the votes. As per the same date, Geely Holding held 16.0 percent of the votes, AMF and AMF Funds held 5.4 percent of the votes, Alecta held 4.3 percent of the votes and AFA Insurance held 2.3 percent of the votes.

For more information about the Volvo share and its shareholders, please refer to the Board of Director's Report on pages 66–67 of the Annual Report.

2 GENERAL MEETING

General

The General Meeting is Volvo's highest decision-making body. The Annual General Meeting is held within six months of the end of the financial year, normally in Gothenburg, Sweden.

In addition to what follows from applicable law regarding shareholders' right to participate at General Meetings, under Volvo's Articles of Association shareholders must give notice of their attendance (within the time stated in the convening notice) and, when applicable, notify the company of any intention to bring assistants.

A shareholder who wants the General Meeting to consider a particular matter must submit a request to the Board in sufficient time prior to the General Meeting to the address provided on Volvo's website, www.volvogroup.com.

The Annual General Meeting 2022 was held on April 6, 2022, and was carried out through postal voting, without any physical attendance, pursuant to temporary legislation. As communicated by the Swedish Corporate Governance Board in January 2022, this is not to be considered a deviation from the Code.

Annual General Meeting 2023

Volvo's Annual General Meeting 2023 will be held on Tuesday, April 4, 2023 at Konserthuset, Gothenburg, Sweden. For further information about the Annual General Meeting 2023, please refer to the end of the Annual Report and Volvo's website, www.volvogroup.com.

3 ELECTION COMMITTEE

Duties

The Election Committee is elected by the General Meeting. The Election Committee shall perform the tasks that are incumbent upon the Election Committee according to its instructions from the General Meeting and the rules of the Code. The main task is to prepare and present proposals to the Annual General Meeting on behalf of the shareholders for the election of Board members, Chairman of the Board and Board remuneration and, when applicable, proposals for auditors and fees to the auditors.

In addition, the Election Committee presents proposals for members of the Election Committee for the following year, in accordance with prevailing instructions for Volvo's Election Committee.

Composition

In accordance with the current instructions for Volvo's Election Committee (adopted by the Annual General Meeting 2019), the Annual General Meeting shall elect five members to serve on the Election Committee, of whom four shall represent the largest shareholders in the company in terms of votes, who have expressed their willingness to participate in the Election Committee. In addition, one of the members shall be the Chairman of the AB Volvo Board. Volvo's Annual General Meeting 2022 resolved to appoint the following individuals as members of the Election Committee:

- Pär Boman (AB Industrivärden)
- Anders Oscarsson (AMF and AMF Funds)
- Magnus Billing (Alecta)
- Anders Algotsson (AFA Insurance)
- Carl-Henric Svanberg, Chairman of the Board

The Election Committee appointed Pär Boman as Chairman of the Election Committee.

4 BOARD OF DIRECTORS

Duties

The Board is ultimately responsible for Volvo's organization and management of the company's operations. The Board is responsible for the Group's long-term development and strategy, for regularly controlling and evaluating the Group's operations and for the other duties set forth in the Swedish Companies Act.

Composition

In 2022, AB Volvo's Board consisted of eleven members elected by the Annual General Meeting and three members, of which one resigned in August, 2022, and two deputy members appointed by employee organizations.

The Annual General Meeting 2022 re-elected Matti Alahuhta, Eric Elzvik, Martha Finn Brooks, Kurt Jofs, Martin Lundstedt, Kathryn V. Marinello, Martina Merz, Hanne de Mora, Helena Stjernholm and Carl-Henric Svanberg as Board members and Jan Carlson was elected as a new Board member. The previous Board member Eckhard Cordes did not stand for re-election. The Annual General Meeting re-elected Carl-Henric Svanberg as Chairman of the Board. A more detailed presentation of each Board member is set out in the "Board of Directors" section on pages 194–195.

Prior to the Annual General Meeting 2022, the Election Committee announced that it had applied the provisions of rule 4.1 of the Code as board diversity policy. The aim is that the Board as a collective should possess the required mix in terms of background and knowledge, whereby an even gender distribution is taken into particular account. The result of the Election Committee's application of the diversity policy is a Board that represents a mix of both professional experience and knowledge as well as geographical and cultural backgrounds. 45 percent (five out of eleven) of the Board members elected by the Annual General Meeting are women.

Independence requirements

The Board of Directors of AB Volvo is subject to the independence requirements prescribed in the Code.

Prior to the Annual General Meeting 2022, the Election Committee presented the following assessment of the independence of Board members elected at the Annual General Meeting 2022.

Carl-Henric Svanberg, Matti Alahuhta, Jan Carlson, Eric Elzvik, Martha Finn Brooks, Kurt Jofs, Kathryn V. Marinello, Martina Merz and Hanne de Mora were all considered independent of the company and company management, as well as the company's major shareholders.

Martin Lundstedt, as President of AB Volvo and CEO of the Volvo Group, was considered independent of the company's major shareholders but not of the company and company management.

Helena Stjernholm was considered independent of the company and company management but not in relation to one of the major shareholders, due to her capacity as President and CEO of AB Industrivärden.

Work procedures

Every year, the Board adopts work procedures for the Board's work.

The work procedures outline how the Board's duties should be distributed, including the specific role and duties of the Chairman, instructions for the division of duties between the Board and the President and for the reporting of financial information to the Board. The Board has also adopted specific instructions for the Board's committees, which are linked to the work procedures.

The Board's work in 2022

The Board's work is mainly performed within the framework of formal Board meetings and through meetings in the committees of the Board. In addition, regular contact is maintained between the Chairman of the Board and the CEO in order to discuss ongoing business and to ensure that the Board's decisions are executed.

In 2022, there were eleven ordinary Board meetings, four extraordinary Board meetings and one statutory Board meeting. During 2022 the Board applied a meeting structure with fewer, but longer, physical meetings combined with more frequent digital meetings in order to get the most value out of the in person meetings, increase meeting efficiency and reduce the CO_2 impact by travelling less. Consequently, all of the extraordinary Board meetings and several of the ordinary Board meetings during 2022 were held as video conferences. The attendance of the Board members at the Board meetings during 2022 is presented in the table on page 192. The company's auditor attended one Board meeting during the year.

In 2022, turbulent developments in the world affected the Volvo Group in many aspects. Hence, monitoring and considering the effects thereof have been an important part of the Board's work. The consequences of the war in Ukraine, with a priority on questions relating to the health and safety of colleagues and business partners, and the Volvo Group's strategic directions in relation thereto have been a focus area throughout the year. The continued strains on the supply chain and industrial system, due to e.g. shortages of labor, materials, components and transport services, have also been a challenge during the year. Costs related to energy, material and supply chain disruptions continued to increase throughout 2022. The Board has closely monitored and followed-up on the effects of the higher inflation on the Volvo Group and its profitability and initiated several proactive activities in relation thereto. In addition, the Board has spent a great deal of time considering how to assess and communicate certain key issues related to the short-term risks described in Note 2 to the financial statements.

The Volvo Group's sustainability work and objectives are integrated parts of the Volvo Group's business and are regularly followed-up by the Board. The focus on sustainability and the corresponding alignment of the product portfolio of the Volvo Group has continued during 2022, with a particular focus on strategic decisions for electromobility. To meet the growing demand for battery electric heavy-duty vehicles and machines, the Volvo Group has initiated the process to establish a large-scale production plant for battery cells in Mariestad, Sweden, and to start to produce battery modules in the Volvo Group's truck plant in Ghent, Belgium. The Volvo Group's climate targets under the Science Based Targets initiative (for further information, see pages 154–156) are, together with background materials, followed-up by the Board on a quarterly basis. At the Board meeting in December 2022, the Board spent time on the Group's broader work related to sustainability and focusing on communication, future environmental impacts and expectations on human rights, as well as regulations relating to strategy, performance and reporting. The Board is involved in on-going work to strengthen the reporting and enable consolidated follow-ups within the area of sustainability.

The speed of transformation of the industry is accelerating and, in light thereof, the Board has devoted most of its time to strategic topics, with particular focus on electrification, digitalization, autonomous solutions and new productivity services. These technologies play an essential part in the Volvo Group's ambition to lead the transformation and, electrification in particular, in the transition to a decarbonized transport system. As a part of the ongoing technology shift, the Volvo Group continues to develop the strategic partnerships previously entered into with focus on autonomous solutions, electrification and charging infrastructure.

The Board's ambition is to stay close to the business and the Board receives continuous up-dates on the status and development of the Group's transformation work and strategies in relation thereto. Furthermore, the Board has devoted time to talent review and succession planning and on the review and follow-up of the company's quality work. Related to this work, the Board usually makes a yearly visit to the company's operations throughout the world. In October 2022, the Board travelled to the US and visited the head office of the Volvo Group's North American business in Greensboro and the Volvo Group's truck assembly plant in New River Valley.

During 2022, the Board resolved on an overall financial plan and investment framework for the Group's operations. In addition, the Board regularly monitors the Group's earnings and financial position and maintains continuous focus on risk related issues such as overall risk management and ongoing legal disputes and investigations. The Board proposed a distribution of an ordinary dividend of SEK 6.50 per share and an extraordinary dividend of SEK 6.50 per share, which was resolved by the Annual General Meeting 2022. Furthermore, the Board regularly reviews the management's short and long-term incentive programs to ensure that they fulfill their purpose and drive the right behavior in the current business environment.

In 2022, the Board also resolved to establish a Volvo CE Transformation Committee with a specific focus on the strategic direction and transformation of the Volvo Construction Equipment business area. The main purpose of the committee being to ensure that Volvo Construction Equipment is successful in the transformation.

Evaluation of the Board's work

In 2023, the Board performed its yearly evaluation of the Board's work during the previous year. The purpose of the evaluation is to further develop the Board's efficiency and working procedures and to determine the main focus of the Board's coming work. In addition, the evaluation serves as a tool for determining the competence required by the Board and for analyzing the competence that already exists in the current Board. By that, the evaluation also serves as input for the Election Committee's work with proposing Board members.

As part of the yearly evaluation, Board members were asked to complete a questionnaire and assess various areas related to the Board's work from their own perspective. The areas evaluated for 2022 included the Board's composition, understanding of key stakeholders, the management and focus of Board meetings, Board support and committees and how the Board addresses issues related to strategy and strategic priorities, sustainability, potential risks, succession planning and people oversight. The areas covered by the evaluation may differ from one year to another to reflect the development of the Board's work and the Volvo Group, and in 2022, there was a particular focus on key strategic topics including sustainability, digital opportunities and threats, the evolution of the competitive landscape, and the impact of geopolitical and macroeconomic events.

Separate evaluations were conducted of the Board as a collective, the Chairman of the Board, the Audit Committee, the Remuneration Committee and the Volvo CE Transformation Committee. The results of the evaluations of the Board as a collective and the Chairman of the Board will be discussed by the Board. The results of the evaluations of the committees will be discussed by the relevant committee. In addition, the results of the evaluations of the Board as a collective and the Chairman of the Board are shared with the Election Committee.

Remuneration of Board Members

The Annual General Meeting resolves on fees to be paid to the Board members elected by the Annual General Meeting. For information about Board remuneration adopted by the Annual General Meeting 2022, please refer to Note 27 "Personnel" in the Group's notes in the Annual Report.

Remuneration of Board members, 2022 (from AGM on April 6, 2022)	SEK
Chairman of the Board	3,850,000
Board member[1]	1,150,000
Chairman of the Audit Committee	405,000
Member of the Audit Committee	190,000
Chairman of the Remuneration Committee	170,000
Member of the Remuneration Committee	125,000
Chairman of the Volvo CE Transformation Committee	200,000
Member of the Volvo CE Transformation Committee	170,000

1 With the exception of the President.

The Board's committees

5 AUDIT COMMITTEE

Duties
The Board has an Audit Committee primarily for the purpose of supervising the accounting and financial reporting processes and the audit of the annual financial statements.

The Audit Committee's duties include preparing the Board's work to assure the quality of the Group's financial reporting by reviewing interim reports, the Annual Report and the consolidated accounts. The Audit Committee also has the task of reviewing and over-seeing the Group's legal and taxation matters as well as compliance with laws and regulations that may have a material impact on financial reporting. Furthermore, the Audit Committee has the task of reviewing and overseeing the impartiality and independence of the company's auditors. The Audit Committee is also responsible for evaluating both internal and external auditors' work and, when applicable, handling the tender process for audit services. In addition, it is the Audit Committee's task to preapprove what other services, beyond auditing, the company may procure from the auditors. The Audit Committee also adopts guidelines for transactions with companies and persons closely associated with Volvo. Further, the Audit Committee evaluates the quality, relevance and effectiveness of the Group's system for internal control over financial reporting, as well as with respect to the internal audit and risk management, and discharge any other duties of an audit committee according to law or its instructions. Finally, the Audit Committee oversees developments within the ESG (Environmental, Social and Governance) standards, and the Group's reporting in these areas.

Composition and work in 2022
At the statutory Board meeting following the Annual General Meeting 2022, the following Board members were appointed members of the Audit Committee:

- Eric Elzvik
- Martha Finn Brooks
- Helena Stjernholm

Eric Elzvik was appointed Chairman of the Audit Committee.

The Audit Committee met with the external auditors without the presence of management on two occasions in 2022 in connection with Audit Committee meetings. The Audit Committee regularly met with the Head of Group Internal Audit in connection with Audit Committee meetings.

The Election Committee's assessment of independence of the Audit Committee members, in accordance with the requirements in the Code, prior to the Annual General Meeting 2022 is presented above under the "Independence requirements" section on page 189.

The Audit Committee and the external auditors, among other tasks, discussed the external audit plan and the view of risk management. The Audit Committee held nine ordinary meetings and four extraordinary meetings during 2022. The attendance of Board members at the committee meetings is presented in the table on page 192. The Audit Committee reports the outcome of its work to all members of the Board on a regular basis and the minutes of the Audit Committee meetings are available for all Board members.

6 REMUNERATION COMMITTEE

Duties
The Board has a Remuneration Committee for the purpose of preparing and deciding on issues relating to the remuneration of senior executives in the Group. The duties of the Committee include making recommendations to the Board on the Board's decisions regarding terms of employment and remuneration of the CEO and the Deputy CEO of AB Volvo, principles for the remuneration, including pensions and severance payments, of other members of the Group Executive Board and principles for variable salary systems, share based incentive programs and for pension and severance payment structures for other senior executives in the Group.

The Remuneration Committee shall also monitor and evaluate ongoing programs and programs concluded during the year for the variable remuneration of senior executives, application of the guidelines for remuneration to the Volvo Group Executive Board, and the current remuneration structures and levels in the Group.

The Board shall prepare a remuneration report for each financial year detailing the remuneration that is covered under the guidelines. The remuneration report shall include the total remuneration, i.e. both compensation that has been and remains to be paid out, and outline how such remuneration correlates to the guidelines. The remuneration report also provides details on the remuneration of AB Volvo's President and CEO and Deputy CEO. The remuneration report shall be submitted to the Annual General Meeting for approval.

Composition and work in 2022
At the statutory Board meeting following the Annual General Meeting 2022, the following Board members were appointed members of the Remuneration Committee:

- Carl-Henric Svanberg
- Matti Alahuhta
- Kurt Jofs

Carl-Henric Svanberg was appointed Chairman of the Remuneration Committee.

The Election Committee's assessment of the independence of the Remuneration Committee members, in accordance with the requirements in the Code, prior to the Annual General Meeting 2022 is presented above under the "Independence requirements" section on page 189.

The Remuneration Committee held four ordinary meetings and one extraordinary meeting during 2022. The attendance of Board members at committee meetings is presented in the table on page 192. The Remuneration Committee reports the outcome of its work to all members of the Board on a regular basis.

7 VOLVO CE TRANSFORMATION COMMITTEE

Duties
The Board has a Volvo CE Transformation Committee, which was established during 2022, that focuses on the strategic direction and transformation of the Volvo Construction Equipment business area. The main purpose of the committee is to ensure that Volvo Construction Equipment is successful in the transformation.

Composition and work in 2022
At the statutory Board meeting following the Annual General Meeting 2022, the following Board members were appointed members of the Volvo CE Transformation Committee:

- Kurt Jofs
- Matti Alahuhta
- Lars Ask
- Mari Larsson
- Hanne de Mora
- Helena Stjernholm

Kurt Jofs was appointed Chairman of the Volvo CE Transformation Committee.

The Election Committee's assessment of the independence of the Volvo CE Transformation Committee members, in accordance with the requirements in the Code, prior to the Annual General Meeting 2022 is presented above under the "Independence requirements" section on page 189.

The Volvo CE Transformation Committee held three ordinary meetings during 2022. The attendance of Board members at committee meetings is presented in the table below. The Volvo CE Transformation Committee reports the outcome of its work to all members of the Board on a regular basis.

The Board's composition and attendance at meetings January 1, 2022 – December 31, 2022

Member	Board meetings (16 incl. statutory)[1]	Audit Committee (13)[1]	Remuneration Committee (5)[1]	Volvo CE Transformation Committee (3)
Carl-Henric Svanberg	16		5	
Martin Lundstedt	16			
Matti Alahuhta	16		5	3
Jan Carlson[2]	10			
Eckhard Cordes[3]	6			
Eric Elzvik	15	13		
Martha Finn Brooks[4]	16	8		
Kurt Jofs	16		5	3
Kathryn Marinello	16			
Martina Merz[5]	15			
Hanne de Mora[6]	16	5		3
Helena Stjernholm	16	13		3
Total number of meetings	16	13	5	3

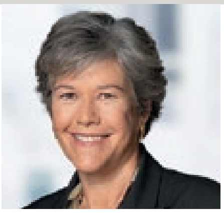
Member	Board meetings (16 incl. statutory)[1]	Audit Committee (13)[1]	Remuneration Committee (5)[1]	Volvo CE Transformation Committee (3)
Lars Ask, employee representative	13			3
Mats Henning, employee representative	14			
Mikael Sällström, employee representative[7]	9		2	
Camilla Johansson, employee representative	16			
Mari Larsson, employee representative	16			3
Total number of meetings	16	13	5	3

1 Whereof extraordinary meetings: four for the Board, four for the Audit Committee and one for the Remuneration Committee.
2 Jan Carlson joined the Board in April 2022 and has since attended all Board meetings during 2022.
3 Eckhard Cordes partly attended the ordinary Board meeting in April 2022. Eckhard Cordes resigned from the Board in April 2022.
4 Martha Finn Brooks partly attended the quarterly report review Board meetings in April and July 2022. Martha Finn Brooks was appointed member of the Audit Committee in April 2022.
5 Martina Merz partly attented the ordinary Board meetings in February, April and August/September 2022.
6 Hanne de Mora partly attended the ordinary Board meeting in June 2022. Hanne de Mora resigned from the Audit Committee in April 2022.
7 Mikael Sällström resigned from the Board in August 2022.

President and CEO Martin Lundstedt during a tour of the Volvo Group's truck assembly plant in New River Valley, Virginia, together with plant manager Koen Knippenberg, Vice President and General Manager Group Trucks Operations.

Board of Directors

Board members elected by the Annual General Meeting

					
Carl-Henric Svanberg *Chairman of the Board* *Chairman of the Remuneration Committee*	**Matti Alahuhta** *Member of the Remuneration Committee* *Member of the Volvo CE Transformation Committee*	**Jan Carlson**	**Eric Elzvik** *Chairman of the Audit Committee*	**Martha Finn Brooks** *Member of the Audit Committee*	**Kurt Jofs** *Chairman of the Volvo CE Transformation Committee* *Member of the Remuneration Committee*
Education					
MSc in Applied Physics, Linköping Institute of Technology, BSc Business Administration, University of Uppsala.	MSc, Dr Sc. Doctor of Science, Helsinki University of Technology.	MSc in Physics and Electrical Engineering from University of Linköping.	MSc Business Administration, Stockholm School of Economics.	BA Economics and Political Science, Yale University. MBA International Business from Yale School of Management, Yale University.	MSc, KTH Royal Institute of Technology, Stockholm.
Born					
1952	1952	1960	1960	1959	1958
Member of the Volvo Board					
Chairman of the Volvo Board since April 4, 2012.	Since April 2, 2014.	Since April 6, 2022.	Since April 5, 2018.	Since March 31, 2021.	Since June 18, 2020.
Position and Board memberships					
Chairman of the European Round Table of Industry (ERT).	Board Chairman: DevCo Partners Oy. Board Member: Kone Corporation.	Board Chairman: Autoliv Inc. Board Member: Telefonaktiebolaget LM Ericsson (proposed as new Chairman for the Ericsson Annual General Meeting 2023 planned to be held on March 29, 2023).	Board Chairman: GlobalConnect Group. Board member: Telefonaktiebolaget LM Ericsson and Landis+Gyr Group AG.	Board Member: Constellium, CARE USA and CARE Enterprise Inc.	Board Member: Telefonaktiebolaget LM Ericsson, Feal AB and Arjeplog Hotel Silverhatten AB.
Principal work experience					
Has held various positions at Asea Brown Boveri (ABB) and Securitas AB, President and CEO of Assa Abloy AB, President and CEO of Telefonaktiebolaget LM Ericsson, Board Chairman of BP plc, member of External Advisory Board of the Earth Institute at Columbia University and the Advisory Board of Harvard Kennedy School. Previous assignments also include Chairman of the Royal Swedish Academy of Engineering Sciences (IVA).	Has held several management positions in the Nokia Group – President of Nokia Telecommunications, President of Nokia Mobile Phones and Chief Strategy Officer of the Nokia Group, President of Kone Corporation 2005–2014 and 2006–2014 also CEO. Previous Board assignments include Vice Chairman of Metso Outotec and member of the Board in ABB Ltd.	Has held various positions within the Autoliv Group since 1999, including President Autoliv Europe, Vice President Engineering of Autoliv and President Autoliv Electronics. President and CEO of Autoliv Inc. 2007–2018 and Chairman of Autoliv Inc. since May 2014. President and CEO and Chairman of Veoneer Inc. 2018–2022. Previous positions also include President of Saab Combitech and of Swedish Gate Array.	Joined ABB in 1984 and has held several management positions in the Finance function at ABB in Sweden, Singapore and Switzerland – most recently as Group CFO between 2013 and 2017 and previously as CFO for the Divisions Discrete Automation & Motion and Automation Products and a position as Head of M&A and New Ventures and also as Head of Corporate Development. Currently, senior industrial advisor to EQT.	Has held various management positions in Cummins truck and bus businesses from 1986–2002. From 2002–2005 Martha was CEO, Rolled Products and SVP in Alcan Inc. and from 2005–2009 she was the President and COO of Novelis Inc., global leader in aluminum rolled products and recycling. Martha has been a Board Member of Harley-Davidson, International Paper, Bombardier, Jabil and privately held Algeco Scotsman.	Previous positions include Executive Vice President and responsible for Telefonaktiebolaget LM Ericsson's Networks business 2003–2008, CEO of Segerström & Svensson 1999–2001, CEO of Linjebuss 1996–1999 and various positions within ABB and Telefonaktiebolaget LM Ericsson. Previous Board assignments include Board Chairman of Tieto, Vesper Holding AB and Höganäs AB.
Holdings in Volvo, own and related parties					
2,000,000 Series B shares.	146,100 Series B shares.	None.	7,475 Series B shares.	10,500 American depositary receipts representing Volvo B shares (ADRs).	47,515 Series B shares.

Board members appointed by the employee organizations

Lars Ask
Employee representative, ordinary member
Member of the Volvo CE Transformation Committee

Born
1959

Member of the Volvo Board
Ordinary member since April 6, 2016. Deputy member from June 16, 2009–2016.

Background within Volvo
With Volvo since 1982.

Holdings in Volvo, own and related parties
116 Series B Shares.

Mats Henning
Employee representative, ordinary member

Born
1961

Member of the Volvo Board
Since May 9, 2014.

Background within Volvo
With Volvo since 1982.

Holdings in Volvo, own and related parties
293 Series A shares, 758 Series B shares.

Board members elected by the Annual General Meeting

				
Martin Lundstedt *President and CEO*	**Kathryn V. Marinello**	**Martina Merz**	**Hanne de Mora**	**Helena Stjernholm** *Member of the Audit Committee* *Member of the Volvo CE Transformation Committee*
Education				
MSc, Chalmers University of Technology.	BA from State University of New York at Albany, MBA & Doctorate from Hofstra University.	BS from University of Cooperative Education, Stuttgart.	BA in Economics from HEC in Lausanne, MBA from IESE in Barcelona.	MSc Business Administration, Stockholm School of Economics.
Born				
1967	1956	1963	1960	1970
Member of the Volvo Board				
Since April 6, 2016.	Since April 2, 2014.	Since April 1, 2015.	Since April 14, 2010.	Since April 6, 2016.
Position and Board memberships				
President and CEO of AB Volvo. Board Chairman: Permobil AB and the European Automobile Manufacturers' Association (ACEA CV BOD). Board Member: Autoliv Inc. and the Confederation of Swedish Enterprise. Member: European Round Table of Industry (ERT) and the Royal Swedish Academy of Engineering Sciences (IVA).	President and CEO of PODS. Board Chairperson: Concentrix. Board Member: Ares Acquisition Corporation.	CEO of thyssenkrupp AG. Board Member: Siemens AG.	Board Chairperson: Microcaps AG. Board Member: IMD Supervisory Board and Nestlé S.A.	President and CEO of AB Industrivärden. Board Member: AB Industrivärden, Sandvik AB, Telefonaktiebolaget LM Ericsson and the Confederation of Swedish Enterprise. Member: The Royal Swedish Academy of Engineering Sciences (IVA).
Principal work experience				
President and CEO of Scania 2012–2015. Prior to that, various managerial positions at Scania since 1992. Co-chairman of the UN Secretary - General's High-Level Advisory Group on Sustainable Transport 2015–2016. Previous Board assignments include Board member of Concentric AB.	Several management positions at Citibank, Chemical Bank New York (now JP Morgan Chase), First Bank Systems and First Data Corporation, Division President General Electric Financial Assurance Partnership Marketing and Division President General Electric Fleet Services, President and CEO of Ceridian Corporation and subsequently also Chairman, Board Chairman, President and CEO of Stream Global Services, Inc. Senior Advisor Ares Management, LLC. Board Member of Nielsen, RealPage, General Motors Co. and MasterCard US. Until 2020 President and CEO of Hertz Global Holdings.	Until January 2015, CEO for Chassis Brakes International. Has, during almost 25 years held various management positions in Robert Bosch GmbH, most recently as Executive Vice President Sales and Marketing in the Chassis System Brakes division combined with responsibility for regions China and Brazil and previously CEO of the subsidiary Bosch Closure Systems, also member of the Board of Management of Brose Fahrzeugteile GmbH & Co.	Credit Analyst Den Norske Creditbank in Luxemburg 1984. Various positions within brand management and controlling within Procter & Gamble 1986–1989, Partner McKinsey & Company, Inc. 1989–2002, one of the founders and owners, also Board Chairperson of the global consulting firm and talent pool a-connect (group) AG from 2002 until May 2021. Previous Board assignments also include Board member of Metso Outotec Oyj.	Between 1998 and 2015, employed by the private equity firm IK Investment Partners (former Industri Kapital) where she held various positions. She was a Partner with responsibility for the Stockholm office. She was also a member of IK's Executive Committee. Prior to that she worked as a consultant for Bain & Company.
Holdings in Volvo, own and related parties				
251,681 Series B shares, 300,000 call options in Series B shares.	None.	4,500 Series B shares.	22,650 Series B shares.	8,000 Series B shares.

Deputies appointed by the employee organizations

Camilla Johansson
Employee representative, deputy member

Born
1966

Member of the Volvo Board
Deputy member since April 6, 2016.

Background within Volvo
With Volvo since 1997.

Holdings in Volvo, own and related parties
643 Series A shares, 508 Series B shares.

Mari Larsson
Employee representative, deputy member
Member of the Volvo CE Transformation Committee

Born
1978

Member of the Volvo Board
Deputy member since May 22, 2015.

Background within Volvo
With Volvo since 2004.

Holdings in Volvo, own and related parties
605 Series A shares, 258 Series B shares.

Secretary to the board

Nina Aresund
Secretary to the Board
Master of Laws

Born
1974

Member of the Volvo Board
Secretary to the Board since January, 2023.

Background within Volvo
Executive Vice President Group Legal & Compliance and General Counsel.

Holdings in Volvo, own and related parties
11,487 Series B shares.

8 EXTERNAL AUDITING

Volvo's auditors are elected by the Annual General Meeting. The auditors review the interim report for the period January 1 to June 30 and audit the annual financial statements and consolidated accounts. The auditors also review the Corporate Governance Report and confirms whether the Group has presented a Sustainability Report. The auditors report the results of their audit in the Audit Report and in an opinion on the Corporate Governance Report and provides an opinion on whether the guidelines for remuneration to the Volvo Group Executive Board have been complied with, which they present to the Annual General Meeting.

The current auditor, Deloitte AB, was elected at the Annual General Meeting 2022 for a period of one year. Jan Nilsson is responsible for the audit of Volvo and is the Auditor-in-Charge.

For information about Volvo's remuneration of the auditors, please refer to Note 28 "Fees to the auditors" in the Group's notes in the Annual Report.

9 GROUP INTERNAL AUDIT

Volvo's internal audit function, Group Internal Audit, provides the Board and the Group Executive Board with an independent, risk based and objective assurance on the effectiveness and the efficiency of the governance, risk management and control systems of the Volvo Group. Group Internal Audit runs from time to time advisory work as well. Group Internal Audit helps the organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and to improve the effectiveness of risk management, control and governance processes.

Group Internal Audit performs internal audits in selected focus areas, identified through an independent risk assessment process involving key stakeholders, input from past audits and from the other assurance functions including the external auditors. This audit plan is approved by the Audit Committee. In addition, special assignments requested by management and the Audit Committee can be performed. The audits cover, among other things, assessments on the adequacy and effectiveness of the Volvo Group's processes for controlling its activities and managing its risks and evaluation of compliance with policies and directives.

The head of Group Internal Audit reports directly to the CEO, the Group's General Counsel and the Audit Committee.

For additional information on internal control over financial reporting, see pages 202–203.

10 GOVERNANCE PRINCIPLES AND ORGANIZATIONAL STRUCTURE

Volvo's strategy

The Volvo Group's mission is to "Drive prosperity through transport and infrastructure solutions". The Volvo Group has the ambition to drive prosperity socially, environmentally and financially, by striving for transport and infrastructure solutions that are safe, fossil-free and productive. The Volvo Group drives the transformation in its industry to shape the world we want to live in. Based on the Group's strategic priorities and Volvo Group 2030 ambitions, each Business Area defines its own operational plans. The long-term plans, such as the Group's industrial and product plans, are also crucial parts of the Group's strategic direction. For more information about the Volvo Group's strategy, please refer to pages 10–21 of the Annual Report.

Governance documents

Another key component of the Group's governance is its policies and directives, such as the Code of Conduct and policies pertaining to investments, financial risks, accounting, financial control and internal audit, which contain Group-wide operating and financial rules for the operations, as well as responsibility and authority structures.

Organizational structure

The Volvo Group is organized into five Group Functions, three Truck Divisions and ten Business Areas. The five Group Functions (Group Finance, Group Legal & Compliance, Group People & Culture, Group Communication and CDO[1] Organization) are tasked with supporting the entire organization with expertise within each Group Function area, developing standards through policies, directives and guidelines and providing services and/or products for the entire Group.

The Volvo Group's truck business is supported by the three Truck Divisions: Group Trucks Technology (GTT), Group Trucks Purchasing (GTP) and Group Trucks Operations (GTO).

The business of the Volvo Group is organized in ten Business Areas: Volvo Trucks, Renault Trucks, Mack Trucks, Volvo Construction Equipment, Volvo Energy, Volvo Buses, Volvo Penta, Volvo Financial Services (VFS), Volvo Autonomous Solution (VAS) and Arquus. In addition, Nova Bus is a separate legal and operational entity within the Volvo Group.

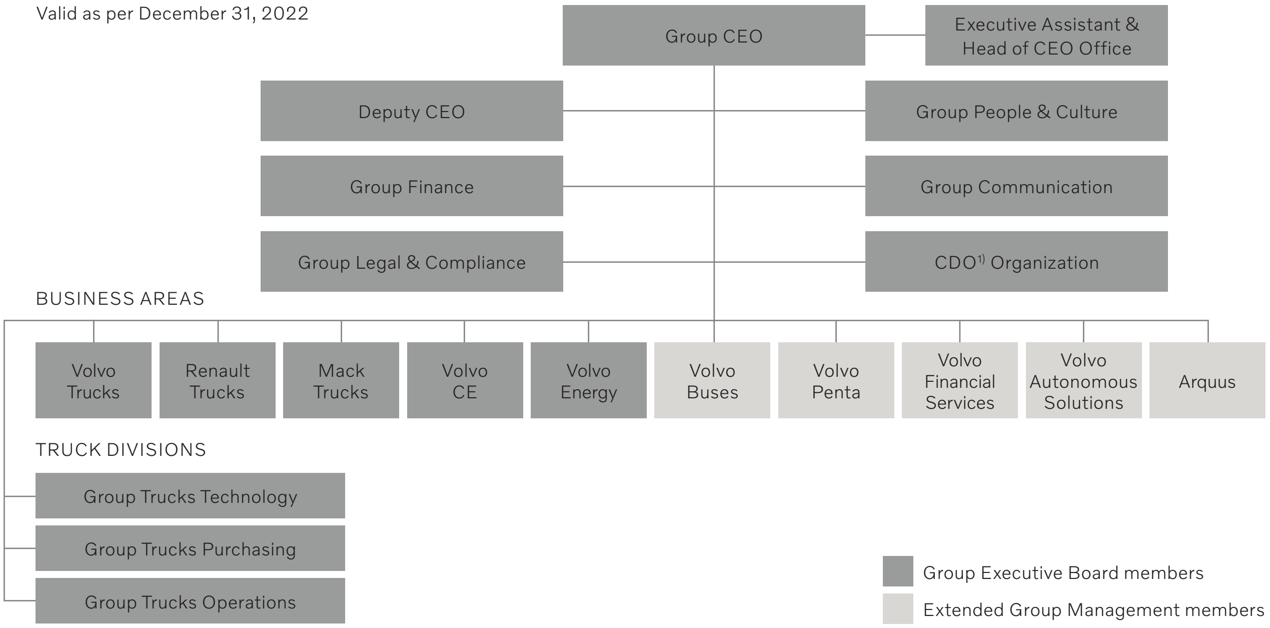
Each Business Area and Truck Division has its own quarterly Business Review Meeting (BRM) to support strategic development and business performance, where key decisions for the respective Truck Divisions or Business Areas are made.

For cross-functional alignment and interaction between different functions and organizations and for taking specific decisions which are sometimes not part of the line organizations ordinary responsibilities, several cross-functional decision forums have been formalized, including: People Board, Digital and IT Product Board, Connected Solutions Board, Product Board, Quality Board and Sales and Operational Planning.

With this governance model, Volvo can utilize the synergies of having global organizations for product development, purchasing and manufacturing, while maintaining clear leadership and responsibility for each business area to make sure that customer needs are met. The aim of the governance model is that all Business Areas are driven according to the same distinct business principles, whereby each Business Area can follow and optimize its own earnings performance and cash flow generation in the short- and long-term.

Volvo Group organization

Valid as per December 31, 2022



1 Chief Digital Office

11 GROUP EXECUTIVE BOARD AND GROUP MANAGEMENT

The CEO is responsible for managing the day-to-day operations of the Volvo Group and is authorized to make decisions on matters that do not require AB Volvo Board approval. The CEO leads the operations of the Volvo Group, e.g. through the Group Executive Board, the extended Group Management and the cross-functional forums.

The Group Executive Board is the highest operational decision forum and is chaired by the President and CEO of the Volvo Group, Martin Lundstedt. Furthermore during 2022, the members of the Group Executive Board are the Deputy CEO, Executive Vice Presidents of the Group Functions, Executive Vice Presidents and Presidents of Volvo Trucks, Renault Trucks, Mack Trucks, Volvo Construction Equipment and Volvo Energy as well as the Executive Vice Presidents of the Truck Divisions.

The members of Group Management report directly to the CEO and include the Presidents of Volvo Buses, Volvo Penta, Volvo Autonomous Solutions (VAS), Volvo Financial Services (VFS) and Arquus respectively. The Group Executive Board and Group Management meet to align on Group matters bi-monthly.

Remuneration of the Group Executive Board

AB Volvo's Annual General Meeting shall, at least every fourth year, resolve on guidelines for remuneration to the members of the Group Executive Board, based on a proposal from the Board. For information about the guidelines adopted by the Annual General Meeting 2022, please refer to Note 27 "Personnel" in the Group's notes in the Annual Report.

Changes to the Group Executive Board and Group Management

On March 15, 2022, Tina Hultkvist replaced Jan Ytterberg, who continued as Volvo Group senior advisor, as Chief Financial Officer and joined the Volvo Group Executive Board. On December 31, 2022, Jan Gurander resigned from his role as Volvo Group Deputy CEO but continued to stand available to the President and CEO Martin Lundstedt's disposal. On January 1, 2023, Nina Aresund replaced Sofia Frändberg, who continued as a senior leader for the Volvo Group, as Executive Vice President Group Legal & Compliance and General Counsel and member of the Volvo Group Executive Board. On February 3, 2023, Tina Hultkvist resigned as Chief Financial Officer and member of the Volvo Group Executive Board whereupon Jan Ytterberg stepped in as acting Chief Financial Officer.

The Board of Directors' visit to the Volvo Group's truck assembly plant in New River Valley, Virginia.

Sustainability and climate related matters

Sustainability is of strategic importance to the Group and the accountability to drive sustainability performance primarily lies with the Truck Divisions and Business Areas. The organizational structure described in this Corporate Governance Report applies to all strategic topics within the Volvo Group, including climate and sustainability matters. For sustainability related matters, the Volvo Group relies on an integrated approach to ensure that environmental, social and economic topics are considered in all relevant decision-making. Opportunities and risks related to sustainability are identified in all Truck Divisions and Business Areas, and may relate to e.g. government regulation, technology development, customer satisfaction and physical risks. The principal risks are consolidated in the Volvo Group's enterprise risk management process and managed by the Group Executive Board and the Truck Divisions, Business Areas and Group Functions.

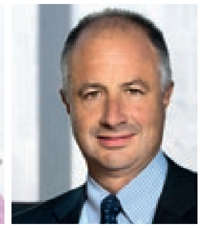
On Group level, the work is coordinated by cross-functional forums and working groups assigned by one or several Group Executive Board members with representatives from the relevant Truck Divisions and Business Areas. These forums and working groups prepare the material for decision-making at Group Executive Board level, to be executed in the respective Truck Divisions, Business Areas and/or Group Functions.

The most relevant cross-functional forums and working groups for sustainability related matters are:

- The Group Executive Board, where top sustainability related targets and ambitions, risks and opportunities are managed. One example is the Volvo Group's science-based climate targets which are followed up in the Group Executive Board every quarter.
- The Product Board, headed by the Chief Technology Officer, where climate related opportunities and risks are managed primarily as part of the transition towards fossil-free transportation.
- The People Board, headed by the Executive Vice President and Head of People & Culture, which focuses on all significant employee related matters such as training, health and safety, diversity, inclusion and talent management.
- The Environmental Committee, a delegated committee from Group Legal & Compliance where Group Functions, Truck Divisions and Business Areas representatives coordinate environmental management with the mission to secure the effective work of the Volvo Group's Environmental Policy and management system.
- The Human Rights Board, chaired by the Executive Vice President Group Communication and the Senior Vice President, Corporate Responsibility with Group Executive Board members who coordinate the implementation of the Group's Human Rights policy and work.

President and CEO Martin Lundstedt together with the Chairman of the Board Carl-Henric Svanberg, the Board and parts of the Group Executive Board in front of a Mack Anthem and a Volvo VNL during a visit to the Volvo Group's truck assembly plant in New River Valley, Virginia.

Group Executive Board

							
	Martin Lundstedt *President and CEO*	**Roger Alm** *Executive Vice President Volvo Group and President Volvo Trucks*	**Nina Aresund** *Executive Vice President Group Legal & Compliance and General Counsel*	**Bruno Blin** *Executive Vice President Volvo Group and President Renault Trucks*	**Andrea Fuder** *Executive Vice President Volvo Group Trucks Purchasing and Chief Purchasing Officer for Volvo Group*	**Jens Holtinger** *Executive Vice President Group Trucks Operations*	**Melker Jernberg** *Executive Vice President Volvo Group and President Volvo Construction Equipment*
Education	MSc, Chalmers University of Technology		Master of Laws.	MBA.	MSc and MBA.	MSc in Mechanical Engineering, Chalmers University of Technology.	MSc in Mechanical Engineering.
Born	1967	1962	1974	1963	1967	1970	1968
Principal work experience	President and CEO of AB Volvo and member of the Group Executive Board since October 2015. President and CEO of Scania 2012–2015. Prior to that, various managerial positions at Scania since 1992. Co-chairman of the UN Secretary-General's High-Level Advisory Group on Sustainable Transport 2015–2016. Previous Board assignments include Board member of Concentric AB.	Executive Vice President Volvo Group and President Volvo Trucks since 2018. Senior Vice President Volvo Trucks Europe 2016–2018. Senior Vice President Volvo Group Trucks Northern Europe 2015–2016. President Volvo Group Trucks Latin America 2012–2014. President Volvo Trucks Latin America 2010–2011. Managing Director Volvo Trucks, Region East 2004–2009. Member of the Group Executive Board since January 2019. With Volvo since 1989.	Member of the Group Executive Board since January 2023. Head of Legal and Compliance at Volvo Construction Equipment 2020–2022. Corporate Legal Counsel at AB Volvo 2007–2014.	After having worked for several companies in the manufacturing, quality and purchasing areas, he joined Renault Trucks Purchasing in 1999. Has held several senior positions over the years until being appointed Senior Vice President of Volvo Group Purchasing. Has also served as Senior Vice President, Group Truck Sales South Europe from January 2013–2016. Executive Vice President Volvo Group and President Renault Trucks since 2016. Member of the Group Executive Board since March 2016. With Volvo since 1999.	Has worked in Quality and Logistic and held various senior positions at Volkswagen's Purchasing organization since 1992. Head of Purchasing at Scania 2012–2016. Executive Vice President Volvo Group Trucks Purchasing and Chief Purchasing Officer for Volvo Group since 2017. Member of the Group Executive Board since 2017. With Volvo since 2017.	Executive Vice President Group Trucks Operations since 2020. Senior Vice President Europe & Brazil Manufacturing Group Trucks Operations 2016–2020. Vice President Powertrain Production Skövde Plant 2012–2016. Has held several leading positions within the Volvo Group. Member of the Group Executive Board since October 2020. With Volvo since 1995.	Executive Vice President Volvo Group and President Volvo Construction Equipment since 2018. CEO and President at Höganäs AB 2014–2017. Executive Vice President, Business Area EMEA at SSAB 2011–2014. Has held various positions at Scania AB since 1989, most recently as Senior Vice President Buses and Coaches at Scania AB 2007-2011. Member of the Group Executive Board since January 2018. With Volvo since 2018.
Board memberships	Board Chairman: Permobil AB and the European Automobile Manufacturers' Association (ACEA CV BOD). Board Member: Autoliv Inc. and the Confederation of Swedish Enterprise. Member: European Round Table of Industry (ERT) and the Royal Swedish Academy of Engineering Sciences (IVA).		Secretary to the AB Volvo Board since January 2023.		Member of the Board of the German-Swedish Chamber of Commerce.		
Holdings in Volvo, own and related parties	251,681 Series B shares, 300,000 call options in Series B shares.	398 Series A shares, 34,414 Series B shares.	11,487 Series B shares.	41,094 Series B shares.	1,600 Series A shares, 62,211 Series B shares.	23,529 Series B shares.	42,620 Series B shares.

	 **Diana Niu** *Executive Vice President Group People & Culture*	 **Scott Rafkin** *Executive Vice President and Chief Digital Officer for Volvo Group*	 **Joachim Rosenberg** *Executive Vice President Volvo Group Strategic Initiatives and President Volvo Energy*	 **Lars Stenqvist** *Executive Vice President Group Trucks Technology and Volvo Group Chief Technology Officer*	 **Martin Weissburg** *Executive Vice President Volvo Group and President Mack Trucks*	 **Kina Wileke** *Executive Vice President Group Communication*	 **Jan Ytterberg** *Acting CFO*
Education	MBA and BA in Economics.	BBA (Bachelors in Business Administration), University of Massachusetts at Amherst.	MSc Industrial Engineering and Management, MSc Financial Economics, MSc Business and Economics.	MSc Industrial Engineering.	Master of Business Management, BSc Industrial Management.	MA in journalism.	MSc in Business Administration and Economics.
Born	1966	1969	1970	1967	1962	1974	1961
Principal work experience	Executive Vice President Group People & Culture since 2019. Joined Volvo Group in February 2005, with SVP HR jobs in two Business Areas, Trucks Asia Pacific and Volvo Construction Equipment. Worked for Telefonaktiebolaget LM Ericsson from July 1993 to January 2005 in a number of leadership positions. Member of the Group Executive Board since January 2019.	Executive Vice President and Chief Digital Officer Volvo Group since 2020. President Volvo Financial Services 2014–2019. Chief Financial Officer Volvo Financial Services 2010–2014. Senior Vice President Global Operations Volvo Financial Services 2003–2009. Senior Vice President Risk Volvo Financial Services 2001–2002. Prior to 2001, held several senior positions with Volvo Car Finance North America. Prior to Volvo, Business Assurance and Capital Markets Manager Coopers & Lybrand LLC. Member of the Group Executive Board since January 2020. With Volvo since 2001.	Executive Vice President Volvo Group Strategic Initiatives since 2023. Executive Vice President Volvo Group and President Volvo Energy since 2021. Executive Vice President Volvo Group and Chairman UD Trucks 2016–2021. Executive Vice President Group Trucks Sales 2015–2016. Executive Vice President Group Trucks Sales & Marketing APAC 2012–2014. President Volvo Group Asia Truck Operations 2007–2011. Vice President Volvo Group Alliance Office 2007. Vice President Volvo Powertrain 2005–2007. Consultant with McKinsey & Company 1996–2004. Member of the Group Executive Board since 2012. With Volvo since 2005.	Executive Vice President Group Trucks Technology and Volvo Group Chief Technology Officer since October 2016. Head of R&D and CTO at Volkswagen Truck & Bus 2015–2016. Senior Vice President Vehicle Definition R&D at Scania 2007–2015. Prior to that various senior positions at Scania since 1992. Member of the Group Executive Board since October 2016. With Volvo since October 2016. Fellow of the Royal Swedish Academy of Engineering Sciences (IVA).	President Mack Trucks since 2018. President Volvo Construction Equipment 2014–2017. President & CEO Volvo Financial Services 2010–2014. President Volvo Financial Services Americas 2005–2010. Prior to Volvo, President Woodard LLC, President Great Dane Financial Services and Senior Vice President ORIX. Member of the Group Executive Board since March 2016. With Volvo since 2005.	Responsible for Group Communications since 2018. With the Volvo Group since 2008, most recently as Senior Vice President Brand, Communication & Marketing Volvo Penta 2016–2017, Senior Vice President External Corporate Communication Volvo Group 2012–2016 and CEO Communication Volvo Group 2008–2012. Has held a number of positions in TV4 Group 1998–2008. Member of the Group Executive Board since 2018.	Senior Advisor Volvo Group since 2022. Executive Vice President Group Finance and CFO AB Volvo 2018–2022. CFO of Husqvarna Group 2015–2018. Executive Vice President and CFO of Scania Group 2006–2015. Various positions in accounting and finance, Scania Group 1987–2006. With Volvo since 2018.
Board memberships			Member of the Board of Concentric AB since April 2021.			Board Member of International Chamber of Commerce (ICC), Sweden.	
Holdings in Volvo, own and related parties	65,534 Series B shares.	50,403 Series B shares.	87 Series A shares, 244,913 Series B shares.	42,727 Series B shares.	140,985 Series B shares.	344 Series A shares, 23,875 Series B shares.	28,392 Series B shares.

Extended Group Management

				
Nils Jaeger *President of Volvo Autonomous Solutions*	**Emmanuel Levacher** *President and CEO of Arquus*	**Heléne Mellquist** *President of Volvo Penta*	**Marcio Pedroso** *President of Volvo Financial Services*	**Anna Westerberg** *President of Volvo Buses*
Born				
1969	1962	1964	1968	1975
Principal work experience				
Responsible for Volvo Autonomous Solutions since 2020. With the Volvo Group since 2014, most recently as President of Volvo Financial Services EMEA. Prior to joining Volvo Group, several leading positions within Deere & Company, including the position as Vice President International Finance, Europe, CIS, N&ME EAST, Northern Africa and Global Trade Finance.	During his 33 years in the automobile industry (Renault Trucks, Renault, Volvo), Emmanuel has held multiple operational and strategic functions in contact with markets on the five continents. He has also built a solid experience with French and foreign governments, state authorities and public and diplomatic institutions.	2019–2020 Senior Vice President of Volvo Trucks Europe, 2016–2019 Senior Vice President of Volvo Trucks International and 2012–2016 CEO of TransAtlantic AB. 1988–2011 Heléne has held several leading position within the Volvo Group.	President Volvo Financial Services since 2020. From 2015–2019 Senior Vice President Volvo Financial Services Americas, Managing Director Brazil and Chile 2011–2014 and Vice President Latin America markets 2010–2011. Held other senior positions and special assignments across Americas and Europe for the Volvo Group from 2001–2010. Prior to 2001, held various leadership positions outside of Volvo in insurance and corporate finance.	President of Volvo Buses since 2021. Senior Vice President Volvo Group Connected Solutions 2017–2021. Prior to that President for Volvo Group Venture Capital 2014–2017 and Vice President, Product Management Industrial, Volvo Penta 2010–2014. With Volvo since 2009.

12 INTERNAL CONTROL OVER FINANCIAL REPORTING

The Board is responsible for the internal controls according to the Swedish Companies Act and the Code. The purpose of this report is to provide share-holders and other interested parties with an understanding of how internal control is organized at Volvo with regard to financial reporting. The description has been designed in accordance with the Swedish Annual Accounts Act and is thus limited to internal control over financial reporting.

Introduction

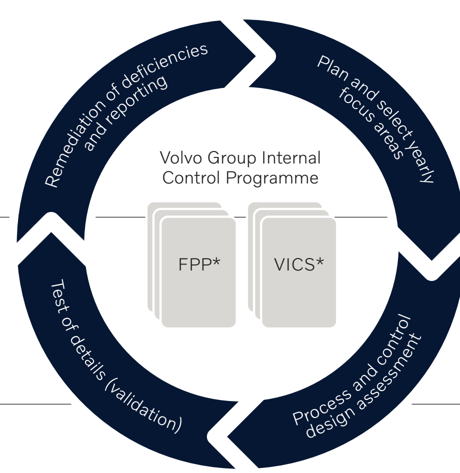
Volvo has a function for internal control with the objective to provide support for management, allowing them to continuously provide solid internal controls relating to financial reporting. Work that is conducted through this function is primarily based to ensure compliance with directives and policies, and to create effective conditions for specific control activities in key processes related to financial reporting. The Audit Committee is regularly informed of the results of the work performed by the Internal Control function within Volvo with regard to risks, control activities and follow-up on the financial reporting.

Volvo also has an internal audit function, Group Internal Audit, which among other things, independently monitors that companies in the Group follow the principles and rules that are stated in the Group's directives, policies and instructions for financial reporting. The head of the Group Internal Audit function reports directly to the CEO, to the Group's General Counsel and the Board's Audit Committee.

Control environment

Fundamental to Volvo's control environment is the business culture that is established within the Group and in which managers and employees operate. Volvo works actively on communication and training regarding

Volvo Group Internal Control Program
Yearly evaluation of the effectiveness of internal control over financial reporting (ICFR) within the Volvo Group.
* FPP – Financial Policies and Procedures;
VICS – Volvo Internal Control Standard



the company's basic values included in the Group's Code of Conduct, to ensure that the business conducted by the organization is characterized by good ethics, integrity and is in compliance with the law.

The foundation of the internal control process relating to the financial reporting is based on the Group's directives, policies and instructions, as well as the organization's responsibility and authority structure. The principles for Volvo's internal controls and directives and policies for the financial reporting are contained in the Volvo Group Management System, a group wide management system comprising, among other things, instructions, rules and principles.

Risk assessment

Risks relating to financial reporting are evaluated and monitored by the Group Executive Board and Group Management as well as the Board through the Audit Committee, based on assessments by management, inter alia through identifying risks that could be considered as material, and through the mitigating generic controls. The risk assessment is based on a number of criteria, such as the complexity of the accounting principles, revaluation principles of assets or liabilities, complex and/or changing business circumstances, etc. The risks together with mitigating generic controls are collected in a framework for internal control over financial reporting, Volvo Internal Control Standard (VICS).

Control activities

In addition to the Board and its Audit Committee, the management groups and other decision-making bodies in the Group constitute overall supervisory bodies. Business processes are designed to ensure that potential errors or deviations in the financial reporting are prevented, discovered and corrected by implementing control activities that correspond to the generic controls defined in the VICS framework. Control activities range from review of outcome results against earlier forecasts and estimates in management group meetings to specific reconciliation of accounts and analyzes of the ongoing processes for financial reporting.

Information and communication

Policies and instructions relating to the financial reporting are updated and communicated on a regular basis from management to all affected employees. The Group's financial reporting function has direct operating responsibility for the daily financial reporting and works to ensure a uniform application of the Group's policies, principles and instructions for the financial reporting and to identify and communicate shortcomings and areas of improvement in the processes for financial reporting.

Follow-up

Ongoing responsibility for follow-up rests with the Group's financial reporting function. In addition, the Group Internal Audit and the Internal Control function conduct review and follow-up activities in accordance with what is described in the introduction of this report. More specifically, the Internal Control function runs and coordinates evaluation activities through the "Volvo Group Internal Control Program," with the purpose of systematically evaluating the quality of the internal control over financial reporting on an annual basis. An annual evaluation plan is established and presented to the Audit Committee. This evaluation program comprises three main areas:

1. Group-wide controls: Self-assessment procedure carried out by management teams at business area, Group Function and company levels. The main areas evaluated are compliance with the Group's financial directives and policies and the Group's Code of Conduct.
2. Process controls at transaction level: Processes related to the financial reporting are evaluated by testing procedures/controls based on the framework for internal control over financial reporting, Volvo Internal Control Standards (VICS).
3. General IT controls: Processes for maintenance, development and access management of financial applications are evaluated by testing procedures and controls.

The results of the evaluation activities are reported to the Group Executive Board, the Group Management and the Audit Committee. During 2022, the Internal Control function reported two times to the Audit Committee regarding the annual evaluation plan, status on outstanding issues and final assessment of the control environment.

Göteborg, February 27, 2023

AB Volvo (publ)
The Board of Directors

AUDITOR'S REPORT ON THE CORPORATE GOVERNANCE STATEMENT

To the general meeting of the shareholders of AB Volvo (publ)
corporate identity number 556012-5790

Engagement and responsibility

It is the board of directors who is responsible for the corporate governance statement for the financial year 2022-01-01–2022-12-31 on pages 186–203 and that it has been prepared in accordance with the Annual Accounts Act.

The scope of the audit

Our examination has been conducted in accordance with FAR's standard RevR 16 *The auditor's examination of the corporate governance statement*. This means that our examination of the corporate governance statement is different and substantially less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden. We believe that the examination has provided us with sufficient basis for our opinions.

Opinions

A corporate governance statement has been prepared. Disclosures in accordance with chapter 6 section 6 the second paragraph points 2–6 the Annual Accounts Act and chapter 7 section 31 the second paragraph the same law are consistent with the annual accounts and the consolidated accounts and are in accordance with the Annual Accounts Act.

Göteborg, February 27, 2023

Deloitte AB

Signature on Swedish original

Jan Nilsson
Authorized Public Accountant

This is a translation of the Swedish language original. In the event of any differences between this translation and the Swedish language original, the latter shall prevail.

Proposed guidelines for remuneration to the Volvo Group Executive Board

Following a review of the long-term incentive program and the remuneration structure, the Board of Directors proposes that the Annual General Meeting adopts the following guidelines for remuneration to senior executives. As compared to the current remuneration guidelines, adopted at the Annual General Meeting 2022, the proposed guidelines are simplified, since the details of the Board of Director's proposal for a new long-term incentive program will be provided separately to the Annual General Meeting.

The Boards's proposal for guidelines for remuneration to the Volvo Group Executive Board

These guidelines concern the remuneration and other terms of employment for the members of the Volvo Group Executive Board ("Executives").

The guidelines are forward-looking, i.e. they are applicable to remuneration agreed, and amendments to remuneration already agreed, after the proposed adoption of these guidelines by the 2023 annual general meeting. These guidelines do not apply to any remuneration separately decided or approved by the general meeting.

The guidelines' promotion of the Volvo Group's business strategy, long-term interests and sustainability

It is a prerequisite for the successful implementation of the Volvo Group's business strategy and safeguarding of its long-term interests, including its sustainability, that the Group can recruit, retain and develop senior management. These guidelines enable AB Volvo to offer Executives a competitive total remuneration. More information regarding the Volvo Group's business strategy is available in the Volvo Group Annual Report.

Types of remuneration

Volvo Group remuneration to Executives shall consist of the following components: base salary, short-term and long-term variable incentives, pension benefits and other benefits.

Short-term incentives may, for the President and CEO, amount to a maximum of 100 % of the base salary and, for other Executives, a maximum of 80 % of the base salary.

Long-term incentives may, for the President and CEO, amount to a maximum of 150 % of the base salary and, for other Executives, a maximum of 80 % of the base salary. Current and proposed long-term incentives are described and addressed separately by the 2023 general meeting.

Further cash remuneration may be awarded in extraordinary circumstances, provided that such extraordinary arrangements are limited in time and only made on an individual basis, either for the purpose of recruiting or retaining Executives, or as remuneration for extraordinary performance beyond the individual's ordinary tasks. Such remuneration may not exceed an amount corresponding to 100 % of the annual base salary. Any resolution on such remuneration shall be made by the Board of Directors based on a proposal from the Remuneration Committee.

For the President and CEO, pension benefits shall be granted on the basis of a defined contribution plan. The pensionable salary shall include base salary only. The pension contributions for the President and CEO attributable to the annual base salary shall amount to not more than 35 % of the base salary.

Other benefits may include, for example, life insurance, medical and health insurance, and company cars. Premiums and other costs relating to such benefits may amount to not more than 3 % of the annual base salary for the President and CEO.

For other Executives, pension benefits shall be granted on the basis of a defined contribution plan except where law or collective agreement requires a defined benefit pension. The pensionable salary shall include base salary and, where required by law or collective agreement, incentives. The total pension contributions for other Executives shall amount to not more than 35 % of base salary, unless a higher percentage results from the application of law or collective agreement.

Other benefits may include, for example, life insurance, medical and health insurance, and company car. Premiums and other costs relating to such benefits may amount to not more than 10 % of the annual base salary for other Executives.

Remuneration for Executives that reside outside Sweden or reside in Sweden but having a material connection to or having been residing in a country other than Sweden may be duly adjusted to comply with mandatory rules or local practice, taking into account, to the extent possible, the overall purpose of these guidelines.

In addition to remuneration set out above, Executives who relocate for the purposes of the position or who work in other multiple countries may also receive such remuneration and benefits as are reasonable to reflect the special circumstances associated with such arrangements, taking into account the overall purpose of these guidelines and alignment with the general policies and practices within the Volvo Group applicable to cross border work.

Termination of employment

Upon termination of an Executive's employment, the notice period may not exceed twelve months. Base salary during the notice period and severance pay may not together exceed an amount corresponding to the base salary for two years.

Executives that reside outside Sweden or reside in Sweden but having a material connection to or having been residing in a country other than Sweden may be offered notice periods for termination and severance payment as are reasonable to reflect the special circumstances, taking into account the overall purpose of these guidelines and alignment with the general policies and practices within the Volvo Group.

Criteria for awarding variable remuneration, etc.

Plans for long-term and short-term incentives shall be linked to predetermined and measurable criteria, to be determined by the Board of Directors. The criteria – which for example may relate to EBIT, cash flow, return on capital employed or similar ratios, or sustainability targets – shall be devised to promote the Volvo Group's strategy and long-term value creation and strengthen the link between achieved performance targets and reward. The satisfaction of the criteria shall be measured over periods of one or multiple years, depending on the type of incentive plan.

To which extent the criteria for awarding incentives has been satisfied shall be determined when the relevant measurement period has ended. The Board of Directors is responsible for the determination of the incentives to be paid, if any, to all Executives.

Claw-back and adjustments

Executives participating in the Volvo Group's short-term and long-term incentive plans are obligated, in certain circumstances and for specified periods of time, to repay, partially or in its entirety, incentive awards already paid if payments have been made by mistake or been based on intentionally falsified data or in the event of material restatement of the Volvo Group's financial results. Furthermore, the Board of Directors may decide on adjustments of pay-out under the incentive plans (before payment has been made) in case of extraordinary circumstances or to adjust for unforeseen one-timers.

Salary and employment conditions for employees

In the preparation of the Board of Directors' proposal for these guidelines, the Board has considered that the various benefits offered to the Executives need to be aligned with the general structures applicable for employees of AB Volvo at levels that are competitive in the market. Thus, salary and employment conditions for other AB Volvo employees have been taken into account by including information thereon in the Remuneration Committee's and the Board of Directors' basis of decision when evaluating whether the guidelines and the limitations set out herein are appropriate.

The decision-making process to determine, review and implement the guidelines

The Board of Directors has established a Remuneration Committee. The Committee's tasks include preparing the Board of Directors' decision to propose guidelines for executive remuneration. The Board of Directors shall prepare a proposal for new guidelines at least every fourth year and submit it to the general meeting. The guidelines shall be in force until new guidelines are adopted by the general meeting. The Remuneration Committee shall also monitor and evaluate plans for variable remuneration for Executives, the application of the guidelines for executive remuneration as well as the current remuneration structures and compensation levels in the Group. The members of the Remuneration Committee are independent of AB Volvo and its executive management. The President and CEO and other members of the executive management do not participate in the Board of Directors' processing of and resolutions regarding remuneration-related matters in so far as they are affected by such matters.

Derogation from the guidelines

The Board of Directors may temporarily resolve to derogate from the guidelines, in whole or in part, if in a specific case there is special cause for the derogation and a derogation is necessary to serve the Volvo Group's long-term interests, including its sustainability, or to ensure the Group's financial viability. As set out above, the Remuneration Committee's tasks include preparing the Board of Directors' resolutions in remuneration-related matters. This includes any resolutions to derogate from the guidelines.

Description of changes to the guidelines, etc.

During 2022, the company has carefully considered feedback received from shareholders and proxy advisors in connection with the general meeting 2022 and otherwise during the year. As a result of this dialogue, the Board and the Remuneration Committee have during 2022 performed a review of the design of the Group's long-term incentives. As a result of this review, the Board proposes the adoption of a new long-term incentive plan with a three-year performance period, to be implemented starting 2023. It is proposed that the transition into a new long-term incentive plan with a three-year performance period will be made in parallel with a two-year phasing out of the current long-term incentive plan. For further information, please refer to the Board's proposal for a new long-term incentive plan.

For further information about the dialogue with shareholders and proxy advisors, please refer to the Remuneration Report 2022. Additional information regarding executive remuneration in the Volvo Group is available in the Volvo Group Annual Report.

Proposed disposition of unappropriated earnings

AB Volvo	SEK
Retained earnings	34,875,417,001.06
Income for the period 2022	24,628,499,995.20
Total retained earnings	**59,503,916,996.26**

The Board of Directors proposes that the above sum be disposed of as follows:

	SEK
To the shareholders, an ordinary dividend of SEK 7.00 per share and an extraordinary dividend of SEK 7.00 per share, for a total of	28,468,329,176.00
To be carried forward	31,035,587,820.26
Total	**59,503,916,996.26**

The record date for determining who is entitled to receive dividends is proposed to be Thursday April 6, 2023.

In view of the Board of Directors' proposal to the Annual General Meeting to be held April 4, 2023 to decide on the distribution of an ordinary dividend of SEK 7.00 per share and an extraordinary dividend of SEK 7.00 per share, the Board of Directors hereby makes the following statement in accordance with Chapter 18, Section 4 of the Swedish Companies Act.

The Board of Directors concludes that the Company's restricted equity is fully covered after the proposed dividend. The Board of Directors further concludes that the proposed dividend is justifiable in view of the parameters set out in Chapter 17, Section 3, second and third paragraphs of the Swedish Companies Act. In connection herewith, the Board of Directors wishes to point out the following:

The proposed dividend reduces the Company's solvency from 62.9% to 50.0% and the Group's solvency from 26.4% to 22.9%, calculated as per year end 2022. The Board of Directors considers this solvency to be satisfactory with regard to the business in which the Group is active.

According to the Board of Directors' opinion, the proposed dividend will not affect the Company's or the Group's ability to fulfill their payment obligations and the Company and the Group are well prepared to handle both changes in the liquidity and unexpected events.

The Board of Directors is of the opinion that the Company and the Group have capacity to assume future business risks as well as to bear contingent losses. The proposed dividend is not expected to adversely affect the Company's and the Group's ability to make further commercially justified investments in accordance with the Board of Directors' plans.

In addition to what has been stated above, the Board of Directors has considered other known circumstances which may be of importance for the Company's and the Group's financial position. In doing so, no circumstance has appeared that does not justify the proposed dividend.

If the Annual General Meeting resolves in accordance with the Board of Directors' proposal, SEK 31,035,587,820.26 will remain of the Company's non-restricted equity, calculated as per year end 2022.

The Board of Directors has the view that the Company's and the Group's shareholders' equity will, after the proposed dividend, be sufficient in relation to the nature, scope and risks of the business.

The Board of Directors and the President certify that the annual financial report has been prepared in accordance with generally accepted accounting principles and that the consolidated accounts have been prepared in accordance with the international set of accounting standards referred to in Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards, and give a true and fair view of the position and profit or loss of the Company and the Group, and that the management report for the Company and for the Group gives a fair review of the development and performance of the business, position and profit or loss of the Company and the Group, and describes the principal risks and uncertainties that the Company and the companies in the Group face.

Göteborg, February 27, 2023

Carl-Henric Svanberg
Board Chairman

Matti Alahuhta
Board member

Jan Carlson
Board member

Eric Elzvik
Board member

Martha Finn Brooks
Board member

Kurt Jofs
Board member

Martin Lundstedt
President, CEO and Board member

Kathryn V. Marinello
Board member

Martina Merz
Board member

Hanne de Mora
Board member

Helena Stjernholm
Board member

Lars Ask
Board member

Mats Henning
Board member

Our audit report was issued on February 27, 2023

Deloitte AB

Jan Nilsson
Authorized Public Accountant

Audit report for AB Volvo (publ)

To the general meeting of the shareholders of AB Volvo (publ) corporate identity number 556012-5790

REPORT ON THE ANNUAL ACCOUNTS AND CONSOLIDATED ACCOUNTS

Opinions

We have audited the annual accounts and consolidated accounts of AB Volvo (publ) for the financial year 2022-01-01–2022-12-31. The annual accounts and consolidated accounts of the company are included on pages 42–146, 204–206 and 212–214 in this document.

In our opinion, the annual accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of the parent company as of 31 December 2022 and its financial performance and cash flow for the year then ended in accordance with the Annual Accounts Act. The consolidated accounts have been prepared in accordance with the Annual Accounts Act and present fairly, in all material respects, the financial position of the group as of 31 December 2022 and their financial performance and cash flow for the year then ended in accordance with International Financial Reporting Standards (IFRS), as adopted by the EU, and the Annual Accounts Act. The statutory administration report is consistent with the other parts of the annual accounts and consolidated accounts.

We therefore recommend that the general meeting of shareholders adopts the income statement and balance sheet for the parent company and the group.

Our opinions in this report on the annual accounts and consolidated accounts are consistent with the content of the additional report that has been submitted to the parent company's audit committee in accordance with the Audit Regulation (537/2014) Article 11.

Basis for Opinions

We conducted our audit in accordance with International Standards on Auditing (ISA) and generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the Auditor's Responsibilities section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements. This includes that, based on the best of our knowledge and belief, no prohibited services referred to in the Audit Regulation (537/2014) Article 5.1 have been provided to the audited company or, where applicable, its parent company or its controlled companies within the EU.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions.

Key Audit Matters

Key audit matters of the audit are those matters that, in our professional judgment, were of most significance in our audit of the annual accounts and consolidated accounts of the current period. These matters were addressed in the context of our audit of, and in forming our opinion thereon, the annual accounts and consolidated accounts as a whole, but we do not provide a separate opinion on these matters.

Allowance for Expected Credit Losses for Receivables in China

Risk description

The downturn in the Chinese construction equipment market is impacting customers' and dealers' profitability negatively. A substantial part of the Volvo Group's accounts receivable is related to customers in this market, and the determination of allowance for expected credit losses for receivables require management to make significant qualitative judgments, including assumptions regarding current and forecasted market conditions and individual assessment of the largest customers financial performance. There is a high degree of uncertainty and subjectivity in determining the severity and duration of the decreased market activity, and the potential impact on the recoverability of the Group's receivables.

The Volvo Group applies a simplified expected credit loss model for accounts receivables, under which the loss allowance is measured at an amount equal to lifetime expected credit losses. The allowance is recorded at initial recognition and is reassessed during the contract period. The accounting principles for expected credit losses and management's significant judgments applied in relation thereto are further described in Note 16 "Receivables" to the annual report.

Our Audit Approach

Our audit procedures included, but were not limited to:

- Evaluating the design and implementation of relevant internal controls implemented within the process.
- Assessing the reasonableness of the expected credit loss methodology including reviewing management's policies, procedures, and accounting position papers.
- Obtaining third-party confirmations from a selection of customers validating the existence and valuation of receivables.
- Performing audit procedures to test the completeness and accuracy of the underlying data and information used in management's calculation for the allowance for expected credit losses.
- Assessing the reasonableness of management's assumptions in relation to credit risk on a portfolio level as well as at customer-by-customer level through inspection of documentation supporting key assumptions, as wells as by evaluating the financial position of a selection of customer.

Provisions for losses from claims from customers and other third parties – EC Antitrust Settlement

Risk description

In July 2016, the European Commission and Volvo Group reached a settlement with regards to antitrust allegations made by the European Commission against Volvo Group and other companies in the truck manufacturing industry. Following the adoption of the European Commission's settlement decision, the Company has received and may continue to receive a significant number of third-party damage claims from customers and other third parties alleging that they suffered loss, directly or indirectly, by reason of the conduct covered in the decision.

The accounting principles for legal disputes is further described in Note 21 "Other Provisions" and Note 24 "Contingent Liabilities" to the annual report. The recognition and measurement of any provisions recorded or quantification of contingent liabilities to be disclosed for such legal disputes is complicated, requires expert legal input, and involves consideration of potential future outcomes of the claims which at this stage are uncertain. Due to these complexities, the valuation of any such provisions or contingent liabilities is significantly impacted by management's ultimate judgments and best estimates. On December 31, 2022, the Company has not been able to make a reliable estimate of the amount of any provision or contingent liability that could arise from these claims, save for the amount reflected in the provision recorded in fiscal year 2022 which is described in Note 21 "Other Provisions" and Note 24 "Contingent Liabilities".

Our Audit Approach

Our audit procedures included, but were not limited to:

- Holding discussions with management and audit the relevant documentation and conclude how management and the board assessed the claims.
- Holding discussions with internal legal department and with Volvo Group's external legal advisors in order to obtain an understanding of matters relevant to the claims.
- Reviewing internal minutes and relevant assessments prepared for management and Board to corroborate the consistency of information received.
- Assessing the appropriateness of the Company's final accounting conclusions.
- Assessing the adequacy of the disclosures around the legal proceedings.

Other information than the annual accounts and consolidated accounts

This document also contains other information than the annual accounts and consolidated accounts and is found on pages 1-41, 147-203, 207-211 and 215-223. The Board of Directors and the President are responsible for this other information.

Our opinion on the annual accounts and consolidated accounts does not cover this other information and we do not express any form of assurance conclusion regarding this other information.

In connection with our audit of the annual accounts and consolidated accounts, our responsibility is to read the information identified above and consider whether the information is materially inconsistent with the annual accounts and consolidated accounts. In this procedure we also take into account our knowledge otherwise obtained in the audit and assess whether the information otherwise appears to be materially misstated.

If we, based on the work performed concerning this information, conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and the President

The Board of Directors and the President are responsible for the preparation of the annual accounts and consolidated accounts and that they give a fair presentation in accordance with the Annual Accounts Act and, concerning the consolidated accounts, in accordance with IFRS as adopted by the EU. The Board of Directors and the President are also responsible for such internal control as they determine is necessary to enable the preparation of annual accounts and consolidated accounts that are free from material misstatement, whether due to fraud or error.

In preparing the annual accounts and consolidated accounts, The Board of Directors and the President are responsible for the assessment of the company's and the group's ability to continue as a going concern. They disclose, as applicable, matters related to going concern and using the going concern basis of accounting. The going concern basis of accounting is however not applied if the Board of Directors and the President intends to liquidate the company, to cease operations, or has no realistic alternative but to do so.

The Audit Committee shall, without prejudice to the Board of Director's responsibilities and tasks in general, among other things oversee the company's financial reporting process.

Auditor's responsibility

Our objectives are to obtain reasonable assurance about whether the annual accounts and consolidated accounts as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs and generally accepted auditing standards in Sweden will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these annual accounts and consolidated accounts.

A further description of our responsibilities for the audit of the annual accounts and consolidated accounts is located at the Swedish Inspectorate of Auditors website: www.revisorsinspektionen.se/revisornsansvar. This description forms part of the auditor's report.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Opinions

In addition to our audit of the annual accounts and consolidated accounts, we have also audited the administration of the Board of Directors and the President of AB Volvo (publ) for the financial year 2022-01-01–2022-12-31 and the proposed appropriations of the company's profit or loss.

We recommend to the general meeting of shareholders that the profit to be appropriated in accordance with the proposal in the statutory administration report and that the members of the Board of Directors and the President be discharged from liability for the financial year.

Basis for Opinions

We conducted the audit in accordance with generally accepted auditing standards in Sweden. Our responsibilities under those standards are further described in the Auditor's Responsibilities section. We are independent of the parent company and the group in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinions.

Responsibilities of the Board of Directors and the President

The Board of Directors and President are responsible for the proposal for appropriations of the company's profit or loss. At the proposal of a dividend, this includes an assessment of whether the dividend is justifiable considering the requirements which the company's and the group's type of operations, size and risks place on the size of the parent company's and the group's equity, consolidation requirements, liquidity and position in general.

The Board of Directors is responsible for the company's organization and the administration of the company's affairs. This includes among other things continuous assessment of the company's and the group's financial situation and ensuring that the company's organization is designed so that the accounting, management of assets and the company's financial affairs otherwise are controlled in a reassuring manner. The President shall manage the ongoing administration according to the Board of Directors' guidelines and instructions and among other matters take measures that are necessary to fulfill the company's accounting in accordance with law and handle the management of assets in a reassuring manner.

Auditor's responsibility

Our objective concerning the audit of the administration, and thereby our opinion about discharge from liability, is to obtain audit evidence to assess with a reasonable degree of assurance whether any member of the Board of Directors or the President in any material respect:

- has undertaken any action or been guilty of any omission which can give rise to liability to the company, or
- in any other way has acted in contravention of the Companies Act, the Annual Accounts Act or the Articles of Association.

Our objective concerning the audit of the proposed appropriations of the company's profit or loss, and thereby our opinion about this, is to assess with reasonable degree of assurance whether the proposal is in accordance with the Companies Act.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with generally accepted auditing standards in Sweden will always detect actions or omissions that can give rise to liability to the company, or that the proposed appropriations of the company's profit or loss are not in accordance with the Companies Act.

A further description of our responsibilities for the audit of the management's administration is located at the Swedish Inspectorate of Auditors website: www.revisorsinspektionen.se/revisornsansvar. This description forms part of the auditor's report.

THE AUDITOR'S EXAMINATION OF THE ESEF REPORT

Opinion

In addition to our audit of the annual accounts and consolidated accounts, we have also examined that the Board of Directors and the President have prepared the annual accounts and consolidated accounts in a format that enables uniform electronic reporting (the Esef report) pursuant to Chapter 16, Section 4 a of the Swedish Securities Market Act (2007:528) for AB Volvo (publ) for the financial year 2022-01-01–2022-12-31.

Our examination and our opinion relate only to the statutory requirements. In our opinion, the Esef report has been prepared in a format that, in all material respects, enables uniform electronic reporting.

Basis for opinion

We have performed the examination in accordance with FAR's recommendation RevR 18 *Examination of the Esef report*. Our responsibility under this recommendation is described in more detail in the Auditors' responsibility section. We are independent of AB Volvo (publ) in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of the Board of Directors and the President

The Board of Directors and the President are responsible for the preparation of the Esef report in accordance with the Chapter 16, Section 4 a of the Swedish Securities Market Act (2007:528), and for such internal control that the Board of Directors and the President determine is necessary to prepare the Esef report without material misstatements, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to obtain reasonable assurance whether the Esef report is in all material respects prepared in a format that meets the requirements of Chapter 16, Section 4(a) of the Swedish Securities Market Act (2007:528), based on the procedures performed.

RevR 18 requires us to plan and execute procedures to achieve reasonable assurance that the Esef report is prepared in a format that meets these requirements.

Reasonable assurance is a high level of assurance, but it is not a guarantee that an engagement carried out according to RevR 18 and generally accepted auditing standards in Sweden will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the Esef report.

The firm applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

The examination involves obtaining evidence, through various procedures, that the Esef report has been prepared in a format that enables uniform electronic reporting of the annual accounts and consolidated accounts. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement in the report, whether due to fraud or error. In carrying out this risk assessment, and in order to design audit procedures that are appropriate in the circumstances, the auditor considers those elements of internal control that are relevant to the preparation of the Esef report by the Board of Directors and the President, but not for the purpose of expressing an opinion on the effectiveness of those internal controls. The examination also includes an evaluation of the appropriateness and reasonableness of assumptions made by the Board of Directors and the President.

The procedures mainly include a validation that the Esef report has been prepared in a valid XHMTL format and a reconciliation of the Esef report with the audited annual accounts and consolidated accounts.

Furthermore, the procedures also include an assessment of whether the consolidated statement of financial performance, financial position, changes in equity, cash flow and disclosures in the Esef report have been marked with iXBRL in accordance with what follows from the Esef regulation.

Deloitte AB, was appointed auditor of AB Volvo by the general meeting of the shareholders on April 6, 2022 and has been the company's auditor since April 5, 2018.

Göteborg, February 27, 2023

Deloitte AB

Signature on Swedish original

Jan Nilsson
Authorized Public Accountant

This is a translation of the Swedish language original. In the event of any differences between this translation and the Swedish language original, the latter shall prevail.

AUDITOR'S LIMITED ASSURANCE REPORT ON SUSTAINABILITY REPORT AND STATEMENT REGARDING THE STATUTORY SUSTAINABILITY REPORT

To AB Volvo (publ.), corporate identity number 556012-5790

Introduction

We have been engaged by the Board of Directors and Executive Management of AB Volvo to undertake a limited assurance engagement of the AB Volvo Sustainability Report for the year 2022. The Company has defined the scope of the Sustainability Report in connection to the table of content in the Annual Report and the Statutory Sustainability Report on page 42.

Responsibilities of the Board of Directors and the Executive Management

The Board of Directors and the Executive Management are responsible for the preparation of the Sustainability Report including the Statutory Sustainability Report in accordance with the applicable criteria and the Annual Accounts Act respectively. The criteria are defined on page 147 in the sustainability report, and are part of the Sustainability Reporting Guidelines published by GRI (Global Reporting Initiative), which are applicable to the Sustainability Report, as well as the accounting and calculation principles that the Company has developed. This responsibility also includes the internal control relevant to the preparation of a Sustainability Report that is free from material misstatements, whether due to fraud or error.

Responsibilities of the auditor

Our responsibility is to express a conclusion on the Sustainability Report based on the limited assurance procedures we have performed and to express an opinion regarding the Statutory Sustainability Report. Our engagement is limited to historical information presented and does therefore not cover future-oriented information.

We conducted our limited assurance engagement in accordance with ISAE 3000 (revised) Assurance Engagements Other than Audits or Reviews of Historical Financial Information. A limited assurance engagement consists of making inquiries, primarily of persons responsible for the preparation of the Sustainability Report, and applying analytical and other limited assurance procedures. Our examination regarding the Statutory Sustainability Report has been conducted in accordance with FAR's accounting standard RevR 12 The auditor's opinion regarding the Statutory Sustainability Report. A limited assurance engagement and an examination according to RevR 12 is different and substantially less in scope than an audit conducted in accordance with International Standards on Auditing and generally accepted auditing standards in Sweden.

The firm applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We are independent of AB Volvo in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

The limited assurance procedures performed and the examination according to RevR 12 do not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. The conclusion based on a limited assurance engagement and an examination according to RevR 12 does not provide the same level of assurance as a conclusion based on an audit.

Our procedures are based on the criteria defined by the Board of Directors and the Executive Management as described above. We consider these criteria suitable for the preparation of the Sustainability Report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion below.

Conclusion

Based on the limited assurance procedures we have performed, nothing has come to our attention that causes us to believe that the Sustainability Report, is not prepared, in all material respects, in accordance with the criteria defined by the Board of Directors and Executive Management.

A Statutory Sustainability Report has been prepared.

Gothenburg, February 27, 2023

Deloitte AB

Jan Nilsson
Authorized Public Accountant

Lennart Nordqvist
Expert Member of FAR

This is a translation of the Swedish language original. In the event of any differences between this translation and the Swedish language original, the latter shall prevail.

Key Ratios

The Volvo Group uses key ratios with the aim to provide valuable information to management, investors and analysts when analyzing trends and financial performance of the Group. The key ratios are not defined by IFRS, unless otherwise is stated, and may differ from similar measures used by other companies and are therefore not always comparable. The measures should be considered as a complement to, and not a substitute for, the financial information presented in compliance with IFRS. Definitions and reconciliations of significant key ratios are presented in the annual report. If the reconciliation is not directly reflected in the financial statements, a separate reconciliation is presented below.

Basic earnings per share (defined by IFRS)
Definition: Income for the period attributable to shareholders of AB Volvo divided by the weighted average number of shares outstanding during the period. For reconciliation see *note 19 Equity and number of shares.*

Operating cash flow
Definition: The operating cash flow is a measure of the amount of cash generated by the Volvo Group's regular business operations. The operating cash flow also includes investments and disposals of intangible and tangible assets, which are part of the investing activities. For reconciliation see *Consolidated cash flow statement*.

Diluted earnings per share (defined by IFRS)
Definition: Income for the period attributable to the shareholders of AB Volvo divided by the average number of shares outstanding plus the average number of shares that would be issued as an effect of ongoing share-based incentive programs and employee stock option programs. For reconciliation see *note 19 Equity and number of shares*.

EBITDA and EBITDA margin
Definition: EBITDA is the operating income before depreciation and amortization of tangible and intangible assets. The key figure EBITDA margin is calculated as operating income adjusted with depreciation and amortization, in relation to net sales.

	Industrial Operations	
SEK M	**2022**	2021
Net sales	459,703	361,062
Operating income	44,862	39,783
Amortization product and software development	2,799	2,622
Amortization other intangible assets	119	135
Depreciation tangible assets	13,010	11,540
Total depreciation and amortization	15,928	14,297
Operating income before depreciation and amortization (EBITDA)	**60,790**	**54,080**
EBITDA margin, %	**13.2**	**15.0**

Equity ratio
Definition: Total equity divided by total assets.

	Industrial Operations		Volvo Group	
SEK M	**2022**	2021	**2022**	2021
Total equity	147,439	129,619	166,236	144,118
Total assets	431,771	371,022	629,064	515,856
Equity ratio, %	**34.1**	**34.9**	**26.4**	**27.9**

Gross margin
Definition: Gross income divided by net sales.

	Industrial Operations		Volvo Group	
SEK M	**2022**	2021	**2022**	2021
Net sales	459,703	361,062	473,479	372,216
Gross income	105,021	84,013	111,737	89,753
Gross margin, %	**22.8**	**23.3**	**23.6**	**24.1**

Net capitalization of research and development cost
Definition: Capitalized research and development cost reduced by amortizations.

	Volvo Group	
SEK M	**2022**	2021
Capitalization	4,707	3,031
Amortization	–2,635	–2,479
Net capitalization of research and development cost	**2,072**	**552**

Net financial position
Definition: Cash and cash equivalents, marketable securities and interest-bearing receivables reduced by interest-bearing liabilities, lease liabilities and provisions for post-employment benefits. For reconciliation see table *Net financial position*, which is presented after the balance sheet for the Volvo Group. Net financial position is also presented excluding provisions for post-employment benefits and lease liabilities, net.

Operating income, operating margin, adjusted operating income and adjusted operating margin

Definition operating income: Operating income is profit before interest and tax, also known as EBIT (Earnings before interest and tax) and is a measure of profit from the ordinary business operations. For reconciliation see the *Income statement Volvo Group.*

Definition operating margin: Operating income divided by net sales. Definition adjusted operating income: Adjusted operating income is profit before interest and tax as well as significant expenses or income of a one-time character.

Definition adjusted operating margin: Adjusted operating income divided by net sales.

2022 SEK M	Quarter	Trucks	Construction Equipment	Buses	Volvo Penta	Group Functions & Other incl. elim[1]	Industrial Opera-tions	Financial Services	Elimi-nations	Volvo Group
Net sales		**310,536**	**100,261**	**18,583**	**18,102**	**12,221**	**459,703**	**17,355**	**–3,579**	**473,479**
Operating income		**31,976**	**12,907**	**353**	**2,527**	**–2,900**	**44,862**	**848**	**2**	**45,712**
Financial impact related to Russia	1	–1,447	–106	–	–3	–1	–1,557	–2,568	–	–4,125
Financial impact related to Russia	3	232	–232	–	–	–	0	–	–	0
Costs relating to claims arising from the European Commission's 2016 antitrust settlement decision	4	–630	–	–	–	–	–630	–	–	–630
	Year	–1,845	–338	–	–3	–1	–2,187	–2,568	–	–4,755
Adjusted operating income		**33,821**	**13,244**	**353**	**–2,530**	**–2,899**	**47,049**	**3,416**	**2**	**50,467**
Operating margin, %		**10.3**	**12.9**	**1.9**	**14.0**	**–**	**9.8**	**–**	**–**	**9.7**
Adjusted operating margin, %		**10.9**	**13.2**	**1.9**	**14.0**	**–**	**10.2**	**–**	**–**	**10.7**

2021 SEK M	Quarter	Trucks	Construction Equipment	Buses	Volvo Penta	Group Functions & Other incl. elim	Industrial Opera-tions	Financial Services	Elimi-nations	Volvo Group
Net sales		**230,881**	**92,031**	**13,652**	**14,437**	**10,061**	**361,062**	**13,437**	**–2,283**	**372,216**
Operating income		**27,349**	**12,228**	**78**	**2,092**	**–1,964**	**39,783**	**3,289**	**2**	**43,074**
Depreciation of Assets held for sale	1	–	–	–	–	246	246	–	–	246
Divestment of UD Trucks	2	1,653	–	–	–	–	1,653	–	–	1,653
Restructuring charges related to headcount reductions	4	128	0	20	0	2	150	9	0	159
	Year	1,781	0	20	0	248	2,049	9	0	2,059
Adjusted operating income		**25,567**	**12,228**	**59**	**2,092**	**–2,212**	**37,733**	**3,279**	**2**	**41,015**
Operating margin, %		**11.8**	**13.3**	**0.6**	**14.5**	**–**	**11.0**	**–**	**–**	**11.6**
Adjusted operating margin, %		**11.1**	**13.3**	**0.4**	**14.5**	**–**	**10.5**	**–**	**–**	**11.0**

Penetration rate

Definition: Share of unit sales financed by Financial Services in relation to total number units sold by the Volvo Group in markets where financial services are offered.

Number of units	Financial Services 2022	Financial Services 2021
Number of financed units	68,658	69,556
Number of units sold where financial services are offered	241,117	228,867
Penetration rate, %	**28**	**30**

Return on capital employed

Definition: Operating income plus interest income and similar credits divided by weighted average capital employed.

SEK M	Industrial Operations 2022	Industrial Operations 2021
Operating income, 12 months rolling	44,862	39,783
Interest income and similar credits, 12 months rolling	1,315	362
Operating income and interest income and similar credits, 12 months rolling	46,177	40,145
Weighted average capital employed	168,703	158,849
Return on capital employed, 12 months rolling, %	**27.4**	**25.3**

Return on operating capital

Definition: Operating income divided by weighted average operating capital.

SEK M	Industrial Operations 2022	Industrial Operations 2021
Operating income	44,862	39,783
Weighted average operating capital	88,367	76,589
Return on operating capital, 12 months rolling, %	**50.8**	**51.9**

Return on total equity

Definition: Income for the period divided by weighted average total equity.

SEK M	Volvo Group 2022	Volvo Group 2021
Income for the period	32,969	33,243
Weighted average total equity	159,232	141,805
Return on total equity, 12 months rolling, %	**20.7**	**23.4**

Sales growth adjusted for currency and acquired and divested operations

Definition: Sales growth adjusted for currency and acquired and divested operations, divided by net sales for the prior year.

	Industrial Operations		Volvo Group	
SEK M	**2022**	2021	**2022**	2021
Net sales	459,703	361,062	473,479	372,216
Increase/decrease of net sales for the year	98,642	34,589	101,263	33,771
Currency rates	−42,087	15,403	−44,031	16,063
Acquired and divested units	5,438	17,122	5,438	17,122
Adjusted Increase/decrease of net sales for the year	61,993	67,115	62,669	66,955
Sales growth adjusted for currency and acquired and divested units, %	**17.2**	**20.6**	**16.8**	**19.8**

Self-financing ratio

Definition: Cash flow from operating activities divided by net investments in tangible assets, intangible assets and leasing vehicles as defined in the *Consolidated cash flow statement*.

	Industrial Operations		Volvo Group	
SEK M	**2022**	2021	**2022**	2021
Cash flow from operating activities	51,423	41,664	33,244	33,647
Investments in in-/tangible assets and leasing vehicles, net	16,096	12,224	20,288	16,002
Self-financing ratio, %	**319**	**341**	**164**	**210**

Eleven-year Summary

The reporting in the eleven-year summary is based on IFRS. Respective year is presented in accordance with the Generally Accepted Accounting Practice (GAAP) for that year. Earlier years are not restated when new accounting standards are applied.

Consolidated income statement

SEK M	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Net sales	**473,479**	**372,216**	**338,446**	**431,980**	**390,834**	**334,748**	**301,914**	**312,515**	**282,948**	**272,622**	**303,647**
Cost of sales	–361,741	–282,463	–259,319	–326,895	–303,478	–254,581	–231,602	–240,653	–220,012	–212,504	–235,085
Gross income	**111,737**	**89,753**	**79,127**	**105,085**	**87,357**	**80,167**	**70,312**	**71,862**	**62,937**	**60,118**	**68,562**
Research and development expenses	–22,526	–18,027	–16,798	–18,539	–15,899	–16,098	–14,631	–15,368	–16,656	–15,124	–14,794
Selling expenses	–29,044	–23,959	–26,510	–33,037	–30,890	–28,582	–26,867	–27,694	–27,448	–28,506	–28,248
Administrative expenses	–5,880	–4,870	–4,621	–5,901	–5,798	–5,642	–5,121	–5,769	–5,408	–5,862	–5,669
Other operating income and expenses	–7,374	246	–5,459	–221	–2,273	–1,061	–3,135	–4,179	–7,697	–3,554	–2,160
Income from investments in joint ventures and associated companies	–1,333	–54	1,749	1,859	1,948	1,407	156	–143	46	96	–23
Income from other investments	132	–15	–3	285	33	135	112	4,609	50	–30	–47
Operating income	**45,712**	**43,074**	**27,484**	**49,531**	**34,478**	**30,327**	**20,826**	**23,318**	**5,824**	**7,138**	**17,622**
Interest income and similar credits	1,008	358	299	320	199	164	240	257	328	381	510
Interest expenses and similar charges	–1,205	–1,167	–1,349	–1,674	–1,658	–1,852	–1,847	–2,366	–1,994	–2,810	–2,476
Other financial income and expenses	–437	926	–518	–1,345	–870	–385	11	–792	931	11	–301
Income after financial items	**45,077**	**43,190**	**25,917**	**46,832**	**32,148**	**28,254**	**19,230**	**20,418**	**5,089**	**4,721**	**15,355**
Income taxes	–12,108	–9,947	–5,843	–10,337	–6,785	–6,971	–6,008	–5,320	–2,854	–919	–4,097
Income for the period	**32,969**	**33,243**	**20,074**	**36,495**	**25,363**	**21,283**	**13,223**	**15,099**	**2,235**	**3,802**	**11,258**
Attributable to:											
Owners of AB Volvo	32,722	32,787	19,318	35,861	24,897	20,981	13,147	15,058	2,099	3,583	11,039
Non-controlling interest	247	456	755	635	466	302	75	41	136	219	219
	32,969	**33,243**	**20,074**	**36,495**	**25,363**	**21,283**	**13,223**	**15,099**	**2,235**	**3,802**	**11,258**

Income statement Industrial Operations

SEK M	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Net sales	**459,703**	**361,062**	**326,472**	**418,361**	**378,320**	**323,809**	**291,459**	**303,582**	**275,999**	**265,420**	**296,031**
Cost of sales	–354,682	–277,048	–252,933	–319,055	–296,109	–248,382	–225,797	–236,311	–217,251	–209,307	–231,216
Gross income	**105,021**	**84,013**	**73,539**	**99,306**	**82,210**	**75,428**	**65,662**	**67,271**	**58,748**	**56,113**	**64,815**
Research and development expenses	–22,526	–18,027	–16,798	–18,539	–15,899	–16,098	–14,631	–15,368	–16,656	–15,124	–14,794
Selling expenses	–26,066	–21,575	–24,284	–30,483	–28,642	–26,495	–24,946	–25,857	–25,778	–26,904	–26,582
Administrative expenses	–5,867	–4,859	–4,611	–5,887	–5,756	–5,602	–5,081	–5,728	–5,367	–5,824	–5,639
Other operating income and expenses	–4,498	300	–3,673	230	–1,828	–640	–2,531	–3,473	–6,931	–2,710	–1,600
Income/loss from investments in joint ventures and associated companies	–1,333	–54	1,749	1,859	1,948	1,407	156	–143	46	96	–23
Income from other investments	132	–15	–4	285	33	135	112	4,610	49	–31	–46
Operating income	**44,862**	**39,783**	**25,919**	**46,771**	**32,067**	**28,135**	**18,740**	**21,312**	**4,111**	**5,616**	**16,130**

Consolidated balance sheets SEK M	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Intangible assets	41,544	37,070	34,577	36,668	38,104	35,893	37,916	36,416	37,115	36,588	40,373
Property, plant and equipment	63,162	54,405	49,113	53,496	55,673	53,348	55,875	53,618	55,181	52,233	55,004
Assets under operating leases	43,518	39,969	37,962	43,326	43,103	37,166	34,693	32,531	31,218	25,672	29,022
Shares and participations	22,188	21,225	13,436	13,113	11,875	11,225	12,420	12,050	9,839	6,327	2,890
Inventories	75,689	63,916	47,625	56,644	65,783	52,701	48,287	44,390	45,533	41,153	40,409
Customer-financing receivables	193,928	151,504	128,531	142,982	126,927	109,378	110,821	102,583	99,166	83,861	80,989
Interest-bearing receivables	7,466	3,702	5,880	2,743	3,393	3,501	2,393	2,938	2,555	1,389	5,635
Other receivables	97,590	81,772	73,982	81,432	82,509	72,961	70,814	61,932	68,448	59,943	55,531
Cash and cash equivalents	83,979	62,293	85,419	61,660	47,093	36,270	25,172	24,393	33,554	29,559	28,889
Assets held for sale	–	–	34,296	32,773	203	51	525	3,314	288	8,104	–
Assets	**629,064**	**515,856**	**510,821**	**524,837**	**474,663**	**412,494**	**398,916**	**374,165**	**382,896**	**344,829**	**338,742**
Total equity[1]	166,236	144,118	148,142	141,678	125,831	109,011	97,764	85,610	80,048	77,365	86,914
Provision for post-employment benefits	8,745	12,177	18,430	19,988	16,482	14,476	14,669	13,673	16,683	12,322	6,697
Other provisions	30,987	28,095	27,335	30,835	32,165	25,477	26,408	27,207	28,010	19,900	21,787
Interest-bearing liabilities	210,948	153,624	153,424	157,752	135,857	127,676	141,048	132,607	147,985	135,001	131,842
Other liabilities	212,148	177,842	152,204	164,171	164,328	135,854	118,879	114,495	110,042	99,891	91,502
Liabilities held for sale	–	–	11,286	10,413	–	–	148	573	130	350	–
Total equity and liabilities	**629,064**	**515,856**	**510,821**	**524,837**	**474,663**	**412,494**	**398,916**	**374,165**	**382,896**	**344,829**	**338,742**
[1]of which non-controlling interests	3,519	3,073	2,847	3,083	2,452	1,941	1,703	1,801	1,723	1,333	1,266
Assets pledged	3,582	6,742	14,960	21,220	15,988	12,791	10,592	9,428	7,680	5,078	4,099
Contingent liabilities	18,201	17,971	13,832	13,732	14,247	15,242	16,056	15,580	15,940	17,290	17,763

Balance sheets Industrial Operations SEK M	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Intangible assets	41,471	36,971	34,423	36,467	37,889	35,716	37,768	36,314	37,010	36,479	40,267
Property, plant and equipment	63,112	54,356	49,045	53,411	55,631	53,308	55,812	53,554	55,087	52,146	54,899
Assets under operating leases	34,109	32,150	29,460	33,794	32,700	24,051	22,752	20,616	19,484	17,013	21,263
Shares and participations	22,169	21,209	13,421	13,095	11,866	11,215	12,409	12,042	9,825	6,321	2,884
Inventories	75,382	63,715	47,273	56,080	65,366	52,231	48,080	44,194	45,364	40,964	40,057
Customer-financing receivables	3,031	2,537	1,695	1,570	1,560	1,358	1,698	11	1,828	1,406	1,397
Interest-bearing receivables	12,918	3,723	6,301	4,916	3,882	4,966	4,415	3,738	2,777	2,195	11,011
Other receivables	103,481	96,758	84,413	99,082	101,347	85,822	75,759	68,223	70,413	60,679	54,324
Cash and cash equivalents	76,098	59,603	82,186	57,675	43,907	32,447	20,875	21,210	31,105	28,230	27,146
Assets held for sale	–	–	29,362	28,427	203	51	525	3,314	288	8,104	–
Assets	**431,771**	**371,022**	**377,579**	**384,517**	**354,351**	**301,165**	**280,093**	**263,216**	**273,181**	**253,537**	**253,248**
Total equity	147,439	129,619	135,127	127,150	113,144	97,790	86,579	75,151	70,105	68,467	78,321
Provision for post-employment benefits	8,690	12,095	18,282	19,850	16,374	14,391	14,608	13,621	16,580	12,249	6,663
Other provisions	28,485	24,918	23,794	27,055	28,476	22,680	22,545	23,936	25,054	17,575	19,653
Interest-bearing liabilities	29,735	19,919	35,017	32,326	25,328	27,001	33,944	32,562	48,180	52,491	54,472
Other liabilities	217,422	184,471	158,721	172,209	171,029	139,303	122,269	117,374	113,131	102,405	94,139
Liabilities held for sale	–	–	6,638	5,927	–	–	148	573	130	350	–
Total equity and liabilities	**431,771**	**371,022**	**377,579**	**384,517**	**354,351**	**301,165**	**280,093**	**263,216**	**273,181**	**253,537**	**253,248**

Consolidated cash flow statements SEK bn	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Operating income	45.7	43.1	27.5	49.5	34.5	30.3	20.8	23.3	5.8	7.1	17.6
Depreciation and amortization	20.7	18.7	20.6	20.6	18.4	16.9	16.7	16.8	15.9	17.4	14.7
Other non-cash items	7.0	–1.0	1.2	–2.8	9.7	1.4	–0.4	–0.5	6.1	2.4	1.4
Change in working capital	–28.7	–17.5	–13.7	–18.2	–23.7	–4.7	–13.9	–9.0	–14.1	–10.8	–21.9
Dividends received from joint ventures and associated companies	0.1	0.8	1.1	0.5	–	–	–	–	–	–	–
Financial items and income tax	–11.6	–10.4	–5.0	–10.1	–7.7	–6.3	–5.7	–4.6	–5.0	–5.1	–8.0
Cash flow from operating activities	**33.2**	**33.6**	**30.6**	**39.0**	**31.2**	**37.6**	**17.5**	**25.9**	**8.7**	**11.0**	**3.8**
Investments in in-/tangible assets	–16.7	–12.5	–8.8	–12.0	–10.7	–7.7	–9.5	–8.8	–8.6	–12.2	–14.6
Investments in leasing assets	–9.2	–9.3	–8.6	–10.0	–10.1	–11.5	–10.8	–10.5	–10.1	–8.2	–10.0
Disposals of in-/tangible assets and leasing assets	5.6	5.8	6.3	7.4	6.2	5.4	9.0	6.0	5.0	3.4	3.1
Investments and divestments of shares, net	–0.9	–7.4	–0.5	0.1	1.0	2.2	0.2	–2.0	0.1	0.0	–1.2
Acquired and divested operations, net	–0.1	22.0	0.4	1.3	–0.2	0.9	1.4	0.4	7.4	0.9	3.4
Interest-bearing receivables including marketable securities	–0.2	–0.1	1.1	–1.0	0.1	1.6	2.5	3.6	–4.8	0.5	3.7
Cash flow after net investments	**11.8**	**32.2**	**20.7**	**24.9**	**17.4**	**28.5**	**10.4**	**14.5**	**–2.3**	**–4.6**	**–11.8**
Change in loans, net	34.0	–7.0	7.3	9.3	1.9	–9.0	–2.2	–13.2	6.7	13.0	14.1
Repurchase of own shares	–	–	–	–	–	–	–	–	–	–	–
Dividend to AB Volvo's shareholders	–26.4	–49.8	–	–20.3	–8.6	–6.6	–6.1	–6.1	–6.1	–6.1	–6.1
Dividend to non-controlling interests	–0.0	–0.6	–0.8	0.0	0.0	0.0	–0.2	0.0	0.0	–0.2	0.0
Other	–0.0	–0.1	–0.1	0.2	0.0	0.0	0.0	0.0	–0.1	0.1	0.0
Change in cash and cash equivalents excluding translation differences	**19.2**	**–25.4**	**27.1**	**14.0**	**10.7**	**12.8**	**1.9**	**–4.8**	**–1.8**	**2.2**	**–3.8**
Translation differences on cash and cash equivalents	2.5	2.3	–3.4	0.5	0.1	–0.7	1.0	–0.4	1.1	–0.5	–0.8
Change in cash and cash equivalents	**21.8**	**–23.1**	**23.7**	**14.5**	**10.8**	**12.1**	**2.9**	**–5.2**	**–0.7**	**1.7**	**–4.6**

Operating cash flow Industrial Operations SEK bn	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Operating income	44.9	39.8	25.9	46.8	32.1	28.1	18.7	21.3	4.1	5.6	16.1
Depreciation and amortization	15.9	14.3	15.9	15.8	13.8	12.6	12.6	12.6	12.7	14.5	12.0
Other non-cash items	3.4	–1.4	–0.8	–3.6	8.9	0.9	–1.1	–1.1	5.3	1.5	0.8
Change in working capital	–2.5	–2.3	–11.0	–0.5	–11.0	–0.2	–14.7	–1.9	–3.3	–2.0	–9.2
Dividends received from joint ventures and associated companies	0.1	0.8	1.1	0.5	–	–	–	–	–	–	–
Financial items and income taxes	–10.3	–9.5	–4.2	–9.5	–7.5	–5.6	–5.6	–4.0	–4.5	–4.9	–7.3
Cash flow from operating activities	**51.4**	**41.7**	**25.9**	**49.0**	**36.4**	**35.8**	**9.9**	**26.7**	**14.3**	**14.7**	**12.4**
Investments in in-/tangible assets	–16.6	–12.5	–8.7	–11.9	–10.7	–7.7	–9.4	–8.8	–8.6	–12.2	–14.6
Investments in leasing assets	–0.0	–0.0	–0.0	–0.1	–0.0	–0.1	–0.1	–0.3	–0.5	–1.5	–3.6
Disposals of in-/tangible assets and leasing assets	0.6	0.4	1.4	1.4	0.9	0.4	3.2	0.7	1.1	0.5	0.9
Operating cash flow	**35.3**	**29.4**	**18.5**	**38.3**	**26.6**	**28.4**	**3.5**	**18.3**	**6.4**	**1.5**	**–4.9**

Exports from Sweden SEK M	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Volvo Group, total	132,092	108,538	92,746	118,543	117,887	107,958	91,962	86,731	78,174	88,560	84,314

Key ratios	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Gross margin, %[1]	22.8	23.3	22.5	23.7	21.7	23.3	22.5	22.2	21.3	21.1	21.9
Research and development expenses as percentage of net sales[1]	4.9	5.0	5.1	4.4	4.2	5.0	5.0	5.1	6.0	5.7	5.0
Selling expenses as percentage of net sales[1]	5.7	6.0	7.4	7.3	7.6	8.2	8.6	8.5	9.3	10.1	9.0
Administration expenses as percentage of net sales[1]	1.3	1.3	1.4	1.4	1.5	1.7	1.7	1.9	1.9	2.2	1.9
Operating income before depreciation and amortization (EBITDA), SEK M[1]	60,790	54,080	41,847	62,568	45,858	40,732	31,373	33,886	16,784	20,089	28,117
EBITDA margin, %[1]	13.2	15.0	12.8	15.0	12.1	12.6	10.8	11.2	6.1	7.6	9.5
Net capitalization of research and development, SEK M	2,072	552	–385	1,006	791	–876	90	–550	–1,441	787	2,264
Return on capital employed in Industrial Operations, %	27.4	25.3	14.7	28.4	22.4	–	–	–	–	–	–
Return on operating capital in Industrial Operations, %	50.8	51.9	29.4	52.3	39.0	32.5	21.5	25.0	4.5	5.9	16.5
Return on total equity, %	20.7	23.4	13.8	27.0	21.3	20.8	14.9	18.4	2.8	5.0	12.9
Interest coverage, times[1]	30.5	34.3	18.5	28.1	19.5	15.3	10.3	9.1	2.2	2.1	6.7
Self-financing ratio, %	164	210	279	268	213	272	155	194	64	84	18
Self-financing ratio Industrial Operations, %	319	341	353	458	373	483	155	316	180	112	72
Net Financial position excl. post-employment benefits and lease liabilities SEK M[1]	73,897	66,227	74,691	62,596	43,926	26,339	–1,151	349	–9,924	–19,828	–19,023
Net financial position excl. post-employment benefits and lease liabilities as percentage of total equity[1]	50.1	51.1	55.3	49.2	38.8	26.9	–1.3	0.5	–14.2	–29.0	–24.3
Net Financial position incl. post-employment benefits and lease liabilities SEK M[1]	61,303	50,356	50,959	37,267	29,101	12,200	–15,679	–13,237	–26,378	–32,066	–22,978
Net financial position incl. post-employment benefits and lease liabilities as percentage of total equity[1]	41.6	38.8	37.7	29.3	25.7	12.5	–18.1	–17.6	–37.6	–46.8	–29.3
Equity ratio	26.4	27.9	29.0	27.0	26.5	26.4	24.5	22.9	20.9	22.4	25.7
Equity ratio, Industrial Operations	34.1	34.9	35.8	33.1	31.9	32.5	30.9	28.6	25.7	27.0	30.9
Equity ratio excluding non-controlling interest	25.9	27.3	28.4	26.4	26.0	26.0	24.1	22.4	20.5	22.0	25.2

1 Pertains to the Industrial Operations.

Regular employees at year-end Number	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Sweden	22,964	21,022	20,598	21,094	20,887	19,965	19,235	20,412	21,384	22,588	23,052
Europe, excluding Sweden	28,056	27,378	27,678	29,033	28,807	27,596	26,955	27,662	29,449	29,746	30,382
North America	17,815	16,956	15,559	17,750	17,845	15,882	14,245	15,534	15,217	16,397	16,569
South America	6,665	5,860	5,448	5,466	5,228	4,774	4,762	5,380	6,353	6,275	5,977
Asia	9,990	9,305	16,121	16,863	16,888	16,526	16,469	17,046	17,793	17,953	20,222
Africa and Oceania	2,196	2,019	2,088	2,369	2,474	2,361	2,373	2,430	2,626	2,574	2,515
Volvo Group total	**87,686**	**82,540**	**87,492**	**92,575**	**92,129**	**87,104**	**84,039**	**88,464**	**92,822**	**95,533**	**98,717**

Business area statistics

Net sales[1] SEK M		2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Trucks	Europe	137,177	107,798	92,127	112,125	111,237	99,642	91,468	83,767	72,757	73,640	76,365
	North America	92,582	65,308	52,038	85,731	70,233	52,405	51,849	73,017	53,696	40,314	42,650
	South America	38,254	23,569	15,830	23,753	16,021	12,789	10,613	11,624	19,669	23,318	21,172
	Asia	23,988	21,359	35,441	37,610	36,664	36,998	33,464	31,589	29,264	26,740	36,531
	Africa and Oceania	18,535	12,846	12,826	17,427	16,203	14,646	13,256	13,982	15,518	14,462	15,565
	Total	**310,536**	**230,881**	**208,262**	**276,647**	**250,358**	**216,480**	**200,650**	**213,978**	**190,904**	**178,474**	**192,283**
Construction Equipment	Europe	30,194	29,524	23,191	30,300	27,291	22,977	19,739	17,732	17,215	16,356	16,518
	North America	22,294	16,583	13,020	17,404	15,575	12,234	10,724	11,843	10,784	8,319	12,027
	South America	6,491	3,951	2,245	2,532	2,304	1,760	1,414	2,207	3,234	3,314	3,788
	Asia	34,228	36,427	39,095	33,932	33,781	25,058	15,765	16,424	18,458	21,911	27,033
	Africa and Oceania	7,054	5,546	3,902	4,437	5,287	4,468	3,088	2,802	3,164	3,539	4,192
	Total	**100,261**	**92,031**	**81,453**	**88,606**	**84,238**	**66,497**	**50,731**	**51,008**	**52,855**	**53,437**	**63,558**
Buses	Europe	6,034	5,886	5,765	7,369	7,036	7,753	7,861	7,284	6,139	5,429	6,200
	North America	6,521	4,089	8,302	15,543	13,244	12,512	11,345	10,635	6,721	5,929	6,675
	South America	3,154	882	1,793	3,281	1,393	1,148	1,363	1,425	2,559	1,836	2,794
	Asia	1,372	1,371	2,397	2,617	2,094	3,135	3,067	2,557	1,892	2,055	2,853
	Africa and Oceania	1,502	1,423	1,535	2,209	2,060	1,530	1,749	1,678	1,334	1,457	1,774
	Total	**18,583**	**13,652**	**19,791**	**31,019**	**25,826**	**26,078**	**25,386**	**23,580**	**18,645**	**16,707**	**20,295**
Volvo Penta	Europe	9,417	7,464	6,064	6,671	7,487	5,727	4,973	4,462	3,779	3,714	3,620
	North America	3,695	2,949	2,532	3,180	2,912	2,456	2,191	2,161	1,584	1,491	1,486
	South America	635	474	345	319	299	289	291	365	386	297	306
	Asia	3,302	2,698	2,228	2,439	2,443	2,082	1,891	1,855	1,615	1,692	1,867
	Africa and Oceania	1,054	851	691	679	599	566	546	562	425	356	352
	Total	**18,102**	**14,437**	**11,891**	**13,287**	**13,741**	**11,119**	**9,893**	**9,406**	**7,790**	**7,550**	**7,631**
Volvo Aero	Europe	–	–	–	–	–	–	–	–	–	–	2,404
	North America	–	–	–	–	–	–	–	–	–	–	2,657
	South America	–	–	–	–	–	–	–	–	–	–	0
	Asia	–	–	–	–	–	–	–	–	–	–	109
	Africa and Oceania	–	–	–	–	–	–	–	–	–	–	49
	Total	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**5,219**
	Other and eliminations	12,221	10,061	5,074	8,802	4,157	3,635	4,799	5,610	5,806	9,252	7,044
Net sales Industrial Operations		**459,703**	**361,062**	**326,472**	**418,361**	**378,320**	**323,809**	**291,459**	**303,582**	**275,999**	**265,420**	**296,031**
Financial Services	Europe	6,705	5,929	6,116	6,279	6,063	5,431	5,116	5,278	5,120	4,686	4,703
	North America	5,752	4,519	4,907	5,534	4,600	4,234	4,202	4,033	2,999	2,900	2,833
	South America	3,338	1,618	1,380	1,555	1,276	1,368	1,235	1,116	1,122	1,009	1,195
	Asia	788	843	1,022	1,010	800	543	476	548	638	707	795
	Africa and Oceania	772	528	535	492	332	235	213	224	232	237	257
	Total	**17,355**	**13,437**	**13,960**	**14,870**	**13,070**	**11,812**	**11,242**	**11,199**	**10,111**	**9,539**	**9,783**
	Eliminations	–3,579	–2,283	–1,987	–1,252	–555	–873	–787	–2,265	–3,162	–2,336	–2,167
Volvo Group total		**473,479**	**372,216**	**338,446**	**431,980**	**390,834**	**334,748**	**301,914**	**312,515**	**282,948**	**272,622**	**303,647**
Of which:												
Vehicles[2]		367,234	282,666	247,397	332,558	299,356	252,063	223,996	237,430			
Services		92,469	78,396	79,075	85,804	78,963	71,747	67,463	66,152			
Financial Services		17,355	13,437	13,960	14,870	13,070	11,812	11,242	11,199			
Eliminations		–3,579	–2,283	–1,987	–1,252	–555	–873	–787	–2,265			

1 Volvo Aero was divested on October 1, 2012.

2 Including construction equipment and Volvo Penta engines.

Operating income[1] SEK M	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Trucks	31,976	27,349	15,764	31,552	19,541	20,383	15,020	19,517	4,157	6,145	10,216
Construction Equipment	12,907	12,228	9,583	11,910	12,125	7,917	2,246	2,044	652	2,592	5,773
Buses	353	78	–522	1,337	575	928	911	860	92	–190	51
Volvo Penta	2,527	2,092	1,402	1,876	2,341	1,439	1,269	1,086	724	626	541
Volvo Aero	–	–	–	–	–	–	–	–	–	–	767
Financial Services	848	3,289	1,564	2,766	2,411	2,192	2,086	2,006	1,712	1,522	1,492
Other	–2,899	–1,962	–308	91	–2,515	–2,532	–707	–2,195	–1,514	–3,557	–1,217
Operating income Volvo Group	**45,712**	**43,074**	**27,484**	**49,531**	**34,478**	**30,327**	**20,826**	**23,318**	**5,824**	**7,138**	**17,622**

1 Between 2009 and 2011, the benefits from the synergies created in the business units are transferred back to the various business areas. Operating income in 2014 included expected credit losses of 660. See section for Key ratios regarding adjusted items.

Operating margin %	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Trucks	10.3	11.8	7.6	11.4	7.8	9.4	7.5	9.1	2.2	3.4	5.3
Construction Equipment	12.9	13.3	11.8	13.4	14.4	11.9	4.4	4.0	1.2	4.9	9.1
Buses	1.9	0.6	–2.6	4.3	2.2	3.6	3.6	3.6	0.5	–1.1	0.3
Volvo Penta	14.0	14.5	11.8	14.1	17.0	12.9	12.8	11.5	9.3	8.3	7.1
Volvo Aero	–	–	–	–	–	–	–	–	–	–	14.7
Volvo Group Industrial Operations	**9.8**	**11.0**	**7.9**	**11.2**	**8.5**	**8.7**	**6.4**	**7.0**	**1.5**	**2.1**	**5.4**
Financial Services	4.9	24.5	11.2	18.6	18.4	18.6	18.6	17.9	16.9	16.0	15.3
Volvo Group	**9.7**	**11.6**	**8.1**	**11.5**	**8.8**	**9.1**	**6.9**	**7.5**	**2.1**	**2.6**	**5.8**

Regular employees at year-end Number[1]	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Trucks	54,046	50,974	56,483	59,142	58,891	55,026	52,154	54,668	58,067	58,542	61,256
Construction Equipment	14,797	13,847	13,404	13,756	13,419	12,788	13,397	13,889	14,901	14,663	14,788
Buses	5,325	5,117	6,608	8,324	8,178	7,943	7,353	7,270	6,900	6,648	7,514
Volvo Penta	2,022	1,832	1,798	1,800	1,713	1,622	1,530	1,470	1,422	1,412	1,361
Volvo Aero	–	–	–	–	–	–	–	–	–	–	–
Financial Services	1,596	1,546	1,511	1,538	1,401	1,363	1,328	1,340	1,339	1,355	1,362
Other	9,900	9,224	7,688	8,015	8,527	8,362	8,277	9,827	10,193	12,913	12,436
Volvo Group, total	**87,686**	**82,540**	**87,492**	**92,575**	**92,129**	**87,104**	**84,039**	**88,464**	**92,822**	**95,533**	**98,717**

1 As of 2012, employees in business units are not allocated to the business areas.

Environmental performance

More detailed information and management approach are further described in Sustainability Notes on page 156–158.

Absolute values and related to net sales	**2022**	2021	2020	2019
Energy usage (GWh; MWh/SEK M)[1]	2,367; 5.1	2,437; 6.8	2,158; 6.6	2,372; 5.7
Direct GHG emissions, CO_2e, scope 1 (1,000 tons; tons /SEK M)[1]	243; 0.5	252; 0.7	211; 0.6	250; 0.6
Indirect GHG emissions, CO_2e scope 2 (1,000 tons; tons/SEK M)	81; 0.2	115; 0.3	121; 0.4	125; 0.3
Indirect GHG emissions, CO_2e scope 3 use of sold products (Mton)	287	286	241	323
Water consumption (1,000 m^3; m^3/SEK M)	4,566; 9.9	4,628; 12.8	4,865; 14.9	5,389; 12,9
NO_x emissions (tons; kilos/SEK M)[1]	198; 0.4	221; 0.6	190; 0.6	289; 0.7
Solvent emissions (tons; kilos/SEK M)[1]	1,398; 3.0	1,309; 3.6	1,224; 3.7	1,406; 3.4
Sulphur dioxide emissions (tons; kilos/SEK M)[1]	2.9; 0.01	5.0; 0.01	3.7; 0.01	8.5; 0.02
Hazardous waste (tons; kilos/SEK M)	36,800; 80	53,314; 148	51,712; 159	50,909; 122
Net sales, Industrial operations (SEK bn)	459.7	361.1	326.5	418.4

1 Several data points have been adjusted for 2019-2021 due to refinements in reporting methodologies and improvements in reporting from certain smaller entities.

Delivered units

Number	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Heavy-duty trucks (>16 tons)	197,249	170,295	140,652	201,092	193,886	171,963	158,025	176,589	173,650	170,307	172,798
Medium-duty trucks (7–16 tons)	15,475	13,907	10,736	12,700	14,065	14,331	15,691	14,749	15,114	16,779	32,935
Light trucks (<7 tons)	19,834	18,256	15,453	18,977	18,539	16,108	16,708	16,137	14,360	13,188	18,284
Total trucks	**232,558**	**202,458**	**166,841**	**232,769**	**226,490**	**202,402**	**190,424**	**207,475**	**203,124**	**200,274**	**224,017**

Number		**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Trucks	Europe	113,245	98,600	79,814	104,145	110,349	105,432	97,909	86,448	72,458	82,088	84,355
	North America	56,535	47,629	32,056	62,308	53,877	37,941	39,193	64,507	57,714	44,755	47,806
	South America	31,958	28,718	17,684	23,729	16,146	11,073	9,442	11,069	23,741	29,137	23,443
	Asia	19,066	17,842	27,009	29,435	32,276	35,476	31,502	31,979	32,399	28,692	51,514
	Africa and Oceania	11,754	9,669	10,278	13,152	13,842	12,480	12,378	13,472	16,812	15,602	16,899
	Total	**232,558**	**202,458**	**166,841**	**232,769**	**226,490**	**202,402**	**190,424**	**207,475**	**203,124**	**200,274**	**224,017**
	Of which fully electric	1,211	371	67	–	–	–	–	–	–	–	–
Construction Equipment	Europe	16,767	20,453	15,762	21,420	19,567	17,519	14,700	12,539	14,174	13,522	12.545
	North America	7,663	6,217	5,025	7,278	7,218	5,685	5,105	5,710	7,127	5,240	6.782
	South America	4,875	4,263	2,335	2,004	2,023	1,372	1,175	2,036	3,669	3,568	3.908
	Asia	48,153	65,635	68,232	53,664	50,716	36,254	21,072	22,339	33,648	44,892	49.263
	Africa and Oceania	3,451	3,303	2,406	2,519	3,130	3,297	2,254	2,094	2,699	3,564	2.982
	Total	**80,909**	**99,871**	**93,760**	**86,885**	**82,654**	**64,127**	**44,306**	**44,718**	**61,317**	**70,786**	**75.480**
	Of which fully electric	598	321	12	–	–	–	–	–	–	–	–
Buses	Europe	1,424	1,388	1,565	2,350	2,142	2,645	2,676	2,431	2,221	2,146	2,491
	North America	1,134	1,118	1,644	3,084	2,796	2,973	2,659	2,398	1,590	1,752	1,826
	South America	1,957	726	1,152	1,917	973	784	1,149	1,415	2,985	2,434	2,560
	Asia	819	585	1,097	1,465	1,451	2,186	1,849	1,656	1,242	1,822	2,945
	Africa and Oceania	481	705	797	915	1,064	805	1,220	925	721	756	856
	Total	**5,815**	**4,522**	**6,215**	**9,731**	**8,426**	**9,393**	**9,553**	**8,825**	**8,759**	**8,910**	**10,678**
	Of which fully electric	240	211	223	–	–	–	–	–	–	–	–
	Of which hybrids	127	232	83	–	–	–	–	–	–	–	–

2018	2017	2016	2015	2014	2013	2012
2,196; 5.8	2,068; 6.4	2,076; 7.1	2,077; 6.8	2,168; 7.9	2,320; 8.7	2,483; 8.5
223; 0.6	207; 0.6	211; 0.7	220; 0.7	231; 0.8	255; 1.0	273; 0.9
198; 0.5	192; 0.6	196; 0.7	192; 0.6	218; 0.8	243; 0.9	260; 0.9
4,870; 12.9	4,817; 14.9	4,430; 15.2	4,919; 16.2	4,982; 18.1	5,815; 21.9	7,372; 25.2
360; 1.0	301; 0.9	333; 1.1	344; 1.3	332; 1.2	347; 1.3	413; 1.4
2,148; 5.7	1,681; 5.2	1,792; 6.1	1,885; 6.2	2,472; 9.0	2,221; 8.4	2,358; 8.1
13.6; 0.04	13.3; 0.04	12.9; 0.04	32.1; 0.1	37.9; 0.1	23.4; 0.1	26; 0.1
38,601; 102	31,941; 99	27,649; 95	27,824; 92	24,944; 90	28,395; 107	32,547; 111
378.3	323.8	291.5	303.6	276.0	265.4	292.2

Volvo share statistics

Data per share[1]	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Basic earnings, SEK[1]	16.09	16.12	9.50	17.64	12.25	10.08	6.47	7.42	1.03	1.77	5.44
Ordinary dividend, SEK	7.00[8]	6.50	6.00	0	5.00	4.25	3.25	3.00	3.00	3.00	3.00
Extraordinary dividend, SEK	7.00[8]	16.00[9]	9.00	0	5.00	0	0	0	0	0	0
Share price at year end (B share), SEK	188.48	209.65	193.80	156.90	115.95	152.70	106.40	79.10	84.70	84.45	88.80
Dividend yield (B share), %[2]	7.4	10.7	7.7	0	8.6	2.8	3.1	3.8	3.5	3.6	3.4
Effective return (B share), %[3]	1	16	24	44	–21	47	38	–3	4	–2	22
Price/earnings ratio (B share)[4]	11.7	13.0	20.4	8.9	9.5	14.8	16.4	10.7	82.2	47.7	16.3
EBIT multiple[5]	7.2	8.3	12.5	6.1	6.5	9.9	11.7	7.7	26.3	19.6	9.0
Payout ratio, %[6]	87	140	158	0	82	41	50	40	291	169	55
Total equity, SEK[7]	80	69	72	68	61	52	47	41	39	38	43
Return on total equity, %	20.7	23.4	13.8	27.0	21.3	20.5	14.9	18.4	2.8	5.0	12.9

1 Basic earnings per share is calculated as income for the period divided by average number of shares outstanding.

2 Proposed dividend in SEK per share divided by share price at year end.

3 Share price at year end, including dividend during the year, divided by share price at beginning of the year.

4 Share price at year end divided by basic earnings per share.

5 Market value at year end less net financial position and non-controlling interests divided by operating income.

6 Cash dividend divided by basic earnings per share.

7 Total equity for shareholders in AB Volvo divided by number of shares outstanding at year end.

8 Proposed by the Board of Directors to the Annual General Meeting 2023.

9 Of which SEK 6.50 per share for 2021 and SEK 9.50 per share relating to the distribution of the proceeds from the sale of UD Trucks paid out in July 2021.

Other share data	**2022**	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
Number of shareholders at year end	374,185	362,144	283,731	250,798	245,663	240,521	237,654	234,989	237,871	246,265	242,482
Number of Series A shares outstanding at year end, million	445	445	448	456	457	459	472	485	492	499	526
Number of Series B shares outstanding at year end, million	1,588	1,588	1,585	1,577	1,576	1,573	1,560	1,546	1,537	1,530	1,502
Average number of shares outstanding, million	2,033	2,033	2,033	2,033	2,032	2,032	2,031	2,030	2,028	2,028	2,028
Number of Series A shares traded in Stockholm during the year, million	41.1	88.1	65.7	43.8	51.8	46.7	67.2	51.7	86.3	53.0	45.4
Number of Series B shares traded in Stockholm during the year, million	967.5	1,065.9	1,407.6	1,146.1	1,293.8	1,341.3	1,667.9	2,052.1	2,068.7	1,878.5	2,081.2

The largest shareholders in AB Volvo, December 31, 2022	Number of shares	Share of votes, %	Share of capital, %
Industrivärden	181,200,000	27.8	8.9
Geely Holding	167,247,516	16.0	8.2
AMF Insurance & Funds	70,710,358	5.4	3.5
Alecta	69,961,010	4.3	3.4
AFA Insurance	14,927,123	2.3	0.7
BlackRock	68,041,907	2.2	3.3
AP4 Fund	60,631,322	1.9	3.0
Norges Bank Investment Management	93,663,749	1.9	4.6
Vanguard	14,312,663	1.7	0.7
Swedbank Robur Funds	46,055,699	1.3	2.3
Total	**786,751,347**	**64.8**	**38.7**

Distribution of shares, December 31, 2022	Number of shareholders	% of total votes	Share of capital, %
1–1,000 shares	317,861	2.9	3.2
1,001–10,000 shares	51,615	6.0	7.0
10,001–100,000 shares	4,165	3.4	5.0
100,001–	544	87.7	84.8
Total	374,185	100	100

Annual General Meeting, April 4, 2023

The Annual General Meeting of AB Volvo will be held on Tuesday, April 4, 2023. For further information about the Annual General Meeting 2023, please refer to Volvo's website, www.volvogroup.com.

Volvo's Election Committee

The following persons are members of Volvo's Election Committee:

Pär Boman	Chairman of the Election Committee (AB Industrivärden), appointed by the Annual General Meeting.
Anders Oscarsson	(AMF and AMF Fonder), appointed by the Annual General Meeting.
Magnus Billing	(Alecta), appointed by the Annual General Meeting.
Anders Algotsson	(AFA Försäkring), appointed by the Annual General Meeting.
Carl-Henric Svanberg	Chairman of the Board, appointed by the Annual General Meeting.

Among other duties, the Election Committee is responsible for submitting to the Annual General Meeting proposals for candidates to serve as members of the Board of Directors, Chairman of the Board and proposal for auditors if applicable. The Election Committee also proposes the amount of the fees to be paid to the Board of Directors.

Preliminary financial calendar

Annual General Meeting 2023	April 4, 2023
Report on the first quarter 2023	April 20, 2023
Report on the second quarter 2023	July 19, 2023
Report on the third quarter 2023	October 18, 2023

The reports are available on www.volvogroup.com and www.volvogroup.se on date of publication and are also sent electronically to shareholders who have advised Volvo that they wish to receive financial information.

Historical and current time series reflecting the Volvo Group's market information are published regularly on www.volvogroup.com and on www.volvogroup.se.

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The Volvo Group drives prosperity through transport and infrastructure solutions, offering trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity. Founded in 1927, the Volvo Group is committed to shaping the future landscape of sustainable transport and infrastructure solutions. The Volvo Group is headquartered in Gothenburg, Sweden, employs 102,000 people and serves customers in almost 190 markets. In 2022, net sales amounted to SEK 473 billion (EUR 44.5 billion). Volvo shares are listed on Nasdaq Stockholm.

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