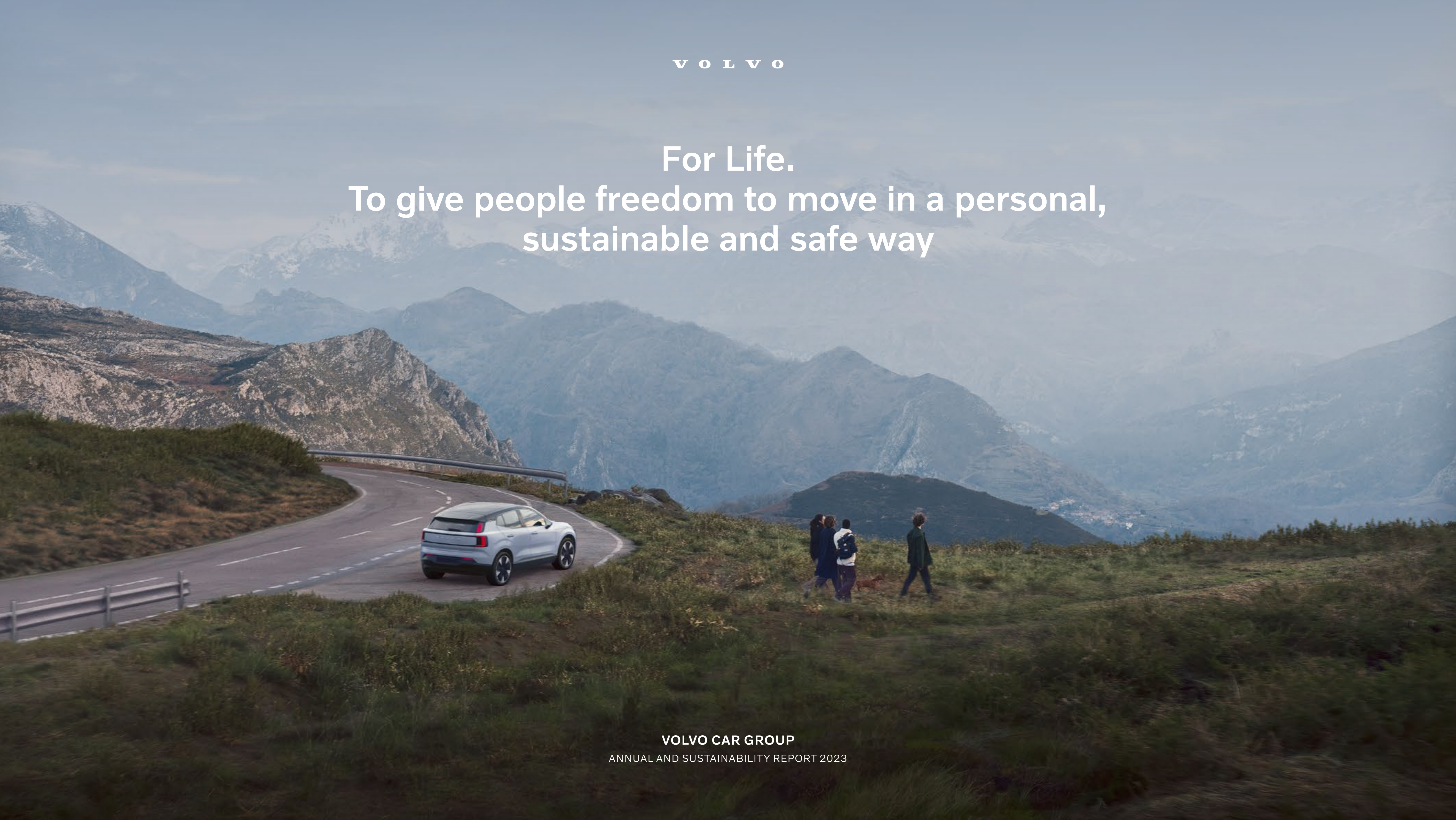
VOLVO

For Life.
To give people freedom to move in a personal, sustainable and safe way



VOLVO CAR GROUP

ANNUAL AND SUSTAINABILITY REPORT 2023

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"We continue to make steady progress on our transformation objectives."

JIM ROWAN
PRESIDENT AND CHIEF EXECUTIVE OFFICER

Volvo Car Group's formal Annual Report is presented on pages 44–58, 76–131 and 136–143, and has been audited by the Group's auditors.
The Sustainability Report can be found integrated in this report on pages 35–43 and 147–195. The auditors have performed a limited assurance engagement of the Sustainability Report.

For Life.

To give people freedom to move in a personal, sustainable and safe way.

PERSONAL – FOR LIFE

Life is precious. So is living. That is why Volvo Cars helps people come to life and live life freely. We celebrate individuality and the freedom to be you. We want to make life easier and to help you save time and stress. To enable joy and peace of mind. Volvo Cars comes from Sweden after all, a place that believes quality of life is as important as being alive itself.

SUSTAINABLE – FOR LIFE

We do not only protect people in and around our cars. We also work hard to protect the planet we live on. We aim to be pioneers in protecting people and the planet by working towards net zero, embracing the circular economy and improving people's lives.

SAFE – FOR LIFE

In 1927 our founder stated "Cars are driven by people. The guiding principle behind everything we make at Volvo, therefore, is and must remain, safety". This principle made our brand synonymous with safety and is today as relevant as ever before. We will continue to aim to pioneer the safest, most intelligent technology solutions in mobility and everyday life to protect what is important to people, their lives and the lives they are living.

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VOLVO

Geared for premium growth with a balanced portfolio

All models are available as plug-in hybrids or fully electric. Since 2020 all new models have been fully electric. During 2023, we revealed two new cars, the EX30, revealed in June and EM90 revealed in November.

PLUG-IN AND MILD-HYBRIDS

XC90


S90


XC60


V90


XC40


S60


V60


FULLY ELECTRIC

EX40


EM90


EC40


EX90


EX30


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VOLVO

EUROPE
~ 29,000 employees

Sweden
- Gothenburg
  – Global HQ
  – R&D
  – Design Centre
  – Car Production
- Stockholm – Tech Hub
- Lund – Tech Hub
- Olofström
  – Body Components
- Skövde – E-motors
- Floby
  – Body components

Belgium
- Ghent – Car Production

Poland
- Krakow – Tech Hub

AMERICA
~ 3,000 employees

USA
- Mahwah, NJ
  – US/Canada HQ
- Charleston, SC
  – Car Production

Brazil
- São Paulo
  – LATAM and Global Importers HQ

ASIA
~ 11,000 employees

China
- Shanghai
  – Greater China HQ
  – Regional R&D and Design Centre
- Chengdu – Car Production
- Daqing – Car Production
- Taizhou – Car Production

Singapore
- Tech Hub and APEC HQ

India
- Bangalore – Tech Hub and contract assembly

Malaysia
- Kuala Lumpur – owned assembly factory

Global reach with a localised network

Volvo Cars serves customers in over 100 countries. Founded in 1927 in Gothenburg, Sweden, Volvo Cars has expanded production across three continents. Being close to our customers reduces operational risk, as well as our environmental footprint, and allows us to form long-term relationships on an individual basis.

~709,000
RETAIL SALES

16%
FULLY ELECTRIC

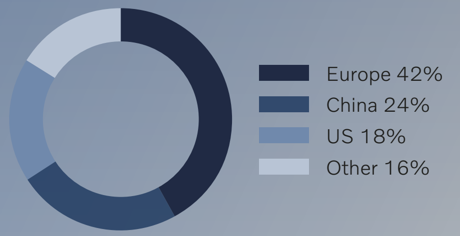
22%
PHEV

+100
SALES IN COUNTRIES

~2,200
RETAIL LOCATIONS

~43,000
EMPLOYEES

RETAIL SALES PER MARKET



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This is Volvo Cars

1927

FOUNDED IN GOTHENBURG, SWEDEN

100

SALES IN OVER 100 NATIONAL MARKETS

Born in Sweden and now 97 years into our story, we remain proudly rooted in our Swedish heritage. We may now be truly global and leading a profound transformation of our company– but those roots remain as strong and relevant as ever.

It is from those roots that the Volvo Cars brand became synonymous with safety. The safety work has meant helping those to protect the people inside our cars to all road users. And further now that where safety once meant inventing the three-point seatbelt and sharing it with the world: today it also means protecting the planet. In this way, having helped to save a million lives we are committed to saving a million more.

We now share our expertise and our voice, advocating for positive change beyond our company interests. That means that the Volvo Cars' voice far exceeds our market share, and we live by our values – which attracts both customers and new competence to us. We aim not to follow guidelines set by others – we strive to set the bar; whether that is emissions targets, or the all-gender inclusive parental leave all colleagues around the globe, in all plants and offices, enjoy from the Family Bond.

The legacy of Swedish design and craft informs our desire to create elegant, uncomplicated solutions to real-world needs. We are responsive to change and understand that as well as saving lives, we make life less complicated for our people, customers and partners. That spans from how a customer buys or subscribes to a car to how the car is designed, and how it feels to the driver and passengers. By building more direct consumer relations we are ensuring that our organisation remains as versatile and aware of changing demand as it always has been.

THAT IS WHY OUR PURPOSE IS FOR LIFE – TO GIVE PEOPLE THE FREEDOM TO MOVE IN A PERSONAL, SUSTAINABLE AND SAFE WAY

OUR AMBITIONS

2025	2025	2026	2026
50%	40%	550–600	ABOVE 8%[1]
FULLY ELECTRIC SALES	CO_2 REDUCTION PER CAR	REVENUE (SEK BN)	EBIT MARGIN

1) excl. share of income in JVs & associates

CLARIFIED AMBITIONS

As we approach the middle of this decade, we want to be more precise with our ambitions and have decided to clarify these. We stand firm on our strategy around electrification and technological leadership, one of the most ambitious in the industry. Yet by clarifying our ambitions that were set out during our IPO with sharpened metrics, it improves transparency and allows us to better follow up on our progress.

We remain firm on our ambition to report an EBIT margin above 8 per cent for 2026, and now do so based on expected revenues between SEK 550–600 billion. By the end of 2026, this calculates to a revenue CAGR of 11–15% from 2023 to 2026. This clarified ambition further underlines that we seek to grow in terms of revenues and value rather than on volume alone, thereby focusing even more on profitable growth.

The ambitions for 50 per cent fully electric sales and CO_2 reduction of 40 percent per average vehicle (compared to a 2018 baseline) we aim to meet by 2025.

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VOLVO

2023 in brief

- The new fully electric Volvo EX30 was revealed in Q2 with start of production in Q3.
- The Volvo EM90 was revealed in November.
- Volvo Cars opened new Tech Hubs in Krakow, Poland and Singapore.
- Volvo Cars continued the commercial transformation as shown by the transition of the UK market to a direct model. Together with our retail partners we continue with the digitalisation journey and network optimisations across our markets.
- Volvo Cars accelerated the cost-efficiency initiative including a reduction of approximately 600 employees, of which the main part through voluntary termination packages. In addition, approximately 400 consultants and agency personnel left the company.
- Volvo Cars declared the end of diesel at Climate Week NYC – our last diesel car will be produced in early 2024.
- Volvo Cars has been recognised for its climate action and transparency by global environmental non-profit CDP, securing a spot on the Climate A-list.
- Volvo Cars published updated Green Financing Framework.
- Volvo Cars raised SEK 1.5 bn through inaugural green bonds in the Swedish market.
- Volvo Cars and the European Investment Bank (EIB) signed credit facility agreements of EUR 250 m to develop a new all-electric vehicle platform.

EX30

The EX30, launched in June, represents one of the company's most significant business opportunities and will serve as a building block for our strategic transformation.

READ MORE ON PAGE 9

EM90

The new fully electric EM90 premium MPV, revealed in November, further expands Volvo Cars' portfolio. The EM90 demonstrates our strong abilities to innovate and meet specific market demands. The multi-purpose vehicle (MPV) segment has gained considerable popularity in recent years, especially in many parts of Asia. This is one of the main reasons why the EM90 was launched in China, the world's largest car market.

VOLVOCARS.COM/INTL/CARS/EM90-ELECTRIC/

Intensified climate actions

On 30 November, ahead of the COP28 climate summit, Volvo Cars announced an extension of our action plan – already one of the most ambitious in the automotive industry – by aiming to reduce CO_2 footprint per average vehicle by 75 per cent by 2030, compared to a 2018 baseline.

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75%

CO_2 EMISSION REDUCTION PER AVERAGE CAR BY 2030

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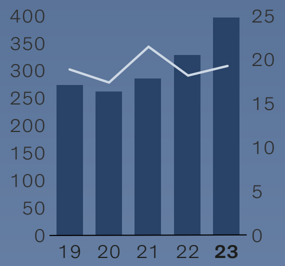
2023 financials in brief

- Retail sales increased by 15% and reached 708.7 (615.1) thousand cars, a new company record.
- Revenue increased by 21% to all-time high SEK 399.3 (330.1) bn, mainly driven by higher volume, as well as positive foreign exchange.
- Operating income (EBIT) was SEK 19.9 (22.3) bn, mainly driven by volume development, but also positive exchange rate effects. 2022 comparative figures were positively affected by the de-SPAC listing of Polestar with net effect SEK of 5.9 bn. EBIT excluding share of income in JVs and associates was at all-time high SEK 25.6 (17.9) bn.
- EBIT margin was 5.0 (6.8)%. EBIT margin excluding share of income in JVs and associates was 6.4 (5.4)%.
- Basic earnings per share was SEK 4.38 (5.23).
- Average lifecycle CO_2 emissions per vehicle were reduced by 20% compared with the 2018 level.

FORWARD LOOKING

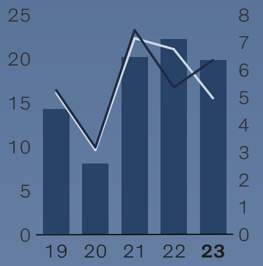
- For 2024, Volvo Cars expects a higher year-over-year growth rate in retail sales than in 2023, provided there are no major disruptions. Supported by our newly launched cars we are expecting to considerably increase the share of fully electric cars versus 2023.
- The Board of Directors proposes that no ordinary dividend is distributed and that the retained earnings shall be carried forward. Further, a distribution of a portion of Volvo Cars' shareholding in Polestar is proposed, as an extraordinary value transfer to its shareholders. For more information regarding this, see the Board of Directors' Report.

REVENUE AND GROSS MARGIN (SEK BN/%)



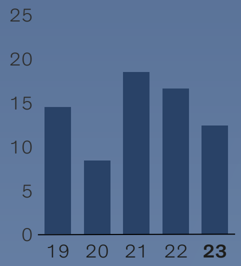
■ Revenue, SEK bn
— Gross margin, %

EBIT AND EBIT MARGIN (SEK BN/%)



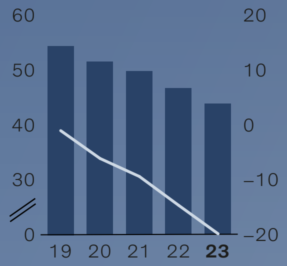
■ EBIT, SEK bn
— EBIT-margin, %
— EBIT-margin excl. share of income in JV & associates, %

RETURN ON INVESTED CAPITAL, ROIC (%)



Invested capital is calculated on two-year average figures.

CO_2-EMISSIONS PER CAR



■ CO_2-emissions per car
— CO_2-reduction, %

KEY FIGURES FINANCIALS (SEKm)	2023	2022	2021[1)2)]
Retail sales, units	708,716	615,121	698,693
Revenue	399,343	330,145	282,045
Research and development expenses	–12,884	–11,514	–12,714
Operating income (EBIT)	19,939	22,332	20,275
Operating income (EBIT) excl. share of income from JVs & associates	25,567	17,889	21,226
Net income	14,066	17,003	14,177
Basic earnings per share, SEK	4.38	5.23	4.72
EBITDA	37,388	38,423	35,280
Cash flow from operating activities	42,867	33,658	29,852
Cash flow from investing activities	–51,842	–39,552	–34,737
Net cash	27,487	38,061	44,846
Gross margin, %	19.4	18.3	21.6
EBIT margin, %	5.0	6.8	7.2
EBIT margin excl. share of income from JVs & associates, %	6.4	5.4	7.5
EBITDA margin, %	9.4	11.6	12.5
Return on invested capital, ROIC, %	12.4	16.7	18.6

1) In 2022, there was a change in the elimination of internal profit related to sale of digital services – resulting in a decrease of Cost of sales, Research and development expenses and Selling expenses against an increase in Administrative expenses. The reclassification has no impact on EBIT. The figures for 2021 have been adjusted accordingly.
2) In 2022, a prior period error was identified regarding the recognition of a government grant in China. The comparative figures have been adjusted accordingly affecting 2021.

KEY FIGURES SUSTAINABILITY	2023	2022	2021
Climate Action			
Reduction of CO_2 emissions per average vehicle[1,9,10)] (baseline 2018), %	–20.0	–14.9	–9.5
Fully electric vehicles (BEVs) sold, %	16.0	10.9	3.7
Circular Economy			
Recycled and bio-based materials of the new vehicles[24,25)], %	17	—	—
Reuse and recycling rate for total waste, %	92	—	—
Circular economy initiatives (compared to 2018 baseline), SEKm	508	413	–160
Responsible Business			
Employee engagement (Score and Benchmark)	76 (+1)	76 (+1)	76 (0)
Women in Senior Leadership[32)] (%)	30.1	29.6	—
Injury rate (LTCR) employees*	0.06	0.07	0.06

* Injury rate (LTCR) is defined as the number of work and occupational accidents reported with at least one day sick leave, divided by hours worked and multiplied by 200,000.
For Sustainability definitions and reporting principles see page 192–195.

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Intensified climate action

Ahead of the COP28 climate summit in Dubai, Volvo Cars announced further sharpening of our CO_2 emissions reduction ambition per car. By 2030, we aim to cut the CO_2 footprint per average vehicle by 75 per cent (from a 2018 baseline). This complements our ambition to cut emissions by 40 per cent per average vehicle already by 2025.

During 2023 we have reduced the average CO_2 emissions per vehicle by 20 per cent, compared to the 2018 baseline. Achieving such an ambition for 2030 of 75 per cent reduction target demands that we continue working towards our existing ambition to only sell fully electric cars by 2030, thereby eliminating tailpipe emissions from our model line-up. Therefore, we have also announced that we will produce our last ever diesel-powered car in early 2024. This milestone follows our decision last year to exit the development of new combustion engines. In the end of 2022 we sold our stake in Aurobay, the joint venture company that harboured all of our remaining combustion engine assets. Instead of focusing on the technologies of the past, we have our eyes on the future.

At the same time, we need to tackle our operational emissions and emissions from materials, aiming to reduce them by 30 per cent per average vehicle each by 2030, compared to a 2018 baseline. We intend to achieve these aims by introducing low- and near-zero emission materials and increasing the use of recycled materials in key categories, as well as reaching climate neutral energy in our own operations by 2025, and reducing emissions in for example logistics, commuting, as well as our retailer network.

READ MORE ON PAGES 35–43

The not-so-big, big deal. The new Volvo EX30.

The EX30, launched in June 2023, represents one of the company's most significant business opportunities and will serve as a building block for our strategic transformation. With our first small, fully-electric SUV, we are entering an important, fast-growing segment of the premium automotive market and reaching new customers.

Built on next-generation electric architectures, with advanced battery and computing technology, as well as next-level passive and active safety features, the EX30 takes an exciting step towards achieving our ambitions for 2025–26. We expect it to become one of our bestsellers in the coming years and significantly contribute to our profitable growth, with gross margins in the range of 15 to 20 per cent. This small yet mighty SUV also takes us closer to reaching our sustainability objectives, designed to have the lowest carbon footprint[1] of any car we have yet produced. Around 25 per cent of its aluminium comes from recycled sources, while approximately 17 per cent of both its steel and plastic content is recycled. Using sustainable design principles, our designers have combined functions into single components, reducing the number of parts with no compromise in functionality. The EX30 takes city safety to a new level, with the introduction of a door opening alert that is designed to warn its occupants of passing cyclists and other vulnerable road users.

"The fully electric EX30 might be our smallest ever SUV, but it is a big deal for our customers and a big deal for us as a company."

1) The lowest carbon footprint of any Volvo car to date statement relates to globally available products over 200,000 kms of driving.

Best core operating performance in 97-year history, while accelerating next-generation technology development

2023 was a key milestone in our transformation journey for Volvo Cars. We delivered a record-breaking year on many levels, reporting the highest retail sales, revenues and profits in our company's 97-year history. We also took several significant steps forward in our ongoing transformation, while navigating a complex external environment. In doing so, we've built a solid foundation for 2024 and the years ahead.

In line with our guidance at the beginning of the year, we delivered a solid double-digit growth in retail sales in 2023. Global sales rose by 15 per cent to a record 708,716 cars versus 2022. This performance demonstrates the strength of our premium product portfolio that offers both fully electric cars as well as an extensive range of hybrid models that will continue to help us bridge the transition into full electrification. The strength of our brand, coupled with our values around safety and sustainability, continues to resonate strongly with our customers.

We continue to move steadily towards our goals. We sold 113,419 fully electric cars (EVs) in 2023, an increase of 70 per cent versus 2022. EVs represented 16 per cent of our total global sales volume and we increased our global EV market share by 34 per cent.

It is also worth noting that our EV share in 2023 was based mainly on only two fully electric premium models (the C40 and XC40) and does not yet reflect the full potential of our new EX30 small SUV, EX90 large SUV or EM90 MPV, all of which will hit the roads in earnest during 2024. It was, however, one of the highest fully electric car shares among all legacy premium car makers.

Especially in Europe and the US, our electrified portfolio of both fully electric and plug-in hybrid models proved to be highly popular. In Europe, electrified cars represented almost 60 per cent of our total sales, while the corresponding figure in the US was almost 30 per cent. We expect that trend to continue in 2024, as our latest sales performance demonstrates. Our strong EV and hybrid portfolio across multiple sizes and models provides us a strong bridge towards our longer-term ambitions in core computing technology that will provide the platform to utilise the substantial benefits that AI will enable.

Delivered record financial performance, while laying a strong foundation for the future

The new sales record in 2023 was also reflected in our revenues and profits. Revenues rose by 21 per cent to an all-time high of SEK 399.3 billion for the full year 2023, demonstrating our ability to maintain premium

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pricing throughout the year. The solid demand for our cars is also reflected in our order book, which has remained robust despite market turbulence.

We were the first premium heritage car maker to be transparent about our EV margins. Gross margins on our fully electric cars improved in the second half, increasing fourfold to 13 per cent in the fourth quarter, helped by falling lithium prices and effects from increased pricing and cost savings.

While there's still a gap in gross margins on our EVs compared to some of our combustion engine (ICE) cars, the gap is closing. Our new EX30 is set to deliver gross margins of 15–20 per cent and takes us a long way towards that goal. We also expect the upcoming EX90 and EM90 to contribute strongly to closing the gap between EV and ICE margins.

We also had a record-high underlying operating profit in 2023 of SEK 25.6 billion excluding joint ventures and associates, an increase of 43 per cent compared to 2022. Our corresponding margin came in at 6.4 per cent, compared to a margin of 5.4 per cent last year.

Throughout the year we also made progress in reducing our CO_2 footprint per car. By the end of 2023, overall CO_2 emissions per car were 20 per cent lower compared with our 2018 benchmark, supporting our ambition of a 40 per cent CO_2 reduction per car by 2025.

We also continued our transformation journey in other areas. Our new EVs need additional manufacturing capacity to bring them to market. That's why we are investing in a new electric car plant in Slovakia to provide that extra capacity. This factory will be designed to use the latest industry 4:0 technologies and digital infrastructure, coupled to a lower operational cost base this will help deliver significant savings in production costs per car.

We continued to strengthen our in-house software development capabilities around the world with new facilities in Poland, Singapore, India and Sweden, and we established a new business unit called Volvo Cars Energy Solutions which will use our technology know-how and purchasing leverage to offer home and industrial energy solutions, including energy management and storage.

We also transformed the UK market from a traditional wholesale business to a direct consumer-facing one. The work we have done together with our retail partners shows this is the right step and we will continue to optimise the customer journey, designed around increased direct customer engagement, offer flexibility and price transparency.

In short, we delivered a strong 2023 and laid important and robust foundations for our ongoing transformation going into 2024.

2024: key milestone in our journey and another big year

2024 will be the year in which we continue to boost our product portfolio and accelerate our transformation with improved EV margins. Our new electric models will be more profitable and help us close the gap in margins between electric and ICE cars. They will also significantly expand our range, enable us to increase market share and take us into new demographics and market segments that we have not been active in before. The EX30, EX90 and EM90 will all be in mass production mode by the first half of this year.

In fact, at the end of the fourth quarter, the first customers already took delivery of their new EX30. This year we're focused on quickly ramping up production of this car and already now thousands of cars are in transit thanks to this ramp-up process and the resilience of our supply chain. We are determined to meet the strong customer demand, which has exceeded our expectations, and we're working hard to add EX30 production to our Ghent plant in Belgium as soon as possible. This will shorten delivery times to our European customers and minimise import tariffs resulting from geopolitical changes.

FOCUS AHEAD

Our strategy is well defined and unambiguous and is the right one for both Volvo Cars, our customers and the environment. Our results, order book and key performance metrics prove as much, and our customers clearly like what they see in our offer. And while we cannot escape from the uncertainties of the world around us, we can do what is in our control, which is to continue our industry-defining transformation and be a leader. We're committed to showing leadership by living our purpose and values, as we've always done since 1927.

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Technology leadership in software/AI, connectivity and data

In 2024 we will take a significant technology leap with the introduction of our next-generation fully electric platform upon which our new EX90 is built. As one of the first cars packed with core computing technology, the software-defined EX90 represents a significant paradigm shift for our company, and the tremendous abilities that can be achieved with AI and machine learning technologies. It is a car that brings next-generation safety, connectivity, data and software all together in one product, and it's 5G connection to the Volvo cloud allows for functionality to improve over time. The EX90 reaffirms our position as an industry leader in the move towards high computational silicon and in-house software that can harness the potential of the AI revolution.

With a ground-breaking sensor set that includes state-of-the-art lidar technology, coupled to our in-house developed perception and sensor fusion software and new strides in active safety, the EX90 is designed to be the safest Volvo car we have ever built and a testament to our global engineering capabilities. It will also be our first car with bi-directional energy capabilities. This enables customers to charge when power is more sustainable and cheaper, to contribute to a more balanced grid by having their car act as a 'virtual power plant,' or power their own home when power is less sustainable, more expensive or simply not available.

Being at the forefront of development does not come without its challenges, but the success of being an early mover in the adoption of meaningful new technologies can bring tremendous benefits. No one ever became a pioneer without facing some adversity and solving complex problems. I am confident that the leap our EX90 represents will not only provide customers with a premium, safe and technology-enhanced experience, but it also allows us to harness the use of data and energy in entirely new ways that will be ground-breaking for our industry.

Our fully electric EM90 MPV, which we revealed in China in November, has also started production. Like the EX90, the EM90 is an important car for China and shows how serious we are about succeeding in that market and taking market share. Our long-term strategy and approach to China are clear. We are a premium player and retain strong pricing power. We have world class hybrid models that sell very well in China, while the market for premium EVs is maturing alongside our own transition to fully electric. And with the EX90 and EM90 targeting the upper premium segment, we will be well positioned for future profitable growth in the premium EV segment.

We are confident that this mix of products – our existing, updated and new cars – will boost our growth for 2024, as well as significantly increase our share of fully electric cars versus 2023. In terms of total 2024 retail deliveries, we aim for a higher year-over-year growth rate than in 2023 (which showed significant growth of 15 per cent). We have a clear path towards market share growth in the premium sector of the automotive industry. December 2023 was our 16th month of continuous growth, and this was without significant EX30 sales. With that car now in production, we're ready to structurally deliver solid and consecutive year-over-year growth, with increased gross EV margins as indicated.

New and updated sustainability ambitions

We firmly believe that we need to take concrete actions to combat climate change. Since the release of our sustainability strategy in 2019, we have made progress towards a number of our climate ambitions. But while going electric is an important step on that pioneering journey, we need to further reduce emissions throughout our value chain. That is why we recently expanded our sustainability strategy, setting additional ambitions for 2030 and 2040 across climate action, circular economy and responsible business, as well as boosting our focus on biodiversity.

By 2025 for example, we now aim to have 100 per cent of our company debt linked to the Green Financing Framework or in a sustainability-linked format. By 2030, we aim to lower the CO_2 footprint per average car by 75 per cent and reduce energy usage in our operations per average car by 40 per cent versus the 2018 baseline.

We also aim to reach net zero greenhouse gas emissions by 2040. This expands upon our previous ambitions of being climate neutral by 2040 and clarifies our intention to use carbon removals only to mitigate any unavoidable emissions. Our first priority remains to reduce real emissions before turning to carbon removals, and we encourage our suppliers to do the same.

Full details of our new and updated sustainability strategy and actions points are enclosed in this report.

Looking ahead

The hard work we have put in during 2022 and 2023 positions us to meet our objectives for the years ahead. We continue to meaningfully improve the core operations of Volvo Cars, we are increasing our market share in the premium EV segment in many geographies, with 24 of our sales companies delivering record earnings, we are improving our EV margins, we are growing our revenues and profits, and we are harnessing new and meaningful technologies in software, AI, core computing, batteries, electric motors and next generation body structures. We will also continue to focus on addressing structural costs in our supply chain, focused on logistics and material costs, and will do so over a multi-year perspective.

We are doing all of this while staying true to our values and building our brand strength aligned to our key focus areas of safety, sustainability and human centric technology.

Jim Rowan
President and Chief Executive Officer

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A fast changing world

MARKET AND TRENDS – FOR LIFE

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Our purpose and values are of increasing relevance to our customers

We are a company led by our purpose, vision and ambition. We believe that our purpose meets the hopes and aspirations of our customers.

WHAT VOLVO CARS' CUSTOMERS WANT

SAFETY

Protection for individuals, their loved ones and society as a whole, in both a physical and digital context

HUMAN CENTRIC TECHNOLOGY

Technological innovation that offers clear customer benefits, is helpful, easy to understand and user friendly

RESPONSIBILITY

Taking environmental and social responsibility through reducing carbon emissions, conserving resources and conducting business responsibly

PRAGMATIC SOLUTIONS

Convenience, products and services with real-world applications

VOLVO CARS' PURPOSE

FOR LIFE

PERSONAL

SUSTAINABLE

SAFE

GLOBAL TRENDS DRIVING OUR ACTIONS

CLIMATE EMERGENCY

Recognition of the need to address climate change and take urgent action

REDEFINED REQUIREMENTS

Changing attitudes to car ownership and increased demand for alternatives

TECHNOLOGICAL BREAKTHROUGHS

Challenging social, economic and political structures

REDEFINED ASPIRATIONS

Priorities and values that are changing perceptions of premium quality

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Industry in rapid transformation

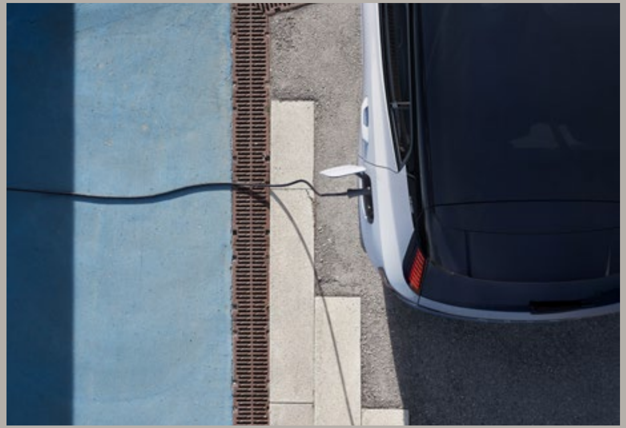
In the fast-changing automotive world, three powerful trends are shaping the way forward: The all-encompassing call for sustainability combined with the technological transformation and commercial evolution. These simultaneous shifts define a landscape marked by complexity and innovation.

Sustainability

Climate change is shaping society. It drives shifts in attitudes, policies and innovations as individuals, governments and businesses increasingly prioritise sustainability initiatives to tackle the challenges.

The automotive industry is recognised as part of the problem of global warming and must therefore act to become part of the solution. Regulatory pressures, such as EU ban on sales of new petrol and diesel cars from 2035, require proactive measures and drive the shift towards emissions-free mobility.

READ MORE ABOUT SUSTAINABILITY ON THE FOLLOWING PAGE



Technological transformation

The automotive industry is undergoing a game-changing technological transformation.

Firstly, there is the shift from traditional combustion engines to electrical propulsion. Despite some regional variances, the overall global push toward electric vehicles (EVs) is gaining momentum, spurred by legislative mandates and accelerated by Chinese born-electric car brands in the race to electrification. But it is not just about changing what is under the hood. The development of charging infrastructure is crucial, making the refuelling experience as easy as it has been with petrol stations for a century.

READ MORE ABOUT TECHNOLOGICAL TRANSFORMATION ON THE FOLLOWING PAGE

Commercial evolution

At the same time, the way we buy and access a car is changing. More and more car brands are adopting a direct-to-consumer (DTC) model, whether it is for sales, subscription, or lease. This is an important shift in the setup of how cars are sold, but more importantly, how customer value is captured after the purchase.

Manufacturers and retailers are experiencing growing demand for alternatives to traditional car ownership. Access and convenience, through leasing or sharing schemes, are valued by some customers more highly than direct ownership.

READ MORE ABOUT COMMERCIAL EVOLUTION ON THE FOLLOWING PAGE

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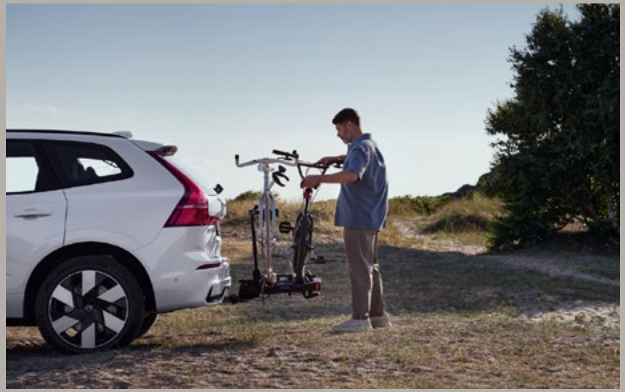
Sustainability

Environmental concerns, including urban air and noise pollution are also driving demand for electric vehicles as more consumers see environmental impact as a personal responsibility. Furthermore, consumers care about the entire supply chain and want to know that the cars are responsibly sourced and produced.

Sustainability efforts in the automotive sector can enhance profitability through increased energy efficiency, material value retention and innovative business models like car-sharing. A purpose-driven organisation with a value-based culture is better placed to attract and retain top talent and to forge valuable partnerships. In addition, a strategic approach to sustainability makes businesses more attractive to investors who are increasingly focused on the environmental, social and governance (ESG) matters.

In short, the call for sustainability is clear and far-reaching. Adopting a strategic approach to sustainability is a critical success factor and presents a significant opportunity for car manufacturers to meet the growing public demand and make a substantial impact on global issues.

READ MORE ABOUT VOLVO CARS' APPROACH TO SUSTAINABILITY ON PAGES 35–43



Technological transformation

Standardised connectors and innovations like Plug&Charge are key steps toward making electric vehicles a norm.

Secondly, electrification is just the tip of the iceberg. The more profound change is taking place in the area of core compute technology, silicon and connectivity. Cars are becoming "smarter," turning into essential parts of our digital lives. Premium segments are experiencing tech innovations, such as high-end infotainment systems, seamless connectivity, driver assistance systems and the incremental introduction of full autonomous driving. Software developments and over-the-air updates becoming essential areas for the premium car segment. The convergence of computing power, connectivity and data analytics, coupled with AI and machine learning, shapes a challenging yet thrilling technological era.

READ MORE ABOUT VOLVO CARS' APPROACH TO THESE TECHNOLOGICAL CHANGES ON PAGES 27–28

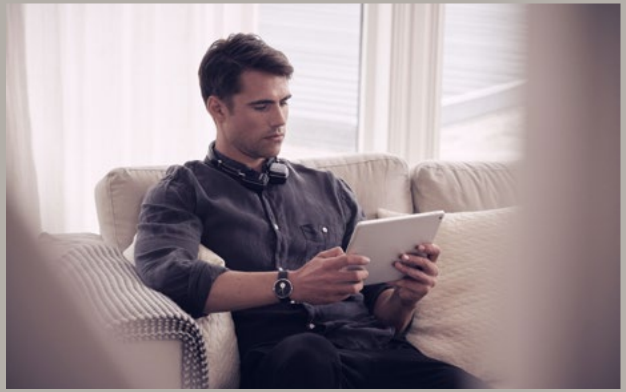
Commercial evolution

Subscription-based models offer the benefits of having a car without the need to arrange insurance, servicing, or resale. Shared mobility services make access to mobility even easier for consumers who only need occasional use of a car.

Attitudes among car-buyers are also shifting. Many consumers are seeking simpler alternatives to the traditional car-buying process, with faster delivery times. The digital era demands a seamless online experience, blending with offline channels for a complete customer journey. A streamlined online buying experience is vital to maintaining a competitive advantage, as well as an important channel for sales of additional physical and digital products.

While dealerships maintain a crucial role in the ecosystem, not least for the delivery and service, the integration of technology is reshaping the conversation between the customer, the manufacturer, and retail partners. This strategic move is forging a richer and more dynamic relationship, allowing car brands to stay relevant and connected with customers throughout their ownership journey, from pre-sale to post-sale services.

READ MORE ABOUT VOLVO CARS' APPROACH TO THE COMMERCIAL EVOLUTION ON PAGES 29–30



In conclusion, the automotive industry faces a crucial moment marked by sustainability concerns, technological advancements and changing consumer dynamics. Success and leadership require proactive adaptation of responsible practices, technological innovation and customer-centric strategies.

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Sales and market development

Despite challenges from high inflation and rising interest rates in the western world and lower consumer confidence in China, the passenger car markets have grown. Part of the increase is, however, attributable to a lower comparison base due to semi-conductor and component shortages during last year. Global production increased by 9% compared to last year.

Volvo Cars' global production increased by 18% to a record 766.7 (648.9) thousand cars as availability and visibility improved in our supply chain. Full year retail sales were at 708.7 (615.1) thousand, an all-time high in the company's history. The orderbook remained robust supporting the ability to maintain premium pricing over the year. Sales of BEVs increased by 70% to 113.4 (66.7) thousand units, and Recharge cars share of total sales increased to 38 (33)%.

Europe

The total European car market increased by 14% and the traditional premium segment increased by 18% compared to last year. The region continued to see an improved production situation and the previously constrained supply chain has now normalised.

China

The total Chinese passenger car market increased by 6%, while the traditional premium segment increased by 9%. The competition in the Chinese car market continued to be strong, with several domestic brands gaining noticeable market shares, especially in the BEV segment.

US

The total US passenger car market increased by 13%. The traditional premium segment increased by 20%. There has been an increase in incentives as the market is normalising after the past years' supply chain disturbances, but overall discounts are still not as high as pre-pandemic levels.

Total industry volume share by propulsion type [1, 2]	Full year 2023	Growth YoY
BEV	13.8%	35.3%
PHEV	4.7%	35.0%
ICE (incl. mild hybrids)	81.5%	5.1%
Total	**100.0%**	**9.4%**

Volvo Cars' market share per propulsion type [1, 2]	Full Year 2023	Full Year 2022
BEV	1.14%	0.97%
PHEV	4.70%	5.71%
ICE (incl. mild hybrids)	0.76%	0.76%
Total	**0.99%**	**0.97%**

1) Volvo Cars is and will continue to be positioned in the premium segment of the automotive market. As the market is transforming with electrification and digitalisation the definition of premium is being redefined. To simplify and to avoid the risk of excluding important parts of the market, we will report our market share in relation to the total market.

2) Includes content supplied by S&P Global Mobility Industry Performance, February 2024, capturing more than 85% of total world sales. All rights reserved.

Retail sales (k units)	2023	2022	Δ%
Europe	294.8	247.4	19
China	170.1	162.3	5
US	128.7	102.0	26
Other	115.1	103.3	11
Retail sales total	**708.7**	**615.1**	**15**
Recharge line-up vehicles	266.0	205.4	30
whereof BEV vehicles	*113.4*	*66.7*	*70*
Recharge line-up share of sales	38%	33%	
whereof BEV share of sales	*16%*	*11%*	
Wholesales	732.3	631.7	16
Production volume	766.7	648.9	18

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Our Blueprint

STRATEGY – FOR LIFE

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Our Blueprint

Our Blueprint is our strategic landscape and it starts with our purpose. For life. To give people freedom to move in a personal, sustainable and safe way.

Convinced by our purpose, guided by our values in combination with our behaviour create our culture. Our culture empowers us and together with our Code of Conduct guides the way we do business.

Further, to live by our purpose and progress towards it, our strategic objectives with ambitions together with our five missions set a clear direction and help to drive execution.

Finally, Our Blueprint guides us in terms of which data to collect and the reporting required to follow up on our execution.

Ambitions

2025	2025	2026	2026
50%	40%	550–600	ABOVE 8%[1]
FULLY ELECTRIC SALES	CO_2 REDUCTION PER CAR	REVENUE (SEK BN)	EBIT MARGIN

1) excl. share of income in JVs & associates

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Our values combined with our behaviours create our culture

Values

SAFETY & SUSTAINABILITY
We protect what's important to you and the generations to come, always.

INCLUSION & COLLABORATION
We are strongest as a team. We value differences and all aspects of diversity to innovate and create the best solutions.

CREATIVITY & COURAGE
We explore and navigate the unknown by taking calculated risks. We bring our ideas to life and stand by our beliefs.

SIMPLICITY & EXECUTION
Based on a deep knowledge of people's needs and our ability to learn fast, we make life less complicated for our people, customers, and partners.

INTEGRITY & TRUST
We are human-centric and embrace honesty, transparency, respect, empowerment and authenticity. We take pride in our responsibilities and don't cut corners.

Culture

We are **curious**, **collaborative**, and **courageous** working together on common goals.

Through our words and deeds, we **make the difference** and bring positive change.

We are **pioneers** in the protection of people and planet.

Core competencies

- Builds Trust
- Collaborates
- Drives Results
- Self-development

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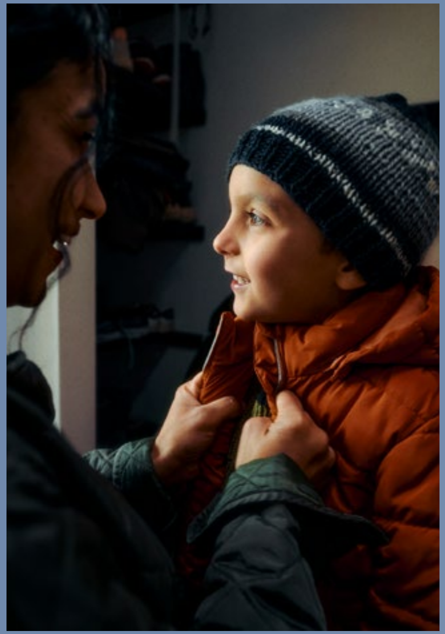
CODE OF CONDUCT

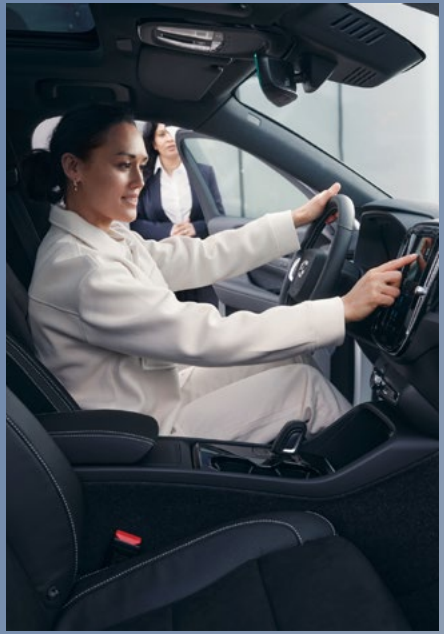
Our way of doing business

The world around us is changing, and so are we. In fact, we are in the middle of the biggest transformation our company has ever seen. There are however some things that will never change – our commitment to doing business in a responsible and ethical way. Every transformation comes with challenges and a degree of uncertainty. By staying true to our purpose, values and culture in everything that we do, we create the foundation needed to meet those challenges. It enables us to explore and navigate the unknown by taking calculated risks.

Convinced by our purpose.
Guided by our values.
Empowered by our culture.

We are a brand for people who care about other people and the world around us. By working towards net zero, embracing circular economy and conducting business responsibly, we reduce our impact on the environment, contribute to a fairer and more equal society as well as support our profitable growth. Our commitment to responsible, ethical and sustainable business is embedded in the way we act – as an employer; as an employee; as a member of the wider community. This is our way of doing business:





We...

Care about people.
The Volvo brand has been carefully built for over 90 years and is closely associated with a focus on people, sustainability and safety. We take pride in our role within society and we are committed to respecting and promoting human rights, including children's rights.

Care about society and the environment.
We contribute to global and national efforts that create a better and more prosperous society – being pioneers in the protection of people. We believe that we need to lead the transformation of the automotive industry to address climate change, in addition to proactively complying with all relevant regulatory requirements to which our products and services need to conform.

Care about our business partners.
We are curious, collaborative and courageous, aiming to build long-term relationships with our business partners, creating bonds founded on trust and a Speak Up culture. When selecting business partners, we do so fairly and objectively with integrity and trust at the core of everything that we do.

Take precautions and follow our corporate policies.
As a matter of ethical practice, we apply "precautionary principles". This means that special precautions must always be taken whenever there is reason to believe that a potential action may negatively impact a person's health or safety, the society or the environment.

Encourage a culture of openness where people can raise their genuine concerns.
We encourage people to express their views and opinions, ask questions and to point out unacceptable behaviour and actions – without fear of retaliation. By doing so, we foster our Speak Up culture.

Develop leaders that ensures our Code of Conduct come alive.
By embracing and demonstrating our leadership competencies, our leaders act in-line with our values and as role models for our culture. Thereby creating the foundation for our Code of Conduct to be part of everything that we do.

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VOLVO

Missions guiding our execution

In order to reach our strategic objectives, we need to focus on execution. The five missions encompass the key focus areas of Volvo Cars.

PEOPLE

"We will focus on our people to develop and enable them to live our values, leading to a positive impact on our business, customers, partners and wider society."

PRODUCT

"We will provide customers with outstanding products that are designed around people and their needs and fully electric by 2030."

TECHNOLOGY

"We will discover, develop and deploy technology that delivers exceptional solutions for people and the planet."

CUSTOMER

"We will drive growth and build great direct consumer relations in an efficient omnichannel setup."

DIGITAL

"We will create a secure digital infrastructure that enables growth, scale and efficiency."

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PEOPLE

"We will focus on our people to develop and enable them to live our values, leading to a positive impact on our business, on our business, customers, partners and wider society."

In a rapidly changing business environment, employing people with the right skills, in the right location is vital for accelerating the execution of our strategy and supporting continued growth. Having a global, diverse workforce, who are encouraged to develop their skills and give their best is central to our success.

We aim to be employer of choice, offering equal opportunities to people who want to make a difference, with a working culture that encourages and welcomes different perspectives.

Our company values an open, creative, and curious mindset that embraces learning from colleagues. By creating a safe, inspiring, and inclusive working environment, we unlock individual potential and raise the level of our collective performance. We have defined a set of behavioural Core Competencies that apply to all our employees – drives results, collaborates, builds trust and self-development. Our competency model helps our people to develop and maximise their overall performance. At Volvo Cars, we believe that problem-solving, spontaneity and innovation shall flourish in a free and collaborative environment. While the office is our primary workplace, we have improved online collaboration between our worldwide employees to increase flexibility.

We continuously invest in the wellbeing of our employees and support their overall health. In this way, we can accelerate the pace, when we need to, but allow our employees time to slow down, recover, and restore their energy when the workload is less intense. The Family Bond by Volvo Cars, all-gender inclusive paid parental leave, and other initiatives are designed to encourage our employees to invest time with their families.

Good leadership is essential in creating meaningful and rewarding time at work for all our people. The most important capability of our leaders is the ability to build trust and help their teams to be their best. Within supportive teams, our employees develop, share their skills, and accept responsibility in a safe environment. As an example of this, in 2023 a new executive leadership program was successfully rolled out to boost the culture and leadership capabilities which has already given added value in our ongoing transformation.

Leading the way in ethical and responsible business is fundamental to us and we strive to improve and protect the lives of employees, customers, partners, and the most vulnerable members of society. Taking an ethical approach to business is not only the right thing to do, but it also makes sense for our business.

OUR PEOPLE AROUND THE GLOBE

The approximately 43,000* Volvo Cars employees are distributed across 65 different locations, with the majority in Gothenburg, Sweden.

*Average number of employees in 2023.

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A high-performance organisation that nurtures personal development

As pioneers in a fast-changing industry, we act quickly and decisively. Our ability to do this depends on highly skilled and efficient people. We believe that everyone can make a meaningful contribution to our success in their everyday work. By connecting our objectives to individual development, we pursue personal and collective growth simultaneously.

In 2023, we improved our performance management process – Continuous Dialogue – in order to unlock our potential. It emphasises the importance of regular conversations, at least once per quarter, about performance, progress, development, and learning, to deliver excellent work and future growth. Continuous Dialogue is mandatory for all employees throughout the company and the purpose is to align employee priorities and development with organisational needs – reaching our business objectives, while giving employees the opportunities to perform at their best and reach their full potential. Also, we encourage everyone to give and seek feedback and support each other to grow, it is not just between managers and their direct reports. Our defined core competencies – build trust, collaborate, drive results, self-development, provide the structure for successful dialogue.

Having aspirational leadership that supports and takes individual responsibility for our growth and learning journey is essential. It empowers us to take charge of our own priorities and development.

"Continuous Dialogue brings clarity in responsibility and expectations to the organisation. We ensure performance is based on both WHAT we deliver and HOW we do it. In combination, our values and behaviour create a robust corporate culture at Volvo Cars. We want to focus on both how we meet today's needs, and how we develop to meet them in the future. People are key to our transformation and success."

Hanna Fager, Chief People Officer

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VOLVO

PRODUCT

"We will provide customers with outstanding products that are designed around people and their needs and fully electric by 2030."

Building on our proud history, we create value for our customers and enable Volvo Cars to become the fastest transformer through excellence in innovation, product development and management of the end-to-end value chain. Our Product Mission outlines how we will continue to deliver products that ensure profitable growth for our future.

Striving to deliver outstanding products and services

The Product Plan is the starting point in our ambition to launch new fully electric cars and become fully electric by 2030. We are creating a line-up targeting different sectors of the market, supporting profitability and growth. The Volvo EX90, our flagship SUV, paved the way, followed by the Volvo EX30, our small SUV, launched in June. Most recently, the EM90 debuted in China in November 2023.

The creation of our products is all about efficiency, continuous improvements and cross-functional collaboration. We have set up cross-functional teams that integrate diverse disciplines and a customer mindset to create and optimise the product and processes, maximising value across the value chain. Our joint focus is to execute at the right cost, on time and with the right quality.

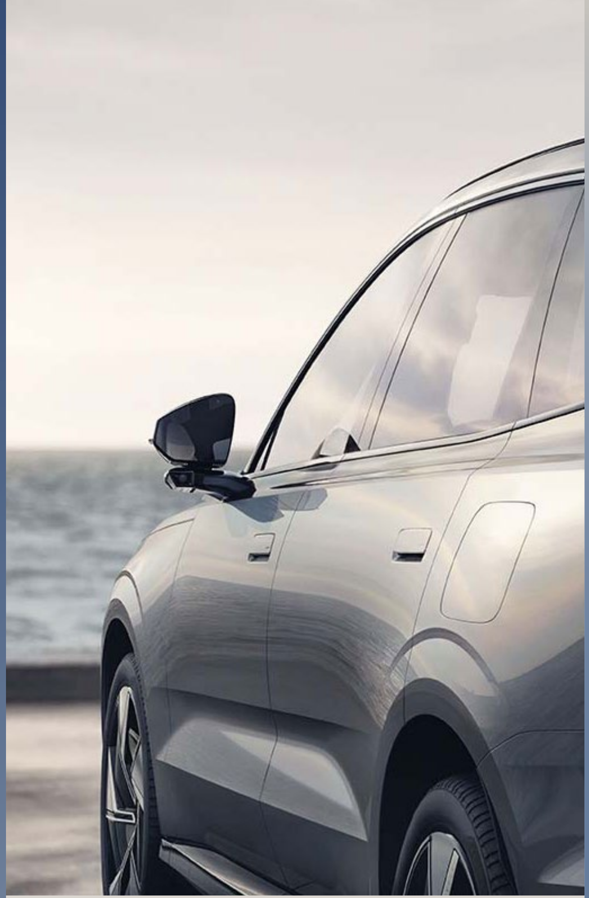
In an increasingly complex world, achieving our ambitions is not just about exceptional vehicles but also about a world-class, resilient supply chain. Our principle is to build where we sell and to source where we build – forming a regionalised, sustainable, smart and lean supply chain. Having diversified operations in three continents enables us to both specialise and optimise production capacity between our sites, while reducing operational risks from macro-economic and geopolitical developments. To strengthen resilience, we focus on diversifying sourcing, increasing capabilities and enhancing control. One key aspect involves access to critical raw materials like nickel, cobalt and lithium; all essential for the batteries powering electric vehicles.

The introduction of a fully electric car architecture allows us to leverage the expertise acquired in the production of electric motors. A third European, state-of-the art manufacturing plant for the next generation of all-electrical cars is planned to be established in Slovakia. To remain a leader, the supply, performance and sustainability of batteries are critical. Our NOVO Energy joint venture with Northvolt enables us to specifically design and manufacture batteries for our next generation cars.

Strategic and operational excellence to achieve our ambitions

We must deliver outstanding products and services if we are to continue being competitive and successful. Volvo Cars was founded upon the concepts of quality and safety. As a premium brand we take pride in securing high quality in every aspect of our products and services. Our commitment to quality includes all our global operations and we continually strive to improve the quality by embracing new technologies, translating into an intuitive consumer experience.

As we are committed to quality, we are also committed to sustainability. With a focus on electrification, sustainability also encompasses the wider climate potential of our cars, for example exploring it through the Energy Solutions business that is being set up. Ultimately, sustainability is about helping to protect people and the world around us by working towards net zero greenhouse gas emissions, embracing the circular economy and conducting business responsibly. We set clear ambitions to reduce CO_2 emissions from cars and plants, working with circular material flows and analysing costs from emissions. Our internal carbon price of SEK 1,000 per tonne of CO_2 intends to future-proof decisions by helping us identify cost-efficient CO_2 reduction measures.



FULL FOCUS ON ELECTRIFICATION

Volvo Cars was the first traditional car manufacturer to exit the development and manufacturing of internal combustion engines. This allows us to focus fully on electrification.

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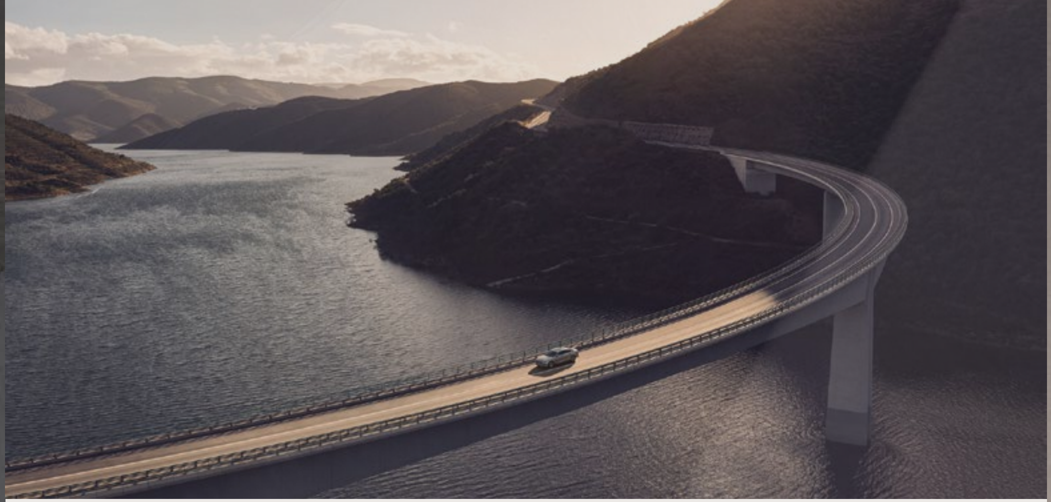
Volvo Cars quality strategy drives customer satisfaction

Our Volvo Cars quality strategy is all about increasing customer satisfaction – a key to profitable growth as a leading premium brand. We aim to deliver outstanding products and services, with positive and efficient customer interactions, as and when desired by the customer.

A profound commitment to quality throughout our organisation is the foundation and the success of our quality strategy. Our company culture reinforces this commitment. Underpinned by our Code of Conduct, this means quality at every level and in everything that we do, regardless of role and tasks.

Our quality strategy originates from the customer's perspective and encompasses five building blocks: listen to the voice of the customer; build in quality in everything we do; prevent quality issues at the outset; swiftly detect and resolve any issue; and ensure a culture of continuous learning and improvement. Volvo Cars is ISO 9001 certified, and we follow up on our performance with internal management system audits, as well as utilising external audits.

Read more on pages 180–181.



The new Energy Solutions business, embracing wider climate potential of electric cars

The electric vehicle revolution goes hand in hand with sustainable energy solutions. Since our ambition is to be a fully electric car company by 2030, we need to capture new business opportunities in this area. In November 2023, we established the new business unit Energy Solutions, with the aim to understand how we can capitalise on the wider potential of electric vehicles and their batteries.

Volvo Cars Energy Solutions aims to offer energy storage and charging-related technologies and services which form the connective tissue between our cars, our customers' lives, the efficient use of energy and society at large.

Key to this is bi-directional charging, a capability of the Volvo EX90, which allows the supply of surplus battery power to the grid. We are piloting a vehicle-to-grid (V2G) programme in Sweden, testing these technologies with real customers. In coming years, we foresee millions of EVs offering ample spare battery capacity for various uses, from reducing energy bills to powering homes and devices, contributing to CO_2 emission reductions.

V2G is just one of the technologies that we envision as a part of that ecosystem offer under the Volvo Cars Energy Solutions banner. We are also looking at vehicle-to-home (V2H) products that allow you to send back energy to your house and lower your energy bill, as well as vehicle-to-load (V2L) services whereby your electric car battery powers your camping gear or charges your electric bicycle.

Over time, we anticipate Volvo Cars Energy Solutions could generate significant new revenues from energy-related products and services every year, as well as new products not previously offered by Volvo Cars. In doing so, Energy Solutions is set to add value to our core business, our customers' daily lives and the environment.

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TECHNOLOGY

"We will discover, develop and deploy technology that delivers exceptional solutions for people and the planet."

The automotive industry is undergoing a technological revolution, with electric vehicles, connectivity, and software changing the scene. Our Technology Mission is about harnessing our innovation power to be a leader in new technology – with the purpose of giving the best customer experience and achieving our strategic objectives.

Towards full electrification with the right technology

We have an ambitious target of being fully electric by 2030. We are also determined to become a leader in sustainable electric propulsion, developed inhouse to secure unique, tailormade systems for the best customer experience. Our technology development serves to make our customers' lives safer, more convenient and enjoyable. This requires control over the entire product, including hardware, mechatronics, software, and sustainable material supply. Our approach is stepwise vertical integration to secure ever improving generations of powertrains and batteries specifically designed to our high standards.

In a global business environment with volatile raw material prices and geopolitical turbulence, mastering materials is crucial. The aim is to enable fast and safe transformation into sustainable and cost-efficient products. By using our supply chain insights, we can mitigate risks in availability of materials and other global challenges. We can further improve circular solutions by reducing material complexity.

We are gearing up our technology platform, initially configured for our mid-sized cars, for an expansion targeting the premium large and small segments of electric vehicles enabling us to cater for advanced battery and computing technology including smart cabin technology and safety features. Similarly to the previous platforms, our new architecture is designed to accommodate over-the-air updates and continuous improvements over the lifecycle of our cars.

Enabling improved user journey through connected experience and software

We envision a connected personal user journey that begins outside the car and extends into the vehicle. This means providing the technical capabilities that enables the best product appeal with the right technologies. The goal is to provide a robust, cost-efficient experience where customers can choose their preferred eco-system.

A software-defined vehicle signifies a Volvo car that continually improves through software updates. This means that the software content defines the product's fundamental characteristics, not the underlying hardware. The transition to a software-defined vehicle is a gradual process which will allow hardware and software to evolve separately, resulting in faster software evolution to advance the customer experience.

Understanding customer behaviour and vehicle performance is key in our pursuit of safety and enhanced customer experience. Responsible data collection and analytics, combined with artificial intelligence and machine learning, enable us to improve product quality and by updating the software faster. We currently have over 2 million connected vehicles providing data, all while respecting data privacy regulations and customer consent.

Towards Zero

Safety is part of our DNA. Safety has always been at the core of our purpose, and since 2007 we have been guided by the vision that no one should be seriously injured or killed in a new Volvo car. Since then, this has been further expanded into our Zero Collision vision. These visions guide us to continuously make our products safer for all. To support our vision of zero collisions, we are investing in technologies such as advanced driver assistance systems (ADAS) and autonomous driving (AD) based on sensing technology and active safety technology, together with our wholly owned subsidiary Zenseact. These technologies leverage deep learning technology based on decades of real-life experience, continually refining and adding new functions to protect people both inside and outside of the car.

NEW, STATE-OF-THE-ART SOFTWARE TESTING CENTRE IN SWEDEN

As part of our strategy, we continuously invest in our in-house software development and testing capabilities. In October, we announced one of our biggest investments into this area to date: a new, state-of-the-art software testing centre in Gothenburg, Sweden that amplifies our capacity for integrated software testing at all levels. We also operate software test centres in Lund, Sweden and Shanghai, China.

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Improved car experience, every day

The automotive industry is undergoing a transformation at a speed that we have never seen before. We are pursuing major changes in digitalisations of the car, in connected services, in autonomy and in electrification. All of these changes have one thing in common: they are all made possible by huge strides forward in software.

What we see now is that we are going from a software-enabled product, where software is deeply integrated with very specialised electronic hardware to give life to all the components that make up the current electronics systems – to a software-defined product, where even more software-intensive features are hosted by more generalised computing hardware, and where the software and the hardware are not as intertwined as they are today, allowing them to evolve individually, in their own pace. Generally, this means that software can evolve faster than today.

With this fast evolution – the aim is for the car to become a much more dynamic product, both in terms of the features it provides and in terms of how it evolves over time. Instead of being at its best when it rolls out from your establishments, it keeps getting better over time.

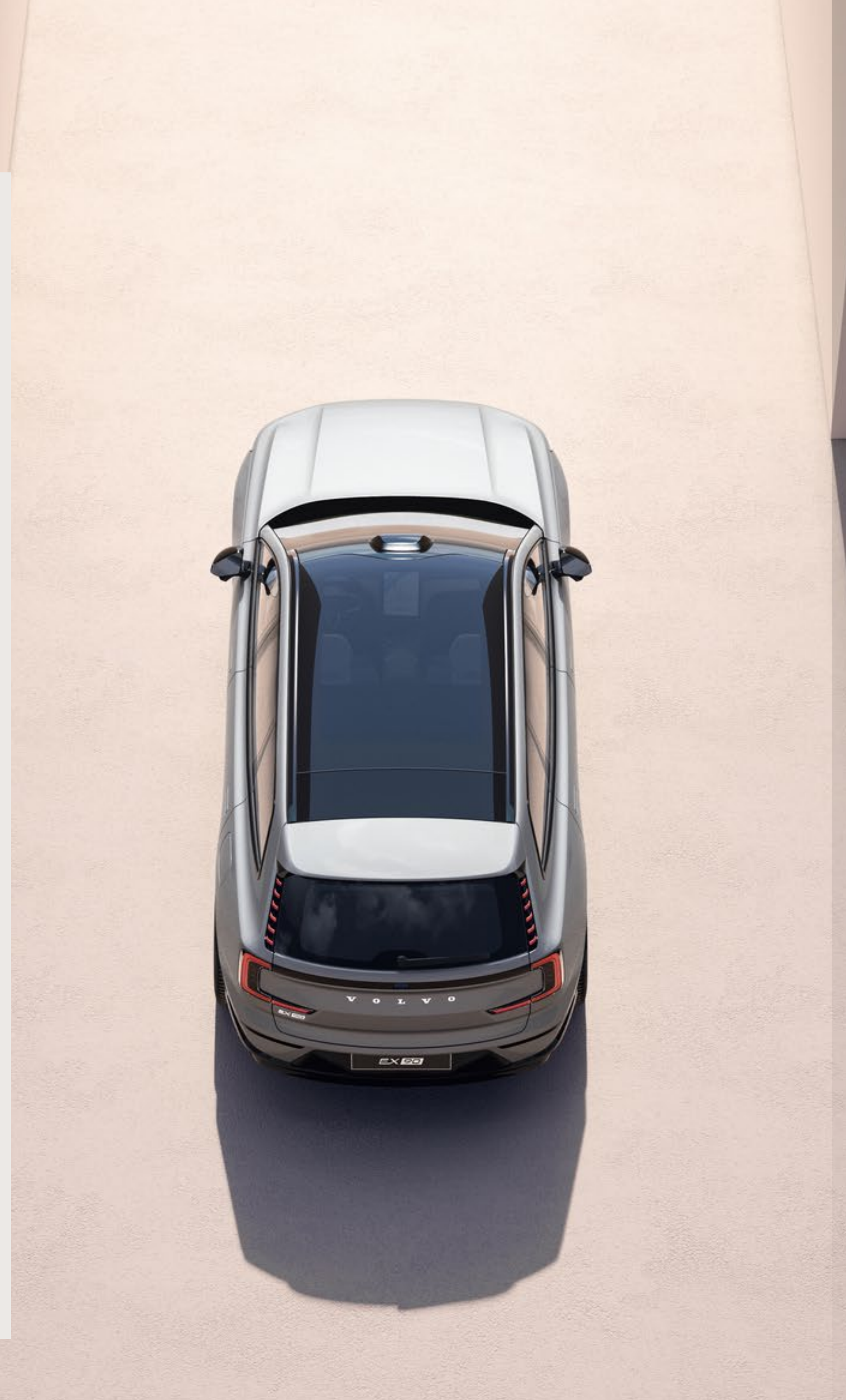
Key aspects of moving towards software-defined vehicles include the primacy of software in defining customer experience, software as a primary competitive differentiator, and software serving as the main enabler for innovation. As software becomes integral to the product, it also becomes a significant valuable asset for automotive OEMs.

This evolution brings changes to the product, influenced by customers' expectations shaped by modern smartphones. The car becomes a seamless integration of the physical vehicle and connected cloud services, evolving and improving over time through over-the-air updates. Connectivity, sensors, high-performance computing, over-the-air updates, customisability, and fleet data collection are essential characteristics of the software-defined vehicle.

Volvo Cars' approach involves our in-house developed software platform, providing an omni-channel customer experience with regular over-the-air software updates to enhance the car's features, introduce new capabilities, and improve quality. An experience that only gets better over time, while also feeding fleet insights that fuel our new technology development, allowing us to further enhance the customer journey. This approach of continuous improvements aligns with our culture and our commitment to personal, sustainable and safe mobility – for Life.

THE SOFTWARE-DEFINED VOLVO EX90

In 2024 we will take a significant technology leap with the introduction of our next-generation fully electric platform upon which our new EX90 is built. As one of the first cars packed with core computing technology, the software-defined EX90 represents a significant paradigm shift for our company, and the tremendous abilities that can be achieved with AI and machine learning technologies. It is a car that brings next-generation safety, connectivity, data and software all together in one product, and it's 5G connection to the Volvo cloud allows for functionality to improve over time. The EX90 reaffirms our position as an industry leader in the move towards high computational silicon and in-house software that can harness the potential of the AI revolution.



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CUSTOMER

"We will drive growth and build great direct consumer relations in an efficient omnichannel setup."

The main objective of our customer mission is driving continuously improved customer experience while decreasing the total cost for the whole system. This transformation is crucial in order to stay relevant and meet customer expectations and thereby support our ambitions to grow and increase profitability.

Our chosen path to reach these ambitions is by transitioning into a direct consumer facing business model together with our retail partners, with an aim to achieve scalable digital platforms. This will allow us to elevate our brand and attract new customers at the same time as we deliver transparent pricing and a simplified product offer, which we know that our customer values. Establishing direct consumer relationships also enables us to gather valuable customer data, which will help us improve efficiencies in the system and create a better experience for our customers.

The Customer mission consists of three overall objectives:

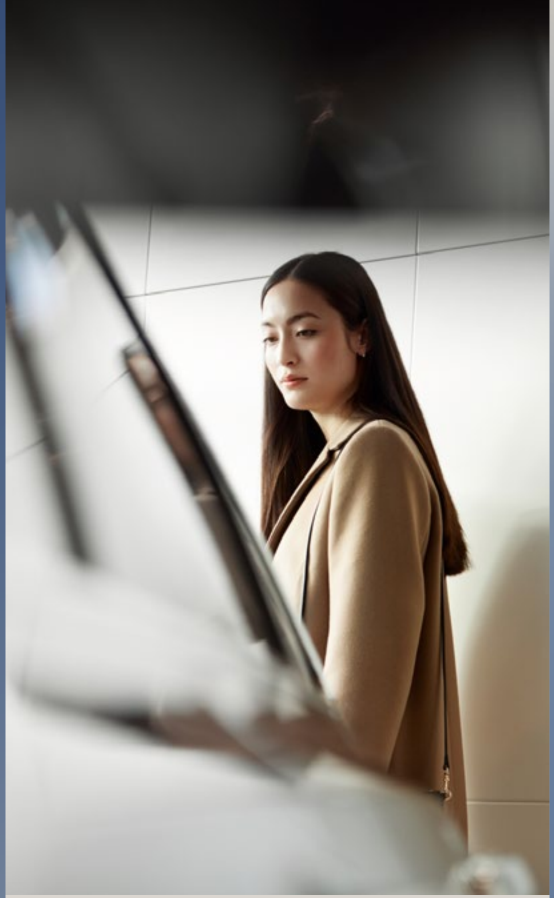
Strengthening the brand: Premium for Life
Central to the customer mission is the strengthening of the brand, advancing our premium pricing power and growing our market share. This pursuit requires a strong value proposition, built upon our purpose and brand values: For life. To give people the freedom to move in a personal, sustainable and safe way. These values reflect societal trends and resonate with our customers. Owning a Volvo car is about being part of a global community that shares values, experiences and a vision for a better future. To maximise the reach and impact we need to connect with consumers in a deeper, more meaningful way.

Securing a competitive and consumer centric product offering
Another key element of the customer mission focuses on the product offering. We are simplifying our vehicle offering, providing customers with a transparent online pricing structure with fewer choices. Implementation will be different across the different markets in line with the legal requirements.

The transition to electric vehicles should be hassle-free, with customers fully understanding the value they receive. Already today, consumers can access the Volvo Cars experience in the way that suits them; to buy, subscribe or, where available, get a Volvo car on demand. We are also working on expanding our offering beyond the actual car to also include services around the Volvo car ownership, such as insurance, accessories, charging and connectivity services. For this, Volvo Cars is taking a much more active role for the benefit of the consumer but also to secure additional revenue streams.

Building direct customer relations: Intuitive, convenient and efficient
The digital revolution has changed how customers learn about, purchase and interact with brands and new products – the automotive industry is no exception. To fulfil our customer mission, we are adapting Volvo Cars' go-to-market model towards online channels and direct relationships.

From exploration to final purchase, every step of the customer journey will need to be designed around convenience. To ensure a unified and consistent customer experience, all channels where a customer can interact with our brand need to be seamlessly integrated. Online touchpoints are integrated with offline channels to create a unified, efficient omnichannel consumer experience. Volvocars.com serves as the base for this new model, with our retail network playing an integral part; being fully engaged and optimised. In this way, the model enables better access to customer data, allowing for more efficient marketing and customer service as well as visibility of total inventory, enabling us to have the right car in the right place at the right time. This ultimately helps to reduce administrative burden and helps driving efficiencies.



ONLINE/DIRECT BUSINESS SALES 2023

In 2023, the share of online/direct business amounted to 6 (5)% of our total global sales. Demand in general for the online/direct offer continues to be robust.

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UK – the first market to take a step towards direct sales

On June 13 2023, a historic milestone was achieved in Volvo Cars' commercial transformation, as the UK became the first market to fully transition into a direct-to-consumer business model. This was a significant achievement for everyone involved, a true cross-functional effort and recognition of the competent workforce at Volvo Cars and our dedicated retail partners.

With this new business model, our customers in the UK can enjoy the same customer experience, with transparent pricing and simplified offerings, both through our digital channels and physical retail partners. Six months after launch, we can see that over 20,000 orders have been placed through our direct channels. Despite still being in the early stages, our business case is on the right track and development is heading in the right direction.

By transitioning our first market to a direct-to-consumer model, significant learnings have been drawn which is now infused into the larger organisation when more markets will follow. We will continue to fine-tune and optimise the machinery in the UK, as well as taking those learnings for upcoming markets.

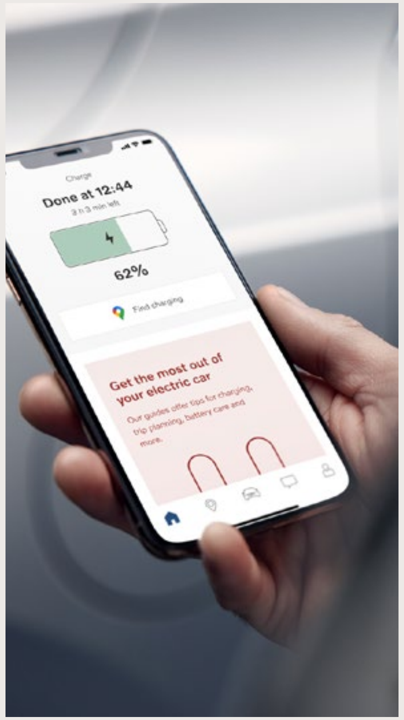
Having our retail partners onboard in this transformation is vital. Even though our customers can choose to purchase a new Volvo car online, the majority still want to interact with the physical car. In addition to the consumer benefits, the objective of the new setup is to decrease the overall cost of the total system, both for Volvo Cars and our partners.

The Volvo Cars app – an evolution

The Volvo Cars app, previously focusing on car-related functions primarily, is undergoing a substantial evolution. Our goal is to extend its core purpose, transforming the app into a one-stop destination for Volvo Cars customers, building an ecosystem of services and products.

The evolution of the app aims to offer features and functions tailored to the customer's specific needs. These include information, manuals, support, and service booking – a lot already in place. For customers with a connected car or a Volvo Cars subscription, the app enables remote access to useful vehicle functions and real-time car status updates as well as smart charging solutions, including public charging.

A milestone in the evolution is the ability for customers to extend their service plans and warranties directly through the app, complete with convenient payment functionality. By offering a diverse range of products and services around the car, we will strengthen the position as an integral part of our customers' lives, enhancing the customer experience. This strategic evolution opens doors to new business opportunities, underlining our commitment to innovation and customer satisfaction.



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DIGITAL

"We will create a secure digital infrastructure that enables growth, scale and efficiency."

Volvo Cars' multifaceted growth ambitions – increasing sales, expanding production, and cultivating a more direct relationship with customers necessitate the development of a robust digital infrastructure. To enable continuous improvement in both our business and technological landscape, we are launching new functionalities, ensuring scalability and efficiency.

Data and digital architecture are critical enablers

Data and the digital architecture play a crucial role in our ambition to disrupt the automotive industry and drive innovation. All our strategic initiatives and missions require data to enhance our products, services, customer experience, and operational efficiency. Similarly, the architecture needs to support the new emerging business capabilities, both in terms of the user facing services as well as the digital backbone. By leveraging high quality data insights and a modern architecture, we can optimise our processes, deliver exceptional customer experiences and focus on delivering on our strategy.

To achieve this, we are implementing a new data strategy blueprint based on a data-driven approach. We are establishing data hubs in different business areas, making business functions accountable for the data they hold. This aims to ensure high data quality and robust processes for data collection, sharing, storage and management and we are committed to respecting privacy and taking appropriate action to protect the personal data we hold and keep it safe. Our strategic and systematic approach enhances data-driven decision-making throughout the organisation while facilitating accountability and compliance. Further, this data foundation opens up for further possibilities for exploration of advanced analytics such as Generative AI.

Balancing customisation and standardisation

As we continue to grow and expand, especially with large scale business transformations like our direct-to-consumer strategy, we need to simultaneously evolve our underlying digital landscape. The intricate web of interconnected systems demands a strategic approach. We assess each business capability, evaluating whether to build in-house or adopt existing solutions based on uniqueness and standardisation opportunities. In some areas, adopting standardised solutions, such as payroll, can offer efficiency and speed, while in others, building custom solutions allows us full control and the ability to meet unique demands. By reducing dependencies, decoupling systems, and moving away from legacy platforms, we can achieve greater speed, adaptability and flexibility.

Fostering excellence through a focus on software developer experience

Our new generation of fully electric Volvo cars is hardware designed, but software-defined. In other words, our cars are becoming more complex, and we also need more advanced digital systems outside our cars. At the same time, our company is undergoing simultaneous transformation initiatives, where in-house software plays a crucial role in for example the ongoing commercial transformation as well as the development of other core systems. Given this, software excellence is key to achieving our strategic ambitions.

Our focus is on robust in-house development and thorough testing, and we are rapidly growing our pool of software engineers across different areas. This includes both the development around the car as well as the systems around our company. We commit substantial resources to create a thriving developer community, offering clear career plans and efficient tools. By prioritising the well-being and efficiency of our developers we are able attract and retain top-tier talent in a competitive market.

It is crucial for our software experts to concentrate on generating value and tackling business challenges. To this end, we seek to reduce cognitive burdens by streamlining processes and eliminating duplicate capabilities. We believe in fostering a positive developer experience, based on a culture where developers feel valued and empowered to play an important role in the company's digital transformation.

DIGITAL TRANSFORMATION SUPPORTING THE TRANSITION TO DIRECT-TO-CONSUMER IN THE UK

The new direct-to-consumer model in the UK meant a comprehensive digital challenge. The teams accomplished a new online sales platform, allowing customers to browse, purchase and finance vehicles. Other benefits we gained include streamlined financial processes, as well as improved visibility over logistics and maintenance.

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Building a resilient, data-driven supply chain

Our future success is dependent on our ability to develop a resilient world-class supply chain guided by data-based decision making. Hence, we aim to boost our supply chain's digital planning capabilities. To handle global disruptions and the growing complexity of supply chain dynamics, we are changing our approach by viewing the entire supply chain and procurement as a complete process. This transformation began in 2023 with the aim of introducing a sophisticated planning system that offers real-time adjustments and resilience in uncertain situations. Ongoing efforts involve developing and building capabilities, all focused on creating stability and optimising profitability.

The new platform will play a special role in our digital supply chain framework. It uses data provided by several systems across multiple functions, creating a full view across the end-to-end supply chain and our digital landscape, while calculating requirements from end market to supplier. The digital foundation, a key element in this transformation, highlights strong data governance and strategy to improve efficiency and automation. The objective is to empower business users, turning them into experts through artificial intelligence. This initiative does not just apply upstream but also downstream, improving distribution and aligning with the broader commercial transformation. Delivering new digital planning capabilities includes providing end-to-end supply chain visibility, scenario planning with 'what-if' evaluation, real-time assessment of plan changes across the supply chain, translation of decision alternatives into business impact, and more. All this creates business gains from getting the right products into the markets at the right time, with an optimised cost to serve.

By tapping into industry standards, we utilise machine learning in the system, aiming for standardised planning flows. The expected outcomes include simplified sales, production, and supply chain planning, creating a proactive and eventually predictive approach. This is enabled by leveraging data on availability of parts, logistics service capacity and production planning capacity, to name a few. This way, this initiative highlights the essential connection between Volvo Cars' data and architecture transformation and our overall goal of building a resilient, data-driven supply chain.

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Collaboration is key

Collaboration within the Volvo Car Group and the wider Geely Ecosystem, in addition to partners, enables us to respond fast to the rapid transformation of the automotive industry.

In order to accelerate our transformation, we seek technological partnerships within the Geely ecosystem and with external parties. We aim to focus on value-adding software development in-house and are therefore open to, and actively pursuing partnerships with major technology companies to enable new and innovative functionality in our cars. By integrating our own innovative software with other leading providers of advanced technology, we can offer our customers an extensive range of products and services.

Our internal software development teams work collaboratively with our partners in a global network of technology hubs. For example, our ownership of Zenseact, our software developing company in autonomous driving and advanced driver-assistance systems and our collaborations with HaleyTek (in Androidbased infotainment software platforms), Google (in infotainment systems) and Nvidia (in core computing) provide the most effective means to achieve rapid technological innovation.

Collaboration with the wider Geely Ecosystem

As an independent Swedish business listed on the Stockholm Stock Exchange, we conform to the Swedish Corporate Governance Code and are subject to Swedish legislation. While we have autonomy as a standalone legal entity in the Geely ecosystem, we collaborate where we have strategic synergies. The collaboration is therefore based on a mutual benefit principle and collaboration is done at an arms length.

In order to meet the demands of our rapidly changing industry, we collaborate with other companies in the Geely ecosystem, in research and development, procurement, manufacturing and aftermarket sales and services. Inter-company synergies ensure optimal use of our resources and allow us to focus our investments in key development areas.

While sharing vehicle architecture reduces development costs, the models built on shared platforms are designed and built to the exacting standards our customers expect and conform with our requirements for quality, sustainability and responsible business.

Our collaborations with Geely Group companies follow the OECD's Transfer Pricing Guidelines. All inter-company collaboration is managed by our Related Party Directive and subject to external audits and legislation, including IAS 24 Related Party Disclosures, Nasdaq OMX, the Swedish Company Act Internal and Swedish tax and accounting regulations.

See page 176 in the sustainability report for more information about collaborations to further our sustainability strategy

VOLVO CARS TECH FUND

In the dynamic landscape of technological evolution, the Volvo Cars Tech Fund serves as a catalyst for innovation, accelerating Volvo Cars toward its strategic and technological objectives. Our dedication to innovation manifests through targeted investments in critical domains: such as electrification, digitalisation, autonomous driving, in-car technologies, and climate tech. Our investment thesis extends beyond innovations directly impacting the car; it encompasses our broader ecosystem.

This year, the Tech Fund has accelerated investments in pivotal areas, fostering collaborations with groundbreaking startups such as:

- Humane: redefining the AI experience
- Dcbel: standardising the energy ecosystem and the charging experience
- Riiico: Digital Twin to enhance manufacturing capabilities
- Leadrive: Accelerating the verticalisation of Volvo Cars' BEV strategy
- Breathe Battery Technologies: enhancing battery technology
- We also further strengthened the relationships with existing portfolio companies in various areas.

The Tech Fund actively facilitates connections between startups and relevant arms of Volvo Cars business, ensuring a synergistic exchange of ideas and expertise while benefiting from value increase generated by our collaboration with the start-ups. By providing capital, know-how, and strategic guidance, we empower these startups to navigate the challenges and deliver strategic benefits while they scale their operations.

"In this collaborative approach, the pooling of resources with external partners becomes a prudent risk-mitigation strategy, allowing us to navigate the uncertainties of innovation with a more diversified and resilient capital foundation."

Ann-Sofie Ekberg, CEO Volvo Cars Tech Fund

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The Volvo Car Group Corporate Portfolio

Our main non-consolidated portfolio companies are Polestar, LYNK&CO, and NOVO Energy. Further we have Zenseact and HaleyTek that, although being consolidated group companies, operate more independently to ensure a focused approach to their technology areas respectively, still in close collaboration with Volvo Cars.

As a global organisation with manufacturing facilities in Europe, China and the US, we engage in collaborative ventures and investments that contribute to achieving our strategic ambitions.

Volvo Cars invests in companies and partnerships that enable us to deliver upon our strategic ambitions, improve our overall competitiveness and to gain speed. We have co-founded and invested in several companies. The standalone setup of these companies creates focus and allows for an accelerated technology development and value creation that could be monetised also outside the Volvo Car Group.

Polestar

The Polestar brand was founded as a racing brand in 1996 and was acquired by Volvo Cars in 2015. It was established as a standalone pure play, premium electric performance automotive brand in 2017, setting market-leading standards in design, sustainability and innovation.

In 2023, Polestar delivered approximately 54,600 cars globally, a growth of 6% compared to 2022. The brand started production and first customer deliveries of a new model, the Polestar 4, during the year.

In June 2022, Polestar was listed at New York Nasdaq and began trading officially under the ticker "PSNY", after which Volvo Cars remained as a large owner. During 2023, Volvo Cars owned 48.3% of Polestar.

The close collaboration between Volvo Cars and Polestar includes sharing technologies and delivering economies of scale through shared manufacturing footprint and supply chain. Polestar has been able to start its journey as an asset light company leveraging Volvo Cars industrial operations through contract manufacturing of some of their models.

Today Volvo Cars builds the Polestar 2 at our Taizhou plant in China, while our plant in Charleston US together with our plant in Chengdu in China will produce the Polestar 3. Polestar 2 and Polestar 3 are both underpinned by technology shared with Volvo Cars.

Volvo Cars' and Polestar's strong operational collaboration across R&D, manufacturing, after sales and commercial will continue to the benefit of both companies.

OWNERSHIP: 48.3%
CO-OWNER: PSD INVESTMENT AND OTHER FINANCIAL INVESTORS
INCLUDED IN EBIT*

*Included in share of income from joint ventures and associates

LYNK&CO

Lynk & Co is a car brand that was established in 2016, focusing on young, urban customers by offering flexible mobility through subscription services and car sharing besides traditional car sales. In 2023, Lynk & Co sold 220 thousand cars. Lynk & Co has centres across China and has launched in seven European markets: The Netherlands, Sweden, Germany, France, Italy, Spain, and Belgium. Volvo Cars supports the European markets with certain services.

OWNERSHIP: 30%
CO-OWNER: GEELY AUTO 50%, GEELY HOLDING 20%
INCLUDED IN EBIT*

*Included in share of income from joint ventures and associates

NOVO

NOVO Energy is a joint venture between Volvo Cars and Northvolt, with the purpose to develop and produce more sustainable batteries to power the next generation of pure electric Volvo cars. The R&D centre has started its operations in 2022 and the plant is planned to be operational in 2026.

OWNERSHIP: 50%
CO-OWNER: NORTHVOLT
INCLUDED IN EBIT*

*Included in share of income from joint ventures and associates

FULLY CONSOLIDATED PORTFOLIO COMPANIES

zenseact

Zenseact is a software company focused on developing world-leading AD and ADAS software stack. This software stack includes sensor fusion software utilising multiple sensors for object detection and positioning. Volvo Cars will launch Zenseact's software ADAS solutions and later also AD solutions, including upgrades in various models of the next generation Volvo, for example the Volvo EX90.

OWNERSHIP: 100%
FULLY CONSOLIDATED

HaleyTek

HaleyTek is a company developing Android-based infotainment software platforms, co-owned by Volvo Cars and ECARX. HaleyTek will customise the system used in Volvo and Polestar cars and market it to other brands within the Geely ecosystem and third parties through ECARX. The platform integrates Google Automotive Services, OEM specific UX and vehicle applications, independent of vehicle architecture variations.

OWNERSHIP: 60%
CO-OWNER: ECARX
CONSOLIDATED WITH MINORITY INTEREST

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Sustainability is key to our success

SUSTAINABILITY – FOR LIFE

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Our sustainability ambitions

At Volvo Cars, sustainability is as important as safety. We aim to be pioneers in protecting people and the planet by working towards net zero greenhouse gas emissions, embracing the circular economy, and conducting business responsibly. We believe doing this, in partnership with others, ensures we help address global sustainable development challenges and support our profitable growth. Sustainability is central to our business and, quite simply, key to our future success.

CLIMATE ACTION

We aim to reach net zero greenhouse gas emissions by 2040

We are taking action to reduce greenhouse gas emissions throughout our value chain and aim to be aligned with the 1.5°C pathway, as well as the goals of the Paris Agreement. It is our ambition to reach net zero greenhouse gas emissions by 2040, while meeting interim ambitions by 2025 and 2030.

FOCUS AREAS

- Transform to pure electrification
- Minimise emissions from materials
- Minimise operational emissions

2025 AMBITIONS

- To reduce CO_2 emissions by 40 per cent per average vehicle (from a 2018 baseline)[1]:
  - – 50 per cent reduction of tailpipe emissions through 50 per cent fully electric vehicles
  - – 25 per cent reduction of emissions from materials[2]
  - – 25 per cent reduction of operational emissions

2030 AMBITIONS

- To reduce CO_2 emissions by 75 per cent per average vehicle (from a 2018 baseline)[1]:
  - – 100 per cent reduction of tailpipe emissions through pure electrification
  - – 30 per cent reduction of emissions from materials
  - – 30 per cent reduction of operational emissions
- To meet Scope 1, 2, and 3 targets verified by the Science Based Targets initiative (from a 2019 baseline)[3]

CIRCULAR ECONOMY

We aim towards becoming a circular business by 2040

Volvo Cars is committed to applying circular economy principles to our operations and stimulating actions across the value chain. This year we have expanded our scope of targets for circular business and set a biodiversity vision for the company.

FOCUS AREAS

- Minimise primary resource use
- Eliminate waste and pollution
- Grow circular business

2025 AMBITIONS

- 25 per cent recycled content in new vehicle models
- To generate one billion SEK from circular economy initiatives (from a 2018 baseline)

2030 AMBITIONS

- 30 per cent recycled content average across the fleet and 35 per cent for new vehicle models
- >99 per cent waste reused or recycled
- 50 per cent reduction in water withdrawal per manufactured vehicle in own operations (from a 2018 baseline)

FUTURE BIODIVERSITY AMBITION

- To be net positive across our value chain and contribute to a nature positive future[26]

RESPONSIBLE BUSINESS

We aim to protect and improve people's lives in our value chain and wider society

We strive to live our values and support a culture of responsible business behaviour, at both a corporate and individual level, throughout our value chain. We support international standards and conventions, as well as the United Nations Sustainable Development Goals. We drive change supported by stakeholder collaboration and advocacy.

FOCUS AREAS

- Ensure employee wellbeing
- Safeguard human rights
- Contribute to a sustainable society

2025 AMBITIONS

- Ensure YoY improvement of share of women in senior leadership
- Injury rate (Lost Time Case Rate) for employees =<0.04
- Ensure YoY increase in the number of sites in value chain being assessed
- 100 per cent green debt or sustainability-linked financing of assets, according to our green financing framework
- EU Taxonomy alignment 50 per cent of CapEx
- By 2027 – Achieve gender equity pay

2030 AMBITIONS

- Women in senior leadership 34 per cent
- Injury rate (Lost Time Case Rate) for employees =<0.02
- EU Taxonomy alignment 70 per cent of CapEx

FOR FURTHER DEFINITIONS AND REPORTING PRINCIPLES SEE PAGE 192–195

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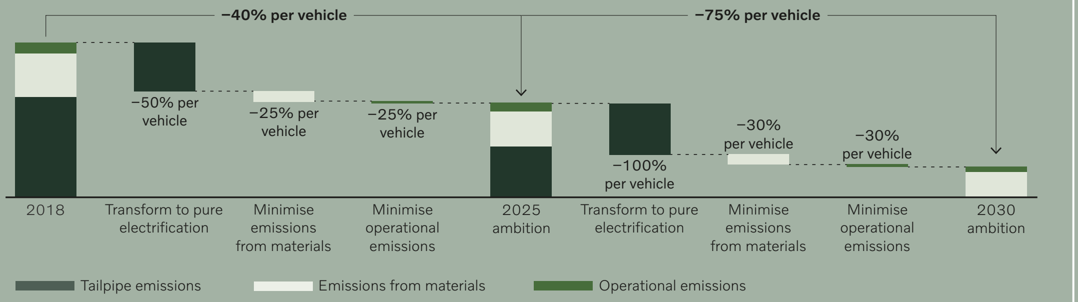
Climate Action

– We aim to reach net zero greenhouse gas emissions by 2040

In 2023, we launched our new climate ambitions for 2030, ahead of the COP28 summit in Dubai. We also updated our climate neutrality ambition to a net zero greenhouse gas emissions ambition, in accordance with the more globally recognised definition. We are seeking to reduce the CO_2 footprint[4] per average vehicle by 40 per cent by 2025 and 75 per cent by 2030 (from a 2018 baseline) over 200,000 kilometres of driving.[1] This is supported by our corporate ambition to sell only fully electric cars by 2030. In line with these ambitions, we will produce our last ever diesel-powered car in early 2024.

CO_2 REDUCTION AMBITIONS – TONNES CO_2 PER AVERAGE VEHICLE[1]



Our climate action ambitions are supported by three key drivers

TRANSFORM TO PURE ELECTRIFICATION

→ To reduce tailpipe CO_2 emissions per average vehicle from a 2018 baseline:
- by 50 per cent by 2025
- by 100 per cent by 2030

We intend to achieve these aims by increasing the number of fully electric vehicles in our product range. We are aiming for fully-electric vehicle sales to reach 50 per cent by 2025 and 100 per cent by 2030.

HIGHLIGHTS IN 2023

- Launch of the EX30 and EM90, our fourth and fifth fully electric vehicles
- Announced that we will cease production of all diesel-powered cars by early 2024

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MINIMISE EMISSIONS FROM MATERIALS

→ To reduce CO_2 emissions from materials per average vehicle from a 2018 baseline:
- by 25 per cent by 2025
- by 30 per cent by 2030

We intend to achieve these aims by introducing low- and near-zero emission materials and increasing the use of recycled materials in key categories, such as steel, aluminium, batteries, and polymers. In addition, we actively encourage the use of climate-neutral energy among our directly contracted suppliers.

HIGHLIGHTS IN 2023

- Initiated production of the EX30, a car designed to have the lowest carbon footprint of any Volvo car to date[5]
- Became a member of the World Economic Forum's First Movers Coalition (FMC) and are putting our purchasing power behind emerging clean technologies that will support the shift to near-zero emission aluminium[6]
- Secured access to near-zero primary and recycled sheet steel from SSAB that we plan to use in an upcoming car programme by 2026
- Showcased treadplates made from near-zero emission steel at a test-drive event for Environment and Climate Ministers, during an informal EU Council meeting under the Swedish EU Council presidency. The treadplates were also displayed at the Action Speaks Summit during Climate Week NYC
- Launched a closed-loop recycling system for stamped aluminium scrap at our factories in Taizhou and Chengdu, China

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MINIMISE OPERATIONAL EMISSIONS

→ To reduce operational CO_2 emissions per average vehicle from a 2018 baseline:
- by 25 per cent by 2025
- by 30 per cent by 2030

We intend to achieve these aims by reaching climate neutral energy in our own operations (manufacturing and non-manufacturing) by 2025 as well as reducing emissions in for example logistics, employee commuting, as well as our retailer network.

HIGHLIGHTS IN 2023

- Introduced renewable fuel in all intercontinental ocean container transport for inbound components and spare parts to Europe, China and the US by purchasing volumes equivalent to 100 per cent of our consumption using a book & claim approach[7]
- Secured supply of climate-neutral electricity in our production facilities in Kuala Lumpur, Malaysia, and Charleston, US. We now use 98 per cent climate neutral electricity in our own operations
- Signed a letter of intent to supply our Gothenburg facilities with electricity from the planned Västvind offshore wind farm

For further definitions and reporting principles see page 192–195.

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Climate action KPIs (%)	2030 Ambition	2025 Ambition	2023	2022	2021
Reduction of CO_2 emissions per average vehicle[1,9,10] (baseline 2018)	–75	–40	–20.0	–14.9	–9.5
Reduction of tailpipe emissions per average vehicle	–100	–50	–38.5	–31.5	–21.6
Reduction of emissions from materials per average vehicle	–30	–25	21.8	19.9	16.0
Reduction of operational emissions per average vehicle	–30	–25	–18.9	–2.7	0.0
Fully electric vehicles (BEVs) sold	100	50	16.0	10.9	3.7
Energy consumption reduction per vehicle in own operations[16,17] (baseline 2018)	–40	—	–17.5	–8.9	–2.1
Climate neutral energy in own operations[20]	—	100	73.6	68.7	64.6
Targets verified by the Science-Based Targets Initiative (SBTi)[3] (baseline 2019)					
Scope 1 and 2[9,14] (%)	–60	—	–64.8	–50.2	–46.3
Scope 3 Use of sold products[9,10,14] (% per vehicle kilometre)	–52	—	–21.7	–16.6	–10.2

For further definitions and reporting principles see page 192–195.

DEVELOPMENTS IN 2023

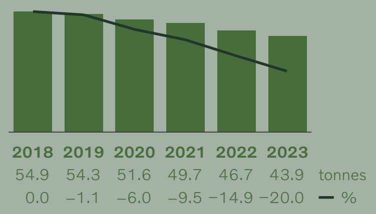
CO_2 emissions per average vehicle decreased by 20 per cent, in comparison with our 2018 baseline.

- The share of Recharge vehicle sales increased from 33 per cent in 2022 to 38 per cent in 2023, primarily due to increasing all-electric sales. This resulted in a 39 per cent decrease in tailpipe emissions per average vehicle, in comparison with our 2018 baseline.
- CO_2 emissions from materials per average vehicle increased by 22 per cent in comparison with our 2018 baseline. This increase is primarily caused by the batteries in all-electric vehicles, compared with those powered by internal combustion engines. We are seeking to reduce these emissions by directing our suppliers to use low-emission aluminium and reduce the carbon footprint of the batteries by shifting to climate neutral energy sources. We estimate that these measures will have made a positive impact by 2025.
- Emissions from operations per average vehicle have decreased by 19 per cent in comparison with our 2018 baseline. We are progressing towards achieving our climate-neutral own operations target for 2025. We now use 98 per cent climate neutral electricity and 74 per cent climate neutral energy in our own operations. Our overall emissions from logistics decreased by 96 kilo tonnes in 2023, partly thanks to reduced use of air freight and the introduction of renewable biofuels for all intercontinental container transport to Europe, China, and the US. Emissions from business travel have increased due to increasing air travel during 2023.
- Total CO_2 emissions have increased by 5,000 kilo tonnes, compared with 2022, mainly driven by an increase in the number of manufactured cars by around 118,000 in 2023 versus 2022. The reduced carbon footprint per vehicle is mainly driven by reduced tailpipe emissions, while emissions from materials per vehicle are increasing, leading to an increase in total emissions. Efforts to reduce the emissions from materials remains a high priority.
- In 2023, we achieved our 2030 Scope 1 and 2 SBTi target, reducing emissions from Scope 1 and 2 by 65 per cent, compared to our 60 per cent target. Progress towards our Scope 3 target to reduce emissions from use of sold products by 52 per cent per vehicle kilometre by 2030 compared to our 2019 baseline was at 22 per cent per vehicle kilometre in 2023.

CO_2 EMISSION REDUCTION PER AVERAGE VEHICLE
–75% IN 2030

–20%

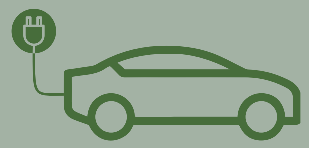
Reduction since 2018



FULLY ELECTRIC VEHICLES (BEVS) SHARE OF TOTAL SALES
100% IN 2030

16.0%

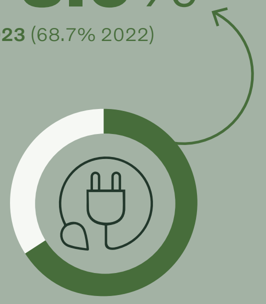
2023 (10.9% 2022)



CLIMATE NEUTRAL ENERGY IN OWN OPERATIONS
100% IN 2025

73.6%

2023 (68.7% 2022)



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Circular Economy

– We aim towards becoming a circular business by 2040

Our ambitions for circular business

By 2025 we aim to:

→ Have 25 per cent recycled or bio-based materials in new car models

→ To generate one billion SEK from circular economy initiatives (from a 2018 baseline)

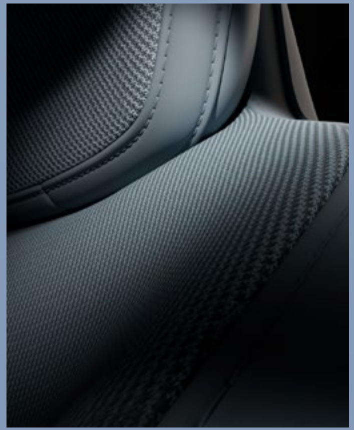
We apply three principles throughout our value chain:

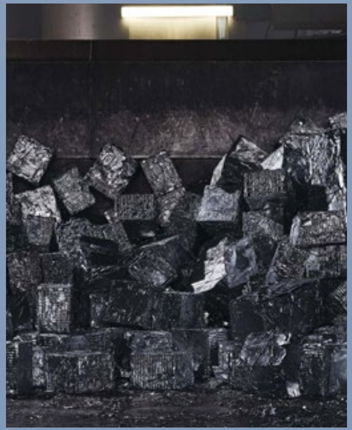
1. Minimise primary resource use by avoiding primary materials and freshwater use and increasing overall efficiency.
2. Eliminate waste and pollution by preventing it, redirecting outputs to high-value circular loops and tackling biodiversity impact.
3. Grow circular business by generating more circular revenue to support the decoupling of revenue value and primary resource use.

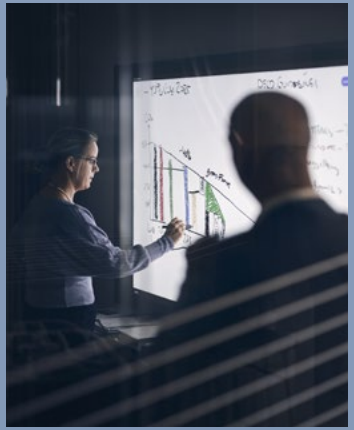
In 2023, our circular economy strategy was updated with the inclusion of measures and KPIs that track the breadth of the impact we have. Our aim is to reduce this impact by applying circular economy principles leading to impact and resource decoupling. We have established a baseline figure for biodiversity that enables us to set a future ambition to be net positive across our value chain and contribute to a nature positive future. We have also updated our approach to how we track circular revenue and, during 2024, will work towards alignment with the EU taxonomy and set our ambition for 2030.

Successful circular business requires ongoing improvement work, throughout the company and in collaboration with our partners. Particular focus is given to material selection, value chain transparency and the recirculation of materials from our processes and through the life of the vehicle and at the end-of-life. We aim to develop further measures to track value of products, parts and materials, in order to improve value retention and support corporate resilience.

Three principles towards becoming a circular business







MINIMISE PRIMARY RESOURCE USE
By avoiding primary material and freshwater use and improving overall efficiency, we aim to significantly reduce our impact on the planet. We are rethinking resource use within the company and setting ambitions to increase the amount of recycled materials used in our products, reduce water use in our operations and improve resource use throughout our value chain.

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ELIMINATE WASTE AND POLLUTION
By avoiding waste and redirecting remaining waste into high-value circular loops and reducing our biodiversity impact, among other measures, we aim to improve our waste management through proactive and economically viable measures. The biodiversity crisis is here and we must now step in and take strides towards reducing and avoiding our impact and making a positive contribution.

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GROW CIRCULAR BUSINESS
By increasing circular revenue and supporting the decoupling of revenue and primary resource use, we aim to do more with less and transform our business, in terms of resource productivity, efficiency and profitable growth.

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DEVELOPMENTS IN 2023

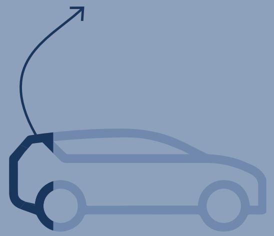
- Company-wide collaboration to establish our updated circular business strategy and set new ambitions, based on our three principles.
- Technical viability evaluation of increasing the use of recycled materials and setting targets for 2030.
- Launching the EX30 – with 17 per cent recycled content and the use of bio-based materials, it represents our most efficient use of resources so far.
- Closed-loop battery recycling in China.
- Closed-loop aluminium recycling expanded into China.
- Evaluating the dismantlability of end-of-life vehicles and utilising the gained knowledge in the design stage of new vehicles.
- Development of a circular business dashboard to share quarterly progress towards our ambition.
- Evaluating the potential for closed-loop end-of-life vehicle recycling and testing key materials, in collaboration with other companies.
- Testing the use of recycled copper in cabling, in collaboration with other companies and proving its viability.
- Internal assessment of waste and water use across our operations.
- Cross value chain evaluation of water and material use, biodiversity impact and energy consumption.
- Electronics recycling evaluation focusing on technical and economic factors.
- Supporting a pause on deep sea mining because of the unknown effects on marine life from such activities.

Circular economy KPIs	2030 Ambition	2025 Ambition	2023	2022	2021
Recycled and bio-based materials of the fleet[24,25]*, %	30	—	10	10	10
Recycled and bio-based materials of the new vehicles[24,25]*, %	35	25	17	—	—
Water withdrawal reduction per vehicle in own operations[17] (Baseline 2018), %	–50	–45	–23	–20	–22
Reuse and recycling rate for total waste, %	>99	—	92	—	—
Circular economy initiatives** (compared to 2018 baseline), SEKm	—	1,000	508	413	–160

*Based on estimates. Includes Volvo car models, i.e. excluding Polestar.
** Revenue generated through material trading, remanufacturing sales and Volvo On Demand.
For further definitions and reporting principles see page 192–195.

RECYCLED MATERIAL
35% in new models 2030

17%
recycled content in the Volvo EX30



REUSE AND RECYCLING RATE FOR WASTE
>99% 2030

92%
2023

WATER WITHDRAWAL REDUCTION PER CAR
–50% 2030

–23%
reduction since 2018

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VOLVO

Responsible Business

– We aim to protect and improve people's lives in our value chain and wider society

We aim to protect and improve people's lives in our value chain and wider society. We believe this attracts talent and investors, minimises the risk of reputational damage and improves stakeholder engagement. Conducting responsible business also helps us address environmental and social challenges, within the automotive industry and throughout society.

Our Code of Conduct (Our Code – How We Act) supports the United Nations Sustainable Development Goals and reflects global values and guidelines. We recognise that conducting responsible business is good for the continued profitability of our company. Where possible, we collaborate with stakeholders and advocate positive change in our industry.

We are focusing on the following key areas

ENSURE EMPLOYEE WELLBEING

Our employees are vital to the company's continued success. Their wellbeing is an important factor in delivering our strategic objectives. We believe that ensuring equality and inclusion, encouraging sustainable behaviour and protecting our employees contributes to our future success.

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SAFEGUARD HUMAN RIGHTS

We aim to ensure responsible business conduct throughout the value chain. We perform risk-based human rights due diligence processes in our value chain to trace, identify, assess and address human rights risks. We aim to source responsibly by tracing raw materials of concern to their origins, and perform basic and enhanced due diligence on our suppliers.

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CONTRIBUTE TO A SUSTAINABLE SOCIETY

We aim to contribute to a sustainable society and support the United Nations Sustainable Development Goals. In collaboration with stakeholders, we advocate positive change, invest sustainably and, through different initiatives, support and protect the most vulnerable members of society.

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Responsible business KPIs	2030 Ambition	2025 Ambition	2023	2022	2021
Employee engagement* (Score and Benchmark)	Score +3 compared to global benchmark	Score +2 compared to global benchmark	76 (+1)	76 (+1)	76 (0)
Women in Senior Leadership[32] (%)	34	YoY improvement	30.1	29.6	—
Injury rate (Lost Time Case Rate)** employees	=<0.02	=<0.04	0.06	0.07	0.06
Gender pay equity*** (%)	—	Achieved gender pay equity by 2027	–3.4	—	—
Inclusion index (based on employee engagement)	Score +3 compared to global benchmark	Score +1 compared to global benchmark	75 (–1)	—	—
Share of green debt or sustainability-linked financing of assets eligible under the Green Financing Framework as percentage of Outstanding Debt[46] (%)	100	100	52.3	41.6	20.2

*Data based on the recent employee engagement survey in May 2023. Global benchmark is 75. Reduced ambition is to allow the employees to adapt to the recent changes in the organisation and new people leaders across the business.
**Injury rate (LTCR) is defined as the number of work and occupational accidents reported with at least one day sick leave, divided by hours worked and multiplied by 200,000.
***Based on Base Pay of four most significant sites (Sweden, Belgium, US and China).
For further definitions and reporting principles see page 192–195.

DEVELOPMENTS IN 2023

- In 2023, a milestone was reached, set in 2013, by identifying and eradicating 500,000 safety risks. Through proactive work, with a sense of urgency, we are not only safeguarding our own wellbeing but also ensuring the safety of our colleagues and creating a culture of engagement and accountability. Each risk reported is an opportunity to prevent accidents and create a safer workplace for all.
- Trained our indirect procurement organisation to further prevent human rights risks in connection with building our production facility in Slovakia.
- Conducted a global pay equity analysis of our four most significant sites (Sweden, US, China and Belgium). Our ambition is to achieve gender pay equity by 2027.
- Developed a data driven methodology based on employee survey to track and benchmark employees perception of inclusion and feeling of belonging. The inclusion index is based on questions in our employee survey on Respectful treatment and Speaking my mind.
- Using Volvo Cars Salient Human Rights Issues (SHRIs) as a base, conducted a risk assessment to identify where in Volvo Cars value chain people are at highest risk and based on the outcome defined a human rights due diligence plan for 2024.
- Carried out enhanced human rights due diligence activities, with 68 audits at our directly contracted suppliers and 20 audits in our battery supply chain. The audits were conducted in seven countries. By auditing, we assess human rights issues, including topics in our Code of Conduct and drive improvement through following up on the implementation of the suppliers' corrective action plans.
- Expanded use of blockchain technology to increase the traceability of battery raw materials. We also expanded our battery supply chain audit programme to include graphite (in addition to cobalt, lithium, nickel, mica and the tracking of carbon emissions). The programme assesses all tiers of our supply chain, from mining to our manufacturing facilities.
- Joined the Responsible Mica Initiative, in order to address risks, including supply chain transparency and ethical mining practices.
- Entered a partnership with Girls Who Code, an international non-profit organisation aiming to close the gender gap in technology.
- Expanded our green financing portfolio by raising SEK 1.5 bn in green bonds and a drawdown of EUR 200m from existing facility.

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EMPLOYEE ENGAGEMENT
+3 COMPARED TO GLOBAL BENCHMARK IN 2030

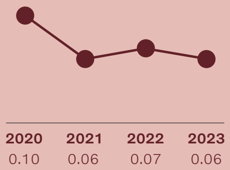
76(+1)
2023

WOMEN IN SENIOR LEADERSHIP
34% IN 2030

30.1%
2023

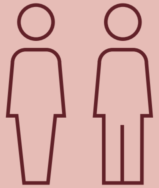
INJURY RATE EMPLOYEE
(LTCR)
0.02 IN 2030

0.06
2023



GENDER PAY GAP
GENDER PAY EQUITY BY 2027

–3.4%
2023



INCLUSION INDEX
+3 COMPARED TO GLOBAL BENCHMARK IN 2030

75(–1)
2023

Value chain

Key activities and ambitions

RAW MATERIAL SUPPLIER | TIER-N SUPPLIERS | TIER-1 SUPPLIERS | UPSTREAM TRANSPORTATION & DISTRIBUTION | OWN OPERATIONS | DOWNSTREAM TRANSPORTATION & DISTRIBUTION | RETAIL PARTNERS | USAGE AND MAINTENANCE | END OF LIFE TREATMENT

AIMING FOR 40% CO_2 EMISSION REDUCTION PER AVERAGE VEHICLE BY MID-DECADE*

EMISSIONS FROM MATERIALS −25%*

OPERATIONAL EMISSIONS −25%*

TAILPIPE EMISSIONS −50%*

OPERATIONAL EMISSIONS −25%*

UPSTREAM

CLIMATE ACTION

- Aiming to increase usage of low-emission aluminium and steel
- Increase usage of low-emission materials, e.g. aluminium, steel and batteries.
- Joined First Movers Coalition to support the shift to near-zero emission aluminium
- All directly contracted suppliers to disclose data on emissions and energy use for each manufacturing site
- Ambition that our directly contracted suppliers shall use climate neutral energy at their production sites
- Aiming for best possible transport mode including electrification and renewable fuels
- Use of biofuel for all inbound intercontinental container transports

CIRCULAR ECONOMY

- 2030 per vehicle and fleet recycled content targets
- Value chain biodiversity ambition
- Direct sourcing of materials & traceability
- Waste reduction target for Tier 1 suppliers
- Closed loop for batteries and aluminium

RESPONSIBLE BUSINESS

- Audits of raw material suppliers and mine sites
- Traceability of materials of concern
- Collaboration with Better Mining
- Identification of high risk suppliers
- RMAP compliant 3TG smelters
- Blockchain technology
- Audits and assessments of direct suppliers
- Code of Conduct for Business Partners
- Conflict Minerals Reporting Template (CMRT)
- Logistics as an integrated part of responsible sourcing

OWN OPERATIONS

CLIMATE ACTION

- Internal carbon price of 1,000 SEK for every tonne of CO_2 emissions
- Aiming for 40 per cent energy usage re-duction per vehicle in own operations by 2030 (from a baseline 2018)
- 100 per cent climate neutral energy in own operations by 2025

CIRCULAR ECONOMY

- >99 per cent waste reused or recycled by 2030
- Water withdrawal reduction in own operations 50 per cent by 2030 per manufactured vehicle (from a 2018 baseline)
- Circular economy initiatives; increase of SEK 1 bn by 2025 (from a 2018 baseline)

RESPONSIBLE BUSINESS

- Ensure YoY improvement of share of women in senior leadership
- Transparent ESG reporting and third party validation
- ISO14001 compliant
- Code of Conduct trainings
- People Policy Assessments
- Proactive safety work to decrease injury rate
- Ensure a culture of Inclusion & Belonging
- Family Bond implemented
- 100 per cent green financing
- Improve EU Taxonomy alignment

DOWNSTREAM

CLIMATE ACTION

- Optimisation of the logistic network
- Help our retail partners reduce emissions from their operations and facilities by 50% by 2025 from a 2018 baseline
- Aiming for 50 per cent fully electric vehicle sales by 2025
- Aiming for 100 per cent fully electric vehicle sales in 2030

CIRCULAR ECONOMY

- Remanufactured parts provide lower impact maintenance
- Reusing packaging for spare parts and logistics
- Retailer network reporting waste into new system
- Care by Volvo and Volvo On Demand delivering mobility through leasing and service
- Durability, reuse and recyclability of vehicles designed from day 1

RESPONSIBLE BUSINESS

- Code of Conduct for Business Partners
- Retailer audits
- Disclose the carbon footprint of each new vehicle model
- Activities to support local communities and society

*Baseline: 2018

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Board of Directors' Report

The Volvo Car Group

Volvo Car AB (publ.) together with its wholly-owned subsidiary Volvo Car Corporation and its subsidiaries are jointly referred to as "Volvo Car Group" or "Volvo Cars".

Volvo Car AB (publ.), with its registered office in Gothenburg, Sweden, is a publicly listed company on the Nasdaq Stockholm Stock Exchange. The largest owner, holding 78.65 per cent of shares and capital, is Geely Sweden Holdings AB, owned by Shanghai Geely Zhaoyuan International Investment Co., Ltd., registered in Shanghai, China, and ultimately owned by Zhejiang Geely Holding Group Ltd., registered in Hangzhou, China.

Volvo Car AB (publ.) holds shares in its subsidiary Volvo Car Corporation and provides the Group with certain financing solutions. Volvo Car AB (publ.), indirectly through Volvo Car Corporation and its subsidiaries, operates in the automotive industry with business relating to design, development, manufacturing, marketing and sale of cars and thereto related services.

Volvo Cars sales development

Despite challenges from high inflation and rising interest rates in the western world and lower consumer confidence in China, the passenger car markets have grown. Part of the increase is, however, attributable to a lower comparison base due to semiconductor and component shortages during last year.

Volvo Cars' global production increased by 18 per cent to a record 766.7 (648.9) thousand cars as availability and visibility improved in our supply chain. Full year retail sales were at 708.7 (615.1) thousand, an all-time high in the company's history. The orderbook remained robust supporting the ability to maintain premium pricing over the year. Sales of BEVs increased by 70 per cent to 113.4 (66.7) thousand units, and Recharge cars share of total sales increased to 38 (33) per cent.

Key ratios, MSEK	2023	2022	2021	2020	2019
Retail sales, units[1]	708,716	615,121	698,693	661,713	705,452
Revenue	399,343	330,145	282,045	262,833	274,117
Research and development expenses[2]	–12,884	–11,514	–12,714	–11,362	–11,446
Operating income, EBIT[3]	19,939	22,332	20,275	8,036	14,303
EBIT excl. share of income from JVs and associates[3]	25,567	17,889	21,226	8,388	14,471
Net income[2]	14,066	17,003	14,177	7,308	9,603
Basic earnings per share, SEK[2]	4.38	5.23	4.72	2.19	N/A
EBITDA[3]	37,386	38,423	35,280	22,578	29,851
Cash flow from operating activities[2]	42,867	33,599	29,852	34,890	32,374
Cash flow from investing activities[2]	–51,842	–39,658	–34,737	–21,608	–20,801
Net cash[3]	27,487	38,061	44,846	35,241	25,214
Gross margin, %[3]	19.4	18.3	21.6	17.5	19.0
EBIT margin, %[3]	5.0	6.8	7.2	3.1	5.2
EBIT margin % excl. share of income from JVs and associates[3]	6.4	5.4	7.5	3.2	5.3
EBITDA margin, %[3]	9.4	11.6	12.5	8.6	10.9
Equity ratio, %	36.6	35.4	33.4	26.8	26.2
Return on invested capital, ROIC, %[3]	12.4	16.7	18.6	7.9	14.5

1) Non-financial operating metric.
2) IFRS measure.
3) Non-IFRS measure (alternative performance measure), see Alternative performance measures on page 132.

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Retail sales (k units)	2023	2022	Change %
Europe	294.8	247.4	19
China	170.1	162.3	5
US	128.7	102.0	26
Other	115.1	103.3	11
Retail sales total	**708.7**	**615.1**	**15**
Recharge line-up vehicles	266.0	205.4	30
whereof BEV vehicles	*113.4*	*66.7*	*70*
Recharge line-up share of sales	38%	33%	
whereof BEV share of sales	*16%*	*11%*	
Wholesales	732.3	631.7	16
Production volume	766.7	648.9	18

Retail sales by model (k units)	2023	2022
XC40 BEV	75.7	42.5
C40 BEV	37.1	24.2
EX30 BEV	0.6	N/A
XC60	228.6	195.4
XC40 ICE/PHEV	125.0	126.7
XC90	107.5	97.1
V60	49.3	42.9
S60	40.2	39.5
S90	30.4	32.1
V90	14.2	14.7
Total	**708.7**	**615.1**

Top 10 retail sales by market (k units)	2023	2022
China	170.1	162.3
US	128.7	102.0
UK	50.1	36.5
Germany	45.5	35.8
Sweden	41.0	45.7
Belgium	23.9	14.6
Italy	19.2	16.0
Netherlands	16.3	13.0
France	15.3	13.7
Spain	14.7	11.3

Events during the year

Launch of the fully electric Volvo EX30 SUV

In June, the fully electric Volvo EX30, our first small premium SUV, was launched. This is a cornerstone of our strategic transformation, and part of the ambition that by 2025 have half of our global sales volume consist of fully electric cars, and by 2030 to sell only fully electric models. With the Volvo EX30, the aim is to bring premium, fully electric mobility to a much broader audience, helping to advance and speed up the transition to full electrification. It is designed to have the smallest CO_2 footprint of any Volvo car to date, and to make people's lives safer, more convenient and more enjoyable through cutting-edge technology and Scandinavian design. Production of the EX30 started during the autumn in Zhangjiakou, China. The car will also be produced in our Ghent plant in Belgium from 2025, in order to expand the production capacity.

Volvo EX30 appointed The Sun's Car of the Year

The new Volvo EX30 was honoured with its first major award, even before the earliest cars have reached customers. In a perfect prelude to the fully electric small SUV's arrival in some markets in late 2023, it has been crowned Car of the Year by The Sun and Small SUV/Crossover of the Year in the News UK Motor Awards.

The new fully electric EM90 premium MPV further expands Volvo Cars' portfolio

In November, our new Volvo EM90 was unveiled. The EM90 presents an important addition to our fully electric portfolio and will support our position as one of the fastest-growing brands in the premium pure electric segment. The car is a fully electric premium multi-purpose vehicle that offers the next level of premium experience on top of everything to expect from a Volvo car, with iconic Scandinavian design, 96 years of safety heritage, ultimate comfort and cutting-edge technology.

Following the reveal of the already award-winning and fully electric EX30 small SUV earlier this year, the EM90 represents the second expansion of Volvo Cars model portfolio in quick succession. Both the EX30 and EM90 will help to reach new audiences, cover more of the automotive market and support profitable growth.

Volvo EX90 to support Google's new HD map

In our upcoming Volvo EX90, lidar, cameras and radars come together to understand your car's surroundings and help keep you safe. To further improve our assisted driving technologies and eventually reach autonomous driving in the future, we also support Google's HD map – a comprehensive map designed specifically for car makers that provides highly detailed and up-to-date road information.

Continuing our longstanding collaboration with Google, Volvo Cars and our strategic affiliate Polestar will be the first car makers to bring their HD map technology into our cars, starting with the Volvo EX90 and Polestar 3.

Adjusted start of production timing for EX90

Demand for the Volvo EX90 remains high and to ensure a high-quality introduction of the car and to maximise customer benefit from its technology from day 1, Volvo Cars has adjusted the planned start of production timing, which is now expected to begin during first half of 2024.

Volvo Cars launches new Energy Solutions business, embracing wider climate potential of electric cars

Our electric cars are an important step towards a more sustainable society, but the cars and their batteries can do so much more than eliminate tailpipe emissions. To capitalise on that potential and help support the transition to a smarter, more sustainable and more efficient energy grid, we are now launching Volvo Cars Energy Solutions. It's a completely new business unit that aims to offer energy storage and charging-related technologies and services which form the connective tissue between our cars, our customers' lives, the efficient use of energy and society at large.

Volvo Cars partners up with the technology investor and innovation platform driver Plug and Play

Volvo Cars and the global innovation platform driver Plug and Play have teamed up to bring cutting-edge technology for sustainable mobility closer to the Scandinavian region. As a first tangible result of the partnership, Plug and Play has opened a new innovation platform in Volvo Cars' hometown of Gothenburg, Sweden.

Volvo Cars is the founding partner of the new platform, which is expected to engage more than 500 startups every year, and additional partners will be joining over time. This approach complements our own ambitions to lead the transformation of a rapidly changing automotive industry.

UK flip – an important step towards direct sales

In June a historic milestone was achieved in Volvo Cars' commercial transformation, as the UK became the first market to transition into a direct-to-consumer business model. At year end, over 20 000 orders had been purchased through our direct channels.

Over-The-Air (OTA) updates

With OTA, Volvo Cars delivers customer value remotely over the car's lifecycle. We are strengthening our position as one of the industry leaders when it comes to updating car software over the air.

A notable improvement in the latest update is that Apple Maps and other supported navigation apps are becoming available in the driver display, just behind the steering wheel. Updates during 2023 included the

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ability to issue voice commands through Google Assistant-enabled devices allowing drivers in the US market to warm up their car and amongst other abilities, launching a wider introduction of our Care Key technology, bringing integrated connectivity in additional markets and various updates along with various stability improvements.

Volvo Cars announced switch to renewable fuels for ocean freight that will cut fossil CO_2 emissions by 84%

Every year tens of thousands of containers of production material destined for Volvo Cars factories are carried across the world's oceans on container ships. From now on, most of these seafaring journeys are made with renewable fuel instead of traditional fossil fuel.

As the first global car maker to announce such a switch, we'll achieve an immediate reduction in fossil CO_2 emissions from intercontinental ocean freight by 55,000 tonnes over a year. Thanks to the renewable fuel, CO_2 emissions are reduced by at least 84 per cent compared to fossil fuel. Comparison of fuels include emissions from production and use of the equivalent amount of energy, so called Well-to-Wake (WTW).

New Tech Hub in Krakow, Poland, opened

A new Tech Hub was opened and operational in Krakow, Poland by the end of 2023, with around 120 engineers in place. It is planned to be a key software development centre and play a crucial role in our strategic ambitions to be a fully electric brand by 2030 and a leader in new technology.

A new Volvo Car Design Studio in Shanghai strengthens our global design network

In May, our new, state-of-the-art Design Studio in Shanghai was unveiled. It is based in one of the most vibrant and creative cities in Asia, expanding our global design footprint by joining our existing studio in Gothenburg.

A new Tech Hub in Singapore opened

In September a new Tech Hub in Singapore was opened. The new Tech Hub will be a key centre for data and analytics, software and advanced manufacturing development in line with our ambition to be a leader in new technology and a fully electric car maker by 2030.

The Singapore facility will initially focus on building up capabilities in technology and software development, data and analytics as well as advanced manufacturing – core strategic areas for Volvo Cars.

A new state-of-the-art software testing centre opened in Sweden

In October a new state-of-the-art software testing centre was opened in Gothenburg, Sweden, that amplifies our capacity for integrated software testing at all levels with an initial investment of around SEK 300 million. This facility is Volvo Cars largest in terms of size and capacity.

Cost-efficiency initiative for long-term sustainable growth

In May, Volvo Cars announced plans to further accelerate its ongoing transformation, to secure a more efficient and sustainable cost base for the future including increasing its growth and remain our aim to be a fully electric car company by 2030, while constantly reducing its overall CO_2 footprint with increased focus on its cost optimisation and resource efficiency initiative. The company has laid out clear strategic ambitions for the future. To ensure the company delivers on those ambitions, it took the next step in securing a more efficient and sustainable cost base for the future.

It also included restructuring and changed ways of working in certain parts of the organisation and accelerate its efforts to drive efficiency, while at the same time ensuring the company has all the relevant skills it needs to be successful in next-generation mobility. The process was finalised in mid October and in total approximately 600 employees in Sweden were affected, of which the main part through voluntary termination packages. In addition, approximately 400 consultants and agency personnel in Sweden left the company during the year.

Volvo Cars Capital Markets Update

Volvo Cars held its virtual Capital Market Update on 8 June, 2023. The update followed the successful reveal of the new, fully electric Volvo EX30 small SUV, and Volvo Cars' leadership provided more granularity on the Volvo EX30's contribution to the company's growth and profitability ambitions. Furthermore, the company provided further colour on the execution of its commercial transformation, starting in the United Kingdom, which is the first market to switch to a fully integrated online/physical, direct-to-consumer model.

Volvo Cars declared the end of diesel at Climate Week NYC – our last diesel car will be produced in early 2024

By 2030 Volvo Cars plan to sell only fully electric cars and a net zero greenhouse gas emissions by 2040. That clear roadmap towards all-out electrification represents one of the most ambitious transformation plans of any legacy car maker. To underline our commitment to those ambitions, in September at Climate Week NYC, we announced the end of production of all diesel-powered Volvo Car models by early 2024.

This milestone follows our decision in 2022 to exit the development of new combustion engines. In December of 2022 Volvo Cars sold our stake in Aurobay, the associated company that harboured all our remaining combustion engine assets.

Funding activities and updated Green Financing Framework

In February 2023, Volvo Cars successfully placed an inaugural green bond transaction in the SEK market, raising a total of SEK 1,500m, divided into a fixed and a floating rate tranche, from a diverse set of Nordic investors. Both tranches will be listed on the Luxembourg Stock Exchange.

All proceeds are earmarked for funding and accelerating the company's transformation towards becoming a fully electric carmaker by 2030 and a net zero greenhouse gas emissions by 2040. 100 per cent of the proceeds will fund the research and development of new platforms and adjacent technology for the next generation pure electric Volvo cars.

In 2020, Volvo Cars introduced its first Green Financing Framework. To better reflect our ambitious sustainability strategy and the integration of market practices and standards, the framework was subsequently updated in May 2023. The framework defines how green financing instruments are used by Volvo Cars to financially accompany its sustainability journey.

Since 2020, Volvo Cars has successfully issued green bonds and obtained loans referencing the Green Financing Framework with an aggregate principal amount of approximately SEK 16 bn, engaging a diverse group of institutional investors.

Volvo Cars supports Polestar's strengthened business plan

Volvo Cars provides support to the strengthened business plan announced by Polestar in November 2023, which aims to take the company into a new phase of growth and profitability by cutting costs and driving efficiencies in the business. In November, Volvo Cars announced its support to Polestar by increase of the existing term loan facility with additional USD 200 million on top of the already provided USD 800 million with all other terms remaining the same. Volvo Cars also extended the maturity date of the total USD 1,000 million term loan to Polestar to June 2027, which in January 2024 was further extended to the end of 2028, see further details in below section Significant events after the reporting period.

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The war in Ukraine and Russian impact

In February 2022 the war in Ukraine started and still in 2023 continues to have a negative impact on Europe and increased the risks to the global economy as a whole. The war has led to accelerating increases in the cost of raw materials, energy and freights. This has further increased inflationary pressures in the global economy and worsened already stretched global supply chains. The risk of further disruption to Russian gas flows also increased. Given that many automotive parts suppliers rely on natural gas, a lower supply may cause disruption to these supply chains. Volvo Cars is continuously evaluating the situation. Volvo Cars has suspended its operations in Russia during 2022, without significant financial effects. The decision to suspend operations was followed by the process to wind down the Russian sales company last year. Volvo Cars has also provided humanitarian aid to families and children affected by the war in Ukraine.

Changes in Board of Directors and the Executive Management Team

Changes to the Board of Directors

- Winfried Vahland left the board in January 2024.

Changes to the Executive Management Team

- 1 February 2024, Maria Hemberg left her role as General Counsel & Chief Legal Office, and was succeeded by Helen Hu. Maria Hemberg has thereafter transitioned into a senior advisory capacity.

Research and development

The focus on electrification has continued in 2023. In terms of new product launches, the EX30 was launched in June. The EX30 is an integral part of our mid-decade ambitions in terms of volume, margins, and sustainability. The car comes with attractive pricing and offers both a shorter range LFP battery single motor version as well as a long range NMC battery version. Following the reveal of the already award-winning and fully electric EX30 small SUV in June, the EM90 was launched in November and represents the second expansion of our model portfolio in quick succession. The Volvo EM90 was first launched in China and is now available for pre-orders for customers in China.

We have also focused on improvements of the existing fully electric models, as for example the model year 2024 fully electric XC40 and C40 have e-motors and inverters that are developed in-house by our talented Volvo Cars colleagues. This has led to significant improvements in the range and efficiency of these cars, compared to previous versions.

To further support our electrification ambitions, during quarter three, construction of Volvo Cars and Northvolt's joint NOVO Li-on battery gigafactory in Gothenburg, Sweden, started. Once complete, it will be among the largest in Europe, with up to 3,000 employees and potential to produce batteries for up to half a million cars per year.

During the year Volvo Cars scaled its Tech Hub site strategy and in-house software capabilities by launching two new Tech Hubs – with the opening of one in Krakow, Poland and the other in Singapore. Poland is up and running, an in-house powerhouse for software development. Singapore is a small and nimble team under build-up with focus on data, advanced technology and manufacturing.

As part of our strategy, we continuously invest in our in-house software development and testing capabilities. In October, we announced one of our biggest investments into this area to date: a new, state-of-the-art software testing centre in Gothenburg, Sweden that amplifies our capacity for integrated software testing at all levels. At a size of around 22,000 square meters and representing an initial investment of around SEK 300 million, our new software testing centre is the new flagship in our network of engineering centres and Tech Hubs around the world. We also operate software test centres in Lund, Sweden and Shanghai, China.

Volvo Cars continued with over-the-air (OTA) updates during the year. These included Apple Maps and other supported navigation apps becoming available in the driver display, voice commands through Google Assistant-enabled devices, launching a wider introduction of our Care Key technology, bringing integrated connectivity in additional markets and various updates along with various stability improvements. We are also among the first carmakers in the world to offer Prime Video in our cars. The service became available as a pre-installed app from September with a gradual rollout via over-the-air (OTA) update, market by market. Prime Video will be available to download from Google Play and also YouTube is planned to come as part of an OTA update.

Environment

Volvo Cars has a longstanding commitment to being a responsible company with a clear focus on sustainable development. Volvo Car Group's Sustainability Report has been prepared to meet the statutory requirements in accordance with the Swedish Annual Accounts Act, chapter 6, section 11. The scope and content of the Sustainability Report is defined on page 192 in this report.

Employees

In 2023, Volvo Car Group employed 43.4 (43.2) thousand full-time employees (FTEs) and 3.8 (4.2) thousand agency personnel. The increase in FTEs was mainly due to new recruitment to support the transformation. However, compared to previous year, there has been a decrease in FTEs due to the cost-efficiency initiatives started during the first half of 2023. This is also the main reason for the decrease in agency personnel.

Proposed distribution of non-restricted equity

The parent company

The following funds are at the disposal of the Annual General Meeting (AGM):

Share premium reserve	SEK	31,653,517,859
Retained earnings brought forward	SEK	4,709,563,345
Net income for the year	SEK	3,480,942,490
At the disposal of the AGM	SEK	39,844,023,694

The Board of Directors proposes that no ordinary dividend is distributed and that the retained earnings, SEK 39,844,023,694, shall be carried forward.

Through the proposed distribution of a portion of Volvo Cars' shareholding in Polestar Automotive Holding UK PLC ("Polestar") subject to approval at the Annual General Meeting to be held on March 26, 2024, Volvo Cars makes an extraordinary value transfer to its shareholders of no more than SEK 35 bn, equivalent to approximately SEK 11.75 per Volvo Cars' series B share. The Board proposes that the distribution is made by way of a share split followed by a share redemption and that the Board of Directors is authorised to finally determine the portion of the Polestar shareholding to be distributed, the redemption amount per share as well as the timetable for the share redemption. The detailed transaction structure and conditions of the Board of Directors' proposal are set out in the notice for the Annual General Meeting available at investors.volvocars.com/agm24.

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Significant events after the reporting period

In January 2024, Volvo Cars agreed to extend the existing convertible loan to Polestar by 18 months to the end of 2028.

In February 2024, the Board of Directors of Volvo Car AB (publ) resolved to propose a distribution of 62.7 per cent of Volvo Cars' shareholding in Polestar Automotive Holding UK PLC to Volvo Cars' share-holders at its 2024 Annual General Meeting. If the AGM approves the proposal, Volvo Cars' shareholding in Polestar will amount to an ownership stake of 18.0 per cent of Polestar's total outstanding shares.

The proposed distribution will enable Volvo Cars to concentrate its resources on the next phase of its transformation. Volvo Cars will therefore not provide further funding to Polestar. Going forward, Geely Holding will continue to provide operational and financial support to Polestar. Volvo Cars' and Polestar's strong operational collaboration across R&D, manufacturing, after sales and commercial will continue to the benefit of both companies and as Volvo Cars has significant collaborations with Polestar and a financial relationship through the outstanding convertible loan of USD 1 billion, Volvo Cars will remain with an 18.0 per cent stake, and thereby continue to have influence over Polestar. The extraordinary value transfer to Volvo Cars' shareholders will amount to no more than SEK 35 bn, equivalent to approximately SEK 11.75 per Volvo Cars' series B share. Further financial effects are too early to evaluate.

The Nomination Committee's proposal for election of members to the Board of Directors of Volvo Car AB (publ.)

The Nomination Committee of Volvo Car AB (publ.) has decided to submit the following proposals for resolution at the Annual General Meeting of shareholders on 26 March 2024:

Re-election as members of the Board of Directors: Eric Li (Li Shufu), Daniel (Donghui) Li, Lone Fønss Schrøder, Jonas Samuelson, Diarmuid O'Connell, Lila Tretikov, Jim Rowan, Anna Mossberg and Ruby Lu.

Eric Li to be re-elected as Chairperson of the Board of Directors and Lone Fønss Schrøder as Vice Chairperson.

Remuneration guidelines to senior executives

The following principal guidelines for remuneration to senior executives were adopted at the Annual General Meeting held on 3 April 2023. These guidelines shall be applicable to remuneration to the Executive Management Team, including the CEO, ("EMT") of Volvo Car AB ("Volvo Cars"). The guidelines implies that the People Committee, instead of Board of Directors in its entirety, is responsible for certain resolutions pursuant to these guidelines.

Types of remuneration

The total remuneration package for the EMT may consist of the following components; fixed cash remuneration, variable cash remuneration, pension benefits and other benefits. The components of remuneration shall be in accordance with market practice. Additionally, the General Meeting may – irrespective of these guidelines – resolve on, among other things, sharerelated or share price-related remuneration. Please refer to Share-based or share price-related incentive programmes below.

Variable cash remuneration

The satisfaction of criteria for awarding short-term variable cash remuneration shall be measured over a period of one year, whereas the satisfaction of criteria for awarding long-term variable cash remuneration shall be measured over a period of three years.

For the CEO, the short-term variable cash remuneration may amount to not more than 200 per cent of the annual fixed cash salary on 31 December at the end of each performance year, and the long-term variable cash remuneration may amount to not more than 150 per cent of the annual fixed cash salary the year the programme was implemented. For the other EMT members, the short-term variable cash remuneration may vary but amount to not more than 140 per cent of the annual fixed cash salary on 31 December at the end of each performance year, and the long-term variable cash remuneration may vary but amount to not more than 120 per cent of the annual fixed cash salary the year the programme was implemented. For information on the criteria for awarding short- and long-term variable cash remuneration, please refer to Criteria for awarding variable cash remuneration below.

Extraordinary arrangements

Further variable cash remuneration may also be paid out in extraordinary circumstances, provided that such arrangement is of a one-time nature and is agreed on an individual basis for management recruitment or retention purposes or as compensation for extraordinary efforts beyond the individual's ordinary assignment. Such remuneration shall be in line with market practice and may for example include a one-time cash payment, retention bonus or severance payment in case of a change of control, or similar. The remuneration may amount to not more than the fixed annual cash salary for one year and shall not be paid more than once a year per individual. Resolutions on such compensation shall be made by the People Committee based on a proposal from the CEO if an EMT member (other than the CEO) is concerned and by the People Committee and the Chairperson if it relates to the CEO.

Share-based or share price-related incentive programmes

The Board of Directors may, irrespective of these guidelines, propose general meetings to resolve on long-term share-based or share price-related incentive programmes. The Board of Directors proposed the Annual General Meeting 2022 to approve a long-term share-based incentive programme to comprise, amongst others, the EMT. The Board of Directors has proposed the annual general meeting 2023, and intends to propose forthcoming annual general meetings, to approve similar incentive plans. No new long-term variable cash programmes will therefore be offered to the EMT as long as there is a long-term share-based program in place.

Pension benefits

For the CEO, pension benefits shall be a defined contribution scheme and the pension premiums may amount to no more than 50 per cent of the annual fixed cash salary. Variable cash remuneration shall not qualify for pension benefits.

For other EMT members, pension benefits shall be a defined contribution scheme and the pension premiums may amount to no more than 30 per cent of the annual fixed cash salary. Some current EMT members have a defined benefit pension as part of a pre-existing agreement. To the extent that variable cash remuneration qualifies for pension benefits under the applicable collective bargaining agreement, the pension benefits shall be deducted from the cash payment and paid as pension.

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Other benefits
Other benefits may include, for example, medical insurance, annual health check-up and company cars. Such benefits may amount to no more than 20 per cent of the annual fixed cash salary.

For employments governed by rules other than Swedish, pension benefits and other benefits may be duly adjusted for compliance with mandatory rules or established local practice, taking into account, to the extent possible, the overall purpose of these guidelines.

EMT members who are expatriates (i.e., are sent on an international assignment and are not on a local employment contract) may receive additional remuneration and other benefits determined in line with Volvo Car Group's International Assignment Instruction which may include (but are not limited to) relocation cost, cost of living allowance, housing, schooling, home travel allowance and tax assistance. Such benefits may amount to no more than 160 per cent of the annual fixed cash salary.

Termination of employment
Upon termination of an employment, the notice period may not exceed twelve (12) months. Fixed cash salary during the notice period and severance pay may together not exceed an amount corresponding to the individual's fixed cash salary for two (2) years, subject to applicable law.

When termination is made by the EMT member, the notice period may not exceed twelve (12) months, without any right to severance pay.

Additionally, remuneration may be paid for non-compete undertakings. Such remuneration shall compensate for loss of income and shall only be paid in so far as the previously employed executive is not entitled to severance pay. The remuneration may amount to not more than 60 per cent of the monthly base salary at the time of termination of employment and be paid during the time the non-compete undertaking applies, however not for more than twelve (12) months following the termination of employment

Criteria for awarding variable cash remuneration
The variable cash remuneration shall be linked to predetermined and measurable criteria which can be financial or non-financial. They may also be individualised, quantitative or qualitative objectives. The criteria shall be designed so as to contribute to the Group's business strategy and long-term interests, including its sustainability, by for example being clearly linked to the business strategy or promote the executive's long-term development.

The variable short-term cash remuneration shall be linked to Volvo Car Group's earnings before interest and taxes (EBIT), sales and mission execution activities.

Variable long-term cash remuneration, which is not approved by a general meeting, if any, shall be linked to the satisfaction of certain performance conditions related to operating margin and revenue growth measured over the term of the programme.

To which extent the criteria for awarding variable cash remuneration have been satisfied shall be evaluated when the measurement period has ended. The People Committee is responsible for the evaluation. For financial objectives, the evaluation shall be based on the latest financial information made public by the company.

The Board of Directors shall have the possibility, in accordance with applicable law or contractual provisions, to in whole or in part reclaim variable remuneration paid on incorrect grounds (claw-back).

Salary and employment conditions for employees
In the preparation of the Board of Directors' proposal for these remuneration guidelines, salary and employment conditions for employees of the company have been taken into account by including information on the employees' total income, the components of the remuneration and increase and growth rate over time, in the People Committee's and the Board of Directors' basis of decision when evaluating whether the guidelines and the limitations set out herein are reasonable.

Share ownership guidelines for members of the EMT
Since the Board of Directors believes that long-term share ownership is an important way to create alignment between the EMT members and Volvo Cars' shareholders, it has implemented the following policy of share ownership for members of the EMT

The Board of Directors expects the CEO and other members of the EMT to accumulate personal holdings in shares with a market value corresponding to the value of 100 per cent of the EMT member's annual fixed cash salary. It is expected that the personal holding of shares be established within five years from the listing of the Company and, for new hires, within five years from commencement of employment with the Group as CEO or other member of the EMT. The CEO and the other members of the EMT are expected to achieve share ownership by retaining shares allotted (net after taxes payable) under future incentive programmes. Further, upon reaching the recommended share ownership level, it is expected that the CEO and the other members of the EMT maintain shares of such value for the duration of their appointment as CEO or the other member of the EMT.

Remuneration guidelines governance
The Board of Directors has established the People Committee, whose tasks include preparing the Board of Directors' decision to propose guidelines for EMT 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 People Committee shall also monitor and evaluate variable pay programmes, the application of the guidelines for executive remuneration as well as the current remuneration structures and compensation levels in the company.

The members of the People Committee are independent of the company and its executive management. Neither the CEO nor any other EMT member participate in the Board of Directors' processing of and resolutions regarding remuneration-related matters in so far as they are affected by such matters.

Deviation from the guidelines
The Board of Directors may temporarily resolve to deviate from the guidelines, in whole or in part, if in a specific case there is special cause for the deviation and a deviation is necessary to serve Volvo Car Group's long-term interests, including its sustainability, or to ensure the Group's financial viability.

The People Committee's tasks shall include preparation of any resolutions to deviate from the guidelines.

The Board of Directors' proposal to guidelines for executive remuneration 2024
The Board of Directors of Volvo Car AB ("Volvo Cars") proposes no changes to the guidelines for remuneration to the Executive Management Team (including the CEO) ("EMT") for the 2024 annual general meeting. The guidelines for 2024 will therefore be consistent with the current guidelines adopted by the annual general meeting held in April 2023.

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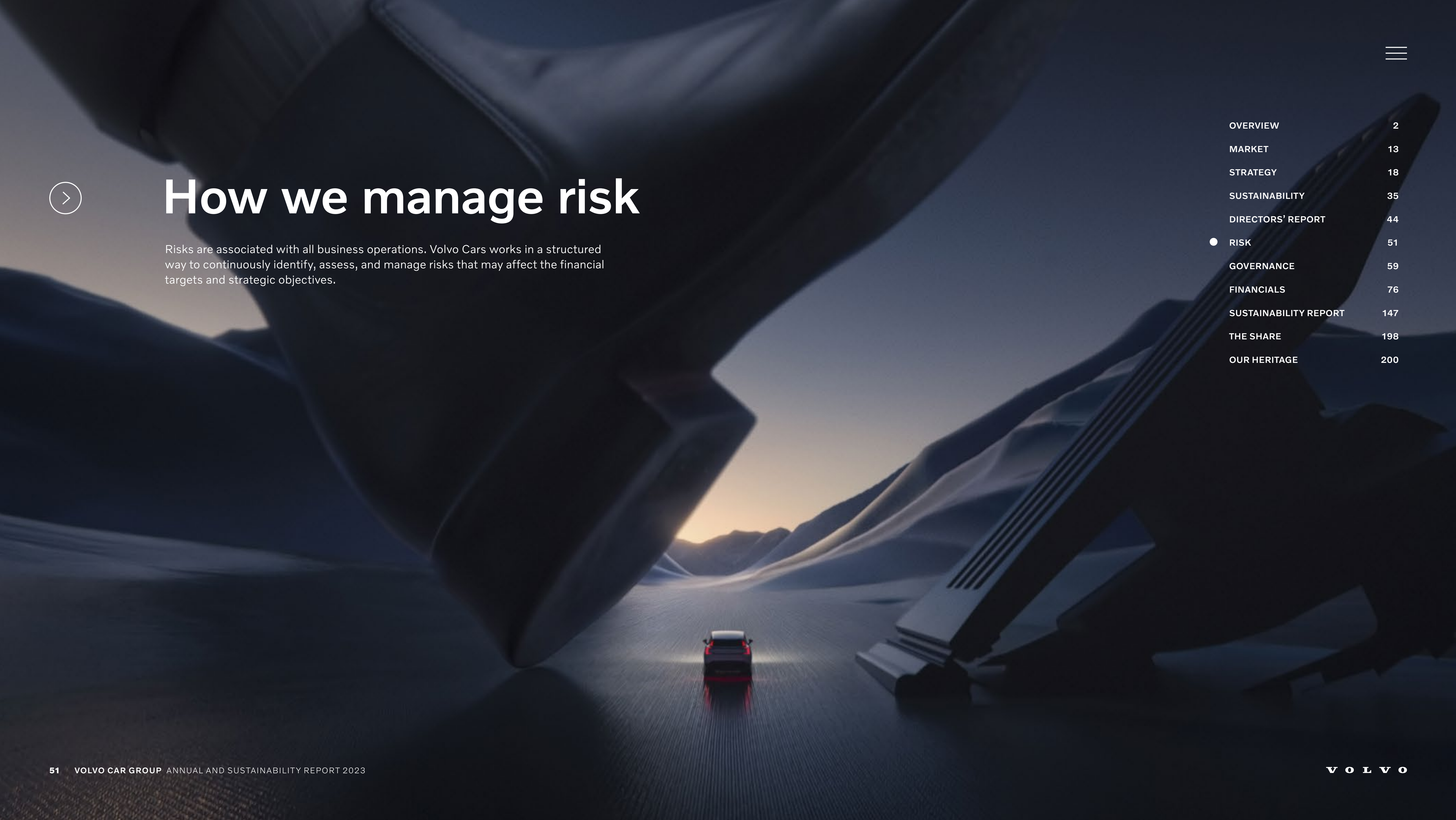

How we manage risk

Risks are associated with all business operations. Volvo Cars works in a structured way to continuously identify, assess, and manage risks that may affect the financial targets and strategic objectives.

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Enterprise Risk Management

Risk is an integral element of business and is characterised by both threats and opportunities. The ability to manage risks may lead to opportunities and value creation while avoiding damages and losses. Volvo Cars risk management process aims to support the business in identifying, managing and monitoring critical risks which may impact our ability to achieve financial targets and strategic objectives.

The Enterprise Risk Management (ERM) is integrated in the business with an objective to improve decision making, proactively protect the fulfilment of strategies and plans and protecting our assets.

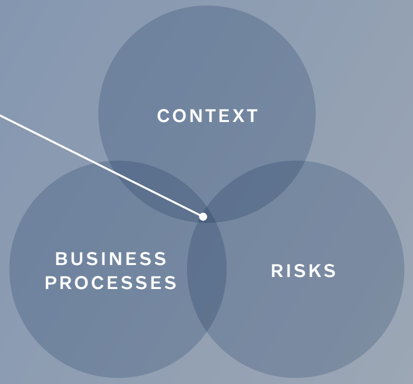
Volvo Cars is committed to foster a systematic risk management approach driven by organisational culture, core competences and leadership behaviors, integrated in our daily operation, and based on best practice way of working.

Management summary

The Top Risks for the end of 2023 reflect the strategies of the company – Transformation, Electrification and Sustainability, as well as our extensive collaborations with strategic partners, affiliates and further through the total supply chain. The headwinds from year 2019 to 2022 have reduced and normalisation is in reach as the combined cause of events with major supply chain/logistic disturbances, COVID-19 aftermath and semiconductor shortages have been resolved. However, the geopolitical tensions, technological decoupling and deglobalisation continue to drive risk landscape. Swiftly identifying and adjusting when threats materialise, are key strengths in our resilience capabilities.

Risk management (RM)
Is the combined countermeasures taken to manage risks. Integrated RM means that it is primarily driven by the business where the RM roles support with tools and competence.

Business Processes
The analysis, decision-making and execution necessary to move in the right direction.



Context
Consists of the policies, strategies, plans, targets, purposes and other that are pointing out the direction of the business.

Risks
External and internal uncertainties, threats and weaknesses that can make us deviate from the direction.

The Enterprise Risk Management function in Volvo Cars started a transformation journey 2020 focusing on cultural changes, governance and efficient processes to meet stakeholder expectations for a listed company. By the end of 2023 we have taken a major step towards a modern and integrated Risk Management, a journey that will continue during 2024 and onwards. The main theme for Risk Management function is continuous improvement and cross functional collaboration.

ERM is integrated in the business with an objective to improve decision making, proactively protect the fulfilment of strategies and plans and protecting our assets.

The ERM also supports effective Business Continuity Management and transparency towards our external stakeholders.

Governance

The ultimate responsibility for ensuring risks (including climate and nature related risks and opportunities) of Volvo Cars are sufficiently managed lies with the Board of Directors. However, certain related tasks are delegated to the Audit Committee. Ensuring an appropriate level of risk management on the operational level is the responsibility of the Chief Executive Officer and the Executive Management Team, where the Head of Enterprise Risk Management reports through the CFO.

The formal Enterprise Risk Management reporting process towards the Board occurs twice a year. Input is gathered throughout the organisation via the local risk managers, resulting in a comprehensive overview of risks in the organisation. For all identified risks, Risk Owners are appointed, and the risk owner will ensure management of risks in alignment with our Risk Management principles.

For sustainability risks the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) are followed.

Risks are assessed and prioritised within a cross functional board consisting of Senior Managers representing the functions of the

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company. The top risks are presented to the Board of Directors and discussed by the Audit Committee twice a year. Additionally, the Internal Audit function serves as a 3rd line of defense by providing an objective review of the effectiveness of Risk Management in the Group.

Volvo Cars works with the three lines of defense Model to manage risks effectively. During the year a Governance, Risk and Compliance (GRC) organisation has been established. To build further on the harmonised taxonomy developed over the years an appropriate GRC system has been implemented. The GRC system is an IT support system being used by Enterprise Risk Management, Internal control, and Internal audit with further roll-out plans.

Risk culture
Our culture is directly related to our purpose: For life. To give people the freedom to move in a personal, sustainable and safe way.

Our risk management builds on a shared culture outlined in Our Blueprint that ensures all employees understand and manage the risks inherent in their daily work. We reinforce it with risk maturity e-learnings to boost the understanding and implementation of our risk management principles stated in risk management -procedure, -directive and -guidelines.

Volvo Cars Risk Management aims for a holistic approach to managing risk, starting with strong governance and taxonomy that facilitate collaboration and transparent decision-making, connecting to the strategy and risks and opportunities embedded in that strategy.

We explore and navigate the unknown by taking calculated risks. The opportunities pursued to fulfil our corporate objectives need to balance the risks.

Risk management principles and approach to risk
The risk management function at Volvo Cars strives to be dynamic, iterative, and responsive to changes. Dynamic risk management means that we consider that the risk landscape changes rapidly, evolves, and integrates with other risks constantly. Iterative means that the risk management cycle is constantly active in our business. Our business context and business model constantly change, and risk management must be responsive to these changes.

In addition, we want risk management to be driven by culture and leadership behaviours, integrated in our daily operation, and based on best practice way of working.

Approach to risk
Risk management at its core is based on what approach we choose to have for risks. At Volvo Cars, the approach is dependent on the category of risk in question.

APPROACH TO RISK	Averse	Minimalist	Cautious	Open	Hungry	Note
STRATEGIC E.g., Commercial Transformation			↔	↔	↔	Medium – High risk appetite because of high opportunities. High management attention.
OPERATIONAL E.g., Supply Chain Risks		↔	↔	↔		Wide range due to wide range of risk areas. Each area to do cost benefit analysis and review insurable risks. Strong process control.
FINANCIAL E.g., Residual Value		↔	↔	↔		Wide range connected to relevant business decisions. Strong second line control. Normally includes both downside and upside.
COMPLIANCE & FINANCIAL REPORTING	↔					Zero to Low appetite, strong first and second line control. Company policy sets the principles.

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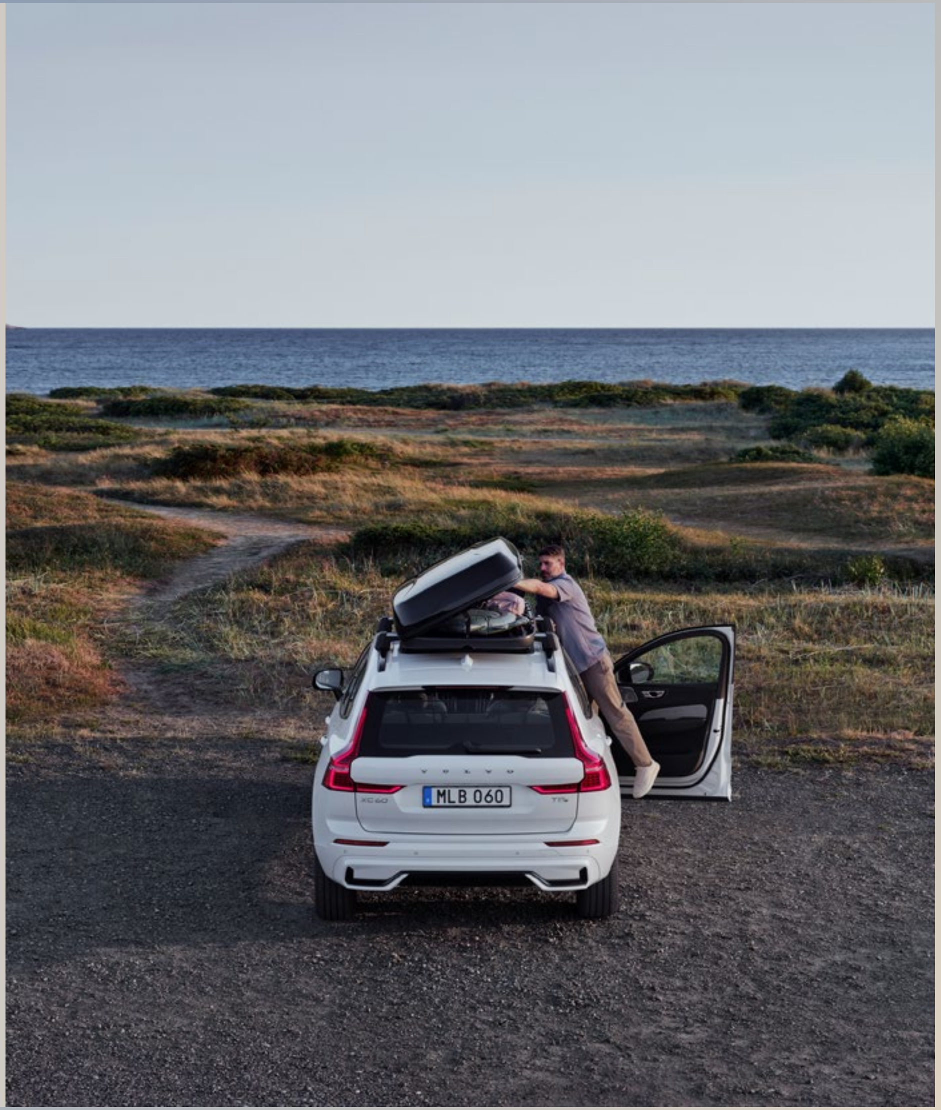
Risk drivers and accelerators

There are some key, more generic, factors that influence our business and drive risk. Individually, these are not considered risks, but rather drivers/accelerators, which in combination with other factors can simultaneously accelerate the pace at which a risk is evolving or even create completely new risks. These drivers/accelerators are also in turn important factors for the Group's strategy work.

We recognise that inaction on climate change and its impacts are the predominant risks facing our world, as set out in the World Economic Forum's (WEF) 2023 Global Risk Report.

MACROECONOMIC AND GEOPOLITICAL DEVELOPMENTS	CONSTANTLY EVOLVING CONSUMER BEHAVIOUR AND DEMAND	THE COMPETITIVE ENVIRONMENT AND TECHNOLOGICAL DEVELOPMENT	ACCELERATING EFFECTS OF CLIMATE CHANGE

As an organisation, we can only control our preparedness to respond to these factors with the right strategies for the future. Intelligence on the trends is gathered and used as a base for decisions on strategic direction. Gathering intelligence is a crucial part of mitigating risks driven and/or accelerated by these various trends. More information about our industry and market trends can be found on pages 13–17, and our strategic work on pages 18–34.



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Risks

The top risks presented in this section are a summary of prioritised risks for 2023. Each risk is described, and key response actions highlighted. The outlook included refers to how this risk is evolving, thus whether the level of risk can be seen as increasing, stable, or decreasing. Volvo Cars strategy contributes to several UN Sustainable Development Goals towards 2030 and we tie them to business objectives and risks according to UN Guidelines.

For further information on our contribution to the UN SDGs and its sub targets, see the table on page 190 in the Sustainability report. For further information on the UN SDGs , see UN website https://sdgs.un.org/goals.

The main risk categories are:

Strategic – the risks that might impact reaching strategic objectives
Operational – the risks that might interfere with operations
Compliance – the risks that might impact our compliance with laws and regulations
Financial – the risks that might impact the financial result and/or valuation

STRATEGIC RISKS

Risk	Description	Response	Outlook
→ Challenges with market shift, intense competition and consumer behaviour in electrification transformation	As the customers move towards electric vehicles, there is uncertainty on the pace of consumer acceptance, market by market. The move from ICE vehicles to BEV is dependent on factors like range, charging experience and pricing. In combination with facing energy crisis and impacts from instable macroeconomics there is a risk of adverse effects on our growth plans both with regards to volumes and margins. In addition to this shifting regional market demands put pressure on specific car requirements as competition continuously increases.	The divestment of Aurobay (ICE legacy business), the launch of the Volvo EX90, EM90 and EX30 fully electric vehicles on new platforms with competitive range are examples of our commitment to our strategy. Collaboration and strategic alliances help us create cost efficient products that enable competitive pricing. In combination with our financial stability, Volvo Cars is prepared to manage also negative impacts from a potential recession.	Continued uncertainties due to the instability in livelihood circumstances for our customers in combination with increased competition.
→ Lack of strategic competencies	The fierce competition for strategic competencies leads to a risk of inability to attract and retain the right talents which poses a risk to our speed of transformation. Volvo Cars compete in a new landscape outside of the traditional automotive sector and are dependent on attracting tomorrow's talent.	To have progressive ambitions and strive to be in the forefront of the automotive transformation with a strong sustainability mindset creates attention and curiosity among key talents. In addition, following actions are in place to improve access to strategic competences; strengthen People Plan process, defining clear talent Journey, establishment of Talent sourcing team, Site Strategy e.g. introducing tech-hubs.	As Volvo Cars compete in a broader arena for key talents the pace of competition for talents is expected to increase.
→ Geopolitical tensions and regionalisation resulting in increased tax/duties/tariffs and export controls	Geopolitical regionalisation introduces risk of increased protectionism as countries and regions impose trade restrictions and trade tax/duties/tariffs/licensing on technology and, which leads to technology decoupling.	With our global presence, we are naturally partly hedging the regional differences between our markets. Our ambition is to build where we sell and source where we build is progressing through our established manufacturing footprint and increased local sourcing.	Regionalisation continues and shows no sign to stabilise or improve in the near future.

STRATEGIC RISKS, CONTINUED

Risk	Description	Response	Outlook
→ Unable to be on the forefront of sustainable transformation	The global risk of climate change generates public expectations on accelerating speed of sustainability transformation. This is a risk if Volvo Cars is not able to proactively adapt business plans and transition of its business, including the complex value chain, potentially risking negative brand reputation and loss of sales.	Volvo Cars' sustainability strategy and sustainability commitment is designed to enable a proactive approach by addressing and mitigating effects of climate change with climate action and circular economy as two key areas. These are fundamental to actively contribute to the Paris agreement and limit the increase to 1,5 degrees global warming. Our ambition is set to become a climate neutral company by 2040 and our climate action CO_2 reduction targets for 2030 have been verified by SBTi. Our focus is to decrease our CO_2 footprint in operations, supply chain and tailpipe, with the transformation into 100 per cent BEV company by 2030 are fundamental drivers. Our work to secure access to renewable energy throughout the value chain is continuous. Strategy refinement for content of recycled materials is ongoing and new business models are explored. During 2023 we have established a biodiversity impact baseline and set an ambition to reduce our impact in our total value chain. Several strategic sustainability milestones are included in the plan. For more details on our sustainability strategy and performance, see the Sustainability report.	Legislation and regulations are getting more stringent and public expectations continuously increase, thus continuing driving the need for proactivity. Based on scenario analysis there is an increased speed and scope of new legislation and policies regulating environmental impact, and thus changes in consumer demand when global warming effects impact consumer preferences and mobility behaviors towards fossil free transportation modes. The recent and potential future increases in energy prices also create bigger consumer awareness of energy consumption and fossil fuel prices. It also highlights one of our key risks moving forward; securing fossil free electricity throughout our value chain. There are trends on growing importance and focus on a circular economy and resource consumption, including biodiversity and water impact and both topics now part of our sustainability strategy.
→ Disruptive technology	The increased regionalisation in technology and the shift from hardware to software defined products drive complexity whilst changes supply chains and needs for technologies and in-house competences. This might negatively impact the customer experience.	Our product strategy includes simplifying the customer offering, to develop modules rather than platforms allowing for updates with varying frequencies. Our industrial strategy is to build where we sell and to source where we build, offsetting increased regionalisation.	Increasing due to the geopolitical development and our expanded product portfolio.

OPERATIONAL RISKS

Risk	Description	Response	Outlook
→ Cybersecurity threats	Cybersecurity is becoming increasingly important for a sustainable business. Cybercrime comes in many forms, i.e., malware, information theft, extortion and fraud. In addition, global automotive regulations, standards and requirements to address cybersecurity continue to emerge, thus cybersecurity is a critical business requirement for Volvo Cars and is fundamental towards protecting Volvo Cars' digital assets.	Volvo Cars has a governance model in place and an organisation equipped to address the cybersecurity risk. There is a broad range of policies, directives and standards in place. There is an overall Cybersecurity Program to address improvement areas. Reporting is made to Executive Management and Board of Directors.	The cyber risk is increasing in general in society thus also affecting Volvo Cars.
→ Business interruption	Volvo Cars may experience disruption to manufacturing, design and research and development capabilities for a variety of reasons, such as climate change, natural disasters, acts of war, epidemics and other external events.	Business interruption is to a certain extent an insurable risk although the impact may go beyond direct financial impact. Our product strategy aims to provide the consumer with options that are less dependent on the status of individual sites.	The global instability due to aftermath effects from COVID-19 and other regional instabilities keep this risk on high level.

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COMPLIANCE RISKS

Risk	Description	Response	Outlook
→ Increased complexity on product compliance	The product compliance is based on automotive industry laws affecting Volvo Cars. These laws are often country or regional specific and concerns, among other things, greenhouse gas emissions, vehicle fuel economy, vehicle emissions, energy security, car safety, environmental matters and data protection. There is a growing complexity in this area in itself and in addition Volvo Cars is transforming and advancing towards connected car capabilities and a direct customer sales model, thereby adding complexity level. We also notice an increasing trend of litigations and supervisory authority activity in these areas.	Volvo Cars is committed to delivering high quality products aligned with applicable automotive and relevant business legislation. Volvo Cars also continue to improve the digital solutions to cope with growing complexity for information management, including data protection and securing required reporting with authorities	There is a risk that the number and extent of legal and regulatory automotive industry requirements will increase significantly in the future and getting more complex.
→ Potential human rights violations in our total value chain	The rising public expectations on corporate responsibility across the world create challenges and opportunities. Volvo Cars aims to protect and improve people lives in our value chain. However, Volvo Cars has a global and complex supply chain including sourcing in high-risk countries. This means that it is even more important to safeguard fundamental human rights and minimise the risk that human rights violations occur at any instance of our total value chain.	Aligning the corporate agenda in Responsible Business areas and monitoring the risks. Securing risk based due diligence activities in our supply chain and Code of Conduct for business partners to be fulfilled. Upcoming EU Corporate Sustainability Due Diligence legislation will help standardise expectations according to OECD guidelines. In 2023 a human rights compliance function was established within the Compliance & Ethics Office which coordinates the work around our most salient human rights issues across our value chain, and with an ambition of establishing a compliance program with improved, risk-based human rights due diligence procedures for potential and actual impacts.	The public's expectations and awareness are increasing. Current and new national and regional legislations are increasing in width and depth and puts even greater responsibility on global companies' due diligence efforts.

FINANCIAL RISKS

Risk	Description	Response	Outlook
→ Corporate portfolio performance	The potential of weak performance in our portfolio companies poses a risk for negative impact on Volvo Cars as it could hinder us from reaching our strategic objectives.	An active corporate portfolio development organisation with well-defined processes and regular follow up for governance and steering of our portfolio companies.	Continued macro-economic uncertainties, geopolitical tension, and supply chain challenges are likely to affect the corporate portfolio in a similar manner as it affects Volvo Cars in general.
→ Macroeconomic development	Risk for negative effect on business due to deteriorating macroeconomics and potential recession with lower purchasing power among consumers. Also, risk that our supply chain will be affected in a potential market decline.	In the case of deteriorating macro environment with effect on our demand and subsequently on our financial performance, we can decide to both change timing or reduce the size of investments to protect cash flow. If there is a more long-term recession, we also have the opportunity to optimise the operations to a lower cost base. We also work closely with our suppliers to monitor effects in the supply chain and take action if necessary.	Forecast of lower annual global GDP growth 2024 and various downside risks to growth forecast include sticky inflation, tighter-for-longer financial conditions and geopolitical uncertainty possibly leading to trade disruptions and higher energy prices.

Reference to other key financial risks
It is important to note that ERM part of the annual report only focuses on the top risks of the group. In addition, Volvo Cars has extensive risk management ongoing in the company within several areas with daily focus on risks and preventive actions. A major risk area is Financial Risks, which are highly regulated with regard to transparency of reporting. A sensitivity analysis of selected financial risks and further details can be found in Note 21 – Financial instruments and financial risks and Note 24 – Post employment benefits.

Climate change
Global warming puts focus on interconnectivity of our physical environment to our business and links strongly to our core value of sustainability. Volvo Cars continuously evaluates how climate change transitional risks affect our business strategy and operations since sustainability is deeply integrated in our business model. Being an automotive industry actor, Volvo Cars acknowledge the global threat of climate change and global warming, particularly the importance of our own contribution to prevent global Climate Action failure. In the WEF's 2023 Global Risk Report, this was highlighted as the most severe risk facing the world. Climate related risks account for the top 3 greatest risks over the next 10 years (extreme weather, biodiversity loss and climate action failure). We follow the recommendations of TCFD and are assessing the new recommendations of Taskforce on Nature-related Financial Disclosures (TNFD) for future alignment, for scenario analysis of transitional and physical risks, see next page.

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SUMMARY OF GLOBAL WARMING SCENARIO ANALYSIS – TRANSITIONAL AND PHYSICAL RISKS

What could happen	What risk areas may be triggered/accelerated	What impact might we see	What is our plan
For Transitional risk scenario analysis Volvo Cars uses both 4Degrees = IEA Stated Policies Scenario (STEPS), and <2Degrees = IEA Sustainability Development Scenario for simulation and strategy discussions in both the short-term (0–2 years), medium-term (2–5years) and long-term (5–20 years). Latest IPCC reports released during 2022 further enhance the risk that world is moving towards a near 3-degree global warming by end of century, with the increased risk that the Paris Agreement targets are not met. This will likely further accelerate government policy actions and increase transitional risks short to long-term. Reporting and regulatory requirements are expected to increase for circularity, pollution, biodiversity and water. We expect to see more scrutiny in these areas in the coming years.	• Market shift and consumer behaviour in electrification transformation, including demand for sustainable resources in cars – short-, medium- and long-term • Strategic alliances and new ways of collaboration – medium-term • Climate change – sustainable transformation – short-, medium- and long-term • Compliance & Ethics – such as increased speed of new stricter regulations and policies – medium-term • Financial – costs related to transformation for circular material within operation and increased material cost and energy prices – long-term • Operational – increased demand in sustainable and recycled material may increase the risk of supply chain disruptions – medium-term	Based on the scenario analysis of the biggest transitional risks (from the >2DS scenario), it is likely to see an increase in speed and scope of new legislation and policies regulating environmental impact towards zero tailpipe emissions vehicles, such as ICE bans in countries and city areas. There are changes in consumer demand when global warming effects impact consumer preferences and mobility behaviours towards fossil free transportation modes. The recent and potential future increases in energy prices also create higher consumer awareness of energy consumption and energy prices. It highlights one of our key risks moving forward, securing fossil free electricity throughout our value chain to meet our climate neutral targets for operations mid-decade, and climate neutral company by 2040. Simulation and analysis of different global carbon prices helped us to set our own carbon price at 1,000 SEK/ton CO_2. Trends on growing importance and focus on a circular economy and resource consumption, impacting our availability to secure sustainable materials such as low emission aluminum and fossil free steel, and recycled materials. There is also an increased focus on companies' biodiversity and water consumption impact.	Our corporate strategy and objectives are constantly stress tested versus different transitional risks including market shifts and changing consumer behaviours, policy developments, material cost and accessibility, energy cost and climate neutral energy access to name a few. Our current climate action CO_2 reduction targets for 2030 are in line with a well below 2-degree scenario as verified by the Science-Based Targets initiative (SBTi). Thereby fulfilling the IEA <2DS scenario, with the strategic decision to sell only BEV's by 2030 as the key enabler. Volvo Cars uses an internal carbon price of 1,000 SEK/ton CO_2 to be used in strategic decisions to further accelerate emissions reductions in all areas. There needs to be a continued focus to reduce our total emissions and decouple resource consumption from growth to reach the corporate ambitions to become a net zero emissions and circular business by 2040, which in all scenarios is seen as the best risk mitigation. Volvo Cars is focusing on increased collaboration with companies using closed loop recycling of materials and batteries, by which we can remediate the risks and reduce the impact on the environment. Read more in the Sustainability Report, starting p. 147.
For physical risk scenario, the climate risk scenario analysis was performed using a well-established system solution for natural disaster and climate change risk analysis and included different physical climate risks for instance storm surge, flooding, hurricane, heat stress and earthquakes. Using the IPCC RCP2.6, RCP4.5 and RCP8.5* scenarios for current, and years 2030, 2050 and 2100, overall and specific risk scores were generated and analysed. Climate change increases the frequency of chronic or acute climate related hazards, such as floodings, storms and heat stress, and they could potentially impact and disrupt our operations, the safety of our personnel and people in our value chain and local communities.	• Chronic physical risks – medium- to long-term • Acute physical risks – short- to long-term Affecting: • Material cost & supply chain – risk for increased costs and supply chain disruption • Property & machinery – damage and increased insurance costs • Financial – financial risks	Volvo Cars continuously evaluates climate related risks when establishing new facilities and critical business operations. This makes us able to take risk-informed decisions when choosing suppliers or compound locations and better understand the risks our operations are exposed to in our industrial operations and workplace footprint. Risk and vulnerability analysis of climate related risks is being performed frequently for our global manufacturing locations, with local and external experts being consulted, often as part of our underwriting processes. During 2023, an additional climate risk scenario analysis has been performed towards all our global manufacturing facilities with a lifetime expectancy longer than 10 years. The analysis verified earlier risk analysis results that our Taizhou factory (storm and flooding risks), Charleston factory (storm and earthquake risks) and Olofström South body plant (flooding risks) are our current top climate physical risk manufacturing facilities.	For identified risk areas, several climate adaptation solutions are in place or in development. Our factory in Charleston is situated in an area affected by a six month hurricane season and considered as a risk zone for earthquakes. The manufacturing site is therefore designed to the highest earthquake design in the US; the wind-load design is higher than local standards; lightning protection is installed on all buildings; there are five storm water retention ponds on the plant site forming part of a natural stormwater drainage system, and there is a Crisis Management Plan, which is activated for instance when hurricanes hit the area. In the Taizhou area, which is a risk area for flooding, there are several governmental driven river network flood control reservoirs and seawalls in place and reinforcements projects ongoing. Adjacent to Olofström South Body plant, Volvo Cars operates since many years a dam for flood control and has during the last years done continuous improvements and renovations. Due to the increased risks for flooding a construction of a new protection gate further upstream has been decided in collaboration with the local municipal and key stakeholders, and the project was approved by the relevant authorities at the end of 2021. The protection gate will be completed within five years and will once completed protect the factory and Olofström area from potential future floodings and make it possible to remove downstream regulation solutions and reintroduce the original river stretch. There will be continuous analyses of our business operations and value chain for climate related risks and we will act accordingly to mitigate and adapt to identified physical climate risks. Read more in the Sustainability Report, starting p. 147.

*) IPCC RCP 8.5
United Nations IPCC (Intergovernmental Panel on Climate Change), RCP (Representative Concentration Pathways)
RCP8.5 Represent high-emissions scenario also frequently referred to as "business as usual" or "worst case" meaning a continued fossil fuel-based development which likely result in above 4 degrees temperature increase by year 2100. Resulting from a society that does not take climate action efforts to reduce greenhouse gas emissions.

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Corporate Governance Report

Corporate governance within Volvo Car Group
The purpose of Volvo Car Group's corporate governance is to create a good foundation for active and responsible ownership, a proper distribution of responsibilities between the different company bodies, as well as good communication with all of the Group's stakeholders with the purpose of driving sustainable growth and good governance.

The corporate governance principles adhered to by Volvo Car Group are based on Swedish law, mainly the Swedish Companies Act and the Swedish Annual Accounts Act (Sw. Årsredovisningslagen (1995:1554)), the Swedish Code of Corporate Governance (the "Code") and Nasdaq Stockholm's rulebook for issuers as well as other relevant laws and regulations. The Code is based on the "comply or explain" principle, meaning that companies are not obliged to at all times apply every rule in the Code, but are allowed the freedom to choose alternative solutions which they feel are better in their particular circumstances, provided they report every deviation, describe the alternative solution and explain the reasons for the deviation.

Volvo Car Group applies the principles of sound corporate governance and responsible business practice and the Code without any deviation.

The Board of Directors of the Company (the "Board") is responsible for Volvo Car Group's organisation and the management of its business worldwide and is obliged to follow directives provided by the General Meetings. The Board may appoint committees with specific areas of responsibility and furthermore authorise such committees to decide on specific matters in accordance with regulations

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established by the Board. As of 20 September 2023, the Board decided to incorporate a new temporary China Committee that will prepare and review matters on behalf of the Board regarding the strategic direction and development of Volvo Cars' business in China. In addition, the Board has decided to delegate certain tasks related to sustainability reporting to the Audit Committee. The responsibility for sustainability matters in general, including but not limited to the strategic aspects thereof, stay with the Board. For 2023, the Board's committees consisted of the Audit Committee, the People Committee and the China Committee (as of 20 September 2023).

The Chairperson of the Board directs the work of the Board and monitors the Board's fulfilment of its obligations. A Vice Chairperson has been appointed to support the Chairperson as appropriate. The Board has adopted and keeps updated its rules of procedures for the Board, which set out the principles on governance of the Board and its committees.

The President of Volvo Car Group, who is also the Chief Executive Officer (CEO), is appointed by the Board to handle the Group's day-to-day management and to lead the Executive Management Team (EMT) as overseen by the Board. The EMT's role is to assist the CEO in the operation of Volvo Car Group's business, setting the strategic long-term direction in dialogue with the Board and take corporate and strategic decisions as delegated by the Board. In addition, a broader Group Management Team (GMT) has also been established, consisting of EMT and other key roles. The GMT shall have shorter term tactical focus and support EMT to drive performance and execution based on direction set by EMT. To guide the direction, EMT has established a strategic blueprint with five missions that shall be guiding the Company's priorities: People Mission, Product Mission, Customer Mission, Technology Mission and Digital Mission.

Shareholders and General Meetings

The General Meetings, the Company's highest decision-making body, is where shareholders exercise their influence. The Annual General Meeting is held within six months after the end of the financial year. Decisions made by shareholders' at the General Meetings include (i) adoption of instructions for the Nomination Committee which nominates members to the Company's Board of Directors, (ii) determination of the number of Board members, composition of the Board (including the Chairperson of the Board) and remuneration of Board members, based on recommendations by the Nomination Committee, (iii) election of external auditors, (iv) determination of the distribution of dividends (v) confirmation of income statements and balance sheets and the disposition of the Company's profit or loss, (vi) discharge from liability of the Board of Directors and CEO as well as (vii) guidelines for remuneration to the CEO and other members of the Executive Management Team. In addition, the shareholders of the Company can resolve on other matters that are important to the Company at the General Meeting, for example changes to the Articles of Association.

In addition to the Annual General Meeting, Extraordinary General Meetings can be convened when required.

Notice of the Annual General Meeting, as well as an Extraordinary General Meeting at which the matter of amendment to the Articles of Association is to be addressed, shall be issued not earlier than six weeks and not later than four weeks prior to the General Meeting. Notices of other Extraordinary General Meetings shall be issued not earlier than six weeks and not later than three weeks prior to the Extraordinary General Meeting. Notice of General Meetings shall be published in the Swedish Official Gazette (Sw. Post- och Inrikes Tidningar) and on the Company's website. Simultaneously, an announcement with information that the notice has been issued shall be published in Dagens Industri.

Right to attend General Meetings

All shareholders who are directly recorded in the Company's share register maintained by Euroclear Sweden six banking days prior to the General Meeting and who have notified the Company of their intention to participate in the General Meeting not later than the date indicated in the notice of the General Meeting, are entitled to attend the General Meeting and vote for the number of shares they hold.

In addition to notifying the Company, shareholders whose shares are nominee registered through a bank or other nominee must request that their shares are temporarily registered in their own names in the register of shareholders maintained by Euroclear Sweden, in order to be entitled to participate in the General Meeting. Shareholders should inform their nominees well in advance of the record date. Voting registrations made by nominees not later than four banking days prior to the General Meeting will be taken into account.

Shareholders may attend the Company's General Meetings in person or by proxy and may be accompanied by a maximum of two assistants. It will normally be possible for shareholders to register for the General Meeting in several different ways, as indicated in the notice of the meeting.

Shareholder initiatives

Any shareholder of the Company who wishes to have a matter dealt with at a General Meeting must submit a written request to the Board of Directors to that effect. The matter will be dealt with at a General Meeting if the request has been received by the Company no later than seven weeks prior to the General Meeting, or after such date, if it still is in due time for the matter to be included in the notice of the General Meeting.

Number of shareholders and ownership structure

The total number of shares in Volvo Car AB (publ.) amounts to 2,979,524,179 shares of series B which are listed on the Nasdaq Stockholm Stock Exchange. Volvo Cars largest shareholder is Geely Sweden Holdings AB holding approximately 78.65 per cent of the total number of shares and votes in the Company. The remaining 21.35 per cent of the shares and votes are held by Nordic and international investors and approximately 175,000 other investors. For further information on the ownership structure, please refer to page 199.

Nomination Committee

Under the Code, a company listed on Nasdaq Stockholm shall have a Nomination Committee, the purpose of which is to make proposals to the General Meeting in respect of the Chairperson at General

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Meetings, number of Board members, elections of Board members, Chairperson of the Board and auditor, remuneration of each Board member (divided between the Chairperson of the Board and other Board members, and remuneration for committee work), remuneration to the auditor, and to the extent deemed necessary, proposals for amendments to the instruction for the Nomination Committee.

At the Annual General Meeting held on 17 October 2021, the current instruction for the Nomination Committee was adopted to apply until further notice.

The Nomination Committee prior to the Annual General Meeting 2024 consists of representatives of the three largest shareholders in terms of voting rights, as of 31 August 2023, and as announced on 25 September 2023.

Members of the Nomination Committee are:

- Thomas Johnstone, appointed by Geely Sweden Holdings AB, Chairperson of the Nomination Committee
- Yimin Chen, appointed by Geely Sweden Holdings AB
- Eric Li (Li Shufu), Chairperson of the Board of Volvo Car AB (publ.)
- Anders Oscarsson, appointed by AMF
- Emilie Westholm, appointed by Folksam

The Nomination Committee applies a framework for nomination of members to the Board, which stipulates that the composition of the Board shall be diverse in terms of gender, nationality, professional background and other competences e.g. sustainability, relevant transformation areas and new technology. This is to ensure that the Board has the appropriate balance of expert knowledge, which matches the scale and complexity of Volvo Cars, supports a sustainable development and meets the independency requirements of Volvo Cars. It is Volvo Cars' aim to have a balanced composition when it comes to gender and it is the ambition that each gender shall have a share of at least some 40 per cent of the Board members elected by the shareholders' meeting, an ambition reached following the Annual General Meeting 2023 whereafter 40 per cent of the Board members elected by the shareholders were women. The Unions represented in the Board shall be encouraged to apply the corresponding goal when appointing their representatives.

Board of Directors

The Board of Directors, which is the highest decision-making body after the General Meeting, bears ultimate responsibility for Volvo Car Group's organisation, management and control of the Company's financial conditions. The Board of Directors shall further ensure that the Company applies the Code and complies with applicable laws and regulations, Nasdaq Stockholm's rulebook for issuers, the listing rules of the Luxembourg Stock Exchange's Euro MTF market, the Company's Articles of Association and the rules of procedures for the Board.

Composition

At all times, the Board shall consist of a minimum of three and a maximum of twelve members and in addition thereto the number of employee representatives as required under Swedish law. No member of the Executive Management Team other than the CEO shall be a member of the Board. Each new Board member is provided with an introduction programme to learn about Volvo Car Group and its regulatory requirements. It is furthermore the Board's intention, during normal conditions, to visit a Volvo Car Group site other than the headquarters at least once a year.

Name of the Board members	Independent of the company/senior management	Independent of the company's major shareholder	Board meeting attendance	Committee meeting attendance	Remuneration, Board and Committees[1], SEK
Members elected by the Shareholders' Meeting					
Eric Li (Li Shufu) (Chairperson of the Board)	N	N	5/12	N/A	N/A
Lone Fønss Schrøder (Vice Chairman of the Board)	Y	N[2]	12/12	9/10	3,140,000
Jim Rowan	N	Y	12/12	2/2	N/A
Daniel Li (Li Donghui)	Y	N	12/12	8/12	N/A
Jonas Samuelsson	Y	Y	12/12	7/7	1,323,000
Diarmuid O'Connell	Y	Y	11/12	5/5	1,286,000
Winfried Vahland[3]	Y	N[4]	12/12	5/5	1,286,000[5]
Lila Tretikov	Y	Y	11/12	9/10	1,344,000
Anna Mossberg	Y	Y	11/12	N/A	1,155,000
Ruby Lu[6]	Y	Y	8/8	2/2	1,155,000
Thomas Johnstone[7]	Y	Y	4/4	2/2	1,323,000[8]

1) Annual average remuneration of the Board and Committees as adopted by the Annual General Meeting in April 2023.
2) Lone Fønss Schrøder is a director in the board of Geely Sweden Holdings AB, the main owner of Volvo Cars.
3) Left the Board on January 12, 2024.
4) Winfried Vahland is a member of the supervisory board of Proton Holdings Berhad being a company partly owned by Geely Holding Group and ultimately controlled by Eric Li (Li Shufu), and serves as an advisor to Eric Li (Li Shufu) and Geely Holding Group.
5) Annual remuneration of the Board and Committees as adopted by the Annual General Meeting in April 2023.
6) Member of the board from 3 April 2023.
7) Left the board in connection with the Annual General Meeting held on 3 April 2023.
8) Annual average remuneration of the Board and Committees as adopted by the Annual General Meeting in May 2022.

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In accordance with the Code, the rules of procedures for the Board stipulate that the majority of the Board members shall be independent of the Company and the EMT and at least two of these independent members shall also be independent of major shareholders. In order to determine whether a member of the Board is independent in relation to the Company and the EMT, an overall assessment must be made of all circumstances which might give reason to question the independence of the Board member, e.g. the board member's current or previous employment, other board memberships or other relationships. Furthermore, in order to determine the independence in relation to major shareholders, consideration must be given to the scope of the Board member's direct or indirect relationship to the Company's major shareholders. Pursuant to the Code, "major shareholder" means a shareholder who, directly or indirectly, controls 10 per cent or more of the shares or voting rights in the Company. The Nomination Committee's assessment of the independence of the Board members in relation to the Company, the EMT and major shareholders is presented below. Lone Fønss Schrøder, Daniel Li (Li Donghui), Anna Mossberg, Jonas Samuelson, Lila Tretikov, Diarmuid O'Connell and Ruby Lu are deemed independent in relation to the Company and the EMT, and, among these members, Anna Mossberg, Jonas Samuelson, Lila Tretikov, Ruby Lu and Diarmuid O'Connell are also deemed independent in relation to major shareholders. The Company thereby satisfies the Code's independence requirement.

Conflicts of interest

Board members shall inform the Chairperson and/ or the Vice Chairperson immediately if they find themselves in a conflict-of-interest situation. A Board member with a conflict of interest in relation to any matter to be dealt with by the Board may not participate in the discussions or decisions regarding such matter. As an example, Eric Li (Li Shufu) and Daniel Li (Li Donghui), are not involved in any decision as regards Geely Holding Group entities. In addition, as an additional governance in relation to conflicts of interests, all related party transactions are handled by the Related Party Business Office.

Matters for the Board

The Board is responsible for the organisation of Volvo Car Group and the management of its business worldwide. The Board continuously monitors Volvo Car Group's performance, evaluates Volvo Car Group's strategic direction and business plan as well as other aspects such as adherence to its Code of Conduct.

Sustainability is a deeply integrated part of Volvo Car Group's strategy and the Board monitors Volvo Car Group's efforts in that area which involves Volvo Cars' actions to reach the ambitions set, including climate related risks and opportunities.

Certain matters are delegated to the Board's Committees or the CEO as set out in the rules of procedures for the Board.

To ensure that the Board has good visibility of the Group's operations, the President and CEO of the Volvo Car Group submits a report on the business, including reporting from the Group's strategic affiliates, where appropriate, at all Board meetings. The Chief Financial Officer also reports on the financials of Volvo Car Group, including relevant matters relating to treasury, hedging, risk management, insurance etc., as appropriate. In addition, the Board discusses specific strategic topics of relevance and the Board Committees report on their work. At each Board meeting the Board is also presented with a number of decision items for consideration and approval as set out in the rules of procedures for the Board.

The work of the Board follows an annual cycle in order to allow the Board to address matters within the scope of its responsibility on a yearly basis. Matters that come up regularly are e.g. product and product development, commercial transformation and new technology and digitalisation as well as sustainability and compliance. In relation to sustainability, Volvo Cars also prepares a Sustainability Report (see pages 35–43 and 147–195) in accordance with GRI Standards and the statutory requirements in accordance with the Swedish Annual Accounts Act.

Authorisation for the Board to resolve on new issues of shares

At the Annual General Meeting held on 3 April 2023, the shareholders resolved to authorise the Board to, on one or several occasions up to the next Annual General Meeting, with or without deviation from the shareholders' preferential right, resolve on new issues of shares of series B and/or subscription warrants and/or convertible bonds. The total number of shares that may be issued by way of a new share issue, exercise of subscription warrants or conversion of convertible bonds, by virtue of the authorisation shall be within the limits of the articles of association and not exceed ten (10) per cent of the total number of shares in the Company at the time of the Board's resolution. The authorisation includes a right to resolve on new issues for cash consideration, by contribution in kind or payment by set-off. The issue price shall, in the case of deviation from the shareholders' preferential right, be determined in accordance with market price. The Board shall be entitled to determine other terms of the issue.

The purpose of the authorisation, and the reason for any deviation from the shareholders' preferential right, is to increase the flexibility of the Company to enable the Company to finance the operations in a fast and efficient way, acquire companies, businesses or parts thereof and/or to enable a broadening of the ownership of the Company.

Board meetings

In accordance with the rules of procedures for the Board, the Board is expected to meet six to ten times per year at venues to be agreed by the Board. The Board has held twelve meetings during 2023, of which ten were ordinary and two extraordinary. The Board meets the external auditor at least once a year without the CEO or any other member of the EMT present. In addition, the Board occasionally holds non-executive meetings. The General Counsel and Chief Legal Officer is the secretary of the Board and also attends Board meetings as does the Chief Financial Officer.

The table on 62 shows the Board members' attendance to the Board meetings in addition to their independence according to the requirements of the Code in relation to (i) the Company and (ii) the major shareholder, and the remuneration to the Board members for Board and Committee work.

Evaluation of the work of the Board

The Board, through an external provider, conducts an annual survey of its work performed during the year. The survey covers areas such as the climate at Board meetings, the allocation of time spent on differ-

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ent topics, the work of the Board and its committees, the efficiency of the work of the Board, their prerequisites to perform Board work, Board leadership and relations with the Executive Management Team. Based on the result of the survey the Board will be benchmarked against its peers and also evaluated on performance and constellation and possible areas of improvement are identified. Relevant parts of the survey are also used in the Nomination Committee process. In addition to the annual survey, the Vice Chairperson conducts meetings with each individual Board member during the year.

Board committees

According to the Swedish Companies Act and the Code, the Board of Directors shall institute an Audit Committee and a Remuneration Committee. The members of the Remuneration Committee are to be independent of the Company and the Executive Management Team. A majority of the Audit Committee's members are to be independent in relation to the Company and its Executive Management Team and at least one of the members who is independent in relation to the Company and the Executive Management Team is also to be independent in relation to the Company's major shareholders. At least one member of the Audit Committee must also have accounting or auditing proficiency. The Board has established two permanent committees, the Audit Committee and the People Committee (which fulfils the tasks of the Remuneration Committee pursuant to the Code) and one temporary committee, the China Committee.

The major tasks of these committees are of preparatory and advisory nature, but the Board of Directors may also delegate decision-making powers on specific issues to the committees. The issues considered at committee meetings shall be recorded in minutes of the meetings and continuously reported to the Board. The committees are appointed at the statutory Board meeting following election of Board members. The Board has also determined that issues may be referred to ad hoc committees dealing with specific matters.

Audit Committee

The Board has assigned an Audit Committee to oversee corporate governance, financial reporting, ESG (Environmental, Social and Governance) and sustainability reporting and risks and compliance with external and internal regulations.

The Audit Committee is responsible for identifying and reporting relevant issues to the Board within the Audit Committee's areas of responsibility. The Audit Committees tasks are to monitor the integrity of Volvo Car Group's financial, ESG and sustainability reporting system, internal controls, related-party transactions, operation procedure and the enterprise risk management framework, recommend to the Board the appointment, removal and remuneration of the external auditors (subject to approval at the shareholders' meeting) in accordance with the Swedish Companies Act, monitor the independence of the external auditors and review the effectiveness of the Internal Audit and Compliance and Ethics' function. The external auditors participate in parts of the Audit Committee meetings. The Audit Committee has during the year met with the external auditors, without management present, to discuss management matters and related topics. The Internal Audit function reports directly to the Audit Committee and the Compliance and Ethics function has a direct reporting line to the Audit Committee for escalation. The Audit Committee has held ten meetings during 2023, four of which were ordinary and six extraordinary interim meetings. Lone Fønss Schrøder (Chairperson), Daniel Li (Li Donghui) and Lila Tretikov are the current members of the Audit Committee. The Audit Committee complies with the Swedish Companies Act's and the Code's requirements for independence as well as accounting and audit competence.

People Committee

The Board has assigned to the People Committee to prepare remuneration principles for the CEO and the EMT members. Furthermore, the committee supports the Chairperson or Vice Chairperson of the Board, as applicable, with the approval of remuneration and benefits of the CEO and is responsible for preparing the remuneration report to be presented at the Annual General Meeting for its approval, and in dialogue with the CEO, assist with or resolve on various other people and remuneration matters in relation to the EMT. The committee is also responsible for approval and monitoring of global incentive arrangements for the EMT and other key employees and necessary coordination of such incentives and the Volvo bonus to all employees, succession planning for the CEO in dialogue with the Chairperson or the Vice Chairperson of the Board, as applicable, as well as other EMT positions. The committee also approves the EMT members' engagements outside Volvo Car Group. The People Committee has held five meetings during 2023, whereof four ordinary and one per capsulam. Jonas Samuelsson (Chairperson) and Diarmuid O'Connell are the current members of the People Committee. The People Committee complies with the Code's requirements for independence.

China Committee

As of 20 September, 2023, the Board decided to incorporate a new China Committee. The Board has assigned to the China Committee to prepare and review matters on behalf of the Board regarding the strategic direction and development of Volvo Cars' business in China. The committee is temporary and will be evaluated after one year. The China Committee has held two meetings during 2023, whereof both ordinary. Jim Rowan (Chairperson), Ruby Lu and Daniel Li (Li Donghui) are the current members of the China Committee.

Governance compliance functions

In order to ensure a safe and stable governance of its work, the Board has four functions that reports directly or indirectly to the Board or its committees: the Global Audit Office, the Disclosure Committee, the Compliance and Ethics Office and Internal Control. In addition, the external auditors are working independent from the Board's functions.

Global Audit Office

Volvo Car Group has an independent Internal Audit department referred to as the Global Audit Office with the assignment to determine whether Volvo Car Group's governance, internal control and risk management processes, as designed, operated and represented by management, are adequate and effective. The scope of the internal audit is determined by means of a risk assessment process and

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any additional requirements by the Board. The Audit Committee approves the internal audit plan which includes risks associated with the execution of the corporate strategy, execution of transformation, ESG, business operations and processes. Audit results and status of implemented corrective measures by management is reported to the Audit Committee. The Head of the Global Audit Office reports to the Audit Committee.

Disclosure Committee

Volvo Car Group has listed shares on Nasdaq Stockholm and listed bonds on Luxembourg Stock Exchange and is therefore required to comply with the relevant disclosure obligations under the Market Abuse Regulation (MAR), as well as under the listing rules of the Luxembourg Stock Exchange's Euro MTF market and the Nasdaq rulebook for issuers. In order to ensure compliance with the relevant requirements, Volvo Car Group has established a Disclosure Committee and the Board of Directors has adopted a set of procedures for the Disclosure Committee. The Board and the Audit Committee are kept updated on the discussions and decisions of the Disclosure Committee by means of summary reports and access to the minutes kept at the committee meetings. The members of the Disclosure Committee are the General Counsel and Chief Legal Officer (Chairperson), the Chief Financial Officer, the Head of Investor Relations, the Chief Communications Officer and the Head of Global Legal (secretary). The Head of Global Performance Steering and the Head of Accounting and Group Reporting are required participants in financial report review meetings, and other senior company representatives attend the meetings on an agenda-driven basis. The Disclosure Committee has been established to implement required disclosure controls and procedures, resolve whether or not information is to be categorised as inside information or not and consider whether there is reason to delay disclosure of inside information or whether immediate disclosure is required as well as determine whether the requirements for selective disclosure are fulfilled.

Compliance and Ethics

The EMT has established a Global Compliance Committee that receives status updates on the implementation and continuous improvements of Volvo Car Group's Compliance and Ethics Program, including updates from relevant parts of the organisation on how adherence to the program is ensured. The committee is provided with regular updates, but has assigned to the General Counsel and Chief Legal Officer together with the Chief People Officer to do the detailed regular review and decide upon compliance cases reported by Volvo Car Group's Compliance and Ethics Office. Furthermore, the Global Compliance Committee when appropriate reviews compliance-related matters reported by the Internal Audit and Internal Control functions, respectively. The Global Compliance Committee normally meets four times per year. Ad hoc meetings may be called for if and when required. The General Counsel and Chief Legal Officer (Chairperson), the Chief Financial Officer, the Chief People Officer, the Chief Operations Officer and the Chief Commercial Officer are permanent EMT members of the Global Compliance Committee together with the heads of Greater China and US & Canada from GMT. In addition, Volvo Car Group's Chief Compliance & Ethics Officer and Head of Internal Audit participate at the meetings. Other GMT members or senior company representatives attend the meetings when relevant, in particular when a compliance case is reported within their region or area of business. The Compliance and Ethics office is led by the Chief Compliance & Ethics Officer, who reports to the General Counsel and Chief Legal Officer and continuously reports on compliance issues to the Global Compliance Committee or as delegated by the committee to the General Counsel and Chief Legal Officer and the Chief People Officer. The Chief Compliance & Ethics Officer also has a direct reporting line, and continuously reports, to the Audit Committee and ensures that compliance training is provided for the Board of Directors.

Volvo Car Group's Code of Conduct reflects Volvo Car Group's values and culture and how it drives results in an ethical and responsible way, by placing the emphasis on Volvo Car Group's culture, values and commitments in addition to focusing on the requirements set out in Volvo Car Group's corporate policies. The Compliance and Ethics Office supports the business operations in conducting business in a responsible and ethical manner, by developing, implementing and maintaining Volvo Car Group's Compliance and Ethics Program which includes dedicated compliance programs focusing on the areas of anti-corruption, data protection, trade sanctions and export control, competition law, and human rights. The Compliance and Ethics Program consists of ten program elements designed on the basis of guidelines describing "effective compliance programmes" and "adequate procedures", such as the US Sentencing Guidelines and the UK Bribery Act Guidance (supporting the Foreign Corrupt Practices Act and the UK Bribery Act), as well as guidance from Anti-Trust Offices throughout Europe. In addition to the Compliance & Ethics organisation described above, the program elements include: tone from the top and culture; risk assessment; a Compliance & Ethics framework (Code of Conduct and corporate policies, directives and guidelines); training, awareness and communication; due care; internal reporting and investigations; enforcing disciplinary actions and incentives; monitoring and audit; program assessment and continuous improvement. Compliance & Ethics Office provides training regarding the Code of Conduct and the five main compliance and ethics risk areas, including how to raise concerns using the Tell Us reporting line. The ten elements can be summarised as: Prevent, Detect and Manage. More information about the performance of the Compliance and Ethics Program, and the risk areas it covers, is available on pages 177–179.

Internal control

According to the Swedish Companies Act, the Board is ultimately responsible for ensuring that an effective internal control system exists within the Group.

In order to assist the Board and the Executive Management Team in their internal control responsibilities, Volvo Car Group has implemented an internal control function. The purpose of the function is to ensure that the external reporting is reliable and that the financial reports follow generally accepted accounting principles. The function is also responsible for ensuring that controls are implemented and adhered to in other areas, including digital internal control and sustainability reporting internal control. The Internal Control function reports to the Audit Committee on a periodic basis.

Volvo Car Group bases its internal governance and control on the framework for control issued by the Committee of Sponsoring Organizations of the Treadway Commission consisting of five components; Control Environment, Risk Assessment, Control Activities, Information and Communication and Monitoring.

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Control Environment
The foundation of Volvo Car Group's control environment is the Code of Conduct, which is the guiding principle for Volvo Car Group and the Group's corporate policies and directives. The foundation of the control environment is also based upon functional policies, directives and guidelines and the Delegation of Authority directive.

Risk Assessment
Each entity and function are responsible for identifying risks within its own business. Risk assessments are updated continuously, and are, at least every six months, consolidated and reported according to the Enterprise Risk Management Directive. The outcome of the risk assessment will define the internal control activities for the coming year. The Enterprise Risk Management function also reports on a regular basis to the Audit Committee.

Control activities
Control activities are the procedures that help to ensure that Volvo Car Group's policies, directives and instructions are implemented and documented in Volvo Car Group's Internal Control framework. Control activities are performed throughout the organisation, at all levels and in all functions, to manage risk and to detect and correct errors in the financial processes.

Information and Communication
From a financial reporting perspective, the information and communication component includes the systems and processes that support the identification, capture and exchange of information enabling personnel to carry out their responsibilities and ensure that financial reports are generated completely and accurately.

Information, communication and monitoring activities include topics from internal control theory to detailed trainings regarding specific processes and activities, self-assessments and certifications, targeted internal control reviews and participation in projects. This is complemented by continuous communication with key stakeholders, newsletters shared by the Internal Control team and an Internal Control intranet site where complete control frameworks and other relevant information can be accessed by all employees.

Information concerning the planning, risk areas and results of the self-assessment and internal control reviews are communicated within various fora and to the Audit Committee on a periodic basis.

Monitoring
The Internal Control function performs internal control reviews and coordinates evaluation activities through the annual self-assessment programme. This assessment programme focuses on management and transaction levels as well as self-assessment of IT general controls through the Internal Control digital team. When control deficiencies are identified through self-assessment, regular operations or internal or external audits they are tracked and appropriate corrective actions undertaken to resolve deficiencies. The Head of Internal Control maintains regular contact with the Chief Financial Officer.

External auditors
The Company's auditors are appointed by the Annual General Meeting. At the Annual General Meeting held on 3 April 2023, Deloitte AB was re-elected until the Annual General Meeting as the Company's auditors. Fredrik Jonsson is the auditor in charge.

The external auditors discuss the external audit plan, audit findings and risk management with the Audit Committee. The auditors review one interim report per year and present the results of their work to Audit Committee. The auditors also examine the Corporate Governance Report and provides a limited assurance of the Sustainability Report and the Green Financing Report. The results of their financial year audit and the audit of the Annual Report of the parent company and the consolidated financial statements are presented to the Audit Committee and the Board of Directors at meetings after year end. An opinion regarding the compliance with the guidelines for executive remuneration is made in conjunction with the Annual General Meeting. When Deloitte is asked to provide services other than the external audit, this is done in accordance with general independence rules. Deloitte provides an annual written assurance of its impartiality and independence to the Audit Committee in accordance with the Swedish Companies Act and ISA 260.

CEO and the Executive Management Team
The division of work between the Board and the CEO is set out in the rules of procedures for the Board and follows the Swedish Companies Act. The CEO is responsible for Volvo Car Group's everyday management and operations and for the preparation of reports and compiling information to the Board meetings and for presenting such material at the Board meetings.

The CEO is further responsible for Volvo Car Group's financial reporting and consequently must ensure that the Board receives adequate information for the Board to be able to evaluate the Group's financial condition. The CEO regularly keeps the Board informed of the developments in Volvo Car Group's operations, the development of sales, Volvo Car Group's results and financial position, important business events and all other events, circumstances or conditions which can be assumed to be of significance to Volvo Car Group's shareholders.

The CEO leads the work of the EMT, which is responsible for the overall business development and operations of Volvo Car Group. In addition to the CEO, the EMT consists of the Chief Financial Officer, the General Counsel and Chief Legal Officer, the Chief Operating Officer, the Chief Commercial Officer, the Chief People Officer and the Chief Communications Officer. The EMT's role is to assist the CEO in the operation of Volvo Car Group's business, setting the strategic long-term direction in dialogue with the Board and take corporate and strategic decisions as delegated by the Board.

In order to assist the EMT in carrying out decisions and actions related to certain topics to fulfil the Groups strategic blueprint as further elaborated on pages 18–34, the EMT has established the Group Management Team (GMT) which in addition to the EMT contains a number of other senior management positions within Volvo Car Group. The GMT's work includes five operational mission review fora, namely the People Mission, the Customer Mission, the Technology Mission, the Product Mission and the Digital Mission. These are established in order to ensure that each of these areas receives proper focus. In addition, the EMT has established a Corporate Committee to support the EMT in preparation of matters within their responsibility. The EMT meets on a bi-weekly basis and the whole GMT meets bi-weekly in between.

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Board of Directors Volvo Car AB (publ.)

Volvo Car AB (publ.) is the parent company of Volvo Car Group.

ERIC LI (LI SHUFU)

CHAIRPERSON AND MEMBER OF THE BOARD

Born 1963. Chairperson and member of the Board since 2010.

Education and professional experience: Bachelor's Degree in Management Engineering from the Harbin University of Science and Technology, China. Master's Degree in Mechanical Engineering from the Yanshan University, China. Former CEO of Zhejiang Geely Holding Group Co., Ltd.

Previously board member of Sanya Oriental Tourism Co., Ltd.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Founder of Zhejiang Geely Holding Group Co., Ltd, Ecarx Holdings Inc and PSD Capital Limited (indirect shareholder in Polestar). Chairman of the Board of Zhejiang Geely Holding Group Co., Ltd, Geely Technology Group Co., Ltd, Geely Talents Development Group Co., Ltd, PSD Capital Limited and PSD Investment Limited, and smart Automobile Co., Ltd. Member of the Board of Geely Group Limited, and Geely Sweden Holdings AB and a number of other companies within his ownership.

Not independent in relation to the company and Executive Management Team nor the company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 2,343,396,227 B shares.[1)]

LONE FØNSS SCHRØDER

VICE CHAIRPERSON OF THE BOARD. BOARD MEMBER CHAIRPERSON OF THE AUDIT COMMITTEE

Born 1960. Vice Chairperson of the Board since 2018 and Board member since 2010.

Education and professional experience: Master of Laws from the University of Copenhagen, Denmark. Master of Science in Economics and Business Administration from Copenhagen Business School, Denmark. Studies in Aviation and Insurance Law at the London Polytechnics (now University of Westminster), United Kingdom. Studies in Blockchain at MIT Sloan School of Management, United States. Studies in Management at IMD Business School, Switzerland. More than 20 years of experience from various senior positions at A.P. Möller Maersk A/S. Former President and CEO of Wallenius Lines. Previous experience as senior advisor at Credit Suisse. Previously chairman of the board of Saxo Bank A/S and board member of Valmet Oyj, Bilfinger SE.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Vice Chairman of the Board and Chairman of the audit committee of Akastor ASA, Board member of Aker Solutions ASA, Aker Horizons ASA, and Geely Sweden Holdings AB. Member of the supervisory Board of INGKA Holding B.V. Member of the EMEA advisory Board of ServiceNow, Inc.

Independent in relation to the Company and Executive Management Team, but not in relation to the Company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 24,897 B shares.[1)]

JIM ROWAN

BOARD MEMBER, PRESIDENT AND CEO CHAIRPERSON OF THE CHINA COMMITTE

Born 1965. Member of the board since 2022.

Education and professional experience: HNC in Mechanical & Production engineering at Glasgow Caledonian University and Glasgow School of Technology. Masters Degree (MSc) in Business from Northumbria University UK. Previous experience as interim CEO of Ember Technologies, Chief Executive Officer and Chief Operating Officer of Dyson, Chief Operation Officer of BlackBerry, Executive Vice President, Global Operations of Celestica, Vice President European Operations of Flextronics, senior advisor at KKR & Co Inc, independent board member of Nanofilm Technologies International Ltd and PCH International Inc.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Currently a member of the Shareholders' Committee of Henkel AG. Member of the board of Polestar Automotive Holding UK PLC and board member in Lynk & Co.

Independent in relation to the company's major shareholders but not in relation to the company and Executive Management Team.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 403,000 B shares.[1)]

1) The Volvo Cars holdings reported reflect the holdings as of 31 December, 2023 and includes holdings by related parties, if applicable. For information on transactions made since this date, please refer to the website of the Swedish Financial Supervisory Authority. PDMR transactions register | Finansinspektionen

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VOLVO

JONAS SAMUELSON

BOARD MEMBER
CHAIRPERSON OF PEOPLE COMMITTEE

Born 1968. Board member since 2020.

Education and professional experience: Master of Science in Economics and Business Administration from the School of Business, Economics and Law at the University of Gothenburg, Sweden. Previous experience from finance in various roles at Saab Automobile AB and General Motors Corporation. Former CFO at Munters AB and CFO, COO and CEO Major Appliances EMEA at AB Electrolux. Former board member in Polygon AB.

Principal activities and current Board assignments and similar outside of Volvo Car Group: CEO at AB Electrolux. Board member of AB Electrolux, Axel Johnson AB, and Ideella Föreningen Teknikföretagen i Sverige.

Independent in relation to the Company and Executive Management Team as well as the Company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 19,807 B shares.[1)]

ANNA MOSSBERG

BOARD MEMBER

Born 1972. Board member since 2022.

Education and professional experience: MBA from Stanford University, USA, MBA from IE University, Spain, Master of Industrial Engineering and Management from Luleå Technical University Sweden. Previous experiences includes CEO of Silo AB, Business Area Manager at Google Sweden, Senior Vice President Strategy and Portfolio Management at Deutsche Telekom AG, CEO of Bahnhof AB and Vice President of Telia International Carrier AB. Previous board member and member of the Audit Committee in Schibsted ASA and Byggfakta AB.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Board member and member of the Finance and Strategy Committee in Swisscom AG, Board member in Orkla ASA, Board member and member of the Remuneration and Sustainability Committee and Audit Committee in Swedbank AB, Board member and member of the Nomination and Compensation Committee in Ringier AG.

Independent in relation to the company and Executive Management Team as well as the company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 2,116 B shares.[1)]

LILA TRETIKOV

BOARD MEMBER
MEMBER OF THE AUDIT COMMITTEE

Born 1978. Board member since 2021.

Education and professional experience: Studies in Computer Science at the University of California Berkeley, United States. Studies at SAAD School of Business, University of Oxford, United Kingdom. Previously CEO of Engie SA, Terrawatt Initiative and Wikimedia Foundation. Previous experience includes several senior positions within SugarCRM Inc., Software General Manager of Evolving Systems Inc., Digital General Manager of Bank of America, founder of GrokDigital and founder and Board member of nam.R S.A.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Corporate VP and Deputy CTO of Microsoft. Board member of Xylem Inc., Onfido Limited and Sophia Genetics.
Member of the Advisory Board of Capgemini.

Independent in relation to the Company and Executive Management Team as well as the Company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 1,197 B shares.[1)]

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1) The Volvo Cars holdings reported reflect the holdings as of 31 December, 2023 and includes holdings by related parties, if applicable. For information on transactions made since this date, please refer to the website of the Swedish Financial Supervisory Authority. PDMR transactions register | Finansinspektionen

DANIEL LI (LI DONGHUI)

BOARD MEMBER, MEMBER OF THE AUDIT COMMITTEE
MEMBER OF THE CHINA COMMITTEE

Born 1970. Board member since 2012.

Education and professional experience: Bachelor of Philosophy from the Renmin University of China. Master of Management Engineering from the Beijing Institute of Machinery Industry, China. Master of Business Administration from the Kelly School of Business at Indiana University, United States. Previously VP and CFO of Zhejiang Geely Holding Group Co., Ltd. Previous experience from key accounting, financing and corporate management positions, such as CFO and General Manager of several companies, including Guanxi Liugong Machinery Co., Ltd, China Academy of Post and Telecommunication, Cummins Inc., BMW Brilliance Automotive Ltd., ASIMCO Braking System (Guangzhou) Co. Ltd. and ASIMCO Braking System (Zhuhai) Co. Ltd. Previously independent Board member of China CYTS Tours Holding Co. Ltd.

Principal activities and current Board assignments and similar outside of Volvo Car Group: CEO of Zhejiang Geely Holding Group Co., Ltd. Chairman of the Board of Lotus Group International Limited. Board member of Saxo Bank A/S, Proton Holdings Berhad, Polestar Automotive Holding UK Plc, Geely Sweden Holdings AB and Geely Automobile Holdings Limited. Independent Board member of YTO International Express and Supply Chain Technology Ltd. Board member of Aston Martin Lagonda Global Holdings.

Independent in relation to the Company and Executive Management Team, but not in relation to the Company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 0 B shares.[1)]

DIARMUID O'CONNELL

BOARD MEMBER
MEMBER OF PEOPLE COMMITTEE

Born 1963. Board member since 2021.

Education and professional experience: Bachelor of Arts in History and Government from Dartmouth College, United States. Master of Arts in Foreign Policy and Political Economy from the University of Virginia, United States. MBA in Strategy and Finance from Kellogg Graduate School of Management, United States. Studies in marketing from McCann School of Business & Technology, United States. Previous experience from Accenture Consulting, Real Time Learning, Young & Rubicam and the U.S Department of State. Several executive roles at Tesla. Member of the Executive team of Fair Financial Corp. Energy/Mobility Consulting for Antin Infrastructure Partners.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Advisor to Form Energy and Carbon America. Chairman of the board of Clarios. Member of the Supervisory Board of Albemarle Corp, Dana Inc. and Mobility House AG.

Independent in relation to the Company and Executive Management Team as well as the Company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 1,197 B shares.[1)]

RUBY LU

BOARD MEMBER
MEMBER OF THE CHINA COMMITTEE

Born 1971. Board member since 2023.

Education and professional experience: M.A. from Johns Hopkins University School of Advanced International Studies (SAIS) and a B.A. with honors from the University of Maryland. Venture capitalist investing in technology start-ups in the US and China. Founder, Atypical Ventures, an early-stage technology investment firm. Co-founder, DCM China, a venture capital firm. Prior to becoming a venture capitalist, Vice President in Goldman Sachs' technology media and telecommunication banking group in the US. Former advisor to and a shareholder in EcarX Holdings, Inc (Nasdaq:ECX), and former member of the Nomination and Corporate Committee and the Compensation Committee of Unilever (NYSE: UL).

Principal activities and current Board assignments and similar outside of Volvo Car Group: Founder and managing partner of Atypical Ventures. Independent board member of Unilever (NYSE: UL) and an independent board member of YUM China (NYSE: YUMC) and Uxin Limited (Nasdaq: UXIN). Board member of private companies TrueSight Inc. and Orka Inc.

Independent in relation to the company and Executive Management Team as well as the Company's major shareholders.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 65,000 B shares.[1)]

1) The Volvo Cars holdings reported reflect the holdings as of 31 December, 2023 and includes holdings by related parties, if applicable. For information on transactions made since this date, please refer to the website of the Swedish Financial Supervisory Authority. PDMR transactions register | Finansinspektionen

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Employee representatives

JÖRGEN OLSSON

BOARD MEMBER, REPRESENTATIVE OF UNIONEN

Born 1968. Board member since 2016.

Education and professional experience: Upper secondary school education.

Current Board assignments and similar: Upper secondary school education. Chairman of Unionen, Volvo Car Group.

Principal activities and current Board assignments and similar outside of Volvo Car Group:
–

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 580 B shares.[1]

ADRIAN AVDULLAHU

BOARD MEMBER, REPRESENTATIVE OF IF METALL

Born 1978. Board member since 2021.

Education and professional experience: Upper secondary school education. Leadership training at Bommersvikakademin and IF Metall Stockholm.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Chairman of IF Metall, Volvo Car Group. Chairman IF Metall Group Volvo Car Sweden. Board member IF Metall Section 36 Gothenburg.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 659 B shares.[1]

BJÖRN OLSSON

BOARD MEMBER, REPRESENTATIVE OF IF METALL

Born 1963. Board member since 2022.
Deputy Board member since 2010.

Education and professional experience: Upper secondary school education. Several years of experience as a union representative.

Principal activities and current Board assignments and similar outside of Volvo Car Group: Union representative of IF Metall.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 438 B shares.[1]

ANNA MARGITIN

DEPUTY BOARD MEMBER, REPRESENTATIVE OF AKADEMIKERNA

Born 1969.
Deputy Board member since 2016.

Education and professional experience: Master in Physics and Electrical engineering from the University of Gothenburg, Sweden. Executive MBA Business and Law from the School of Business, Economics and Law at the University of Gothenburg, Sweden. Previous experience from several positions within Volvo Car Group, such as Chief Program Engineer, Senior Director Business Quality, Senior Director Current Model Quality and Senior Director Customer Service.

Principal activities and current Board assignments and similar outside of Volvo Car Group:
–

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 786 B shares.[1]

MARIE STENQVIST

DEPUTY BOARD MEMBER, REPRESENTATIVE IF METALL

Born 1963.
Deputy Board Member since 2022.

Education and professional experience: Upper secondary school education.

Principal activities and current Board assignments and similar outside of Volvo Car Group:
–

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 500 B shares.[1]

1) The Volvo Cars holdings reported reflect the holdings as of 31 December, 2023 and includes holdings by related parties, if applicable. For information on transactions made since this date, please refer to the website of the Swedish Financial Supervisory Authority. PDMR transactions register | Finansinspektionen

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Executive Management Team

JIM ROWAN

We'll be one of the fastest transformers and become a leader in future mobility by remaining true to our brand, anchored to our values, and confident in the benefits that our cars bring to our customers.

PRESIDENT AND CEO

Born 1965.

Member of EMT since 2022.

Education and professional experience: HNC in Mechanical & Production engineering at Glasgow Caledonian University and Glasgow School of Technology. Masters Degree (MSc) in Business from Northumbria University UK.

Previous experience as interim CEO of Ember Technologies, Chief Executive Officer and Chief Operating Officer of Dyson, Chief Operation Officer of BlackBerry, Executive Vice President, Global Operations of Celestica, Vice President European Operations of Flextronics, senior advisor at KKR & Co Inc, independent board member of Nanofilm Technologies International Ltd and PCH International Inc.

Current board assignments and similar: Member of the bioard of Polestar Automotive Holding UK PLC. Member of the Shareholders' Committee of Henkel AG and board member in Lynk & Co.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 403,000 B shares.[1)]

HELEN HU

As we are moving fast in our business transformation towards fully electric and software driven, our commitment to be a responsible business stays firm.

HELEN HU
GENERAL COUNSEL AND CHIEF LEGAL OFFICER AS OF 1 FEBRUARY, 2024.

Born 1976.

Education and professional experience: Juris Doctor, cum laude, from University of Minnesota Law school. Previous experience within Volvo Cars as Managing Director of Volvo Car Switzerland, Head of Legal and Deputy CEO for Volvo Car Asia Pacific. Prior to that experience at among others General Counsel, Asia at Luxottica Group S.p.A.

Current board assignments and similar: –

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 0 B shares.[1)]

BJÖRN ANNWALL

We are focusing on building meaningful direct to consumer relationships and driving a step-change improvement in CX/cost to support our long-term ambitions and growth plans.

CHIEF COMMERCIAL OFFICER AND DEPUTY CEO

Born 1975.

In current position since 2022. Member of EMT since 2015.

Education and professional experience: Master of Science in Economics and Business Administration from Stockholm School of Economics. Previously Senior Partner at McKinsey & Co. Previous experience from several positions within Volvo Car Group, including CFO, head of EMEA and Senior VP for Marketing, Sales and Service.

Current board assignments and similar: Board member of Axel Johnson.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 237,170 B shares.[1)]

1) The Volvo Cars holdings reported reflect the holdings as of 31 December, 2023 and includes holdings by related parties, if applicable. For information on transactions made since this date, please refer to the website of the Swedish Financial Supervisory Authority. PDMR transactions register | Finansinspektionen

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JOHAN EKDAHL

"On our way to becoming a fully electric carmaker by 2030, my focus is on enabling sustainable and profitable growth as we renew our entire product portfolio.

CHIEF FINANCIAL OFFICER

Born 1975.

Member of EMT since 2022.

Education and professional experience: Civilekonom (Masters in Business and Economics) from School of Business, Economics and Law, Gothenburg University. Vice President, Head of Accounting and Group Reporting and various finance roles at Volvo Cars. Previously worked as authorised auditor at EY.

Current board assignments and similar: Board member at Volvofinans Bank AB and Volvo Car Financial Services UK Ltd.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 706 B shares.[1]

HANNA FAGER

"Volvo Cars should be a great place to work: an inclusive culture that values the free exchange of ideas and allows creativity to flourish.

CHIEF PEOPLE OFFICER

Born 1975.

In current position since 2020. Member of EMT since 2016.

Education and professional experience: Bachelor of Science in Human Resource Development, Labour Relations from University West, Sweden. Studies in labour law and EU law at Halmstad University. Previous experience from several positions within Volvo Car Group, such as SVP Corporate Functions, Senior Director HR Marketing, Sales & Services, VP HR, Centre of Expertise and VP Employee & Benefits.

Current board assignments and similar: Board member at Teknikföretagen.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 43,600 B shares.[1]

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1) The Volvo Cars holdings reported reflect the holdings as of 31 December, 2023 and includes holdings by related parties, if applicable. For information on transactions made since this date, please refer to the website of the Swedish Financial Supervisory Authority. PDMR transactions register | Finansinspektionen

JAVIER VARELA

“We’ll create fully electric cars that deliver on everything our customers expect from a Volvo, by embracing innovation and boosting efficiency in our development and manufacturing network.

CHIEF OPERATING OFFICER AND DEPUTY CEO

Born 1964.

In current position since 2022. Member of EMT since 2016.

Education and professional experience: Industrial engineering from the University of Vigo, Spain. Former Executive Vice President of Toyota Peugeot Citroën Automobile Czech as well as several senior positions within the PSA Group, including President and CEO of PSA Peugeot Citroën Argentina and Site Director for the Sochaux Plant.

Current board assignments and similar: Chairperson of the Board of NOVO Energy AB, Board member of Zenseact AB.

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 83,185 B shares.[1]

OLIVIA ROSS-WILSON

“By consistently engaging with audiences and highlighting what we stand for, we can make the Volvo brand more attractive to customers and have a positive impact on the world we live in.

CHIEF COMMUNICATIONS OFFICER

Born 1977.

Member of EMT since 2021.

Education and professional experience: Diploma in Business Management at East Sydney College, Australia. Former Chief Communications Officer, IKEA (Ingka Group), Director of Communication for Climate at Clinton Foundation and Bloomberg Philanthropies. Other roles include communication positions at Marks & Spencer Plc and Ketchum.

Current board assignments and similar: –

Holdings in Volvo Car AB (publ.), own and related parties, as per 31 December, 2023: 0 B shares.[1]

1) The Volvo Cars holdings reported reflect the holdings as of 31 December, 2023 and includes holdings by related parties, if applicable. For information on transactions made since this date, please refer to the website of the Swedish Financial Supervisory Authority. PDMR transactions register | Finansinspektionen

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Group Management Team

AREK NOWINSKI
HEAD OF EMEA

XIAOLIN YUAN
HEAD OF GREATER CHINA

MIKE COTTONE
HEAD OF US & CANADA

GRETCHEN SAEGH-FLEMING
HEAD OF GLOBAL MARKETING

FRANCESCA GAMBONI
HEAD OF PROCUREMENT AND SUPPLY CHAIN

GEERT BRUYNEEL
HEAD OF GLOBAL MANUFACTURING

HELENA BERGSTRÖM PILO
HEAD OF QUALITY

ANDERS BELL
HEAD OF GLOBAL ENGINEERING

ALWIN BAKKENES
HEAD OF SOFTWARE ENGINEERING

ERIK SEVERINSON
HEAD OF STRATEGY AND PROGRAM MANAGEMENT

TOBIAS ALTEHED
HEAD OF GLOBAL DIGITAL CORE

ELISABETH BARRIE
HEAD OF COMMERCIAL DIGITAL

FREDRIK HANSSON
HEAD OF GLOBAL PERFORMANCE STEERING

JEREMY OFFER
HEAD OF GLOBAL DESIGN

FOR MORE INFORMATION ABOUT THE GMT MEMBERS PLEASE SEE INVESTORS.VOLVOCARS.COM

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Auditor's report on the corporate governance statement

To the general meeting of the shareholders in Volvo Car AB (publ.) corporate identity number 556810-8988

Engagement and responsibility
It is the board of directors who is responsible for the corporate governance statement for the financial year 2023-01-01–2023-12-31 on pages 59–74 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.

Gothenburg, March 4, 2024
Deloitte AB

Signature on Swedish original
Fredrik Jonsson
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.

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Consolidated Income Statements

SEKm	Note	2023	2022
Revenue	2	399,343	330,145
Cost of sales	3	–321,916	–269,813
Gross income		**77,427**	**60,332**
Research and development expenses	3, 16	–12,884	–11,514
Selling expenses	3	–26,056	–21,000
Administrative expenses	3	–12,539	–11,485
Other operating income and expenses	6	–381	1,556
Share of income in joint ventures and associates	13	–5,628	4,443
Operating income	4, 5, 7, 8, 9, 10, 11	**19,939**	**22,332**
Interest income and similar credits	21	2,495	852
Interest expenses and similar charges	21	–772	–837
Other financial income and expenses	12	–802	–1,532
Income before tax		**20,860**	**20,815**
Income tax	14	–6,794	–3,812
Net income		**14,066**	**17,003**
Net income attributable to			
Owners of the parent company		13,053	15,577
Non-controlling interests		1,013	1,426
		14,066	**17,003**
Basic earnings per share (SEK)	15	4.38	5.23
Diluted earnings per share (SEK)	15	4.38	5.23

Income and result

Revenue increased by 21 per cent to SEK 399.3 (330.1) bn, mainly supported by wholesale volumes, which increased by 16 per cent to 732.3 (631.7) thousand cars.

Gross income increased to SEK 77.4 (60.3) bn, resulting in a gross margin of 19.4 (18.3) per cent, an increase mainly due to increased volume, as well as favourable foreign exchange rate effects, including hedges.

Operating income (EBIT) amounted to SEK 19.9 (22.3) bn, resulting in an EBIT margin of 5.0 (6.8) per cent, a decrease primarily as a result of the de-SPAC listing of Polestar in the comparative figures, see items affecting comparability table on the next page.

Excluding share of income in joint ventures and associates, EBIT increased to SEK 25.6 (17.9) bn, corresponding to a margin of 6.4 (5.4) per cent. The exchange rate effects including hedges had a positive impact on EBIT of SEK 1.8 bn.

Net financial items amounted to SEK 0.9 (–1.5) bn. The effective tax rate increased to 32.6 (18.3) per cent, mainly due to non tax deductible effect of the de-SPAC listing of Polestar in the comparative figures. Net income was SEK 14.1 (17.0) bn and 3.5 (5.2) per cent in relation to revenue. Basic earnings per share amounted to SEK 4.38 (5.23).

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Research and development spending, SEKm	2023	2022
Research and development spending	–26,943	–22,123
Capitalised development costs	18,912	15,188
Amortisation and depreciation of research and development	–4,853	–4,579
Research and development expenses	**–12,884**	**–11,514**

Changes to revenue, SEKbn	Full year
Revenue 2022	**330.1**
Volume	41.8
Sales mix and pricing	4.7
Sale of licences	–0.1
Foreign exchange rates	14.3
Contract manufacturing	1.8
Other[1]	6.7
Revenue 2023	**399.3**
Change %	21

1) Including used cars, earned emissions credits, parts and accessories.

Changes to Operating income, SEKbn	Full year
EBIT 2022	**22.3**
Volume	12.3
Sales mix and pricing	–0.5
Sale of licences	–0.1
Foreign exchange rates	1.8
Share of income in JVs and associates[2]	–4.2
Items affecting comparability – Volvo Cars operations	–0.6
Items affecting comparability – JVs & Associates	–5.9
Other[3]	–5.2
EBIT 2023	**19.9**
Change %	–11

2) Excluding items affecting comparability.
3) Mainly including raw material increases, fixed costs, used cars, emissions credits, parts and accessories, cost efficiencies and import duties.

Items affecting comparability, SEKbn	2023	2022
Whereof affecting Volvo Cars Operations		
Restructuring costs	–0.6	—
Whereof affecting JV's & Associates		
de-SPAC listing of Polestar, net effect	—	5.9
Total	**–0.6**	**5.9**

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Consolidated Comprehensive Income

SEKm	2023	2022
Net income	14,066	17,003
Other comprehensive income		
Items that will not be reclassified subsequently to income statement:		
Remeasurements of provisions for post-employment benefits	–1,815	4,560
Tax on items that will not be reclassified to income statement	424	–998
Items that have been or may be reclassified subsequently to income statement:		
Translation difference on foreign operations	–1,240	3,872
Translation difference of hedge instruments of net investments in foreign operations	131	–710
Change in fair value of cash flow hedge related to currency and commodity price risks	1,976	2,289
Tax on items that have been or may be reclassified to income statement	–435	–319
Other comprehensive income, net of income tax	**–959**	**8,694**
Total comprehensive income	**13,107**	**25,697**
Total comprehensive income attributable to		
Owners of the parent company	12,343	24,150
Non–controlling interests	764	1,547
	13,107	**25,697**

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Consolidated Balance Sheets

SEKm	Note	31 Dec 2023	31 Dec 2022
ASSETS			
Non-current assets			
Intangible assets	16	72,104	56,994
Tangible assets	7, 17	84,113	77,252
Investments in joint ventures and associates	13	14,142	15,599
Other long-term securities holdings	21	12,066	4,353
Deferred tax assets	14	10,135	9,131
Other non-current interest-bearing receivables		1,327	3,354
Non-current derivative assets	21	2,094	1,128
Other non-current assets	18	3,426	3,994
Total non-current assets		**199,407**	**171,805**
Current assets			
Inventories	19	57,058	46,951
Accounts receivable	4, 20	19,284	25,239
Current tax assets		997	1,763
Current derivative assets	21	1,988	1,769
Other current assets	20	19,849	16,239
Marketable securities	22	9,918	3,415
Cash and cash equivalents	22	47,861	63,743
Total current assets		**156,955**	**159,119**
TOTAL ASSETS		**356,362**	**330,924**

SEKm	Note	31 Dec 2023	31 Dec 2022
EQUITY & LIABILITIES			
Equity	23		
Equity attributable to owners of the parent company		126,371	113,947
Non-controlling interests		4,114	3,331
Total equity		**130,485**	**117,278**
Non-current liabilities			
Provisions for post-employment benefits	24	7,610	6,883
Deferred tax liabilities	14	8,293	5,392
Other non-current provisions	25	7,582	8,398
Liabilities to credit institutions	21	4,562	3,096
Non-current bonds	21	18,087	22,959
Non-current contract liabilities to customers	26	8,148	7,144
Other non-current interest-bearing liabilities	7	4,790	4,845
Non-current derivative liabilities	21	424	825
Other non-current liabilities	4, 27	5,385	4,726
Total non-current liabilities		**64,881**	**64,268**
Current liabilities			
Current provisions	25	13,117	9,051
Liabilities to credit institutions	21	937	755
Current bonds	21	6,660	2,000
Current contract liabilities to customers	26	30,817	26,094
Accounts payable	4	62,304	68,913
Current tax liabilities		1,607	1,566
Other current interest-bearing liabilities	7	1,242	1,500
Current derivative liabilities	21	1,055	1,809
Other current liabilities	28	43,257	37,690
Total current liabilities		**160,996**	**149,378**
TOTAL EQUITY & LIABILITIES		**356,362**	**330,924**

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VOLVO

Consolidated Statement of Changes in Equity

SEKm	Share capital[1]	Share premium	Other contributed capital	Currency translation reserve	Other reserves	Retained earnings	Attributable to owners of the parent	Non-controlling interests	Total
Balance at 1 January 2022 (as previously reported)	**61**	**31,655**	**8,452**	**1,653**	**–1,244**	**49,841**	**90,418**	**4,560**	**94,978**
Correction of prior period error[2]	—	—	—	7	—	–240	–233	–233	–466
Effect of hyperinflation[3]	—	—	—	—	—	49	49	—	49
Balance at 1 January 2022 (restated)	**61**	**31,655**	**8,452**	**1,660**	**–1,244**	**49,650**	**90,234**	**4,327**	**94,561**
Net income	**—**	**—**	**—**	**—**	**—**	**15,577**	**15,577**	**1,426**	**17,003**
Other comprehensive income									
Remeasurements of provisions for post-employment benefits	—	—	—	—	—	4,560	4,560	—	4,560
Translation difference on foreign operations	—	—	—	3,902	—	—	3,902	–30	3,872
Translation difference of hedge instruments of net investments in foreign operations	—	—	—	–710	—	—	–710	—	–710
Change in fair value of cash flow hedge related to currency and commodity price risks	—	—	—	—	2,102	—	2,102	187	2,289
Tax attributable to items recognised in other comprehensive income	—	—	—	147	–430	–998	–1,281	–36	–1,317
Other comprehensive income	**—**	**—**	**—**	**3,339**	**1,672**	**3,562**	**8,573**	**121**	**8,694**
Total comprehensive income	**—**	**—**	**—**	**3,339**	**1,672**	**19,139**	**24,150**	**1,547**	**25,697**
Transactions with owners									
Capital contribution from non-controlling interest[4]	—	—	—	—	—	—	—	17	17
Transactions with non-controlling interests[4]	—	—	—	—	—	37	37	–37	—
Divestment of non-controlling interest[4]	—	—	—	—	—	–764	–764	–432	–1,196
Divestment under common control[4]	—	—	—	—	—	267	267	–1,245	–978
New issue	—	–1	—	—	—	—	–1	—	–1
Share-based payments[5]	—	—	—	—	—	24	24	—	24
Dividend to shareholders[6]	—	—	—	—	—	—	—	–846	–846
Transactions with owners	**—**	**–1**	**—**	**—**	**—**	**–436**	**–437**	**–2,543**	**–2,980**
Balance at 31 December 2022	**61**	**31,654**	**8,452**	**4,999**	**428**	**68,353**	**113,947**	**3,331**	**117,278**

1) Share capital amounted to SEK 60,947,709.
2) For further information, see Annual report 2022, Note 10 – Governments grants.
3) For further information, see Annual report 2022, Note 1 – General information for financial reporting in Volvo Car Group.
4) For further information, see Note 23 – Equity and Note 8 – Participation in subsidiaries (Parent company).
5) For further information, see Note 9 – Share-based renumeration.
6) For further information, see Note 23 – Equity and Note 4 – Related party transactions.

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Consolidated Statement of Changes in Equity

SEKm	Share capital[1]	Share premium	Other contributed capital	Currency translation reserve	Other reserves	Retained earnings	Attributable to owners of the parent	Non-controlling interests	Total
Balance at 1 January 2023	**61**	**31,654**	**8,452**	**4,999**	**428**	**68,353**	**113,947**	**3,331**	**117,278**
Net income	**—**	**—**	**—**	**—**	**—**	**13,053**	**13,053**	**1,013**	**14,066**
Other comprehensive income									
Remeasurements of provisions for post-employment benefits	—	—	—	—	—	–1,815	–1,815	—	–1,815
Translation difference on foreign operations	—	—	—	–1,011	—	—	–1,011	–229	–1,240
Translation difference of hedge instruments of net investments in foreign operations	—	—	—	131	—	—	131	—	131
Change in fair value of cash flow hedge related to currency and commodity price risks	—	—	—	—	2,000	—	2,000	–24	1,976
Tax attributable to items recognised in other comprehensive income	—	—	—	–27	–412	424	–15	4	–11
Other comprehensive income	**—**	**—**	**—**	**–907**	**1,588**	**–1,391**	**–710**	**–249**	**–959**
Total comprehensive income	**—**	**—**	**—**	**–907**	**1,588**	**11,662**	**12,343**	**764**	**13,107**
Transactions with owners									
Transactions with non-controlling interests	—	—	—	—	—	–19	–19	19	—
Change in Group composition	—	—	—	—	—	–9	–9	—	–9
Share-based payments[2]	—	—	—	—	—	109	109	—	109
Transactions with owners	**—**	**—**	**—**	**—**	**—**	**81**	**81**	**19**	**100**
Balance at 31 December 2023	**61**	**31,654**	**8,452**	**4,092**	**2,016**	**80,096**	**126,371**	**4,114**	**130,485**

1) Share capital amounted to SEK 60,947,709.
2) For further information, see Note 9 – Share-based remuneration.

Equity

Total equity increased to SEK 130.5 (117.3) bn, resulting in an equity ratio of 36.6 (35.4) per cent. The change is mainly attributable to a positive net income of SEK 14.1 bn and minor effects in share-based payments and other comprehensive income.

The change in other comprehensive income is related to a foreign exchange translation effect, including hedges of net investments in foreign operations of SEK –1.1 bn (net of tax). Remeasurements of provisions for post-employment benefits had a negative effect of SEK –1.4 bn (net of tax). The positive change in cash flow hedge reserve related to currency and commodity price risks of SEK 1.6 bn (net of tax). The change in value of cash flow hedges is mainly due to an appreciated SEK compared to most of the major currencies.

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Consolidated Statement of Cash Flows

SEKm	Note	2023	2022
OPERATING ACTIVITIES			
Operating income		19,939	22,332
Depreciation and amortisation of non-current assets	10	17,449	16,091
Dividends received from joint ventures and associates		88	72
Interest and similar items received		2,495	1,065
Interest and similar items paid		–1,710	–1,351
Other financial items		178	206
Income tax paid		–4,486	–4,223
Adjustments for other non-cash items	31	6,087	–7,135
		40,040	**27,057**
Movements in working capital			
Change in inventories		–11,341	–7,348
Change in accounts receivable		4,750	–776
Change in accounts payable		–2,918	18,533
Change in provisions		–1,914	–4,640
Change in contract liabilities to customers		8,707	5,941
Change in other working capital		5,543	–5,168
Cash flow from movements in working capital		**2,827**	**6,542**
Cash flow from operating activities		**42,867**	**33,599**
INVESTING ACTIVITIES			
Investments in shares and participations	13	–1,151	–9,597
Divestment in shares and participations	32	–178	2,290
Loans to affiliated companies		–11,990	—
Investments in intangible assets		–20,680	–18,328
Investments in tangible assets		–18,485	–13,784
Disposal of tangible assets		642	161
Other		—	–400
Cash flow from investing activities		**–51,842**	**–39,658**
Cash flow from operating and investing activities		**–8,975**	**–6,059**

SEKm	Note	2023	2022
FINANCING ACTIVITIES			
Proceeds from credit institutions		3,970	1,040
Proceeds from bond issuance	21	1,500	5,260
Repayment of bond		–2,000	—
Repayment of liabilities to credit institutions		–673	–4,530
Repayment of interest-bearing liabilities		–1,747	–1,711
Dividend paid to Non-controlling interest	4	—	–846
Investments in marketable securities	22	–10,792	–21,127
Matured marketable securities		4,115	26,157
Other[1]		376	726
Cash flow from financing activities		**–5,251**	**4,969**
Cash flow for the year		**–14,226**	**–1,090**
Cash and cash equivalents at beginning of year		**63,743**	**62,265**
Exchange difference on cash and cash equivalents		–1,656	2,568
Cash and cash equivalents at end of year	22	**47,861**	**63,743**

1) Other is attributable to realised result from financial instruments of SEK 376 (1,058) m and change in Other non-current liabilities of SEK — (–332) m.

Net financial position and liquidity

Total cash and cash equivalents, including marketable securities, decreased to SEK 57.8 (67.2) bn. Net cash decreased to SEK 27.5 (38.1) bn. Liquidity amounted to SEK 75.0 (83.8) bn, including undrawn credit facilities of SEK 17.2 (16.7) bn.

Cash flow from operating activities was positive and amounted to SEK 42.9 (33.6) bn, mainly due to a positive EBITDA of 37.4 (38.4) bn, offset by paid income tax of SEK –4.5 (–4.2) bn, together with a positive development in working capital of SEK 2.8 (6.5) bn. Volvo Cars continued to invest in the transformation into a fully electric car company and together with a loan to Polestar cash flow from investing activities amounted to SEK –51.8 (–39.7) bn.

Cash flow from financing activities amounted to SEK –5.3 (5.0) bn, mainly related to change in marketable securities.

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Notes to the Consolidated Financial Statements

All amounts are in SEKm unless otherwise stated.
Amounts in brackets refer to the preceding year.

NOTE 1 GENERAL INFORMATION FOR FINANCIAL REPORTING IN VOLVO CAR GROUP

Basis of preparation

The consolidated financial statements of Volvo Car AB (publ.) have been prepared in accordance with the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), as adopted by the European Union and the Swedish Annual Accounts Act. In addition, RFR 1 Supplementary Rules for Groups has been applied, a standard issued by the Swedish Financial Reporting Board. RFR 1 specifies mandatory additions to the IFRS disclosure requirements in accordance with the Swedish Annual Accounts Act. Group companies apply the same accounting principles, irrespective of national legislation, as defined in Volvo Car Group accounting directives and they have been applied consistently for all periods, unless otherwise stated.

The financial statements are based on cost, apart from certain financial instruments, provisions for pensions and other post-employment benefits which are reported at fair value. Preparation of the financial statements in accordance with IFRS requires the Company's Executive Management and the Board of Directors to make estimations and judgements that affect the value of the reported assets, liabilities, income and expenses. Estimates and judgements will impact the values of assets and liabilities. The actual outcome (value) may differ from these estimates and judgements and corrections may be necessary to make. Therefore, the estimates and judgements are reviewed on a regular basis. Changes are recognised in the period of the change and in future periods if the change affects both.

All accounting policies considered material to Volvo Car Group are described in conjunction with each note. When a new accounting policy has been implemented or when there has been changes in disclosures this is described as part of the relevant note.

The estimates and judgements that are deemed to be the most important for an understanding of Volvo Car Group's financial reports within each area, taking into account the degree of materiality and uncertainty, are presented as part of each applicable note.

In order to avoid duplication of information, cross-references have been made between different parts of the annual report.

New accounting principles

New accounting principles 2023

IASB has published amendments to standards that were endorsed by EU, effective after 1 January 2023. These additions have not had any material impact on the financial statements.

New accounting principles 2024

IASB has published amendments to standards that were endorsed by EU, effective after 1 January 2024. None of these are expected to have a material effect on the financial statements.

Basis of consolidation

The consolidated accounts include Volvo Car AB (publ.) and its subsidiaries. Subsidiaries are all entities over which Volvo Car Group has control. Volvo Car Group controls an entity when exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

All wholly-owned subsidiaries and certain companies owned to 50 per cent or more, are consolidated, see Note 8 – Participation in subsidiaries (parent company). Subsidiaries are fully consolidated from the date on which control is transferred to Volvo Car Group. They are deconsolidated from the date that control ceases. When a subsidiary is not wholly-owned by Volvo Car Group, the portion of the results and equity attributable to the non-controlling interest are presented separately in the financial statements.

Climate change

Being an automotive industry actor, Volvo Cars acknowledge the global threat of climate change and global warming, particularly the importance of our own contribution to prevent global climate action failure and fulfilment of the Paris Agreement. Volvo Cars continuously evaluates how climate change transitional and physical risks affects our business strategy and operations as sustainability is deeply integrated in our business model. We have set the ambition to become a climate neutral company by 2040 and our current climate action emission reduction targets for 2030 are in line with a well below 2-degree scenario as verified by the Science-Based Targets initiative (SBTi). A key enabler is our strategic objective to become a 100 per cent BEV company by 2030. All types of strategic decisions including investment decisions are taken in the context of fulfilling these ambitions and targets.

In preparing the consolidated financial statements the potential impact of climate change, future regulatory changes and our transition towards becoming a 100 per cent BEV company by 2030 has been, as far as possible, incorporated as part of the critical accounting estimates and judgements made in the consolidated financial statements. Areas that have been especially considered are the potential impact on the value of non-current assets, future cash flows and emission credits.

Our ambitions and targets are part of Management's business plan and climate related risks are thus also included in the identification of future cash flows to be used when calculating different assets and or cash generating units' recoverable values, including the impairment tests of goodwill and intangible assets with indefinite useful lives. Furthermore, Volvo Car Group regularly assess the useful lives of non-current, non-financial assets which also take into consideration said factors. As an effect, the useful life of our ICE related assets are aligned with our objective to become a 100 per cent BEV company by 2030. For more information on the effects of climate related risks relating to intangible and tangible assets, see Note – 16 Intangible assets and Note 17 – Tangible assets.

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Changing regulations and changes in environmental policies are continuously monitored and any obligations are recognised accordingly. In respect to this, during the year Volvo Car Group has recognised in revenue, income from government grants relating to emission credits earned during the period for exceeding the emission targets in certain markets. For more information, see section Emission credits in Note 2 – Revenue.

Foreign currency

The Group's Consolidated Financial Statements are presented in Swedish Krona (SEK), which is also the Parent Company's functional currency.

Assets and liabilities denominated in foreign currencies other than the functional currency are translated to the functional currency using the balance sheet closing rate. Exchange rate differences are recognised in the income statement.

Exchange rate differences on operating assets and liabilities are recognised in other operating income and expenses, while exchange rate differences arising on financial assets and liabilities are recognised in financial income and expenses.

When 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 rate differences arising on translation are recognised in other comprehensive income and accumulated in equity. The accumulated translation differences related to subsidiaries, joint ventures or associates are reversed to the income statement as a part of the gain/loss arising from disposal of such a company.

The main exchange rates applied are presented in the table below:

		Average rate		Close rate	
Country	Currency	**2023**	2022	**2023**	2022
China	CNY	1.50	1.50	1.42	1.51
Euro zone	EUR	11.49	10.58	11.12	11.12
United Kingdom	GBP	13.20	12.44	12.80	12.56
United States	USD	10.63	10.05	10.05	10.40
Japan	JPY	0.08	0.08	0.07	0.08

Classification of current and non-current assets and liabilities

An asset is classified as current when it is held primarily for the purpose of trading, is expected to be realised within 12 months after the balance sheet date or consists of cash or cash equivalents, provided it is not subject to any restrictions. All other assets are classified as non-current. A liability is classified as current when it is held primarily for the purpose of trading or is expected to be settled within 12 months after the balance sheet date and Volvo Car Group do not have the right to defer settlement of the liability for at least 12 months after the balance sheet date. All other liabilities are classified as non-current.

When the criteria for being classified as a non-current asset held for sale are fulfilled and the asset or disposal group are of material value, the asset or disposal group and the related liabilities are recognised on a separate line in the balance sheet.

NOTE 2 REVENUE

ACCOUNTING POLICIES

Revenue is recognised when the customer obtains control of a delivered good or service, and thus has the ability to direct the use and obtain the benefits from the goods or services. Revenue could either be recognised at a point in time or over time depending on the applied business model. The sale of goods or services will sometimes give rise to recognition of contract liabilities to customers.

These liabilities are recognised when Volvo Car Group are obligated to transfer goods or services for which consideration is already received. Contract liabilities to customers include sales generated obligations, deferred revenue from service contracts, sales with repurchase commitments and residual value guarantees as well as advance payments from customers.

Revenue from sale of goods

Revenue from sale of goods include sales of new and used cars, sales of parts and accessories as well as contract manufacturing. Revenue from the sale of goods is recognised when the customer has gained control over the goods according to agreed contract terms. If the customer contracts include variable considerations or consideration payables the revenue recognised will be affected. If a variable consideration or a consideration payable, e.g., a volume discount or incentive programme, is paid out at a later point in time then the revenue for the good or service is recognised, the value is estimated and recognised as a contract liability.

Revenue from sale of a vehicle to a customer, where there is a residual value guarantee issued to an independent financing provider, is recognised at the time of sale, less an amount corresponding to the estimated residual value risk. The estimated residual value risk remaining in Volvo Car Group is recognised as a contract liability, see Note 26 – Current and non-current contract liabilities to customers. Revenue is only recognised provided that transfer of control over the vehicle can be confirmed.

Revenue from sale of a vehicle to a customer combined with a repurchase commitment (the right or obligation (put option) to buy back the car) is recognised over the contract period as if it were an operating lease contract, see Note 7 – Leasing. This is based on the fact that the customer has not obtained the control of the vehicle. Based on historical experience a majority of customers use the put option at the end of the contract period. During the contract period

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the cars are recognised on the balance sheet and are depreciated to the estimated residual value, see Note 10 – Depreciation and amortisation. The useful life of the asset and the corresponding residual value is monitored closely and changed, if necessary, see Note 19 – Inventories and Note 17 – Tangible assets. Liabilities related to repurchase commitments are recognised as other non-current and other current liabilities, see Note 27 – Other non-current liabilities and Note 28 – Other current liabilities. Deferred revenue related to sale with repurchase commitments are recognised as current and non-current contract liabilities to customers, see Note 26 – Current and non-current contract liabilities to customers.

Revenue from sale of services
Volvo Car Group sells services in the form of for example, maintenance contracts, extended warranties and connectivity to customers. Revenue from these sales is deferred and recognised on a straight-line basis over the contract period. The deferred revenue is recognised as contract liabilities to customers, since the customer's payment is made before the service is performed. When an extended warranty contract is included in the sales price of the car and the inclusion in the contract is assessed to be common practice in the market, such extended warranty costs is recognised as a provision. Where an extended warranty is included in the sale of a car and the offer goes beyond common practice in the market, it is instead accounted for as a separate performance obligation; a stand-alone selling price is identified, and revenue is recognised on a straight-line basis over the contract period. The stand-alone selling price is often not directly observable, why the price in general is estimated based on expected cost plus a reasonable margin.

Maintenance and extended warranty contracts can in some cases meet the definitions of both a customer contract (IFRS 15 Revenue from Contracts with Customers) and an insurance contract (IFRS 17 Insurance Contracts). Considering the terms of these contracts, Volvo Car Group has applied the policy choice available to account for these as customer contracts.

Revenue from subscription, leasing and rental business
Revenue from subscription, leasing and rental business is recognised as revenue on a straight-line basis over the contract period. Revenue related to an operating lease arrangement is recognised on a straight-line basis over the leasing period.

Revenue from sale of licences
Revenue from the sale of licences is recognised at a point in time or over time, depending on whether the sold licence gives the customer a right to use or a right to access the underlying asset. Volvo Car Group sells both types of licences and revenue is therefore recognised in accordance with the substance of the relevant agreement. Income from sold licences related to intellectual property (IP) and other developed technology is classified as revenue.

Emission credits
Volvo Cars recognises in revenue, income from government grants relating to emission credits earned during the period for exceeding the emission targets in certain markets when the credits can be sold or consumed in the future, and a fair value for the credits received can be determined. The earned credits are classified as inventories until they are either sold to a third-party or consumed in Volvo Cars operations. When emission credits are sold that either did not have a determinable fair value as of their grant date or were sold at a value that exceeds the fair value on the grant date, this gain is recognised in revenue when the credits are transferred to the customer and derecognised from inventory. See Note 11 – Government grants and Note 19 – Inventories for more information.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Consideration payables
The inherent risk with regard to different forms of variable consideration in a sales transaction is the probability of a reversal of revenue in future periods. As a consequence, Volvo Car Group use either the expected value method or the most likely amount as appropriate when assessing the variable sales price. Revenue is recognised when it is highly probable that a revenue reversal in future periods will not occur. An example of this being cars sold with volume discounts based on aggregate sales over a 3–12 months period. Revenue from these sales is recognised based on the price specified in the contract, adjusted for volume discounts for the wholesales period. Estimates and judgements initially made are updated continuously at each reporting period.

Residual value guarantees
Volvo Car Group is exposed to residual value risks, meaning that there is a potential loss for Volvo Car Group if the future market value of a used car is lower than the guaranteed value of the car according to the contract. This potential negative effect is recognised as a contract liability, and the future market value of cars is monitored individually on a continuing basis with a special emphasis on residual value of internal combustion engine vehicles, in line with the market shifting towards electric vehicles. An estimate is made based on evaluating recent car auction values, future price deterioration due to expected change of market conditions, vehicle quality data and repair and reconditioning costs etc.

Repurchase Commitments
Cars sold with a repurchase obligation are recognised in the balance sheet as assets under operating leases or inventories depending on the contract period. During the contract period there is risk of a potential loss for Volvo Car Group if the estimated value of the car is lower than the market value at the time. The potential negative effect is recognised as an increased depreciation or an impairment of the car. An estimate of the value of the car is therefore made based on recent car auction values, future price deterioration due to expected change of market conditions, vehicle quality data and repair and reconditioning costs etc. The value of the car in the balance sheet is adjusted if necessary.

Revenue recognised in relation to contract liabilities to customers
For revenue recognised in the current reporting period in relation to opening balance of contract liabilities see Note 26 – Current and non-current contract liabilities to customers. The majority of Volvo Car Group´s contract liabilities are classified as current and will most likely be recognised as revenue during the coming year.

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Revenue allocated to geographical regions:	2023	2022
China	73,545	70,924
US	75,172	62,070
Europe	184,894	144,150
of which Sweden[1)]	*47,029*	*44,923*
of which Germany	*24,942*	*19,015*
of which United Kingdom	*21,661*	*16,159*
Other markets	65,732	53,001
of which Japan	*7,673*	*8,339*
of which South Korea	*8,336*	*6,024*
Total	**399,343**	**330,145**

1) Includes the Contract manufacturing sales channel.

Revenue allocated to category:	2023	2022
Sales of new cars	307,549	252,747
Sales of used cars	18,505	16,405
Sales of parts and accessories	37,170	30,778
Revenue from subscription, leasing and rental business	5,463	4,473
Sales of licences and royalties	798	887
Contract manufacturing	22,357	20,288
Emissions credits	910	505
Other revenue	6,591	4,062
Total	**399,343**	**330,145**

NOTE 3 EXPENSES BY NATURE

	2023	2022
Material cost incl. freight, distribution and warranty	–280,287	–236,127
Personnel[1)]	–43,809	–36,776
Amortisation/depreciation	–17,449	–16,091
Other	–31,850	–24,818
Total	**–373,395**	**–313,812**

1) The amounts presented as Personnel have been reduced by capitalised salary costs related to product development.

NOTE 4 RELATED PARTY TRANSACTIONS

ACCOUNTING POLICIES

Volvo Car Group has a close collaboration with its Related parties. The main part of the transactions is related to sales and purchases of cars, licences of technology, contract manufacturing and purchases of components. Related parties include companies outside the Volvo Car Group, but within the Geely sphere of companies as well as other companies, such as associates and joint ventures. All transactions with related parties are performed at arm's length.

Significant event and agreements with Related parties during the year

- On 6 January, Volvo Cars, through one of its wholly-owned subsidiaries, Asia Euro Automobile Manufacturing (Taizhou) Co., Ltd. acquired 100 per cent of the shares in Taizhou Luqiao Jijin Automobile Manufacturing Co., Ltd. The acquired company owns land use rights and building related to the manufacturing plant in Luqiao, Taizhou, China. The purchase consideration amounted to SEK 2,865 m.
- In November 2022, Volvo Cars signed a facility agreement with Polestar, amounting to USD 800 million. During the autumn 2023, Volvo Cars agreed to increase the existing term loan facility with additional USD 200 million, with all other terms remaining the same. Volvo Cars also extended the credit loan where any drawn funds be repaid during 2027, and in January 2024 further extended to the end of 2028, see further details in Board of Directors' report. At year end 2023, Polestar has withdrawn the full amount from the total credit facility of USD 1,000 m. The loan is interest-bearing and classified as other securities holdings.
- Volvo Car Corporation and Zhejiang Genius & Guru Investment Co., Ltd have entered into an agreement resulting in the loss of control of the wholly-owned subsidiary, Volvo Car Group Financial Leasing (Shanghai) Co., Ltd. Volvo Car Group has consolidated the company until 25 June when control was ceased, thereafter the company is a joint venture between Volvo Cars and Geely. Zhejiang Genius & Guru Investment Co., Ltd. acquired 45 per cent of Volvo Car Group Financial Leasing (Shanghai) Co., Ltd. through the issuance of new shares, for a total of SEK 621 m. For further information see Note 32 – Business combinations and divestments.

  In addition, the shareholders have provided the company with financial support in the form of a joint credit facility based on their pro rata share, amounting to a total of CNY 1,815 m. As of 31 December, Volvo Car Group Financial Leasing (Shanghai) Co., Ltd. has withdrawn a credit amount of total CNY 1,600 m from the joint credit facility, of which the part provided by Volvo Cars amounts to CNY 880 m.

Tables of transactions with Related parties

The information presented below includes all assets and liabilities towards related parties. All assets and liabilities are current except SEK 11,543 (966) m which are non-current. For further details refer to section Specification of transactions with related parties, on next page.

	Sales of goods, services and other		Purchases of goods, services and other	
	2023	2022	**2023**	2022
Related companies[1)2)]	27,253	24,962	–33,519	–26,202
Associated companies and joint ventures[1)]	2,705	1,627	–2,958	–2,701

	Receivables		Payables	
	31 Dec 2023	31 Dec 2022	**31 Dec 2023**	31 Dec 2022
Related companies[1)2)]	21,534	21,043	14,941	13,414
Associated companies and joint ventures[1)]	2,545	1,377	627	466

1) Related companies are companies within the Geely sphere of companies. Joint ventures and associated companies within the Geely sphere are presented as Related companies. For joint ventures and associated companies see Note 13 – Investments in joint ventures and associates.
2) Including contract manufacturing.

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Specification of significant transactions with Related parties

The Polestar Group
Volvo Car Group recognised revenue from the Polestar Group of SEK 24,939 (21,837) m. The revenue was mainly related to sale of Polestar cars from the Taizhou plant, technology licences and development of technology as well as revenue related to sale of other services.

Zhangjiakou Aurobay Powertrain Manufacturing Co., Ltd
The purchase of combustion engines amounted to SEK –7,304 (–6,956) m and has mainly been recognised as cost of sales.

Powertrain Engineering Sweden AB (PES)
The total purchases from Powertrain Engineering Sweden AB amounted to SEK –13,517 (–10,930) m, mainly related to combustion engines and product development which has mainly been recognised as cost of sales.

Zhejiang Liankong Technology Co., Ltd and Zhejiang Ji Run Auto Co., Ltd
The purchase of research and development services from Zhejiang Liankong Technology Co., Ltd and Zhejiang Ji Run Auto Co., Ltd amounted to SEK –343 (–1,885) m, all purchased during the first quarter. The full amount has been capitalised as intangible assets.

Ningbo Fuhong Auto Sales Co., Ltd
Total revenue from sales of cars to Ningbo Fuhong Auto Sales Co., Ltd amounted to SEK 1,467 (1,545) m.

Ningbo Geely Automobile Research & Development Co., Ltd
The purchase of research and development services from Ningbo Geely Automobile Research & Develepment Co., Ltd amounted to SEK –1,592 (–1,358) m and has mainly been capitalised as intangible assets.

Viridi E-Mobility Technology (Ningbo) Co., Ltd
The total purchases from Viridi E-Mobility Technology (Ningbo) Co., Ltd. amounted to SEK –2,079 (–1,553) m, mainly related to batteries and has been recognised as cost of sales.

Zhejiang Geely Automobile Co.,Ltd and Shanghai Global Trading Corporation
The total purchases from Zhejiang Geely Automobile Co.,Ltd and Shanghai Global Trading Corporation amounted to SEK –3,545 m. The purchases were related to the production of the EX30.

The NOVO Energy Group
In June, Volvo Car Corporation signed a share purchase agreement with Novo Energy Production AB. The divestment was closed on 14 July 2023 and the control of Volvo Cars wholly-owned subsidiary Fastighetsbolag Sörred 15:7 AB was transferred to the acquirer, the joint venture company Novo Energy Production AB, Sweden. The divested real estate company owns the land where upon the future battery manufactury plant will be built in the area of Gothenburg, Sweden. The disposal consideration amounted to SEK 121 m. Novo Energy Group has consolidated the aquired wholly-owned subsidiary from 14 July 2023 when the joint venture Group gained control. During 2023, capital contributions amounting to SEK 815 (158) m has been paid from Volvo Cars to NOVO Energy AB.

Zhejiang Geely Holding Group Co., Ltd
Total dividend of SEK — (846) m was distributed to the shareholder Zhejiang Geely Holding Group Co., Ltd, whereof SEK — (840) m from the 50 per cent owned subsidiary Daqing Volvo Car Manufacturing Co., Ltd, SEK — (6) m from the 50 per cent owned subsidiary Shanghai Volvo Car Research and Development Co., Ltd.

Volvo Car Group does not engage in any transactions with Board members or senior executives except ordinary remunerations for services and the sharebased programme as described in Note 8 – Employees and remuneration and Note 9 – Share-based remunerations.

NOTE 5 AUDIT FEES

	2023	2022
Deloitte		
Audit fees	–57	–49
Audit-related fees	–4	–3
Tax services	–2	–2
Other services	–8	–6
Total	**–71**	**–60**
Audit fees to other audit firms	—	–1
Total	**–71**	**–61**

administration by the Board of Directors and the Managing Directors. The audit also includes advice and assistance as a result of the observations made in connection with the audit.

Audit-related fees refer to other assignments to ensure quality in the financial statements including consultations on reporting requirements and internal control.

Tax services include tax-related advisory.

All other work performed by the auditor is defined as **other services**.

NOTE 6 OTHER OPERATING INCOME AND EXPENSES

	2023	2022
Other operating income		
Foreign exchange rate gains[1]	—	800
Sold services	804	858
Government grants	307	231
Other	1,716	1,361
Total	**2,827**	**3,250**

	2023	2022
Other operating expenses		
Amortisation and depreciation of intangible and tangible assets	–31	–31
Foreign exchange rate loss[1]	–1,372	—
Property tax	–147	–132
Other	–1,658	–1,531
Total	**–3,208**	**–1,694**

1) The gross foreign exchange rate gain on operating assets and liabilities amounted to SEK 483 (2,664) m. The gross foreign exchange rate loss on operating assets and liabilities amounted to SEK –1,855 (–1,864) m.

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NOTE 7 LEASING

ACCOUNTING POLICIES

Volvo Car Group as a lessee

At the lease commencement date, a right-of-use asset and a lease liability are recognised on the balance sheet.

Right-of-use assets

The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and the estimate of costs to dismantle and remove the underlying asset or the site on which it is located, less any lease incentives received. The asset is subsequently depreciated on a straight-line basis from the commencement date to the earlier of the end of the useful life of the underlying asset or the end of the lease term. For more information regarding deprecation see Note 10 – Depreciation and amortisation. The right-of-use asset is reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

In the balance sheet, right-of-use assets are presented as Tangible assets, see Note 16 – Tangible assets.

Lease liabilities

The lease liability is initially measured at an amount equal to the present value of the future lease payments under the lease contract. Lease payments included in the measurement of the lease liability comprise of fixed lease payments including in-substance fixed payments, variable lease payments that depend on an index or a rate, amounts expected to be payable under a residual value guarantee and payments related to options that Volvo Car Group is reasonably certain to exercise. The lease payments are discounted using the interest rate implicit in the lease if this can be readily determined. In cases where the interest rate is not implicit in the lease, Volvo Car Group generally has used the incremental borrowing rate. Non-lease components are included in the measurement of the lease liability for all asset classes.

On the balance sheet, lease liabilities are presented as Other non-current and current interest-bearing liabilities.

Recognition exceptions

Volvo Car Group applies the recognition exemptions regarding short-term leases and leases where the underlying asset is of low value. Hence, payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in the income statement. Short-term leases are leases with a lease term of 12 months or less and low value assets are defined as asset classes that are typically of low value, for example small IT equipment (cellphones, laptops, computers, printers) and office furniture.

Lease expenses and payments

In the income statement, depreciation of the right-of-use asset is presented on the same line item/items with similar expenses. Interest expense on the lease liability is presented as part of finance expenses. In the statement of cash flows, amortisation on the lease liability is presented as a cash flow from financing activities.

Payments of interest as well as payments for short-term leases and leases of low value are presented as cash flow from operating activities.

Volvo Car Group as a lessor

When Volvo Car Group is a lessor the accounting treatment differs based on the classification into operating and finance leases. The classification is made based on the distribution of risks and rewards incidental to ownership of the lease asset. If they are transferred to the lessee, it is classified as a finance lease or if it remains with Volvo Cars it is classified as an operating lease.

Finance leases

When accounting for finance leases, the lease asset is derecognised and a lease receivable is recognised in the amount of the net investment in the lease, corresponding to the present value of the lease payments less any unguaranteed residual values. Any initial direct costs are included in the net investment in the lease. Income is recognised over the lease term using the effective interest rate.

Operating leases

Volvo Car Group recognises operating leases when cars are sold with repurchase commitments and for car subscription contracts under the brand Care by Volvo. Assets under operating lease with a maturity less or equal to 12 months are recognised as inventory, see Note 19 – Inventories. Assets with operating lease contracts with a maturity more than 12 months are recognised as assets under operating lease, see Note 17 – Tangible assets. For cars sold with repurchase commitments, the difference between the original sales price and the repurchase price is recognised in the income statement as revenue on a straight line basis over the lease term, see Note 2 – Revenue. The remaining lease revenue yet to be recognised is presented as part of current and non-current contract liabilities to customers in the balance sheet, see Note 26 – Current and non-current contract liabilities to customers. The repurchase obligation is considered to be a financial liability and is classified as non-current or current liabilities, see Note 27 – Other non-current liabilities and see Note 28 – Other current liabilities.

Sub-leases, manufacturer finance leases and sale and leaseback transactions are not considered material for Volvo Car Group.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Complex contracts require Volvo Car Group to make judgemental decisions when determining the lease term for contracts, especially for the leasing of buildings. Factors included in the determination of the lease term are if Volvo Car Group, as a lessee, has made investments to improve the asset or tailored it for our special needs and/or the importance of the underlying asset to Volvo Car Group's operations.

Lease term

When determining the lease term, management is considering all facts and circumstances that create an economic incentive to exercise an extension option, or not to exercise a termination option in addition to the non-cancellable lease term. In determining the lease term, those options are only considered if they are reasonably certain. The assessment is reviewed if a significant event or a significant change in circumstances occurs that may affect the assessment.

Discount rate

When determining the discount rate, Volvo Car Group uses an applicable industrial yield curve and takes into consideration for example credit risk, adjustment for currency, lease term and economic environment.

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Volvo Car Group as lessee

Volvo Car Group mainly leases buildings and other items such as IT-equipment and production equipment.

Right-of-use asset	Buildings and land	Machinery and equipment	Total
Acquisition cost			
Balance at 1 January 2022	9,352	985	**10,337**
Additions	889	99	**988**
Divested through business combinations	–248	—	**–248**
Divestments and disposals	–358	–166	**–524**
Reclassifications	35	—	**35**
Effect of foreign currency exchange rate differences	311	27	**338**
Balance at 31 December 2022	**9,981**	**945**	**10,926**
Additions	3,050	190	**3,240**
Divested through business combinations	–16	–92	**–108**
Divestments and disposals	–912	–357	**–1,269**
Reclassifications	—	—	**—**
Effect of foreign currency exchange rate differences	–227	–13	**–240**
Balance at 31 December 2023	**11,876**	**673**	**12,549**
Accumulated depreciation			
Balance at 1 January 2022	–2,953	–444	**–3,397**
Depreciation expense	–1,401	–179	**–1,580**
Divested through business combinations	36	—	**36**
Divestments and disposals	257	85	**342**
Reclassifications	–5	—	**–5**
Effect of foreign currency exchange rate differences	–104	–13	**–117**
Balance at 31 December 2022	**–4,170**	**–551**	**–4,721**
Depreciation expense	–1,412	–220	**–1,632**
Divested through business combinations	3	35	**38**
Divestments and disposals	493	284	**777**
Reclassifications	—	—	**—**
Effect of foreign currency exchange rate differences	103	8	**111**
Balance at 31 December 2023	**–4,983**	**–444**	**–5,427**

Right-of-use asset	Buildings and land	Machinery and equipment	Total
Net balance at 31 December 2022	**5,811**	**394**	**6,205**
Net balance at 31 December 2023	**6,983**	**229**	**7,122**

Lease liabilities	2023	2022
Non-current lease liabilities	4,786	4,845
Current lease liabilities	1,266	1,515

The maturity analysis of lease liabilities is presented as other current and non-current interest-bearing liabilities respectively in Note 21 – Financial instruments and Financial Risks.

Amounts recognised in income statement	2023	2022
Deprecation expenses on right-of-use assets	–1,632	–1,580
Interest expense on lease liabilities	–240	–220
Expense relating to short-term leases	–276	–177
Expense relating to leases of low value assets	–50	–58
Expense relating to variable lease payments not included in the measurement of the lease liability	–93	–44
Income from sub-leasing right-of-use assets	185	172

The total cash outflow for leases amounts to SEK 2,106 (1,907) m. The amount include payments for lease agreements recognised as liabilities, variable payments, short-term payments and payments for leases of low value.

Volvo Car Group as lessor

Operating lease contracts mainly relate to vehicles sold with repurchase commitments and contracts under the name of Care by Volvo.

Operating lease contracts

The table contains a maturity analysis of lease payments and the total of undiscounted lease payments that will be received after the balance sheet date.

Future lease income of operating lease contracts, undiscounted	2023	2022
No later than 1 year	973	2,089
Later than 1 year but no later than 2 years	362	1,146
Later than 2 year but no later than 3 years	40	360
Later than 3 year but no later than 4 years	20	39
Later than 4 year but no later than 5 years	18	21
Later than 5 years	57	77
Total	**1,470**	**3,732**

Finance lease contracts

Volvo Car Group has acted as a lessor in finance leasing arrangements for cars in China. During 2023, Volvo Car Group lost control over Volvo Car Group Financial Leasing (Shanghai) Co., Ltd. in a common control transaction meaning Volvo Car Group no longer acts as a finance lease lessor. For further information, see Note 32 – Business combinations and divestments.

Amounts receivable under finance leases	2023	2022
No later than 1 year	—	1,109
Later than 1 year but no later than 2 years	—	1,355
Later than 2 year but no later than 3 years	—	810
Later than 3 year but no later than 4 years	—	618
Later than 4 year but no later than 5 years	—	448
Later than 5 years	—	—
Undiscounted lease payments	—	**4,340**
Less unearned finance income	—	335
Net investment in the lease	—	**4,005**

The following table presents the amounts included in income statement:

	2023	2022
Finance income on the net investment in finance leases	234	189

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NOTE 8 EMPLOYEES AND REMUNERATION

ACCOUNTING POLICIES

Incentive programmes

Volvo Car Group manages in total five different global incentive programmes, whereof two are short-term and three are long-term.

Short-term

- The Short-Term Variable Pay Programme for Senior Leaders (STVP for Senior Leaders)
- The Volvo Bonus programme

Long-term

- The Long-Term Variable Pay (LTVP) programme
- The Performance share programme (PSP)
- The Employee share matching programme (ESMP)

The design and pay-out of all programmes are subject to approval of the Board of Directors. Certain decisions related to the share-based programmes are subject to decision by the Annual General Meeting.

Short-term incentive programmes

For the short-term incentive programmes a liability is recognised if all prerequisites are met and the cost is recognised as an operating expense.

Long-term incentive programmes

Cash-settled long-term programmes

The fair value of the cash-settled programme is determined at the grant date, revalued at each balance sheet date, and is recognised as an operating expense during the vesting period and as a corresponding liability. An assessment whether the terms for allotment will be fulfilled is made continuously. Based on such assessment, the expense might be adjusted. The LTVP performance period is concluded in 2023, thereafter terminated and replaced by alternative share-based incentive programmes.

For information on share-based programmes, see Note 9 – Share-based remuneration.

Restructuring

Volvo Car Group does from time-to-time engage in restructuring programmes to reduce cost and drive efficiencies. Such programmes may involve a redundancy of employees. When a detailed and formal plan of restructuring has been publicly announced, the amounts of provision are determined based on the total direct expenditure arising from the restructuring when the recognition criteria for provisions are met, see Note 25 – Current and other non-current provisions.

Average number of employees by region[1]	2023	Of whom women,%	2022	Of whom women,%
Sweden	21,677	28	21,371	27
Nordic countries other than Sweden	726	38	715	40
Belgium	5,206	14	5,142	14
Europe other than the Nordic countries and Belgium	1,612	39	1,584	33
North and South America	2,652	37	2,229	33
China	10,426	18	11,006	16
Asia other than China	1,013	24	1,021	22
Other countries	134	37	101	40
Total	**43,446**	**25**	**43,169**	**23**

Number of Board members and senior executives[2]	31 Dec 2023 Board members (Chief Executive Officers and senior executives),%	Of whom women,%	31 Dec 2022 Board members (Chief Executive Officers and senior executives),%	Of whom women,%
Parent company	10	40	10	30
Subsidiaries	102 (264)	27 (32)	95 (288)	22 (31)
Total	**112 (264)**	**29 (32)**	**105 (288)**	**23 (31)**

Salaries and other remunerations	2023 Wages and salaries, other remunerations	2023 Social security expenses (of which pension expenses)	2022 Wages and salaries, other remunerations	2022 Social security expenses (of which pension expenses)
Parent company	12	3(—)	12	3(—)
Subsidiaries	29,057	10,641 (4,837)	24,873	9,630 (4,789)
Total	**29,069**	**10,644 (4,837)**	**24,885**	**9,633 (4,789)**

Salaries and other remuneration to the Board[3], CEO, Executive Management Team (EMT)[4] and other employees	2023 Wages and salaries, other remunerations (of which variable salaries)	2023 Social security expenses (of which pension expenses)	2022 Wages and salaries, other remunerations (of which variable salaries)	2022 Social security expenses (of which pension expenses)
Board, Chief Executive Officers and EMT	299 (88)	114 (36)	347 (115)	131 (51)
Other employees	28,770	10,530 (4,801)	24,538	9,502 (4,738)
Total	**29,069 (88)**	**10,644 (4,837)**	**24,885 (115)**	**9,633 (4,789)**

1) The FTE number in 2022 and 2023 reflects temporary layoffs.
2) Senior executives are defined as key personnel within the subsidiaries.
3) The Board includes all Board members in the subsidiaries within Volvo Car Group.
4) The Executive Management Team (EMT) consists of the CEO in Volvo Car Corporation and key management personnel other than Board members, in total 7 (7).

Compensation to Board members

The shareholders have elected a Nomination Committee, which on a yearly basis proposes appropriate remuneration principles and remuneration for Volvo Cars Board in accordance with the Guidelines for executive remuneration decided by the Annual General Meeting. The remuneration to the members of the Board is determined at the Annual General Meeting. At the Annual General Meeting 2023 it was decided that Board members elected at the meeting who are employed or otherwise remunerated by Volvo Car Group or the Zhejiang Geely Holding Group shall not be entitled to any remuneration. The other Board members elected at the Annual General Meeting shall receive remuneration containing the following elements: (i) a

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market based fixed remuneration decided at the Annual General Meeting (ii) a company car in accordance with the Group´s company car policy in force from time to time and (iii) to Board members who are members of any of the Boards' committees an additional market based fixed remuneration as decided at the Annual General Meeting.

Expensed remuneration to the individual Board members is specified below:

Board member	2023 Ordinary compensation, TSEK	2022 Ordinary compensation, TSEK
Li Shufu, Chairperson	—	—
Li Donghui	—	—
Lone Fønss Schrøder	3,140	3,086
Winfried Vahland	1,286	1,273
Jonas Samuelsson	1,328	1,301
Diarmud O'Connell	1,286	1,219
Lila Tretikov	1,344	1,256
Anna Mossberg (from May 2022)	1,155	739
Jim Rowan (from May 2022)	—	—
Ruby Lu (from April 2023)	860	—
Thomas Johnstone (until April 2023)	342	1,345
Håkan Samuelsson (until March 2022)	—	—
Betsy Atkins (until May 2022)	—	490
Michael Jackson (until May 2022)	—	519
Jim Zhang (until May 2022)	—	490
Total	**10,741**	**11,718**

Terms of employment and remuneration to the CEO

The Board has assigned a People Committee (PC) to determine the remuneration principles for the CEO, subject to the shareholders' meetings approval. The chairperson of the Board shall in dialogue with PC decide the remuneration to the CEO. The CEO is entitled to a remuneration consisting of a fixed annual salary, STVP, PSP and other benefits such as a company car and insurance.

In order to retain critical competences and deliveries within Volvo Car Group, the CEO has an additional variable pay and an annual cash payment (initial three-year incentive agreement). The additional variable pay programme is a three year programme based on fulfillment of the CEO's yearly individual objectives and can vary from 0 up to maximum SEK 5.5 m depending on fulfillment rate. The annual cash payment of SEK 10.9 m was paid as a sign on bonus in 2022 and will be paid as a retention award for employment year one (2023) and employment year two (2024).

The CEO is covered by the ITP plan and a supplementary pension plan – Volvo Management Pension (VMP). On average, the contributions for the CEO is 30 per cent of the pensionable salary. Disability benefits follow the ITP and VMP regulations.

The notice period for the CEO is a maximum of 12 months in case of termination by either Volvo Car Group or the CEO. Furthermore, the CEO is, in case of termination by Volvo Car Group, entitled to severance pay based on the fixed salary, during a period of maximum 12 months.

Terms of employment and remuneration to the Deputy CEOs

The Board has assigned a People Committee (PC) to determine the remuneration to the Deputy CEOs, proposed by the CEO, and in line with the remuneration guidelines approved by the shareholders' meeting. Volvo Car Group Deputy CEOs are entitled to a remuneration consisting of a fixed annual salary, STVP, LTVP, PSP and other benefits such as a company car and insurance. The Deputy CEOs are covered by the ITP plan and a supplementary pension plan – Volvo Management Pension (VMP). On average, the contributions for the Deputy CEOs is 28–30 per cent of the pensionable salary. Disability benefits follow the ITP and VMP regulations.

The notice period for the Deputy CEOs is a maximum of 12 months in case of termination by either Volvo Car Group or the Deputy CEOs. Furthermore, the Deputy CEOs are, in case of termination by Volvo Car Group, entitled to severance pay based on the fixed salary, during a period of maximum 12 months.

Remuneration to Executive Management Team

The Board has further assigned the PC to determine the remuneration to the Executive Management Team (EMT), proposed by the CEO, and in line with the remuneration guidelines approved by the shareholders'meeting. Members of EMT are entitled to a remuneration consisting of a fixed annual salary, STVP, LTVP, PSP and other benefits such as company car and insurance.

The notice period for a member of EMT is a maximum of 12 months in case of termination by either Volvo Car Group or the member of EMT. Furthermore the member of EMT is, in case of termination by Volvo Car Group, entitled to severance pay based on the fixed salary, during a period of maximum 12 months.

During 2023 no members of EMT left their positions compared with 6 members during 2022. For EMT members leaving Volvo Car Group, remuneration during the notice period and severance pay amounted to SEK — (—) m, excluding social expenses.

Members of EMT employed in Sweden are covered by the ITP plan and, where applicable, the VMP. On average, the contributions for members of EMT is 28–30 per cent of the pensionable salary. Disability benefits follow the ITP and VMP regulations.

For members of EMT employed outside of Sweden, varying pension terms and conditions apply, depending upon the country of employment.

Volvo Car Group's outstanding post-employment benefits obligations to former CEO's and EMT amounted to SEK 36 (44) m.

Other long-term benefits

Apart from the compensation accounted for under Incentive programmes, EMT does not have any other long-term benefits.

Restructuring

As part of a global cost efficiency intiative to reduce cost and drive resource efficiencies, a redundancy programme was announced in Q2 2023. The programme impacted 567 white-collar employees in Sweden at a cost of SEK 625 m, of which the main part through voluntary termination packages. In addition, approximately 400 consultants and agency personnel were impacted. The carrying value of the restructuring provision as at 31 December 2023 is SEK 503 m, including social expenes, see Note 25 – Current and other non-current provisions.

Incentive programmes

Short-term incentive programmes

Volvo Bonus

The Volvo Bonus programme includes all Volvo Car Group employees, except those who participates in the STVP for Senior Leaders. The purpose of the Volvo Bonus is to strengthen global alignment among employees around Volvo Car Group's vision, objectives and strategies and to encourage all employees to achieve and exceed the business plan targets. The qualifier for the Volvo Bonus is that the Volvo Car Group profit target (EBIT), excluding share of income in joint ventures and associates, is reached. In order for the Volvo Bonus to be paid out at all, a minimum acceptable performance

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Expensed compensation to Executive Management Team (EMT), TSEK	2023 Salary[1]	2023 Variable pay[2]	2023 Long-term variable pay	2023 Social security expenses (of which pension expenses)	2022 Salary[1]	2022 Variable pay[2]	2022 Long-term variable pay	2022 Social security expenses (of which pension expenses)
Jim Rowan, CEO	16,166	23,950	517	19,732 (5,542)	12,188	22,482	1,551	18,612 (4,579)
Håkan Samuelsson, former CEO[3]	—	—	—	— (—)	13,143	18,509	—	12,094 (8,863)
Björn Annwall, Deputy CEO[4]	7,187	5,684	786	8,559 (3,066)	3,601	1,691	697	3,393 (1,068)
Javier Varela, Deputy CEO[4]	9,734	7,714	1,124	11,768 (4,290)	4,880	2,294	1,016	4,661 (1,473)
Other members of EMT	16,743	10,408	1,280	17,668 (6,563)	39,314	21,036	8,801	40,086 (19,800)
Total	**49,830**	**47,756**	**3,707**	**57,727 (19,461)**	**73,126**	**66,012**	**12,065**	**78,846 (35,783)**

1) Includes benefits such as insurance and company car.
2) Includes STVP and also other additional short-term variable pay in accordance with individual agreements.
3) Remuneration in accordance with fixed term agreement.
4) Deputy CEOs from 1 July 2022. Remuneration for first half year 2022 is included in "Other members of EMT".

regarding EBIT needs to be met. This is called the threshold level and the remaining two levels (target and maximum) increase the bonus paid out in relation to increased performance. The pay-out is capped at 200 per cent of the so-called target bonus. Depending on the employee's position, the employee is eligible for a certain target level that can be either a fixed amount or a percentage of the employee´s annual base salary 31 December at the end of the performance year. To be eligible for pay-out, the employee must remain within Volvo Car Group on the pay-out date. The remuneration is paid in cash.

STVP for Senior Leaders

The STVP for Senior Leaders is an incentive programme for the CEO, EMT and certain senior executives. The purpose of the STVP for Senior Leaders is to support the corporate strategy and the transformation of Volvo Cars. To reach maximum pay-out a number of performance targets must be reached. Targets include Volvo Car Group profit target (EBIT), excluding share of income in joint ventures and associates, but also other targets related to sales and mission execution activities. A threshold, target and maximum level is set for each performance indicator. In order for any STVP to be paid out in respect of each performance indicator, the threshold level needs to be met. If the higher target or maximum level is reached, the pay-out related to the relevant performance indicator will increase with linear pay-outs for performance between levels. The amount subject to payment for each level of performance is a percentage of the employee's annual base salary, with a cap on the maximum amount payable when reaching or exceeding the maximum level of all performance indicators. The pay-out is capped at 200 per cent of the so-called target award. The target award is a percentage of the employee's gross annual base salary on 31 December at the end of each performance year. To be eligible for pay-out, the employee must remain within Volvo Car Group on the pay-out date. The remuneration is paid in cash.

Liability and cost

The cost for the Volvo Bonus and STVP programmes amounted to SEK 2,665 (1,223) m including social security expenses, of which SEK 54 (44) m was related to EMT.

Long-term incentive programme

LTVP

The purpose of the LTVP-programme is to (i) strengthen the alignment of key people around Volvo Car Group's vision, objectives, strategies and business plan, (ii) improve Volvo Car Group's ability to attract and retain key people with key competencies, and (iii) reward potential future contribution in relation to increased shareholder value. The pay-out for the LTVP-programmes depends on the development of the market value of Volvo Car Group as well as satisfaction of certain financial performance factors related to profit (EBIT) and revenue growth measured over the term of the programme, as established by the Board of Directors. A threshold and a maximum level is set for each performance factor. In order for any LTVP to be paid out in respect of each performance factor, the threshold level needs to be met. If the higher maximum level is reached , the pay-out related to the relevant performance condition will increase with linear pay-outs for performance between the levels.

Depending on the participant's position they receive a LTVP bonus award equivalent to a certain percentage of their gross annual base salary. Each LTVP award has a vesting period of three years and is paid out in cash. The cash amount paid depends on the valuation of Volvo Cars on the vesting date, three years after grant and the achievement of financial performance factors.

The programme is capped to a maximum of 300 per cent of the value of the award at grant. To be eligible for pay-out, the employee must remain within Volvo Car Group, and not be under notice of termination, on the pay-out date.

There will be no new LTVP since it has been replaced by the PSP.

Liability and cost

The cost for the LTVP-programme amounted to SEK –9 (87) m including social security expenses, of which SEK 2 (18) m was related to EMT. The total liability amounted to SEK 65 (115) m.

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NOTE 9 SHARE-BASED REMUNERATION

ACCOUNTING POLICIES

Share-based long-term programmes

The fair value of the share-based programmes are based on the share price reduced by dividends connected with the share during the vesting period. Additional social expenses are reported as a liability, revalued at each balance sheet date.

The aim of these share-based programmes is to generate engagement and commitment to the organisation on a long-term basis. The PSP is entirely equity-settled while the ESMP programme contains both equity-settled and cash-settled components. For components of the programmes that are equity-settled, the total compensation expense is based on the fair value at the grant-date together with consideration of any relevant performance conditions and is recognised over the relevant service period, with a corresponding increase in equity. All share-based payment programmes with employees have a service component while one has performance components as well. The amount recognised as an expense is adjusted to consider the total number of awards for which the relevant non-market performance conditions and service conditions are expected to be met. The result is that the amount ultimately recognised is based on the actual number of awards that meet the relevant service and non-market performance conditions at the vesting date. For share-based payment transactions with non-vesting conditions, the grant-date fair value is adjusted to reflect these conditions.

For components of the ESMP that are cash-settled, the liability is valued based on the fair value of the liability and is revalued at the end of each reporting period, with any changes in fair value recognised in the income statement for the period.

Share-based incentive programmes

Performance Share Plan (PSP)

At the Annual General Meeting 2022, the shareholders adopted a share-based incentive programme (Performance Share Plan, PSP 2022), with a purpose to create a long-term focus amongst the participants on reaching Volvo Car Group´s long-term ambitions, as well as to facilitate recruitment and retention of employees with key competencies. Since the Board of Directors also believes that long-term share ownership is an important way to create alignment between the EMT and Volvo Car´s shareholders, it has implemented a policy setting out recommendations for certain levels of share ownership for members of the EMT. The PSP offers an opportunity for such members to increase their holdings to achieve the recommended share ownership.

A new share-based incentive programme, PSP 2023, was adopted at the Annual General Meeting 2023 and the structure of the plan corresponds to the incentive programme approved in 2022.

In both programmes, each PSP participant will at commencement of the programme, free of charge receive a conditional award of Performance Shares (a “PSP Award”). The PSP award will amount to the number of Performance Shares the value of which corresponds to a percentage of each participants gross annual base salary. The share price used to calculate the PSP Award value was the volume-weighted average price paid for the Volvo Car AB (publ.) class B share during a period of 30 trading days in connection with the commencement of the vesting period.

The number of Performance Shares allocated to the participants after expiration of the three year vesting period may amount to between 0 and 200 per cent of the PSP award, depending on the satisfaction of four performance conditions;

PSP 2022 performance conditions

- average operating margin during financial years 2022–2024 (weight 40 per cent)
- average revenue growth during financial years 2022–2024 (weight 40 per cent)
- reduction of CO_2 emissions per car sold (average CO_2 emissions per car sold in 2018 compared to the average CO_2 emissions per car sold in 2024) (weight 10 per cent)
- gender diversity (portion of non-male participants) in the STVP programme as of 31 December 2024 (weight 10 per cent)

PSP 2023 performance conditions

- average operating margin (excl share of income in JV and associates) during financial years 2023–2025 (weight 30 per cent)
- average revenue growth during financial years 2023–2025 (weight 30 per cent)
- reduction of CO_2 emissions per car sold (average CO_2 emissions per car sold in 2018 compared to the average CO_2 emissions per car sold in 2025) (weight 30 per cent)
- gender diversity (portion of non-male participants) in the STVP programme as of 31 December 2025 (weight 10 per cent)

The performance conditions for both programmes include a minimum level which must be exceeded in order for any Performance Shares to be allocated at all. Should the minimum level be exceeded but the maximum level not reached, a proportionate number of Performance Shares will be allocated.

Both PSP programmes shall comprise a maximum of 9,886,909 class B shares in Volvo Car AB (publ.) respectively.

Allocation of Performance Shares is also conditional upon the participants retaining the employment within the Volvo Car Group over the entire vesting period.

The total value of the Performance Shares at the end of the vesting period may not exceed 400 per cent of the PSP Award value and the number of Performance Shares allotted may be reduced accordingly. Should there be a decline in the price of the Volvo Car AB (publ.) class B share such that the number of Performance Shares subject to allocation exceeds the maximum number of Performance Shares, the number of Performance Shares allocated to the participants will be reduced proportionately.

The Board of Directors is entitled to reduce the number of Performance Shares subject to allocation or, wholly or partially, terminate the PSP programmes in advance if significant changes in the Group or in the market occur which, in the opinion of the Board of Directors, would result in a situation where the conditions for allocation of Performance Shares become unreasonable.

The fair value of the Volvo Car AB (publ.) class B share at grant date is calculated as the market value of the share excluding the present value of expected dividend payments for the next three years and amounted to SEK 75.26 for the PSP 2022 and to SEK 40.43 for the PSP 2023.

Liability and cost

The total cost for the PSP programmes amounted to SEK 60 (24) m of which SEK 48 (18) m is equity-settled. SEK 12 (6) m is cash-settled, of which SEK 8 (4) m is related to social security expenses. Of the total expenses, SEK 8 (5) m is related to the CEO, SEK 2 (1) m to deputy CEO B.A, SEK 3 (2) m to deputy CEO J.V and SEK 4 (4) m to other members of EMT. The total liability amounted to SEK 19 (6) m.

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	PSP 2022	of which CEO	of which deputy CEO J.V	of which deputy CEO B.A	of which other members of EMT
Outstanding number of shares at the beginning of the year	1,332,017	145,958	49,301	30,100	62,369
Granted shares during the year	30,533	—	—	—	—
Forfeited during the year	–153,523	—	—	—	—
Outstanding number of shares at the end of the year	**1,209,027**	**145,958**	**49,301**	**30,100**	**62,369**

	PSP 2023	of which CEO	of which deputy CEO J.V	of which deputy CEO B.A	of which other members of EMT
Outstanding number of shares at the beginning of the year	—	—	—	—	—
Granted shares during the year	2,620,315	250,940	84,762	62,456	144,270
Forfeited during the year	–238,168	—	—	—	—
Outstanding number of shares at the end of the year	**2,382,147**	**250,940**	**84,762**	**62,456**	**144,270**

Employee Share Matching Plan (ESMP)

In 2022, the Annual General Meeting also approved implementation of a share-based incentive programme (Employee Share Matching Plan, ESMP 2022) giving all permanent employees of Volvo Car Group the opportunity to become shareholders in Volvo Car AB (publ.). The purpose of the ESMP is to create engagement, commitment and motivation for the entire permanent workforce of Volvo Car Group, excluding the members of PSP.

During 2023 the Annual General Meeting approved a new ESMP programme, ESMP 2023, similar to the one implemented during 2022. To participate in the programmes, the participants must make own investments in class B shares in Volvo Car AB (publ.) (Investment shares), up to an aggregate value for each participant at the time of the investment of no more than SEK 10 000.

For each Investment share, the participants will be entitled to allocation of one Matching Share free of charge after the expiration of the two-year vesting period.

Allocation of Matching Shares is conditional upon the participants retaining the employment within the Volvo Car Group over the entire vesting period and that the participants has retained the Investment shares purchased.

Both ESMP programmes shall comprise a maximum of 7,832,000 class B shares in Volvo Car AB (publ.) respectively. Should there be a decline in the price of the Volvo Car AB (publ.) class B share such that the number of Matching Shares subject to allocation exceeds the maximum number of Matching Shares, the number of Matching Shares allocated to the participants will be reduced proportionately.

The Board of Directors is entitled to reduce the number of Matching Shares subject to allocation or, wholly or partially, terminate the ESMP programmes in advance if significant changes in the Group or in the market occur which, in the opinion of the Board of Directors, would result in a situation where the conditions for allocation of Matching Shares become unreasonable.

The fair value of the Volvo Car AB (publ.) class B share at grant date is calculated as the market value of the share excluding the present value of expected dividend payments for the next two years. For ESMP 2022 the fair value of the share at grant date amounted to SEK 44.34, SEK 50.71, SEK 49.25 and SEK 44.14 dependent on the date the Matching Share was granted. For ESMP 2023 the fair value of the share at grant date amounted to SEK 39.96, SEK 42.72, SEK 45.32, SEK 40.14, SEK 32.56 and SEK 33.6 dependent on the date the Matching Share was granted.

When the employee receives the Matching Shares, it is normally seen as a taxable benefit. Volvo Cars has therefore decided to contribute with an additional cash sum corresponding to a general tax level for each country. The contribution is calculated on a general level and is not individually set.

Since this part of the programme meets the description of a cash-settled share-based payment transaction, a liability will be recorded and remeasured to fair value at the end of each reporting period.

Liability and cost

The total cost for the ESMP programme amounted to SEK 132 (23) m of which SEK 61 (7) m is equity-settled. SEK 71 (16) m is cash-settled, of which SEK 26 (7) m is related to social security expenses. The total liability amounted to SEK 86 (16) m.

	ESMP 2022	ESMP 2023
Outstanding number of shares at the beginning of the year	1,632,602	—
Granted shares during the year	729,532	1,676,604
Forfeited during the year	–122,230	–35,190
Outstanding number of shares at the end of the year	**2,239,904**	**1,641,414**

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NOTE 10 DEPRECIATION AND AMORTISATION

ACCOUNTING POLICIES

Amortisation methods for intangible assets
Intangible assets with finite useful lives are amortised on a straight-line basis over their respective expected useful lives. The amortisation period for contractual rights such as licences does not exceed the contract period. All intangible assets are considered to have a finite useful life, with the exception of goodwill and trademarks. Trademarks are assumed to have indefinite useful lives since Volvo Car Group has the right and the intention to continue to use the trademarks for the foreseeable future, while generating net positive cash flows for Volvo Car Group. An intangible asset with an indefinite useful life is not amortised. The following useful lives are applied to intangible assets with finite useful lives:

Dealer network	30 years
Software	3–8 years
Product development	3–10 years
Patents, licences and similar rights	3–10 years

Amortisation is included in cost of sales, research and development expenses as well as selling or administrative expenses depending on in what way the assets have been used. Amortisation of intangible assets related to vehicle platforms are included in Research and development expenses.

Depreciation methods for tangible assets
Tangible assets are systematically depreciated over the expected useful life of the asset. Each part of a tangible assets, with a cost that is significant in relation to the total cost of the item, is depreciated separately when the useful life for the part differs from the useful life of the other parts of the item. Land is assumed to have an indefinite useful life and is not depreciated.

Vehicles sold combined with a repurchase commitment are depreciated evenly over their respective useful lives. They are depreciated from their original acquisition cost to their expected residual value, being the estimated net realisable value, at the end of the lease term. If the market value of these vehicles is lower than the originally set residual value, the depreciation is accelerated over the remaining contract period.

Right-of-use assets where Volvo Car Group is a lessee are depreciated over the lease contract period. Assets under operating leases where Volvo Car Group is a lessor are depreciated over their respective useful lives. For more information on leased assets, see Note 7 – Leases.

The following useful lives are applied in Volvo Car Group:

Buildings	14.5–50 years
Land improvements	30 years
Machinery	8–30 years
Equipment	3–20 years

Depreciation is included in cost of sales, research and development expenses as well as selling or administrative expenses depending on how the assets have been used.

Impairment of assets
The carrying amount of tangible and intangible assets with finite useful lives are tested whenever events or changes in circumstances indicate that the value of the asset will not be recovered. Intangible assets that have an indefinite useful life, as well as assets that are not yet available for use, are not subject for amortisation and are tested for impairment at least annually or whenever there is an indication that the value will not be recoverable. Assets may sometimes be grouped into cash-generating units for the purpose of testing impairment.

When performing an impairment test, the asset's or cash-generated unit's recoverable amount is calculated. The recoverable amount is the higher of an asset's or cash-generated unit's fair value less costs to sell and its value in use. Value in use is defined as the present value of the future cash flows expected to be derived from an asset or cash-generated unit. If the recoverable amount is lower than the carrying value, an impairment loss is recognised. Previously recognised impairment losses are reversed, with the exception of goodwill, if reasons for the previously made impairment no longer exist. An impairment loss is reversed only to the extent that the asset's or cash-generated unit's carrying amount after reversal does not exceed the carrying amount, net of amortisation, which would have been recognised if no impairment loss had been recognised.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

The useful life of an intangible asset is to a large extent based on historical experience, expected application as well as other individual characteristics of the asset. The useful lives of the assets are regularly assessed and adjusted if necessary.

To test an asset or a cash-generating unit for impairment several estimates need to be performed, see section Impairment of assets as well as in Note 16 – Intangible assets and note 17 – Tangible assets.

Operating income includes depreciation and amortisation as specified below:	**2023**	2022
Software	–682	–469
Product development	–4,853	–4,579
Other intangible assets	–921	–786
Buildings and land improvements[1)]	–1,093	–1,084
Machinery and equipment[1)]	–7,036	–6,860
Right-of-use asset[2)]	–1,632	–1,580
Assets under operating leases	–1,232	–733
Total	**–17,449**	**–16,091**

Depreciation and amortisation according to plan by function:	**2023**	2022
Cost of sales[1)]	–9,029	–8,349
Research and development expenses	–6,158	–5,722
Selling expenses	–1,377	–1,028
Administrative expenses	–854	–961
Other income and expense	–31	–31
Total	**–17,449**	**–16,091**

1) Impairment losses of SEK –194 (–29) m have been recognised within Cost of sales.
2) Depreciation of Right-of-use assets amounted to SEK –1,632 (–1,580) m, whereof SEK –1,411 (–1,401) m is related to Buildings and land, and SEK –221 (–179) m is related to Machinery and equipment.

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NOTE 11 GOVERNMENT GRANTS

ACCOUNTING POLICIES

Government grants are recognised in the financial statements in accordance with their purpose, either as a reduction of expense or as a reduction of the carrying amount of the asset. Government grants intended to compensate for a specific expense are recognised as a cost reduction in the same period as the expense which the grant is intended to compensate has been recognised. Government grants related to acquiring assets are deducted from the carrying amount of the asset and are recognised in the income statement over the life of a depreciable asset as a reduced depreciation expense. In cases where the received government grant is not intended to compensate for any expenses or the acquisition of assets, the grant is classified by the nature of the income, either as other income or revenue. Government grants for future expenses are recognised as deferred income. For more information relating to the accounting policies for emission credits see Note 2 – Revenue.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

A government grant is recognised when there is reasonable assurance that Volvo Car Group will comply with the conditions attached to the grant and that the grant will be received. Judgement includes assessing if Volvo Car Group is in compliance with the prerequisites in the contract or not and if there is a potential risk of repayment if these prerequisites are breached during the contract period. As of today, Volvo Car Group's assessment is that there are no government grants received where there is a risk of material repayments.

Volvo Car Group receives grants from several parties, mainly from the Swedish, American, Chinese and Belgian Governments as well as from the European Union. In 2023 the government grants received amounted to SEK 395 (409) m and the government grants realised in the income statement amounted to SEK 1,267 (868) m. Grants relating to earned emission credits amounted to SEK 910 (505) m. Non-monetary government grants have been received in China, mainly in the form of rent-free office and factory premises, and in the US in the form of reduced lease fees related to office premises and the manufacturing site.

NOTE 12 OTHER FINANCIAL INCOME AND EXPENSES

ACCOUNTING POLICIES

Other financial income and expenses consists mainly of net exchange rate differences on financial assets and liabilities, fair value changes on financial assets and liabilities, expenses on credit facilities, and fees on supplier financing arrangements. Information of the classification of financial instruments, see Note 21 – Financial instruments and Financial risks.

	2023	2022
Interest effect from the measurment of repurchase obligations	–348	–235
Net foreign exchange rate differences	–222	88
Fees on supplier financing arrangements	–108	–43
Expenses for credit facilities	–66	–58
Changes in fair value through profit or loss	–51	–1,205
Other financial income	5	2
Other financial expenses	–12	–81
Total	**–802**	**–1,532**

NOTE 13 INVESTMENTS IN JOINT VENTURES AND ASSOCIATES

ACCOUNTING POLICIES

Joint ventures refer to joint arrangements whereby Volvo Car Group together with one or more parties have joint control and rights to the net assets of the arrangements.

Associated companies are companies in which Volvo Car Group has a significant but not controlling influence, which generally is when Volvo Car Group holds between 20 and 50 per cent of the shares, but it also includes investments with less participation if significant influence is proven based on other facts and circumstances.

Investments in joint ventures and associated companies are recognised in accordance with the equity method and are initially valued at acquisition cost. Volvo Car Group's share of post-acquisition profit or loss is recognised in the income statement, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income, with a corresponding adjustment to the carrying amount of the investment. When Volvo Car Group's share of losses in an associate or joint venture equals or exceeds its interest in the associate or joint venture, Volvo Cars does not recognise further losses unless it has a legal or constructive obligations in relation to the associate or joint venture.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

A critical judgement in relation to joint ventures is whether joint control exists when other facts and circumstances are taken into consideration. A critical judgement in relation to joint ventures is when Volvo Car Group has a shareholding of greater than 50 per cent but based on other facts and circumstances has joint control over the investee. This could be based on but not limited to the governance structure of the joint venture, and procedures for appointment of key management and dispute resolution. The judgement that is made is whether Volvo Car Group has the power to direct the activities that significantly affect the returns of the joint venture, has a right to variable returns from the joint venture, and the ability to exercise its power over the joint venture to affect the amount of its returns. Even with a greater than 50 per cent ownership in an investee, if Volvo Car Group cannot direct the activities of the joint venture to signifi-

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cantly affect its returns from the joint venture, nor exercise its power over the joint venture to affect the amount of its returns, it is deemed a joint venture.

	2023	2022
Share of income in joint ventures	– 206	520
Share of income in associates	–5,422	3,923
Total	**–5,628**	**4,443**

Share of income in joint ventures and associates is specified below:	**2023**	2022
Lynk & Co Investment Co., Ltd	–598	30
Polestar Automotive Holding Group	–5,427	4,151
Volvofinans Bank AB	426	431
Other companies	–29	–169
Total	**–5,628**	**4,443**

Investments in joint ventures and associates	**31 Dec 2023**	31 Dec 2022
At beginning of the year/acquired acquisition value	15,599	6,931
Share of net income	–5,628	4,443
Investment in NOVO Energy AB	815	163
Investment in Zenuity AB	3	3
Investment in Volvo Car Financial Services UK Ltd	—	185
Investment in Polestar Automotive Holding UK PLC	—	6,101
Investment in Zhejiang Aurobay Powertrain Co., Ltd	—	1,696
Divestment of shares in Zhejiang Aurobay Powertrain Co., Ltd	—	–1,528
Reversal internal profit elimination	–389	–335
Reclassification from subsidiary to joint venture	711	—
Reclassification from joint venture to other long-term securities holdings	—	–7,998
Revaluation of earn-out rights in Polestar Automotive UK PLC	2,755	5,146
Dividends	–88	–72
Translation difference	364	864
Total	**14,142**	**15,599**

Volvo Car Group's carrying amount on investments in joint ventures and associates:	Corp. ID no.	Country of incorporation	% interest held	**31 Dec 2023**	31 Dec 2022
Joint ventures					
NOVO Energy AB	559344-2600	Sweden	50	774	131
Volvo Trademark Holding AB	556567-0428	Sweden	50	7	10
Volvofinans Bank AB	556069-0967	Sweden	50	3,526	3,176
VH Systems AB	556820-9455	Sweden	50	35	38
Zenuity AB	559073-6871	Sweden	50	—	—
World of Volvo AB	559233-9849	Sweden	50	69	105
VCFS Germany GmbH	HRB 85091	Germany	50	4	3
VCIS Germany GmbH	HRB 86800	Germany	50	9	8
Volvo Car Financial Services UK Ltd	12718441	United Kingdom	50	795	642
Volvo Car Group Financial Leasing (Shanghai) Co., Ltd	91310115MA1K49CY8Y	China	55	726	—
GV Automobile Technology (Ningbo) Co., Ltd	91330201MA2AGKLQ8E	China	50	39	39
Lynk & Co Investment Co., Ltd	91330200MA2AF25Y7B	China	30	2,843	3,643
Associated companies					
VCC Försäljnings KB	969712-0153	Sweden	50	1	1
VCC Tjänstebilar KB	969673-1950	Sweden	50	3	5
Volvohandelns PV Försäljnings AB	556430-4748	Sweden	50	14	13
Volvohandelns PV Försäljnings KB	916839-7009	Sweden	50	3	2
Polestar Automotive Holding UK PLC	13624182	United Kingdom	48	5,286	7,775
Trio Bilservice AB	556199-1059	Sweden	33	1	1
Göteborgs Tekniska College AB	556570-6768	Sweden	26	6	6
Leiebilservice AS	879 548 632	Norway	20	1	1
Carrying amount, participation in joint ventures and associates				**14,142**	**15,599**

The share of voting power corresponds to holdings in per cent as per above. For practical reasons, some of the joint ventures and associates are included in the consolidated financial statements with a certain time lag, normally one month.

Lynk & Co Investment Co., Ltd

The joint venture company Lynk & Co Investment Co., Ltd is an establishment between Volvo Cars (China) Investment Co., Ltd, (30 per cent), Ningbo Geely Automobile Industry Co., Ltd. (50 per cent) and Zhejiang Geely Holding Group Co., Ltd. (20 per cent). The principal activity of the Lynk & Co Investment Co., Ltd is to engage in the manufacturing and sale of vehicles under the "Lynk & Co" brand, and support after-sale services relating thereto.

Polestar Automotive Holding Group

In 2020, the joint venture company Polestar Automotive Holding Ltd was established between Volvo Car Group's wholly-owned subsidary Snita Holding B.V. (50 per cent shareholding) and PSD Investment Ltd (50 per cent shareholding). In November 2020, Snita Holding B.V. sold 0.86 per cent of its shares in Polestar Automotive Holding Ltd to PSINV AB, another subsidiary within Volvo Car Group.

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In March 2021, Polestar Automotive Holding Group raised external capital from long-term financial investors. The private placement was conducted through newly issued shares and diluted Volvo Cars ownership in Polestar. The valuation effects in connection with the transaction amounted to SEK 2,039 m and were recognised as income from shares in joint ventures and associates. In July 2021, PSD Investment Ltd sold 7.3 per cent of its shares to Volvo Cars, which increased Volvo Cars share in Polestar from 46.1 per cent to 49.5 per cent following an investment of SEK 2,068 m.

In June 2022, Polestar's wholly-owned subsidiary Polestar Automotive Holding UK PLC was listed on the Nasdaq Stock Exchange in New York in a de-SPAC process through a merger with the SPAC company Gores Guggenheim and Polestar Automotive Holding UK PLC became the new parent company of the Polestar Group. The transaction broadened Polestar's ownership base and in total raised approximately USD 890 m in external capital, of which Volvo Cars invested USD 11 m (SEK 113 m).

The listing transactions had several financial effects for Volvo Cars. In connection with the listing, Volvo Cars ownership was diluted due to external funds raised by Polestar in the listing process. The dilution effect amounted to SEK 4,023 m and were recognised as income in shares in joint ventures and associates.

As part of the listing process, Polestar also issued earn-out rights to its shareholders. The value of Volvo Car Group's portion of the earn-out rights, which have been calculated in accordance with a Monte Carlo simulation methodology, has been accounted for as a deemed dividend from Polestar, increasing financial assets, and decreasing the carrying amount of the shares in Polestar. As of 31 December, these earn-out rights have been revalued to market value. The part of the earn-out rights value exceeding the carrying amount of Polestar is accounted for in the income statement as share of income in joint ventures and associates. The earn-out rights can be converted to common shares in Polestar Automotive Holding UK PLC after a minimum of 180 days after the listing process. The conversion is subject to the Polestar share price at Nasdaq stock exchange. There are five thresholds where the earn-outs will be converted at a price of USD 13, USD 15.50, USD 18, USD 20.50 and USD 23, respectively, with 20 per cent of the earn-out rights being converted at each threshold.

Directly after the listing, Volvo Cars invested in convertible preference shares issued by Polestar for a total value of SEK 5,988 m (USD 589 m). The convertible preference shares have been converted into common shares in Polestar Automotive Holding UK PLC.

Polestar is after the listing transactions accounted for as an associate instead of a joint venture.

In October 2022, the former parent company, Polestar Automotive Holding Ltd entered into voluntary liquadation. In November 2022, PSINV AB sold all of its shares in Polestar Holding Automotive Ltd to Snita Holding B.V. In December 2022, Polestar Automotive Holding Ltd made an interim distribution of its shareholding in Polestar Automotive Holding UK PLC to its shareholders and also sold redeemable preference shares in Polestar Automotive Holding UK PLC to Snita Holding B.V. Thereafter Snita Holding B.V. sold its entire shareholding in Polestar Automotive Holding Ltd to PSD Investment Ltd.

At year end, Volvo Car Group, through its subsidiary Snita Holding B.V., have a shareholding of 48.3 per cent in Polestar Automotive Holding UK PLC, and is together with the other main owner PSD Investment Ltd, still considered to have significant influence over the Polestar Group based on, among other factors, ownership and board composition.

As of 31 December 2023, our fair value of the Polestar Group, listed on the Nasdaq Stock Exchange in New York (ticker symbol: PSNY), was SEK 23,144 (56,251) m based on the quoted market price.

Volvofinans Bank AB

Volvofinans Bank AB is a joint venture between Volvo Car Corporation and AB Volverkinvest. In Sweden, Volvofinans Bank AB is one of the the leading banks within vechicle financing services.

Other companies

In January 2022, the joint venture company NOVO Energy AB was established between Volvo Car Corporation (50 per cent) and Northvolt AB (50 per cent). The purpose of the joint venture is to develop and produce more sustainable batteries to contribute to powering the next generation of pure electric Volvo and Polestar cars.

In July 2023 the joint venture Novo Energy Group, through one of its wholly-owned subsidiary Novo Production AB aquired the wholly-owned subsidiary Fastighetsbolag Sörred 15:7 AB from Volvo Car Corporation AB. The acquired real estate company owns the land where upon the future battery manufactury plant will be built in the area of Gothenburg, Sweden. For further information, see Note 4 – Related party transactions.

In January 2023, Volvo Car Corporation and Zhejiang Genius & Guru Investment Co., Ltd signed a joint venture agreement regarding Volvo Car Group Financial Leasing (Shanghai) Co., Ltd. In June, Zhejiang Genius & Guru Investment Co., Ltd subscribed to all the newly issued shares according to the signed subscription agreement. As a result the wholly-owned subsidiary, Volvo Car Group Financial Leasing (Shanghai) Co., Ltd was reclassified to a joint venture company between Volvo Car Corporation (55 per cent) and Zhejiang Genius & Guru Investment Co., Ltd (45 per cent) and from 25 June reported in accordance with the equity method since none of the holding companies has the decision-making power over the operation. For further information, see Note 4 – Related party and Note 32 – Business combinations and divestments.

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The following tables present summarised financial information for the Volvo Car Group's material joint ventures and associates.

	Lynk & Co Investment Group[1]		Polestar Automotive Holding Group[2]		Volvofinans Bank AB[3]	
Summarised balance sheets	**2023**	2022	**2023**	2022	**2023**	2022
Percentage ownership	30	30	48	48	50	50
Non-current assets	25,580	21,739	21,692	18,826	40,728	37,800
Cash and cash equivalents	4,200	2,858	7,738	10,095	3,285	3,530
Other current assets	39,494	20,135	16,402	11,904	4,827	4,649
Total assets	**69,274**	**44,732**	**45,832**	**40,825**	**48,840**	**45,979**
Equity[4]	9,310	12,101	–8,694	–1,096	6,300	5,601
Non-current financial liabilities	4,705	1,869	14,814	890	38,131	36,537
Non-current liabilities[4]	4,647	3,913	4,317	7,354	964	1,140
Current financial liabilities	3,896	1,998	21,419	14,214	—	—
Current liabilities	46,716	24,851	13,976	19,463	3,445	2,701
Total equity and liabilities	**69,274**	**44,732**	**45,832**	**40,825**	**48,840**	**45,979**

	Lynk & Co Investment Group[1]		Polestar Automotive Holding Group[2]		Volvofinans Bank AB[3]	
Summarised income statements	**2023**	2022	**2023**	2022	**2023**	2022
Revenue	52,941	37,966	25,580	24,723	5,879	5,340
Depreciation and amortisation	– 4,862	–4,177	–1,410	–1,452	–8	–10
Interest income	136	68	292	50	—	—
Interest expense	–387	–117	–2,131	–735	—	—
Profit/loss from continuing operations	1,957	33	–7,714	–4,416	655	460
Profit (loss) for the year	**1,957**	**33**	**–7,714**	**–4,416**	**655**	**460**
Other comprehensive income for the year	**–43**	**27**	**–112**	**81**	**—**	**—**
Total comprehensive income for the year	**1,914**	**60**	**–7,826**	**–4,335**	**655**	**460**
Dividends received from joint ventures and associates during the year	—	—	—	—	77	65

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Reconciliation of the summarised financial information presented to the carrying amount of its interest in joint ventures and associates.

	Lynk & Co Investment Group 1)		Polestar Automotive Holding Group 2)		Volvofinans Bank AB 3)	
Reconciliation of summarised financial information	**2023**	2022	**2023**	2022	**2023**	2022
Net asset of the joint venture and associate	9,310	12,101	–8,694	–1,096	6,300	5,601
Proportion of Volvo Car Group's ownership, %	30	30	48	48	50	50
Goodwill	—	—	—	—	376	376
Adjustments for differences in accounting principles	—	—	386	—	—	—
Adjustments for common control transaction	51	11	20	20	—	—
Polestar listing	—	—	8,970	8,970	—	—
Revaluation of earn-outs rights	—	—	125	–173	—	—
Equity-settled share-based payments	—	—	–78	–41	—	—
Capital injection from investors other than Volvo Car Group	—	—	–764	–764	—	—
Net foreign exchange rate effect	–1	2	827	292	—	—
Carrying amount of Volvo Car Group's interest in joint ventures and associates	**2,843**	**3,643**	**5,286**	**7,775**	**3,526**	**3,176**

1) Volvo Car Group's equity share in Lynk & Co Investment Group is included with a time lag of a month, and a forecast for December.
2) Volvo Car Group's equity share in Polestar Automotive Holding Group is included with a time lag of a quarter and a forecast for the last quarter.
3) Volvo Car Group's equity share in Volvofinans Bank AB is included with a time lag of a quarter.
4) Equity and non-current liabilities are adjusted with the portion of untaxed reserves where appropriate.

Significant restrictions

For the Chinese joint venture companies, there are some restrictions on the Volvo Car Group's ability to access cash.

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NOTE 14 TAXES

ACCOUNTING POLICIES

Income taxes

Volvo Car Group's tax expense consists of current tax including withholding tax on i.a. licence sales to China and deferred tax. Taxes are recognised in the income statement except when the underlying transaction is recognised directly in equity or other comprehensive income, whereupon related taxation is also recognised in equity or other comprehensive income.

Current tax is tax that must be paid or will be received for the current year. Current tax also includes adjustments to current tax attributable to previous periods. Deferred tax is calculated according to the balance sheet method for all temporary differences, with the exception of goodwill, that arise between the tax value and the carrying amount of assets and liabilities.

Deferred tax assets and liabilities are measured at the nominal amount and at the tax rates that are expected to be applied when the asset is realised or the liability is settled, using the tax rates and tax rules that have been enacted or substantively enacted at the balance sheet date.

Deferred tax assets relating to deductible temporary differences and loss carry-forwards are recognised to the extent it is probable that they will be utilised in the future. Deferred tax assets and deferred tax liabilities are offset when they are attributable to the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis and the affected company has a legally adopted right to offset tax assets against tax liabilities.

Tax laws in Sweden and in certain other countries allow companies to defer tax payments through allocation to untaxed reserves. These items are treated as temporary differences in the consolidated balance sheet where the untaxed reserves are divided between deferred tax liability and equity. In the consolidated income statement an allocation to, or withdrawal from, untaxed reserves is divided between deferred taxes and net income for the year.

In May 2023, the IASB amended IAS 12 in response to the OECD's Pillar Two rules. The amendment to IAS 12 includes a mandatory temporary exception to not recognise or disclose information about deferred tax assets and liabilities related to the OECD Pillar Two rules which Volvo Car Group has applied. Information regarding the initial assessment of the Groups exposure to the enacted but not yet effective legislation is presented in the note.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Deferred tax assets

The recognition of deferred tax assets requires assumptions to be made with regard to the level of future taxable income and the timing of recovery of deferred tax assets. These assumptions take into consideration forecasted taxable income. The measurement of deferred tax assets is subject to uncertainty and the actual result may diverge from judgements due to future changes in business climate, altered tax laws etc. An assessment is made at each closing date of the likelihood that the deferred tax asset will be utilised. If needed the carrying amount of the deferred tax asset will be altered. The judgements that have been made may affect net income both positively and negatively.

Income tax recognised in income statement	2023	2022
Current income tax for the year	–4,568	–3,277
Current income tax for previous years	–206	179
Deferred taxes	–1,494	–282
Withholding taxes[1]	–597	–561
Other taxes	71	129
Total	**–6,794**	**–3,812**

1) Withholding tax on i.a. royalty and licence sales, mainly to China.

Reconciliation between current tax rate in Sweden and effective tax rate	2023	2022
Income before tax for the year	20,860	20,815
Tax according to applicable Swedish tax rate, 20.6% (20.6%)	–4,297	–4,288
Operating income/costs, non-taxable	–92	–144
Withholding taxes	–597	–561
Other taxes, non-taxable	71	129
Share of income in joint ventures, already taxed	–869	1,043
Capital gains or losses, non-taxable	–722	–8
Effect of different tax rates	–16	–291
Tax effect on deferred tax due to change of tax rate	–14	–27
Non-recognised deferred tax asset on tax losses carry forward	–48	–42
Remeasurements of previously non-recognised deferred tax on tax losses	12	246
Revaluation of previously non-valued losses and other temporary differences	–172	155
Other	–50	–24
Total	**–6,794**	**–3,812**

Income tax recognised in other comprehensive income	2023	2022
Deferred tax		
Tax effects on cash flow hedge reserve	408	466
Tax effect of remeasurement of provisions for post-employment benefits	–424	998
Tax effects on translation difference of hedge instruments of net investments in foreign operations	27	–147
Total	**11**	**1,317**

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Specification of deferred tax assets	31 Dec 2023	31 Dec 2022
Goodwill arising from the purchase of the net assets of a business	67	103
Provision for employee benefits	1,047	828
Unutilised tax loss carry-forwards	7,325	6,976
Accruals	7,197	6,260
Reserve for unrealised income in inventory	1,938	1,633
Provision for warranty	1,475	1,355
Fair value of financial instruments	—	5
Other temporary differences[1]	3,043	2,952
Total deferred tax assets	**22,092**	**20,112**
Netting of assets/liabilities[1]	–11,957	–10,245
Total deferred tax assets, net	**10,135**	**9,867**

Specification of deferred tax liabilities	31 Dec 2023	31 Dec 2022
Fixed assets[1]	16,573	13,471
Untaxed reserves	42	52
Auto lease portfolio	2,872	2,650
Fair value of financial instruments	546	—
Other temporary differences	217	181
Total deferred tax liabilities	**20,250**	**16,354**
Netting of assets/liabilities[1]	–11,957	–10,245
Total deferred tax liabilities, net	**8,293**	**6,109**

1) Comparative figures have been restated due to application of the amendments to IAS 12 Income taxes. Application of these amendments does not have a material effect on the Group.

Deferred tax assets and deferred tax liabilitites are offset when the item relates to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend either to settle current tax liabilities and assets on a net basis, or to realise the assets and settle the liabilities simultaneously.

Deferred tax assets are only recognised in countries where Volvo Car Group expects to be able to generate corresponding taxable income in the future to benefit from tax reductions.

Significant tax loss carry-forwards are related to countries with long or undefinite periods of utilisation, mainly Sweden. Of the total SEK 7,325 (6,976) m recognised deferred tax assets related to tax loss carry-forwards, SEK 6,804 (6,150) m relates to Sweden with indefinite periods of utilisation. SEK 378 (239) m relates to China where tax loss carry-forwards are expected to be utilised before expiration date. The assessement is that Volvo Car Group will be able to generate sufficient income in the coming years to also utilise the remaining part of the recognised amounts.

Deferred tax that may arise on distribution of remaining unrestricted earnings of foreign subsidiaries has not been booked, hence they can be distributed free of tax or Volvo Car Group may consider them permanently reinvested in the subsidiaries.

The Group had total unrecognised deferred tax assets of SEK 295 (159) m related to tax losses carry forwards and withholding tax credits. These were not recognised due to the uncertainty of future taxable income.

On 13 December 2023, the government of Sweden, where the parent company is incorporated, enacted the Pillar Two income taxes legislation (Swe Lag (2023:875) om tilläggsskatt) effective from 1 January 2024.

The Group is in the process of assessing the potential exposure arising from Pillar Two legislation. The assessment so far is based on the latest available country-by-country reporting for 2022. Based on this assessment, the Group has identified potential exposure to Pillar Two income taxes on profits earned in a few countries. The potential exposure is expected to come from the constituent entities (mainly operating subsidiaries) in these jurisdictions.

However, based on the initial assessments made so far, the expectation is that, besides the additional administration, the new regulations will have limited impact on the Group and that any tax due to the new regulations will be non-material from a group perspective.

The Group is continuing to assess the impact of the Pillar Two income taxes legislation on its future financial performance.

Changes in deferred tax assets and liabilities during the reporting period	31 Dec 2023	31 Dec 2022
Net book value of deferred taxes at 1 January	3,758	5,027
Deferred tax income/expense recognised through income statement	–1,494	–282
Change in deferred taxes recognised directly in other comprehensive income	–11	–1,317
Change in deferred taxes due to application of the amendments to IAS 12 Income taxes	–19	19
Exchange rate impact	–392	311
Net book value of deferred taxes at 31 December	**1,842**	**3,758**

Deferred tax assets regarding tax loss carry-forwards are reported to the extent that realisation of the related tax benefit through future taxable profits is probable also when considering the period during which these can be utilised, as described below.

As of 31 December, 2023, the recognised tax loss carry-forwards amounted to SEK 35,153 (33,188) m. The tax value of these tax loss carry-forwards is reported as an asset. The final years in which the recognised loss carry-forwards can be utilised are shown in the following table.

Tax-loss carry-forwards; year of expiration	31 Dec 2023	31 Dec 2022
Due date		
2024	—	—
2025	4	—
2026	—	82
2027	882	937
2028	600	—
2029–	33,667	32,169
Total	**35,153**	**33,188**

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NOTE 15 EARNINGS PER SHARE

ACCOUNTING POLICIES

Basic earnings per share is calculated as net income attributable to owners of the parent company divided by the weighted average number of ordinary shares outstanding during the period.

Effects on Earnings per share (EPS) connected with equity-settled employee incentive plans are reflected in the diluted earnings per share calculation when they are dilutive. For the performance share programme this is based on the fulfilment of the performance conditions. For the employee share matching programme dilutive effects are calculated using the treasury share method.

Basic earnings per share	2023	2022
Net income attributable to owners of the parent company	13,053	15,577
Net income attributable to owners of ordinary shares in the parent company	**13,053**	**15,577**
Weighted average number of ordinary shares outstanding, basic	2,979,524,179	2,979,524,179
Basic earnings per share (SEK)	**4.38**	**5.23**

Diluted earnings per share	2023	2022
Net income in basic earnings per share	13,053	15,577
Net income in diluted earnings per share	**13,053**	**15,577**
Weighted average number of ordinary shares outstanding, basic	2,979,524,179	2,979,524,179
Dilutive effect for share-based payment programmes	778,275	47,186
Weighted average number of ordinary shares, diluted	**2,980,302,454**	**2,979,571,365**
Diluted earnings per share (SEK)	**4.38**	**5.23**

NOTE 16 INTANGIBLE ASSETS

ACCOUNTING POLICIES

An intangible asset is recognised when it is identifiable, Volvo Car Group controls the asset, it is expected and probable to generate future economic benefits and the cost can be measured reliably. Intangible assets consist of internally developed products, licences and patents, trademarks, goodwill, dealer network and investments in IT-systems and software.

Both acquired and internally generated intangible assets are recognised at acquisition cost, less accumulated amortisation and any impairment loss, with the exception of goodwill and trademark. Borrowing costs are sometimes included in the acquisition cost of an asset if it takes more than 12 months to get it ready for its intended use or sale. Goodwill and trademark are recognised at fair value at the date of the acquisition less any accumulated impairment losses.

Subsequent expenditure on intangible assets increases the cost only if it gives rise to future economic benefit. All other subsequent expenditures are expensed in the period in which they are incurred.

Product development

Volvo Car Group's research and development activities are divided into a concept phase and a product development phase. Costs incurred during the concept phase are normally research costs for developing new products at an early stage, where the outcome of the project is still uncertain and where for example different options and alternatives are still evaluated. Research costs during the concept phase are expensed as incurred.

When a research and development project has developed to the extent that there is a definable future product that is assessed to generate future economic benefits, the project is considered to be in the development phase. Costs for development of new products, production systems and software are recognised as an asset if certain conditions are met. The cost of an internally generated intangible asset comprises of all expenditures that can be directly attributed to the development phase and that serve to create, produce and prepare the asset for use. All other development costs are expensed as incurred.

Development costs incurred by Volvo Car Group that are contractually shared with other parties and where Volvo Car Group remain in control of a share of the developed product, either through a licence or through ownership of patents, are recognised as intangible assets, reflecting the relevant proportion of Volvo Car Group interests.

Volvo Car Group incur development costs on behalf of other parties. In cases where the developed technology is sold and therefore not controlled by Volvo Car Group, the costs are expensed as cost of sales at the time of the sale. These costs are also used to measure development progress for revenue recognition for the sold technology, licences or Intellectual Property. See Note 2 – Revenue for further information.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Intangible assets with a finite useful life are amortised on a straight-line basis over their estimated useful lives. Management regularly reassesses the useful life of all significant assets. When the useful life of an intangible asset is reduced, amortisation is accelerated and increased in future periods to reflect the reduction of time over which the Group will derive benefits from the asset. A shorter estimated useful life is not always an indicator of impairment, as impairment is characterised by a change in the expected cash flows to be derived from the asset.

In the assessment of useful life, climate-related risks have been considered, mainly impacting capitalised costs related to product development for internal combustion engines in line with Volvo Cars plans to be fully electric by 2030.

The carrying amount of intangible assets with finite useful lives are tested whenever events or changes in circumstances indicate that the value of the asset will not be recovered. Intangible assets with indefinite useful lives, i.e. trademarks, goodwill, and other intangible assets not yet ready for use, are not subject for amortisation and are tested for impairment at least annually or whenever there is an indication that the value will not be recoverable.

An impairment test is made by calculating the asset or assets recoverable amount. If the recoverable amount is less than the carrying value, the asset is written down to its recoverable value. The recoverable amount is the higher of an asset's or cash-generating unit's fair value less costs to sell and its value in use. Value in use is defined as the present value of the future cash flows expected to be derived from an asset or cash-generating unit. The estimated future cash flows are based on assumptions that represent management's best estimate of the economic conditions that will exist during the

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asset's remaining useful life and are based on internal business plans or forecasts. Future cash flows are determined on the basis of long-term planning, which is approved by Management and valid at the date of preparation of the impairment test. The planning is based on expectations regarding future market share, the market growth, Volvo Car Group's expected performance in this environment as well as the products' profitability.

Previously recognised impairment losses are reversed, with the exception of goodwill, if reasons for the previously made impairment no longer exist. An impairment loss is reversed only to the extent that the asset's or cash-generating unit's carrying amount after reversal does not exceed the carrying amount, net of amortisation, which would have been recognised if no impairment loss had been recognised.

Impairment testing of assets are done by grouping assets per platform. Intangible assets with indefinite useful life are not allocated to the platform but instead tested at the operating level Volvo Car Group.

Management's business plan for 2024–2027 is used as a basis for the calculation for the Volvo Car Group CGU. In the model, Volvo Car Group is expected to maintain stable efficiency over time and the estimates for the cash flows following the end of the planning period are based on the same growth rate and cash flow as for the last year in the calculation onwards in perpetuity. The business plan is an integral part of Volvo Car Group's financial planning process and represents management's best estimate of the economic conditions that will exist during the asset's remaining lifetime. The business plan process is based on the historic and current financial performance and financial position of the company, i.e., assumptions for margin development, fixed cost and new investments are based on current year financials and balanced towards what is containable given the projection of exogenous factors. Exogenous factors as industry and segment volumes, exchange rates, raw material etc. are based on external assessments from analyst companies and banks. A sensitivity test has been performed whether a negative adjustment of one percentage point to the margin or in the discount rate would affect the result of the impairment test. The discount rate before tax

	Product development[1]	Software	Assets under construction	Trademark and goodwill[2]	Other intangible assets[3]	Total
Acquisition cost						
Balance at 1 January 2022	51,405	4,150	13,158	4,431	8,252	**81,396**
Additions	867	2,987	15,275	—	16	**19,145**
Divested through business combinations	—	–131	—	–95	–103	**–329**
Divestments and disposals	–9,291	–73	—	–6	–41	**–9,411**
Reclassifications	1,832	–925	–714	—	7	**200**
Effect of foreign currency exchange rate differences	2	2	6	—	111	**121**
Balance at 31 December 2022	**44,815**	**6,010**	**27,725**	**4,330**	**8,242**	**91,122**
Additions	1,688	58	19,883	—	28	**21,657**
Divested through business combinations	—	–4	–1	–76	—	**–81**
Divestments and disposals	–1,478	–41	—	–36	—	**–1,555**
Reclassifications	6,416	1,979	–10,104	—	1,851	**142**
Effect of foreign currency exchange rate differences	—	29	–37	—	–113	**–121**
Balance at 31 December 2023	**51,441**	**8,031**	**37,466**	**4,218**	**10,008**	**111,164**
Accumulated amortisation and impairment						
Balance at 1 January 2022	–30,368	–2,315	—	–6	–4,867	**–37,556**
Amortisation expense	–4,579	–469	—	—	–786	**–5,834**
Divested through business combinations	—	83	—	—	63	**146**
Divestments and disposals	9,282	46	—	6	9	**9,343**
Reclassifications	—	–84	—	—	–64	**–148**
Effect of foreign currency exchange rate differences	–1	20	—	—	–98	**–79**
Balance at 31 December 2022	**–25,666**	**–2,719**	**—**	**—**	**–5,743**	**–34,128**
Amortisation expense	–4,853	–682	—	—	–921	**–6,456**
Divested through business combinations	—	1	—	—	—	**1**
Divestments and disposals	1,451	23	—	—	—	**1,474**
Reclassifications	—	–48	—	—	8	**–40**
Effect of foreign currency exchange rate differences	—	–34	—	—	123	**89**
Balance at 31 December 2023	**–29,068**	**–3,459**	**—**	**—**	**–6,533**	**–39,060**
Net balance at 31 December 2022	**19,149**	**3,291**	**27,725**	**4,330**	**2,499**	**56,994**
Net balance at 31 December 2023	**22,373**	**4,572**	**37,466**	**4,218**	**3,475**	**72,104**

1) Volvo Car Group has capitalised borrowing costs related to product development of SEK 1,055 (418) m. A capitalisation rate of 3.4 (2.4) per cent was used to determine the amount of borrowing costs eligible for capitalisation.
2) Of the total Net balance at 31 December 2023, Goodwill amounted to SEK 620 (732) m.
3) Other intangible assets refers to licences, dealer network and patents.

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was 12.4 (12.3) per cent. In 2023, the discounted cash flows including the sensitivity analysis performed exceeded the carrying amount and no impairment loss was recognised as a result of this test.

NOTE 17 TANGIBLE ASSETS

ACCOUNTING POLICIES

A tangible asset is recognised when it is controlled by Volvo Car Group, expected to generate future economic benefits and is measurable. Tangible assets are recognised at acquisition cost, less accumulated depreciation and any recognised impairment losses. The cost of the asset includes expenditures that can be directly attributed to the acquisition and bringing the asset in place for its intended use. Borrowing costs are sometimes included in the acquisition cost of an asset if it takes more than 12 months to get it ready for its intended use or sale.

Repair and maintenance expenditures are recognised in the income statement during the period in which they are incurred.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Tangible assets are depreciated on a straight-line basis over their estimated useful lives. Management regularly reassesses the useful life and residual value of all significant assets. When the useful life of a tangible asset is reduced, depreciation is accelerated and increased in future periods to reflect the reduction of time over which the Group will derive benefits from the assets. A shorter estimated useful life is not always an indicator of impairment, as impairment is characterised by a change in the expected cash flows to be derived from the asset. In the assessments of useful life and residual value, climate-related risks have been considered, mainly impacting assets related to the production of internal combustion engines in line with Volvo Cars plans to be fully electric by 2030.

The carrying amounts of non-current tangible assets are tested for impairment if there are indicators of a decline in value with regards to future economic benefits related to the asset. Impairment is recognised if the carrying value of the asset exceeds the recoverable amount. The recoverable amount is the higher of the net selling price and its value in use. For these calculations, certain estimations must be made with regards to future cash flows, required return on investments and other adequate assumptions. The estimated future cash flows are based on assumptions that represent management's best estimate of the economic conditions that will exist during the asset's remaining useful life and are based on internal business plans or forecasts. Future cash flows are determined on the basis of long-term planning, valid at the date of preparation of the impairment test and approved by Management. The planning is based on expectations regarding future market share, the market growth as well as the products' profitability.

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	Buildings and land[1) 2)]	Machinery and equipment[1) 2)]	Construction in progress	Right-of-use assets[3)]	Assets under operating leases[4)]	Total
Acquisition cost						
Balance at 1 January 2022	24,959	110,086	4,274	10,337	8,596	**158,252**
Additions	345	2,835	6,132	988	7,135	**17,435**
Divested through business combinations	–595	–3,793	–30	–248	–30	**–4,696**
Divestments and disposals	–350	–2,541	–46	–524	–24	**–3,485**
Reclassifications	1,477	5,151	–2,747	35	–3,582	**334**
Effect of foreign currency exchange rate differences	1,315	2,852	230	338	279	**5,014**
Balance at 31 December 2022	**27,151**	**114,590**	**7,813**	**10,926**	**12,374**	**172,854**
Additions	2,617	4,516	9,178	3,240	7,641	**27,192**
Divested through business combinations	–4	–2	—	–108	—	**–114**
Divestments and disposals	–398	–7,300	–87	–1,269	–143	**–9,197**
Reclassifications	1,143	2,449	–3,764	—	–6,570	**–6,742**
Effect of foreign currency exchange rate differences	–464	–1,421	–385	–240	–120	**–2,630**
Balance at 31 December 2023	**30,045**	**112,832**	**12,755**	**12,549**	**13,182**	**181,363**
Accumulated depreciation and impairment						
Balance at 1 January 2022	–11,256	–71,561	—	–3,397	–623	**–86,837**
Depreciation expense	–1,084	–6,860	—	–1,580	–733	**–10,257**
Divested through business combinations	198	1,101	—	36	7	**1,342**
Divestments and disposals	324	1,994	—	342	2	**2,662**
Reclassifications	–130	–1,061	—	–5	556	**–640**
Effect of foreign currency exchange rate differences	–409	–1,325	—	–117	–21	**–1,872**
Balance at 31 December 2022	**–12,357**	**–77,712**	—	**–4,721**	**–812**	**–95,602**
Depreciation expense	–1,093	–7,036	—	–1,632	–1,232	**–10,993**
Divested through business combinations	1	1	—	38	—	**40**
Divestments and disposals	131	6,117	—	777	41	**7,066**
Reclassifications	—	48	—	—	1,171	**1,219**
Effect of foreign currency exchange rate differences	141	750	—	111	18	**1,020**
Balance at 31 December 2023	**–13,177**	**–77,832**	—	**–5,427**	**–814**	**–97,250**
Net balance at 31 December 2022	**14,794**	**36,878**	**7,813**	**6,205**	**11,562**	**77,252**
Net balance at 31 December 2023	**16,868**	**35,000**	**12,755**	**7,122**	**12,368**	**84,113**

1) Includes impairment losses of SEK –194 (–29) m.
2) Volvo Car Group has no mortgages in Buildings and land or Machinery and equipment. For further information regarding pledged assets, see Note 29 – Pledged assets.
3) For information regarding Right-of-use assets, see Note 7 – Leasing.
4) Assets under operating leases mainly relate to vehicles sold with repurchase commitments and contracts under the name Care by Volvo.

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NOTE 18 OTHER NON-CURRENT ASSETS

	31 Dec 2023	31 Dec 2022
Restricted cash	35	63
Endowment insurance for pensions	357	352
Rental deposition	82	90
Other non-current assets	2,952	3,489
Total	**3,426**	**3,994**

NOTE 19 INVENTORIES

ACCOUNTING POLICIES

Inventories consist of raw material, consumables and supplies, emission credits, semi-manufactured goods, work in progress, finished goods and goods for resale. Assets held under operating lease, with a maturity less or equal to 12 months, are also recognised as inventory. Inventories are measured at the lower of cost and net realisable value. Cost of inventories comprise of all costs of purchase, production charges and other expenditures incurred in bringing the inventories to their present location and condition. The initial value of emission credit inventories is based on the fair value on the date they are earned.

The cost of inventories of similar assets is established using the first-in, first-out method (FIFO). Net realisable value is calculated as the selling price in the ordinary course of business, less estimated costs of completion and selling costs. For groups of similar products, a Group valuation method is applied. Physical stock counts are carried out annually or more often where appropriate in order to verify the records.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Inventories are measured at the lower of cost and their net realisable value. Net realisable value is based on the most reliable evidence of the amount Volvo Car Group expects to realise from vehicles and components on future sales trends or needs, for components, and takes into account items that are wholly or partially obsolete.

A future unexpected decline in market conditions could result in an adjustment in future expected sales, requirements and in estimated selling prices assumptions, which may require an adjustment to the carrying amount of inventories.

	31 Dec 2023	31 Dec 2022
Raw materials and consumables	135	135
Work in progress	11,598	13,502
Current assets held under operating lease	5,228	3,474
Finished goods and goods for resale	38,977	29,335
Emissions credits	1,120	505
Total	**57,058**	**46,951**
Of which value adjustment reserve:	–793	–554

The cost of inventories recognised as an expense and included in cost of sales amounted to SEK 307,670 (259,122) m. Current assets held under operating lease refers to a sale of vehicles combined with a repurchase commitment with a maturity less or equal to 12 months.

NOTE 20 ACCOUNTS RECEIVABLE AND OTHER CURRENT ASSETS

ACCOUNTING POLICIES

Accounts receivables are recognised at amortised cost. An allowance for expected credit loss is recognised when the receivable is initially recognised. The recognised allowance for credit losses consists of incurred as well as of expected credit losses. A credit loss has been incurred when there has been an event that has triggered the customers inability to pay. The expected credit loss allowance is based on a multiplier consisting of average historical write-offs and forward-looking macroeconomic data. In these cases, there has not yet been any events incurred showing any inability to pay.

If it has been determined that an accounts receivable is uncollectible, it will be written off and removed. It usually means that collection has been unsuccessful and an entity has no reasonable expectations of recovering the contractual cash flows on the receivable in its entirety or a portion thereof.

	31 Dec 2023	31 Dec 2022
Accounts receivable, non-group companies	12,672	8,876
Accounts receivable, related companies	6,612	16,363
VAT receivables	4,951	3,197
Prepaid expenses and accrued income	9,570	5,805
Other financial receivables	729	350
Restricted cash	752	736
Other receivables[1) 2)]	3,847	6,151
Total	**39,133**	**41,478**

1) Whereof other receivables to related companies amounted to SEK 1,436 (3,016) m.
2) Whereof interest-bearing receivables amounted to SEK 47 (4,260) m.

Accounts receivable amounted to SEK 19,284 (25,239) m including a credit loss allowance of SEK 126 (128) m of which SEK 31 (43) m is related to allowance for expected credit losses. As of 31 December 2023 the total credit loss allowance amounted to 0.65 (0.50) per cent of total accounts receivable.

The size and geographical spread of the accounts receivable are closely linked to the distribution of Volvo Car Group's sales. Apart from receivables and accrued income against Polestar, the accounts receivable and other current assets do not contain any significant concentration of credit risk to individual customers or markets.

Change in loss allowance for accounts receivable is as follows:	2023	2022
Balance at 1 January	128	127
Additions	30	40
Reversals	–25	–28
Write-offs	–6	–14
Translation difference	–1	3
Balance at 31 December	**126**	**128**

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Aging analysis of accounts receivable and accounts receivables from related companies	Not due	1–30 days overdue	30–90 days overdue	>90 days overdue	Total
2023					
Accounts receivable gross	17 621	708	316	765	19 410
Loss allowance	–92	—	–4	–30	–126
Accounts receivable net	**17 529**	**708**	**312**	**735**	**19 284**
2022					
Accounts receivable gross	24 258	473	–121	757	25 367
Loss allowance	–93	—	–4	–31	–128
Accounts receivable net	**24 165**	**473**	**–125**	**726**	**25 239**

NOTE 21 FINANCIAL INSTRUMENTS AND FINANCIAL RISKS

ACCOUNTING POLICIES

Financial instruments recognition and derecognition
Financial instruments are any form of contract that gives rise to a financial asset in one party and a financial liability or equity instrument in another party. Financial assets and liabilities are recognised in the balance sheet when Volvo Cars becomes a party to the contractual terms and conditions, namely at the transaction date.

Financial assets are initially recognised at fair value plus transaction costs, except for financial assets carried at fair value through profit or loss. In this case transaction costs are expensed in the income statement.

Financial liabilities are initially recognised at fair value less transaction costs, except for those financial liabilities carried at fair value through profit or loss. For these liabilities transaction costs are expensed in the income statement.

Derivatives with positive fair values, the accumulated unrealised gains, are recognised as non-current or current derivative assets. Derivatives with negative fair values, the accumulated unrealised losses, are recognised as non-current or current derivative liabilities.

A financial asset or a portion of a financial asset is derecognised from the balance sheet upon expiry, when it has been settled or when all significant risks and benefits linked to the asset have been transferred to a third party. In those cases where Volvo Cars concludes that all significant risks and rewards have not been transferred, the portion of the financial assets corresponding to Volvo Cars' continuous involvement continues to be recognised. A financial liability or a portion of a financial liability is derecognised when the obligation in the contract has been settled, cancelled, or expired.

Classification of financial assets and liabilities
Volvo Cars applies different business models for financial instruments. Financial assets and liabilities are measured at amortised cost or fair value depending on their initial classification at recognition.

Financial assets and liabilities carried at amortised cost
The business model for financial assets under this classification to hold the financial assets in order to collect contractual cash flows. This classification also includes financial assets with contractual cash flows that are solely payment of principal and interest. Financial assets carried at amortised cost include accounts receivables, cash and cash equivalents, time deposits and other financial assets.

Accounts receivables are recognised at the amount expected to be received including allowance for expected credit loss, see Note 20 – Account receivables and other current assets.

Customer invoices are sometimes subject to factoring with a third party, such as a bank or other financial institution. This enables Volvo Cars to receive payment for its receivables within a few days after invoicing and thus be able to release liquidity at an earlier stage than would otherwise have been the case. If criteria for removal from the balance sheet in factoring arrangements are not met, the receivables in the balance sheet remain with the company.

Financial liabilities carried at amortised cost encompasses issued bonds, liabilities to credit institutions, accounts payable and other financial liabilities.

Realised and unrealised gains and losses of these instruments are recognised as operating income or finance net in the income statement, depending on the nature of the underlying contracts.

Financial assets and liabilities carried at fair value through profit or loss
Financial assets carried at fair value through profit or loss encompasses derivatives that are not designated for hedge accounting, interest-bearing securities, convertible loans receivables and equity instruments. Derivatives includes forward contracts, options and swaps. Interest-bearing securities encompasses commercial paper, for further information see Note 22 – Marketable securities and cash and cash equivalents. Convertible loans receivables and equity instruments are presented as Other long-term securities holdings. The convertible loan receivable includes a conversion option, which provides the holder with a possibility to convert the loan balance into equity instruments, as shares in the company. Equity instruments includes holdings in listed and unlisted equity instruments, as well as unlisted warrants and so called earn-out rights. For further information about issued warrants related to the share-based incentive programme see Note 9– Share-based remuneration.

Financial liabilities at fair value through profit or loss encompasses derivatives that are not designated for hedge accounting and financial liabilities that are designated hedging instruments, namely for fair value hedge.

Realised and unrealised gains and losses from fluctuation in fair value of these instruments are recognised as operating income or finance net in the income statement, depending on the nature of the underlying contracts.

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Financial assets and liabilities carried at fair value through profit or loss – designated hedging instruments
Financial instruments under the following classification are derivatives when they are designated as hedging instruments. Derivatives includes forward contracts and swaps. Unrealised gains and losses from fluctuations in the fair value of these instruments are recognised in other comprehensive income and accumulated in other reserves in equity until the underlying transactions occur. The accumulated gain or loss on these hedging instruments is then recycled to the income statement and is recognised in operating income.

Financial Instruments measurement
Fair value is defined as the price that would be received when selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Amortised cost is calculated using the effective interest rate method, where any premiums or discounts and directly attributable costs and revenue are capitalised over the contract period. Measurement of financial instruments at fair value is based on prevailing market quotations by estimating future cash flows using the relevant forward curve and discounting with the relevant discount curve for the respective derivative and currency. Currency options are measured using the Garman-Kohlhagen model, an adaptation of Black-Scholes model. Unlisted warrants and earn-out rights are measured by using the Black-Scholes model and Monte Carlo simulation respectively.

The fair value of a financial asset or liability reflects non performance risk including the counterparty's credit risk for an asset and Volvo Cars' own credit risk for a liability. Derivatives with positive fair value and interest-bearing securities are adjusted with the Default Probability derived from the Credit Default Swap curve per counterparty. The same adjustment is made for the derivatives with negative fair value with Volvo Cars' own credit risk using the Default Probability of Volvo Car AB (publ.) credit default swaps. The convertible loans are adjusted for default probability, using the difference between current market spreads (derived from comparable/benchmark securities of similar time to maturity and credit risk profile) and outstanding loan deals credit spreads.

The measurement of the financial instruments is divided into three levels depending on the market information available for fair value measurement:

- Level 1: Instruments are measured based on unadjusted quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date.
- Level 2: Instruments are measured based on inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly such as quotations or indirectly such as derived from quotations.
- Level 3: Instruments are measured based on unobservable inputs for the asset or liability.

The measurement levels are presented in the table financial instruments by category and measurement level in this note.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Accounting for financial instruments includes performing certain estimates and judgements:
- **Equity instruments – recognition of fair value changes:** When measuring the unlisted warrants and earn-out rights the most relevant judgement to be made is whether Volvo Cars will fulfil the vesting criteria and when they would do so, assessing the risk-free interest rate and the volatility of the underlying share price.

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The table below presents financial instruments by category and measurement level.

	Measure-ment level	31 December 2023 Carrying value	31 December 2023 Fair value	31 December 2022 Carrying value	31 December 2022 Fair value
Financial assets carried at fair value through profit or loss					
Other long-term securities holdings[1)2)]	1, 2, 3	12,066	12,066	4,353	4,353
Derivatives for hedging of currency risk	2	411	411	315	315
Derivatives for hedging of interest rate risk	2	4	4	—	—
Interest-bearing securities[3)]	2	50	50	1,760	1,760
		12,531	**12,531**	**6,428**	**6,428**
Financial assets carried at fair value through profit or loss-designated hedging instruments					
Derivatives for hedging of currency risk	2	3,557	3,557	2,149	2,149
Derivatives for hedging of commodity price risk	2	110	110	434	434
		3,667	**3,667**	**2,583**	**2,583**
Financial assets carried at amortised cost					
Accounts receivables	—	19,284	19,284	25,239	25,239
Other non-current and current financial assets	—	8,868	8,868	13,387	13,387
Time deposits[4)]	—	16,533	16,533	26,204	26,204
Cash and cash equivalents	—	41,197	41,197	39,194	39,194
		85,882	**85,882**	**104,024**	**104,024**
Financial liabilities carried at fair value through profit or loss					
Derivatives for hedging of currency risk	2	56	56	17	17
Derivatives for hedging of interest rate risk	2	297	297	599	599
		353	**353**	**616**	**616**
Financial liabilities carried at fair value through profit or loss-designated hedging instruments					
Derivatives for hedging of currency risk	2	865	865	1,816	1,816
Derivatives for hedging of commodity price risk	2	261	261	202	202
		1,126	**1,126**	**2,018**	**2,018**
Financial liabilities carried at amortised cost					
Accounts payable	—	62,304	62,304	68,913	68,913
Non-current and current bonds and liabilities to credit institutions[5)]	—	30,246	29,805	28,810	27,390
Other non-current and current liabilities	—	15,733	15,733	14,343	14,343
		108,283	**107,842**	**112,066**	**110,646**

1) Whereof convertible loans receivables to the Polestar Group at level 2 amounted to SEK 10, 270 (—) m, the value of the conversion option is nil.
2) Including holdings in equity instruments amounted to SEK 1,796 (4,353)m, whereof SEK 166 (252) m are measured at level 1 category and SEK 1,630 (4,101) m are measured at level 3 category. At level 3 category equity instruments includes earn-out rights in Polestar Group amounted to SEK 577 (3,225) m and unlisted warrants and earn-out rights in Luminar Technologies Inc (Luminar) amounted to SEK 42 (108) m.
3) Whereof SEK —(450) m are reported as marketable securities in the balance sheet and SEK 50 (1,310) m are reported as cash and cash equivalents. For further information see in Note 22 – Marketable securities and cash and cash equivalent.
4) Whereof SEK 9,918 (2,965) m are reported as marketable securities in the balance sheet and SEK 6,615 (23,239) m are reported as cash and cash equivalents. For further information see in Note 22 – Marketable securities and cash and cash equivalent.
5) The carrying amount of the bonds and liabilities to credit institutions including a fair value adjustment amounting to SEK –46 (–287) m, which relates to the fair value hedging.

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The table below presents the nominal amounts and fair value of outstanding derivative instruments.

	31 December 2023		31 December 2022	
	Nominal amount	Fair value	Nominal amount	Fair value
Derivatives for hedging of currency risk related to financial assets and liabilities				
Foreign exchange swaps and forward contracts				
– receivable position	18,660	411	16,977	293
– payable position	6,506	–47	2,255	–11
Subtotal		**364**		**282**
Derivatives for hedging of currency risk in future commercial cash flows				
Foreign exchange swaps and forward contracts				
– receivable position	71,061	3,557	52,809	2,136
– payable position	23,099	–865	36,150	–1,815
Currency options				
– receivable position	—	—	749	34
– payable position	1,693	–9	1,161	–7
Subtotal		**2,683**		**348**
Derivatives for hedging of interest rate risk				
Interest rate swaps				
– receivable position	1,112	4	—	—
– payable position	13,905	–297	11,672	–599
Subtotal		–293		**–599**
Derivatives for hedging of commodity price risk				
Forward contracts				
– receivable position	1,234	110	1,327	434
– payable position	2,280	–261	940	–202
Subtotal		–151		**232**
Total		**2,603**		**263**

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The table below illustrates gains and losses, interest income and expenses that have affected the income statement divided per category of financial instruments.

	2023			2022		
	Gains/ Losses	Interest income	Interest expenses	Gains/ Losses	Interest income	Interest expenses
Recognised in operating income						
Financial assets and liabilities carried at fair value through profit or loss– designated hedging instruments						
Derivatives for hedging currency risk and commodity price risk	–1,288	—	—	–3,914	—	—
Financial assets and liabilities carried at fair value through profit or loss						
Derivatives for hedging currency risk	29	—	—	96	—	—
Financial assets and liabilities carried at amortised cost						
Accounts receivable and accounts payable	–1,521	—	—	991	—	—
Impact on operating income	**–2,780**	—	—	**–2,827**	**—**	**—**
Recognised in net finance net						
Financial assets and liabilities carrried at fair value through profit or loss						
Other long-term securities holdings[1)]	–154	626	—	–877	—	—
Interest-bearing securities	29	14	—	–24	12	—
Derivatives for hedging of currency risk and interest rate risk	806	—	–492	689	—	54
Financial assets and liabilities carried at amortised cost						
Cash and cash equivalents and time deposits	–714	1,787	–19	1,482	698	–19
Financial assets and liabilities[2)]	–240	364	–1,138	–2,382	142	–845
Impact on net financial items	**–273**	**2,791**	**–1,649**	**–1,112**	**852**	**–810**

1) The total fair value change of all holdings in Luminar amounted to SEK –152 (–822) m. For further information about issued warrants related to share-based incentive programme see Note 9 – Share-based remuneration.
2) Including the financial liabilities designated for fair value hedge, amounted to SEK –241 (287) m.

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HEDGE ACCOUNTING

Hedge accounting is applied when derivative instruments are included in a documented hedge relationship. For hedge accounting to be applied, a direct connection between the hedging instrument and the hedged item is required. At the inception of the hedge, Volvo Cars documents the relationship between hedging instruments and hedged items, as well as its risk management strategy and objective for undertaking various hedging transactions. Volvo Cars also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of the hedged items.

Fair value hedge

Hedge accounting is applied for a specified part of a financial liability, recognised at amortised cost. The criteria for applying fair value hedge accounting, that is the designation should eliminate the significant accounting mismatch of having a fixed rate liability carried at amortised cost and a related derivative contract, such as an interest rate swap which is recognised at fair value through profit or loss. The carrying value of the hedged item, namely a specified part of a foreign currency fixed rate issued bond is initially recognised at amortised cost. Subsequent changes related to the hedged risks are reflected in the carrying amount of the liability as a fair value adjustment with the offsetting entry going to the income statement. Changes in fair value adjustment of the hedged item and the hedging instrument are both recognised in the income statement and the accounting mismatch is therefore eliminated. Gains and losses related to the interest rate swaps used in hedging fixed rate borrowings and the changes in the fair value of the hedged fixed rate borrowings attributable to interest rate risk are recognised in the income statement within other financial income and expenses.

Prospective effectiveness testing is performed at inception of the hedging relationship and monitored regularly. The test is performed by comparing the changes in fair values and the critical terms, which are nominal amount, cash flows and time of maturity, of the hedging instrument and the hedged item. If critical terms match and the credit risk of the counterparty has not changed significantly, the hedge relationship is highly effective.

In the table below the fair value hedges by maturity date are presented.

					Carrying amount		
31 December 2023 Maturity date	Nominal amount	Fair value, hedged item	Fair value, derivatives	Ineffectiveness reflected in income statement	Financial assets	Financial liabilities	Variable benchmark
2024	400	12	–12	0	—	–12	Euribor 3m
2025	400	32	–31	1	4	–35	Euribor 3m
2027	250	–49	52	3	61	–9	Euribor 3m
2028	200	51	–58	–7	—	–58	Euribor 3m
Total		**46**	**–49**	**–3**	**65**	**–114**	

					Carrying amount		
31 December 2022 Maturity date	Nominal amount	Fair value, hedged item	Fair value, derivatives	Ineffectiveness reflected in income statement	Financial assets	Financial liabilities	Variable benchmark
2024	200	33	–34	–1	—	–34	Euribor 3m
2025	300	68	–66	2	—	–66	Euribor 3m
2027	100	47	–47	—	—	–47	Euribor 3m
2028	200	139	–151	–12	—	–151	Euribor 3m
Total		**287**	**–298**	**–11**	**—**	**–298**	

If the hedge no longer meets the criteria for hedge accounting, the adjustment to the carrying amount of a hedged item for which the effective interest method is used is accrued to the income statement over the contracts' remaining period to maturity. Ineffectiveness has affected net income for 2023.

Net investment hedge

Hedging of net investments in foreign operations refers to hedges held to reduce the effect of changes in the value of a net investment in a foreign operation due to changes in foreign exchange rates. Net investments in foreign operations consists of the value of Volvo Cars' share of the net assets of the foreign subsidiary. The Group hedges the currency risk associated with the translation of the net assets including goodwill in foreign subsidiaries with functional currency EUR and USD.

Volvo Cars designates EUR 920 m of the EUR debt and USD 117 m of the USD debt as hedging instruments to reduce the translation exposure on net investments in EUR and USD. The hedge reserve with regards to net investment in foreign operations is recorded in other comprehensive income and accumulated in currency translation reserve in equity. In the event of a divestment, the accumulated hedge effect is transferred from the hedge reserve in equity to the income statement as part of the financial income or expenses. No ineffectiveness has affected net income for 2023.

Cash flow hedge

Cash flow hedging refers to the hedging of highly probable forecasted commercial transactions in foreign currencies, expected to occur at various dates during the next 48 months, against currency rate risks. Hedge accounting is also applied for expected future commodity consumption against commodity price risk. To hedge the exposure, the Group uses forward contracts as well as option and swap contracts. In cash flow hedge accounting the changes in fair value of the hedging instruments are recognised in other comprehensive income and accumulated in other reserves in equity. These reserves are recycled to the income statement in the same period as

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when the hedged forecast transaction affects the income statement. The effect from realised cash flow hedges is classified as Revenue and Cost of sales, respectively, depending on the underlying substance of the transaction.

Prospective effectiveness testing is performed at inception of the hedge. The test is performed by comparing the critical terms, which are nominal amount, timing and foreign currency or commodity, of the hedging instrument and the hedged item. If critical terms match and the credit risk of the counterparty has not changed significantly, the hedge relationship is highly effective.

The hedging relationship is regularly tested, if critical terms match, up until its maturity date. If the identified relationships are no longer deemed effective, the fluctuation in fair value on the hedging instrument from the last period the instrument was considered effective is recognised in the income statement. If the hedged transaction is no longer expected to occur, the hedge's accumulated changes in value are immediately transferred from equity through other comprehensive income to the income statement and are included in other operating income and expenses.

No ineffectiveness has affected net income for 2023.

In the table below the outstandig derivatives within hedge accounting are presented.

	Financial assets	Financial liabilities	Net	Tax	Hedge reserve after tax	Recycled from other comprehensive income	Ineffectiveness reflected in income statement
31 December 2023							
Cash flow hedge							
– Currency risk	3,557	–865	2,692	–554	2,138	505	—
– Electricity price risk	46	–76	–30	6	–24	–263	—
– Raw material price risk	64	–185	–121	25	–96	86	—
Subtotal	**3,667**	**–1,126**	**2,541**	**–523**	**2,018**	**328**	—
Net investments hedge							
– Currency risk	—	–1,093	–1,093	225	–868	73	—
Total	**3,667**	**–2,219**	**1,448**	**–298**	**1,150**	**401**	
Fair value hedge							
– Interest rate risk	65	–114	–49	—	—	—	–3

	Financial assets	Financial liability	Net	Tax	Hedge reserve after tax	Recycled from other comprehensive income	Ineffectiveness reflected in income statement
31 December 2022							
Cash flow hedge							
– Currency risk	2,149	–1,816	333	–67	266	1,682	—
– Electricity price risk	373	–38	335	–69	266	–102	—
– Raw material price risk	61	–164	–103	21	–82	–23	—
Subtotal	**2,583**	**–2,018**	**565**	**–115**	**450**	**1,557**	**—**
Net investments hedge							
– Currency risk	—	–1,224	–1,224	252	–972	11	—
Total	**2,583**	**–3,242**	**–659**	**137**	**–522**	**1,568**	**—**
Fair value hedge							
– Interest rate risk	—	–298	–298	—	—	—	–11

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FINANCIAL RISKS

In its operations, Volvo Car Group is exposed to various types of financial risks such as currency risk, funding and liquidity risk, interest rate risk, commodity price risk and credit risk.

The Volvo Car Group's treasury function is responsible for managing and controlling these financial risks, ensuring that appropriate financing is in place through capital market transactions, loans and committed credit facilities and is responsible for managing Volvo Cars' liquidity.

The management of financial risks is governed by Volvo Car Group's Financial Policy Framework which is approved by the Board of Directors (BoD) and is subject to review every second year or when otherwise required. The policy mandates the minimisation of the effects from fluctuating financial markets on Volvo Car Group's financial earnings. Policy compliance is reported to the CFO on a monthly basis. Policy compliance is also a part of the general treasury reporting to the BoD. There is an alert function in place safeguarding mandate limits on a daily basis.

Currency risk

Currency exposure arises as Volvo Cars produces cars in various countries, it arises from procurement and the mix of sales currencies. Relative changes in currency rates have a direct impact on the Volvo Car Group's operating income, finance net, balance sheet and cash flow statement.

The currency risk is related to:

- Expected future cash flows from sales and purchases made in foreign currencies (transaction risk)
- Changes in value of assets and liabilities denominated in foreign currencies (translation risk)
- Net investments in foreign operations (translation risk)

Transaction exposure risk

Volvo Car Group Financial Policy Framework

The currency transaction exposure risk arises from cash flows in functional currencies, namely other currencies than the presentation currency of the Volvo Car Group, which is Swedish krona. Sales in combination with purchases made in other currencies than Swedish krona determine the transaction exposure of the Group.

The Volvo Car Group Financial Policy Framework states, regarding currency transaction risk management, that up to 80 per cent of the future expected cash flows in the coming 24 months and up to 60 per cent of the future expected cash flows in the coming 25 to 48 months can be hedged with adequate financial instruments, such as currency options, forward contracts, foreign exchange swaps or combined instruments with maturities matching expected timing of cash flows. Hedging strategies using financial instruments for long-term exposures (over 48 months) require approval by the BoD. The management of currency risk within the above stipulated intervals is delegated by the Board of Directors to Group Treasury via the CFO.

For currency risk management purposes, transaction exposure is expressed in terms of Cash Flow at Risk (CFaR), which is the maximum loss at a 95 per cent confidence level in one year. The CFaR is based on the cash flow forecast, currency exchange rates, market volatility and correlations.

The hedging mandates are proposed by Group Treasury and approved by the CFO and are expressed as a strategic hedge level of CFaR. The strategy allows for mandates to deviate from a benchmark. The deviation mandate is given as a tactical mandate in terms of timing. The hedging mandates are revised at least quarterly.

Status at year end

The total currency inflow and outflow for Volvo Car Group was distributed according to below table:

	Inflow, %		Outflow, %	
	2023	2022	**2023**	2022
CNY	26	30	36	38
EUR	25	21	37	34
GBP	6	6	1	1
JPY	2	3	3	4
USD	21	22	19	19
Other	20	18	4	4

Forward contracts, currency options and foreign exchange swaps are used to hedge the currency risk in expected future cash flows from sales and purchases made in foreign currencies. Hedging of the currency risk in the Chinese industrial entities can be made onshore in China.

The CFaR at year end for the cash flows over a one year horizon for the Group, excluding hedges, was approximately SEK 5,847 (9,461) m. The table below shows the percentage of the forecasted cash flows that were hedged (expressed both in nominal terms and in CFaR).

	0–12 months		13–24 months		25–48 months	
	2023	2022	**2023**	2022	**2023**	2022
Nominal hedge, %	35	42	12	15	4	3
CFaR hedge, %	36	50	24	25	9	8

The table below presents cash flow hedge volumes by maturity for the 10 largest exposure currencies, nominal amounts in local currency[1)]

Maturity	BRL	CAD	CNH	EUR	GBP	KRW	MXN	PLN	TRY	USD	Total fair value of derivatives[2)]
Average hedge rate	—	7.90	1.48	11.19	12.76	0.008	0.63	2.57	—	10.57	
1–12 months	—	–311	5,950	837	–1,223	–122,797	–300	–700	—	–1,849	671
13–24 months	—	–60	—	171	–429	—	—	—	—	–985	999
25–36 months	—	—	—	—	—	—	—	—	—	–960	652
37–48 months	—	—	—	—	—	—	—	—	—	–550	361

1) The average duration of the portfolio was 13 (12) months.
2) As of 31 December 2023 the fair value of the outstanding derivatives for hedging of currency price risk in future commercial cash flows amounted to SEK 2,683 (348) m.

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Translation exposure risk

Volvo Car Group Financial Policy Framework

Translation risk in Volvo Car Group relates to the translation of net investments in foreign operations and translation risk of assets and liabilities in foreign currencies related to the operations. Translation risk of assets and liabilities in foreign currencies related to the operations, as accounts receivable, accounts payable and warranty provisions, will generate an impact on the operating income. Translation of financial assets and liabilities are reflected in the finance net.

The translation of net investments in foreign operations can generate a positive or negative impact recognised in other comprehensive income. The translation risk in foreign operations is hedged either by matching the currency composition of debt with the currency composition of assets or via financial derivatives.

Total translation effect of investments in foreign operations was SEK –1,240 (3,872) m, the effect is recognised in other comprehensive income. A ten per cent change in the Swedish krona against major currencies has a net impact on the net investments in the other comprehensive income of approximately SEK 4,638 (5,617) m. Part of the investments in operations in the Eurozone and Americas are hedged with debt instruments. The residual translation risk is part of the strategic risk management and is not hedged with financial instruments.

Status at year end

The table below shows the translation exposure of net investments in foreign operations as of 31 December 2023.

Currency	Investments in foreign operations
CNY	24,165
EUR	12,433
USD	4,872
BRL	1,145
JPY	796
MYR	431
Other	2,536
Total	**46,378**

Funding and liquidity risk management

Capital Structure

Volvo Cars aims to have an optimal capital structure at all times. The capital structure is continuously analysed, and various options are evaluated. Volvo Cars shall have a strong balance sheet and aims to maintain an equity ratio of about 30 per cent; where the definition of the equity ratio is equity in relation to total assets. The equity ratio by end of the year is 36.6 (35.4) per cent, whereof shareholders' equity amounted to SEK 130,485 (117,278) m.

Volvo Cars aims to achieve an Investment Grade rating over time and the capital structure will be optimised to support this; Volvo Car Group's current external rating by Moodys is Ba1 and BB+ by Standard & Poor's.

Funding risk management

Volvo Car Group Financial Policy Framework

Funding risk is the risk that the Volvo Car Group does not have access to adequate financing on acceptable terms at any given point.

All draw down on new loans is evaluated against future liquidity needs and investment plans. The Volvo Car Group should for the coming 12 months, at any given time, have available committed financing for investments and maturing loans. To limit the risk of refinancing, debt maturing over the next 12 months should not exceed 25 per cent of total debt.

Status at year end

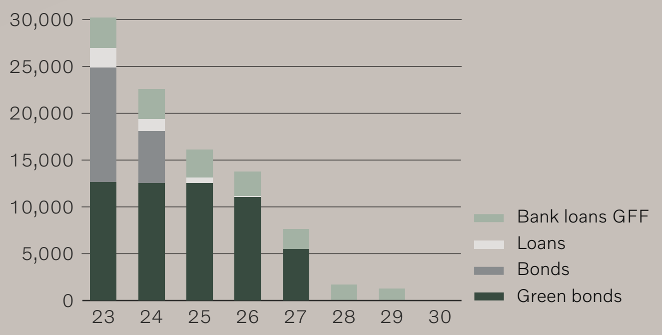
As of 31 December 2023 the outstanding debt of bonds and liabilities to credit institutions, excluding lease contracts and transaction costs, in Volvo Car Group was SEK 30,316 (29,140) m. During 2023 loans of SEK 2,673 (4,498) m matured or were amortised. The remaining credit duration of outstanding debt was 2.5 (3.1) years. At year end, debt maturing over the next 12 months amounted to 25 per cent of total debt.

Outstanding debt is presented in the below table.

Funding	Currency	Nominal amount in local currency (million)	SEKm
Bank loan	USD	117	1,173
Bank loan	SEK	834	834
Bank loan GFF[1]	SEK	1,000	1,000
Bank loan GFF[1]	EUR	200	2,225
Bonds	EUR	1,100	12,236
Green bonds	SEK	1,500	1,500
Green bonds	EUR	1,000	11,124
Other	PLN	35	91
Other	TRY	390	133
Total			**30,316**

1) Loans agreed to solely finance eligible projects in accordance with the Green Financing Framework.

Outstanding bonds and liabilites to credit institutions (at successive year end)



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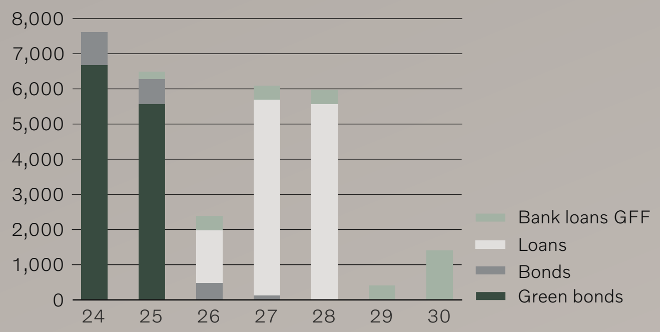
VOLVO

Bonds and liabilities to credit institutions – amortisation schedule (at successive year end)



In February 2023, Volvo Cars issued a SEK 1,500 m green bond. The bond issuance was divided into fixed and floating rate tranches of SEK 650 m and SEK 850 m respectively. Moreover, in November 2023, a drawdown of EUR 200 m was made under an existing bilateral credit facility entered into in 2022 and maturing in 2030. In February 2023, Volvo Cars repaid a bond, issued in February 2019, of SEK 2,000 m.

A new bilateral 10-year credit facility agreement of EUR 250 m was entered into in late 2023, with the purpose to finance investments that meet the eligibility criteria set out in the Green Financing Framework. The credit facility is undrawn as per end of 2023.

In relation to all external financing, there are information undertakings and covenants according to Loan Market Association (LMA) and capital market standards. These are monitored and calculated quarterly to fulfil the terms and conditions stated in the financial agreements. Covenants are based on standard measurements such as EBITDA and Net debt. As of 31 December 2023 there is substantial headroom in the fulfilment of all covenants.

Liquidity risk management

Volvo Car Group Financial Policy Framework

Liquidity risk is the risk that Volvo Car Group is unable to meet ongoing financial obligations on time. In order to meet seasonal volatility in cash requirements, Volvo Car Group shall always have committed credit facilities or cash and cash equivalent and marketable securities available corresponding to 15 per cent or more of revenue. The rolling 12 month cash flow forecasts are the basis for the risk assessment of liquidity risk management.

Undrawn committed credit facilities	31 Dec 2023	31 Dec 2022
Expiring within one year	—	2,223
Expiring after one year but within five years	14,461	14,451
Expiring after five years	2,781	—
Total	**17,242**	**16,674**

Status at year end

As of 31 December 2023, Volvo Car Group cash and cash equivalent, marketable securities and committed credit facilities amounted to SEK 75,021 (83,832) m, approximately 19 (25) per cent of revenue. The liquidity of Volvo Car Group is strong considering the maturity profile of the external debt, the balance of cash and cash equivalents, marketable securities and available credit facilities from banks.

Interest rate risk management

Changes in interest rates will impact Volvo Car Group's finance net and the value of financial assets and liabilities. The return on cash and cash equivalents and marketable securities, as well as the cost for liabilities to credit institutions and issued bonds are impacted by changes in interest rates. The exposure can be either direct from interest-bearing debt or indirect through leasing or other financing arrangements.

Volvo Car Group Financial Policy Framework

According to the policy, the interest rate risk in Volvo Car Group's net debt position has a benchmark duration of 12 months. The policy allows for a deviation of –9/+12 months from the benchmark. The interest rate mandate is proposed by Group Treasury and approved by the CFO. The hedging mandate shall be revised at least quarterly.

Status at year end

As of 31 December 2023 Volvo Car's interest-bearing assets consisted of cash at bank, time deposits and interest-bearing securities. The average interest fixing term on these assets was one (one) month. The average interest fixing term on debt was 13 (18) months. At year-end the duration of the net debt position was 10 (17) months. The average cost of borrowing was 3.92 (2.38) per cent.

To manage interest rate risk, Volvo Cars uses interest rate swaps.

The table below shows the estimated effect of a parallel shift of the interest curves up or down by one per cent (100 basis points) on all exposed external loans and interest rate swaps.

Interest rate sensitivity, effect on Finance Net	2023	2022
Market rate +1%	–73	–157
Market rate –1%	74	162

The impact from cash and cash equivalents and marketable securities is immaterial as the fixed interest period of the asset portfolio is short as it is dominated by cash at bank.

Benchmark rate reform

The interest rate benchmark reform refers to the transition from the existing, traditional interest rate benchmark – Interbank Offered Rates (IBOR) – to new risk-free benchmarks.

Volvo Cars is currently exposed to external interest rate risk in EUR, SEK and USD from the EURIBOR, STIBOR and SOFR benchmarks respectively.

For EUR and SEK there is no expected change (risk of conversion) in the related floating benchmarks in the short to medium term and thus cash flow risk is not affected. The related benchmarks are currently not scheduled for termination and will therefore continue to dictate interest cash flows for floating financial assets, financial liabilities and derivatives in these currencies. Nonetheless, a switch to ESTR (EUR) and SWESTR (SEK) denominated risk-free floating-benchmarks will be a feature of the future financial landscape and may affect financial assets, financial liabilites and derivative instruments. Suitable instruments are already available to cater for these new benchmarks and can be implemented when the need arises. Volvo Car Group expects continued 100 per cent effectiveness of related hedges and no net interest impact.

Commodity price risk management

Commodity price risk is the risk that the cost of materials could increase as a result of rising commodity prices in the global markets. Changes in commodity prices impact Volvo Car Group's cash flow and earnings.

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The following table presents the maturity structure of the Volvo Cars' financial assets and liabilities. The figures shown are contractual undiscounted cash flows which Volvo Cars is liable to pay or eligible to receive.

	31 December 2023				31 December 2022			
	Less than 3 months	3 months to 1 year	1–5 years	Over 5 years	Less than 3 months	3 months to 1 year	1–5 years	Over 5 years
Assets								
Other long-term securities holdings[1)]	—	—	10,907	—	—	—	3,333	—
Non-current derivative assets	—	—	2,094	—	—	—	1,128	—
Other non-current assets	—	—	3,287	330	—	—	6,050	179
Total non-current financial assets	—	—	**16,288**	**330**	**—**	**—**	**10,511**	**179**
Accounts receivable[2)]	18,386	898	—	—	24,409	830	—	—
Current derivative assets	483	1,505	—	—	722	1,048	—	—
Other current assets	3,880	1,371	—	—	5,918	1,241	—	—
Marketable securities	278	9,640	—	—	3,415	—	—	—
Cash and cash equivalents	47,861	—	—	—	63,743	—	—	—
Total current financial assets	**70,888**	**13,414**	**16,288**	**330**	**98,207**	**3,119**	—	—
Total financial assets	**70,888**	**13,414**	**16,288**	**330**	**98,207**	**3,119**	**10,511**	**179**
Liabilities								
Bonds, non-current	—	—	18,087	—	—	—	17,596	5,363
Liabilities to credit institutions, non-current	—	—	2,761	1,801	—	—	2,100	996
Non-current derivative liabilities	—	—	424	—	—	—	674	151
Other non-current interest-bearing liabilities	—	—	3,598	1,191	—	—	3,587	1,258
Other non-current liabilities	—	—	5,280	105	—	—	4,723	3
Total non-current financial liabilities	—	—	**30,150**	**3,097**	—	—	**28,680**	**7,771**
Bonds, current	—	6,660	—	—	2,000	—	—	—
Liabilities to credit institutions, current	214	722	—	—	14	741	—	—
Accounts payable	59,908	2,397	—	—	63,729	5,184	—	—
Current derivative liabilities	518	537	—	—	656	1,153	—	—
Other current interest-bearing liabilities	350	892	—	—	386	1,114	—	—
Other current liabilities	5,671	4,674	—	—	3,972	5,645	—	—
Total current financial liabilities	**66,661**	**15,882**	—	—	**70,757**	**13,837**	**—**	**—**
Total financial liabilities	**66,661**	**15,882**	**30,150**	**3,097**	**70,757**	**13,837**	**28,680**	**7,771**

1) Aging of the Other long-term securities holdings are not covering holdings in listed and unlisted equity instruments, such as holdings in other entities.
2) For aging analysis of accounts receivable see Note 20 – Accounts receivable and other current assets.

Strategic commodity price risk arises from the procurement mix of commodities and is primarily managed through contracts with suppliers using clauses or similar constructions and fixed prices with suppliers.

Volvo Car Group Financial Policy Framework
Forecasted cash flows for the purchasing of commodities for the coming 48 months can be hedged up to 70 per cent with adequate financial instruments. The hedging mandates are proposed by Group Treasury and approved by the CFO. Hedging mandates shall be revised at least quarterly.

Status at year end
Raw materials
Volvo Car Group manages the risk of changes in raw material prices in highly probable forecasted consumption with futures and forwards contracts. In 2023, Volvo Car Group incurred costs for raw materials of approximately SEK 24,355 (33,544) m. A ten per cent change in the prices of raw materials has an impact on operating income of approximately SEK 1,736 (2,002) m.

Electricity
Volvo Cars manages the changes in prices for electricity by using forward contracts. The hedging is performed for electricity usage in the European factories and is managed under an advisory contract. The highly probable forecast transactions in electricity purchase volume for the coming 48 months are hedged.

A ten per cent change in the electricity spot price has an impact on the income statement of SEK 41 (94) m.

Credit risk management
Volvo Car Group's credit risk can be divided into financial credit risk and commercial credit risk. These risks are described in the following sections.

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Financial counterparty credit risk

Volvo Car Group Financial Policy Framework

Credit risk on financial transactions is the risk that Volvo Car Group will incur losses as a result of non-payment by counterparties related to Volvo Car Group's bank accounts, interest-bearing securities, time deposits or derivative transactions. Investments should meet the requirements of low credit risk, high liquidity and the exposure with any single counterparty is limited. All external counterparties used for investments and derivative transactions shall have credit rating of minimum A- (S&P or equivalent rating) and ISDA agreements are required for counterparties with which derivative contracts are traded. Limits are established according to counterparty credit rating and limit usage is monitored for the Volvo Car Group's treasury counterparties and deposits are diversified between relationship banks. Subsidiary bank balances are diversified in order to limit credit risk.

The above does not apply for the counterparty credit risk for related parties where Volvo Cars is exposed to risk in its convertible loan receivable. This risk is monitored on a monthly basis and the market value of this loan is adjusted accordingly.

Status at year end

As of 31 December 2023, the maximum amount exposed to financial credit risk amounts to SEK 72,131 (70,055) m. This encompasses cash and cash equivalents SEK 47,861 (63,743), marketable securities SEK 9,918 (3,415) m, convertible loan receivable SEK 10,270 (—) m and derivative assets SEK 4,082 (2,897) m. The maximum amount exposed to credit risk for financial instruments is best represented by their fair values, see table Financial instruments by category and measurement level in this note.

Volvo Cars applies the general model for assessing impairment reserve regarding time deposits recognised at amortised cost. The assessment is based on the counterparty´s credit rating, on the estimated exposure at default, probability of default and on the loss given default. The impairment assessment in relation to time deposits is considered immaterial.

Derivative contracts are subject to master netting agreements (ISDA), no collateral has been received or posted. The table below shows derivatives covered by master netting agreements (ISDA).

Net position for derivative instruments	Gross	Offset in Balance sheet	Net in Balance sheet	Master netting agreements	Net position
31 December 2023					
Derivative assets	4,096	—	4,096	–1,227	2,868
Derivative liabilities	1,391	—	1,391	–1,227	164
31 December 2022					
Derivative assets	2,855	—	2,855	–1,710	1,145
Derivative liabilities	2,531	—	2,531	–1,710	821

Commercial credit risk

The commercial credit risk arises from accounts receivables. For the risk in customer and dealer financing, the objective is to have a sound and balanced credit portfolio and to engage in credit monitoring by means of detailed procedures which include follow-up and repossession. In cases where the credit risk is considered unsatisfactory a letter of credit or other instruments are used. The maximum amount exposed to commercial credit risk is the carrying amount of accounts receivables, see table for Financial instruments by category and measurement level in this note. For quantification of credit risk in accounts receivable refer to Note 20 – Accounts receivable and other current assets.

Equity instruments

Status of the year

The earn-out rights and unlisted warrants will accrue to the Group if a number of criteria have been met during a specific time period in the future. The simulation of the Volvo Cars earn-out rights in the Polestar Group is based on a volatility of 70.0 per cent and a risk-free interest rate of 3.9 per cent. The volatility was varied in the range of +/–10 percentage points resulting in a valuation range of SEK 371–767 m. Furthermore, the drift of the risk-free interest rate was varied in the range of +/–2 percentage points, resulting in a valuation range of SEK 540–614 m in the base case volatility scenario.

For the Volvo Cars' unlisted warrants Luminar, the volatility of the underlying share price has been determined at 87.0 per cent. The assessed risk-free interest rate have been determined at 5.0 per cent and 4.3 per cent for the different maturity.

The table below shows the sensitivity analysis for unlisted warrants in Luminar.

	Likelihood of triggering event				
Volatility	**–10%**	**–5%**	**0%**	**5%**	**10%**
–10%	33	35	38	40	42
–5%	34	37	40	42	44
87%	36	39	42	44	46
5%	38	40	44	46	49
10%	39	42	46	48	51

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NOTE 22 MARKETABLE SECURITIES AND CASH AND CASH EQUIVALENTS

ACCOUNTING POLICIES

Marketable securities

Marketable securities are highly liquid interest-bearing securities that are considered easily convertible to cash. In Volvo Cars, marketable securities comprise of commercial paper and time deposits with a term of more than three months and less than one year from acquisition date.

Cash and cash equivalents

Cash and cash equivalents comprise of cash at banks and time deposits as well as short-term interest-bearing securities that are considered easily convertible to cash in the form of commercial paper with a maturity of three months from the date of acquisition.

Marketable securities	31 Dec 2023	31 Dec 2022
Time deposits in banks	9,918	2,965
Commercial paper	—	450
Total	**9,918**	**3,415**

Cash and cash equivalents	31 Dec 2023	31 Dec 2022
Cash at banks	41,196	39,194
Time deposits in banks	6,615	23,239
Commercial paper	50	1,310
Total	**47,861**	**63,743**

Cash and Cash equivalents includes SEK 4,261 (5,711) m where limitations exist, mainly liquid funds in certain countries where exchange controls or other legal restrictions apply. It is not possible to immediately use the liquid funds in other parts of Volvo Cars, however there is normally no limitation for use in the Group's operation in the respective country.

NOTE 23 EQUITY

ACCOUNTING POLICIES

Equity

An equity instrument is any contract that constitutes a residual interest in the net assets of an entity.

Share-based payments

Equity-settled share-based payments in connection with employee incentive plans are recognised in equity. See Note 9 – Share-based remuneration.

Group contributions and unconditional shareholders' contributions

Distributed group contributions to the main owner are recorded in equity, along with the tax effect. Group contributions received from the main owner and the tax effect on these contributions are recognised in equity in accordance with the principles for shareholders' contributions.

Unconditional shareholders' contributions received from the main owner are recognised in equity.

The share capital consists of 2,979,524,179 common shares of class B. Each share carries one vote. A common share of class B entitles its holder to a dividend that is determined, if one is declared. All issued shares are fully paid.

The share premium relates to issue in kind attributable to Zhejiang Geely Holding Group Co., Ltd's acquisition in year 2010. Share premium also include capital received (reduced by transaction costs) in excess of par value of issued capital.

Other contributed capital consists of Group contributions from Geely Sweden Holding Group and unconditional shareholders' contribution from Shanghai Geely Zhaoyuan International Investment Co., Ltd.

The currency translation reserve comprises exchange rate differences of hedge instruments of net investments in foreign operations and exchange rate differences resulting from the translation of financial reports of foreign operations that have prepared their financial reports in a currency other than Volvo Car Group's reporting currency. The parent company and Volvo Car Group present their financial reports in SEK.

The other reserve consists of the change in fair value of cash flow hedging instruments in cases where hedge accounting is applied.

Retained earnings comprises net income for the year and preceding years as well as remeasurements of post-employment benefits and equity-settled share-based payments. Retained earnings also include the effects of business combinations under common control within the Geely group, transaction with non-controlling interests and dividend to shareholders.

Non-controlling interests mainly refers to the share of equity that belongs to Zhejiang Geely Holding Group Co., Ltd without a controlling influence. Volvo Car Group holds 50 per cent of the equity in the following companies; Daqing Volvo Car Manufacturing Co., Ltd, Shanghai Volvo Car Research and Development Co., Ltd and up until end of January 2022, Zhangjiakou Volvo Car Engine Manufacturing Co., Ltd and has the decision-making power over the operation. In the consolidated financial statements, these companies are classified as subsidiaries and fully consolidated with a non-controlling interest of 50 per cent.

In January 2022, Volvo Car Group divested its 50 per cent shareholding in Zhangjiakou Volvo Car Engine Manufacturing Co., Ltd, resulting in a divestment of non-controlling interest of SEK – 1,245 m. For further information, see Note 8 – Participation in subsidiaries (Parent company).

In year 2022, the non-controlling interest decreased due to dividend paid of SEK — (840) m from Daqing Volvo Car Manufacturing Co., Ltd, SEK — (6) m from Shanghai Volvo Car Reasearch and Development Co., Ltd to its shareholder Zhejiang Geely Holding Group Co., Ltd.

In July 2022, Volvo Car Group acquired the 21 per cent non-controlling interest in PSINV AB, resulting in a divestment of non-controlling interest of SEK –37 m. In December 2022, 13.5 per cent non-controlling interest in Zenseact AB was acquired by Volvo Car Group, resulting in a divestment of non-controlling interest of SEK –432 m.

During year 2022 the non-controlling interest increased through a capital contribution to HaleyTek AB of SEK — (17) m from ECARX Technology Co., Ltd.

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At year end 2023, non-controlling interests amounted to SEK 4,114 (3,331) m. Summarised financial information on subsidiaries with non-controlling interest is presented in Note 8 – Participation in subsidiaries (Parent company).

Total equity consists of the equity attributable to the owners of the parent company and non-controlling interests. At year-end 2023, the total equity amounted to SEK 130,485 (117,278) m.

NOTE 24 POST-EMPLOYMENT BENEFITS

ACCOUNTING POLICIES

Pension benefits

Volvo Car Group has various schemes for post-employment benefits, mainly relating to pension plans. Other benefits can in some locations include disability, life insurance and health benefits. Pension plans are classified either as defined contribution plans or defined benefit plans. Volvo Car Group has both defined contribution plans and defined benefit plans for qualifying employees in some subsidiaries and the largest plans are in Sweden and Belgium.

Under a defined contribution plan, Volvo Car Group pays fixed contributions into a separate external legal entity and will have no legal obligation to pay further contributions if the fund does not hold sufficient assets to pay all employee benefits. The contributions are recognised as employee benefit expenses in the income statement when earned by the employee. Some defined contribution plans combine the promise to make periodic payments with a promise of a guaranteed minimum return on investments. Such plans are accounted for as defined benefit plans.

A defined benefit plan is a pension plan that defines the amount of post-employment benefits an employee will receive upon retirement, usually dependent on one or more factors such as age, years of service and compensation. For funded defined benefits plans, plan assets have been separated, with the majority invested in pension foundations. The net pension provision or asset recognised in the balance sheet in respect of defined benefit pension plans is the present value of the defined benefit obligation at the balance sheet date less the fair value of plan assets.

The calculation of the present value of defined benefit pension obligations is performed according to the Projected Unit Credit method. The calculation is performed by independent actuaries. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds, or when these are not available, government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related pension liability. The most important actuarial assumptions are stated below.

Actuarial gains and losses arising from changes in actuarial assumptions and adjustments based on experience are charged or credited to other consolidated comprehensive income in the period in which they arise. Past service costs are recognised immediately in the income statement when the settlement occurs.

The net interest cost is calculated by applying the discount rate to the net balance of the defined benefit obligation and the fair value of plan assets.

Termination benefits

Termination benefits are payable when employment is terminated by Volvo Car Group before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. Volvo Cars recognises termination benefits at the earlier of the following dates: (a) when Volvo Cars can no longer withdraw the offer of those benefits and (b) when the entity recognises costs for a restructuring that involves payment of termination benefits.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

The value of defined benefit obligations is determined through actuarial calculations performed by independent actuaries. The calculations are based on different assumptions and estimates, for instance with regards to the discount rate, future salary increases, inflation, mortality rates and demographic conditions. Changes in these assumptions affect the calculated value of the post-employee benefits obligations. The discount rate, which is the most critical assumption, is based on market return on high-quality corporate or government bonds that are denominated in the currency in which the benefits will be paid and with maturities corresponding to the related pension liability. A decrease in the discount rate increases the present value of post-employee benefits obligations while an increase in the discount rate has the opposite effect.

Description of the substantial pension schemes within Volvo Car Group is presented below.

Sweden

In Sweden, Volvo Car Group has seven retirement plans of which four are funded. The largest plan overall is the Swedish ITP 2 plan which is a collectively agreed pension plan for white collar employees. ITP 2 is a final salary-based plan. Volvo Car Group's defined benefit plans are secured in three ways: as a provision in the balance sheet, assets held in separate pension funds or funded through insurance payments. The "funded through insurance payments" plans are defined benefit plans accounted for as defined contribution plans. In Sweden, these plans are secured with the mutual insurance company Alecta.

The portion secured through insurance with Alecta refers to a defined benefit plan that comprises several employers and is reported according to a pronouncement by the Swedish Financial Reporting Board, UFR 10. For 2023, Volvo Car Group did not have access to the information to report its proportionate share of the plan's obligations, assets under management and cost, that would make it possible to report this plan as a defined benefit plan. Volvo Cars estimates payments of premiums of about SEK 167 m to Alecta in 2024. Volvo Car Group's share of the total saving premiums for ITP2 in Alecta as at 31 December 2023 amounted to 0.33 (0.29) per cent and Volvo Car Group's share of the total number of active policy holders amounted to 1.45 (1.43) per cent.

The collective consolidation level comprises the market value of Alecta's assets as a percentage of the insurance obligations calculated in accordance with Alecta's actuarial methods and assumptions, which do not conform to IAS 19. The collective funding ratio is normally allowed to vary between 125 and 175 per cent. If the consolidation level falls short or exceeds the normal interval one measure may be to increase the contract price for new subscriptions and expanding existing benefits or introduce premium reductions. At year end 2023, the consolidation level amounted to 157 (172) per cent.

In case local legal requirements exist, funded or unfunded plans are credit insured with an external party.

Belgium

In Belgium, Volvo Car Group has three retirement – indemnity plans which are all funded. All three are based on the Collective Labour Agreement applicable to the company. The pension plan for white

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collar employees and the closed plan for blue collar employees who were in service before 2009 are defined benefit plans. The benefits are based on the final salary and seniority within the company. The pension plan for blue collars who are in service as from 2009 is a cash balance plan. The pension obligations are secured through a transfer of the required funds to a separate pension fund. The funding of the obligations under these defined benefit and cash balance plans is fully externalised through a number of pension funds and through insurance contracts.

In Belgium, Volvo Car Group also has early retirement arrangements (termination benefits – bridge plans) as well as seniority premiums (other long-term benefits). The early retirement arrangements are unfunded and the seniority premiums are funded.

Summary of provision for post-employment benefits

The provision for post-employment benefits have been recognised in the balance sheet as follows:

	31 Dec 2023	31 Dec 2022
Post-employment benefits	7,610	6,883
Other provisions (Note 25)	341	352
Closing balance	**7,951**	**7,235**

The tables below show Volvo Car Group's provision for post-employment benefits, the assumptions used to calculate the value of these provisions and the plan assets related to these provisions, as well as the amounts recognised in the income statement. Volvo Car Group's reported pension provision amounts to SEK 7,951 (7,235) m in total, which includes endowment insurances and similar undertakings amounting to SEK 341 (352) m in respect of defined premium pension plans in Sweden.

	Total	of which Sweden	of which Belgium	Total	of which Sweden	of which Belgium
Financial year ending on	**31 Dec 2023**	**31 Dec 2023**	**31 Dec 2023**	31 Dec 2022	31 Dec 2022	31 Dec 2022
Amounts recognised in the statement of financial position						
Defined benefit obligation	25,116	18,220	4,092	22,221	15,341	4,049
Fair value of plan assets	17,506	11,918	3,594	15,338	9,913	3,432
Funded status	**7,610**	**6,302**	**498**	**6,883**	**5,428**	**617**
Net provision (asset) as recorded in the balance sheets	**7,610**	**6,302**	**498**	**6,883**	**5,428**	**617**
Principal actuarial assumptions						
Weighted average assumptions to determine benefit obligations						
Discount rate, %	3.57	3.45	3.50	4.07	3.95	4.12
Rate of salary increase, %	3.34	3.40	3.16	3.34	3.40	3.16
Rate of price inflation, %	2.06	2.00	2.00	2.08	2.00	2.00
Rate of pension indexation, %	2.06	2.00	N/A	2.07	2.00	N/A

The actuarial assumptions are the most significant assumptions applied when calculating the value of a defined benefit pension plan. Volvo Car Group determines the discount rate based on AA-rated corporate bonds and mortgage bonds that match the duration of the obligations. If no such corporate bonds and mortgage bonds are available, government bonds are used.

Inflation assumptions are based on a combination of central banks targets, implicit market expectations and long-term analyst forecasts.

Assumptions regarding future mortality are set based on actuarial advice in accordance with published statistics and experience in each territory. Mortality assumptions for Sweden are based on the DUS23 (white collar) mortality study, and the DUS23 (white collar) mortality table is generational. Mortality assumptions in Belgium are not as significant, since there are lump sum payments .

The actuarial assumptions are reviewed annually by Volvo Car Group and modified when deemed appropriate to do so.

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Financial year ending on	Total 31 Dec 2023	of which Sweden 31 Dec 2023	of which Belgium 31 Dec 2023	Total 31 Dec 2022	of which Sweden 31 Dec 2022	of which Belgium 31 Dec 2022
Change in defined benefit obligation						
Defined benefit obligation at end of prior year	22,221	15,341	4,049	28,167	19,891	4,266
Service cost	464	260	150	747	518	166
Interest expense	887	598	158	512	394	46
Cash flows	–893	–409	–306	–753	–357	–138
Remeasurements	2,437	2,430	39	–6,965	–5,105	–606
Effect of changes in foreign exchange rates	—	—	2	513	—	315
Defined benefit obligation at end of year	**25,116**	**18,220**	**4,092**	**22,221**	**15,341**	**4,049**
Change in fair value of plan assets						
Fair value of plan assets at end of prior year	15,338	9,913	3,432	16,206	9,760	3,379
Interest income	648	411	137	303	205	38
Cash flows	874	1,000	–46	882	1,000	62
Remeasurements	643	594	73	–2,443	–1,052	–308
Effect of changes in foreign exchange rates	3	—	–2	390	—	261
Fair value of plan assets at end of year	**17,506**	**11,918**	**3,594**	**15,338**	**9,913**	**3,432**
Components of defined pension cost						
Service cost	464	260	150	747	518	166
Net interest cost	239	187	20	209	189	7
Remeasurements of Other long-term benefits	–10	—	–10	41	—	41
Administrative expenses and taxes	28	—	25	24	—	21
Total pension cost for defined benefit plans	**721**	**447**	**185**	**1,021**	**707**	**235**
Pension cost for defined contribution plans	4,114	3,277	378	3,768	3,041	342
Total pension cost recognised in P&L	**4,835**	**3,724**	**563**	**4,789**	**3,748**	**577**
Remeasurements (recognised in other comprehensive income)	1,815	1,836	–19	–4,560	–4,053	–337
Effect of changes in demographic assumptions	113	148	—	378	379	—
Effect of changes in financial assumptions	2,317	2,024	205	–8,079	–5,638	–1,066
Effect of experience adjustments	18	257	–156	695	154	420
Return on plan assets (excluding interest income)	–633	–593	–68	2,446	1,052	309
Total defined benefit cost recognised in P&L and OCI	**2,536**	**2,283**	**166**	**–3,539**	**–3,346**	**–102**

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Financial year ending on	Total 31 Dec 2023	of which Sweden 31 Dec 2023	of which Belgium 31 Dec 2023	Total 31 Dec 2022	of which Sweden 31 Dec 2022	of which Belgium 31 Dec 2022
Net defined benefit provision (asset) reconciliation						
Net defined benefit provision (asset)	6,883	5,428	617	11,961	10,131	887
Defined benefit cost included in the income statement	721	447	185	1,021	707	235
Total remeasurements included in OCI	1,815	1,836	–19	–4,560	–4,053	–337
Cash flows	–1,805	–1,409	–289	–1,661	–1,357	–222
Employer contributions	–1,296	–1,000	–255	–1,225	–1,000	–184
Employer direct benefit payments	–509	–409	–34	–436	–357	–38
Effect of changes in foreign exchange rates	–4	—	4	122	—	54
Net defined benefit provision (asset) as of end of year	**7,610**	**6,302**	**498**	**6,883**	**5,428**	**617**
Defined benefit obligation by participant status						
Actives	12,249	8,252	3,364	11,189	7,174	3,325
Vested deferreds	5,645	4,219	573	4,928	3,533	532
Retirees	7,222	5,749	155	6,104	4,634	192
Total	**25,116**	**18,220**	**4,092**	**22,221**	**15,341**	**4,049**

Plan assets

			Of which with a quoted market price	
Fair value of plan assets	**2023**	2022	**2023**	2022
Cash and cash equivalents	466	331	375	113
Equity instruments	1,474	1,034	952	664
Debt instruments	7,412	7,000	6,532	6,429
Real estate	690	577	82	13
Investment funds	5,463	4,306	5,423	4,306
Other	2,001	2,090	66	30
Total	**17,506**	**15,338**	**13,430**	**11,555**

Responsibility for the management of several pension plans rest with Volvo Car Group and therefore pension trusts have been set up in different countries. The assets are held by long-term employee benefit trusts that are legally separated from Volvo Car Group. The assets are available to fund employee benefits only. Sweden, Belgium and United Kingdom have the largest pension trusts. The assets of the pension trusts are managed in accordance with a capital preservation strategy where the risk exposure is adjusted accordingly. The investment strategies are long-term and the distribution of assets ensures that investment portfolios are well diversified. The capital is managed in accordance with the investment policies of each pension trust. Continuous monitoring is performed by the trustees to ensure that capital is allocated and managed according to the investment policies. In Sweden the minimum funding level is decided by PRI Pensionsgaranti.

The actual return on plan assets amounts to SEK 1,291 (–2,140)m.

Risks

There are mainly three categories of risks related to defined benefit obligations and pension plans. The first category relates to risks affecting the actual pension payments. Increased longevity and inflation of salary and pensions are the principal risks that may increase the future pension payments and hence, increase the pension obligation. The second category relates to investment return. Pension plan assets are invested in a variety of financial instruments and are exposed to market fluctuations. Poor investment return may reduce the value of investments and render them insufficient to cover future pension payments. The final category relates to the discount rate used for measuring the obligation and the plan assets. The discount rate used for measuring the present value of the obligation may fluctuate which impacts the valuation of the defined benefit obligation. The discount rate also impacts the value of the interest income and expense that is reported in the financial items and the service cost. The risk related to pension obligations, i.e. mortality exposure, discount rate and inflation, are monitored on an ongoing basis.

Sensitivity analysis on defined benefit obligation	Sweden	Belgium
Discount rate +0.5%	–1,575	–157
Discount rate –0.5%	1,769	171
Inflation rate +0.5 %	1,769	112
Inflation rate –0.5%	–1,575	–105

The weighted average duration of the obligation is 16.2 years for Sweden and 8.3 years for Belgium.

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NOTE 25 CURRENT AND OTHER NON–CURRENT PROVISIONS

ACCOUNTING POLICIES

Provisions

Provisions are recognised in the balance sheet when a legal or constructive obligation exists as a result of a past event, it is deemed more likely than not that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are typically settled within 2–3 years.

Warranties

Warranty provisions include Volvo Car Group's cost of satisfying the customers with specific contractual warranties, as well as other costs not covered by standard contractual commitments. All warranty provisions are recognised at the sale of the vehicles or spare parts. The initial calculations of the reserves are based on historical warranty statistics considering known quality improvements, costs for remedy of defaults etc. The warranty provision booked at point of sale is adjusted as campaign decisions for specific quality problems are made. On a quarterly basis the provisions are adjusted to reflect latest available data such as actual spend, exchange rates, discount rates etc. The provisions are reduced by virtually certain warranty reimbursements from suppliers. Generally, warranty provisions are settled within 2–4 years, provisions for battery warranties are typically settled within 8 years.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Provisions

The amount recognised as provision is the best estimate of the expenditure required to settle the present obligation at the balance sheet date. Provisions are regularly reviewed and adjusted as further information becomes available or circumstances change. If the effect of the time value of money is material, non-current provisions are recognised at present value by discounting the expected future cash flows at a pre-tax rate reflecting current market assessments of the time value of money. The discount rate does not reflect such risks that are taken into consideration in the estimated future cash flow. Revisions of estimated cash flows, both amount and likelihood, are recognised as operating cost. Changes to present value due to the passage of time and revisions of discount rates to reflect prevailing current market conditions are recognised as a financial cost.

There is always a risk for changing governmental regulations and changes in environmental policies affecting our business as well as accounting estimates and judgements related to climate regulation. Based on our performance to date, current product and volume plans and current knowledge of global emissions regulations, Volvo Car Group does not foresee any significant financial risks or judgmental accounting issues short to mid-term related to not meeting global, regional or national CO_2 emissions regulations.

Warranties

The recognition and measurement of provisions for product warranties is generally connected with estimates. Estimated costs for product warranties are charged to cost of sales when the products are sold. Estimated warranty costs include contractual warranty, warranty campaigns (recalls and buy-backs) and coverage in excess of contractual warranty or campaigns, which is accepted as a matter of policy or normal practice in order to maintain a good business relation with the customer. Warranty provisions are estimated based on historical claims statistics and the warranty period. Quality index improvements based on historical patterns have been reflected in all categories of warranty. Refunds from suppliers that decrease Volvo Car Group's warranty costs are recognised to the extent these are considered to be virtually certain, based on historical experience. Supplier recovery provisions amount to SEK 2,040 (1,853) m.

	Warranties	Other provisions[1]	Total
Balance at 1 January 2022	**11,087**	**6,143**	**17,230**
Provided for during the year	9,378	5,414	**14,792**
Utilised during the year	–6,917	–5,630	**–12,547**
Reversal of unutilised amounts	–2,796	–171	**–2,967**
Translation differences and other	742	199	**941**
Balance at 31 December 2022	**11,494**	**5,955**	**17,449**
Of which current	4,224	4,827	**9,051**
Of which non-current	7,270	1,128	**8,398**

	Warranties	Other provisions[1]	Total
Balance at 1 January 2023	**11,494**	**5,955**	**17,449**
Provided for during the year	11,571	10,410	**21,981**
Utilised during the year	–9,104	–6,687	**–15,791**
Reversal of unutilised amounts	–2,539	–33	**–2,572**
Translation differences and other	–300	–68	**–368**
Balance at 31 December 2023	**11,122**	**9,577**	**20,699**
Of which current	4,617	8,500	**13,117**
Of which non-current	6,505	1,077	**7,582**

1) Other provisions include personnel related provisions of SEK 3,068 (1,792) m.

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NOTE 26 CURRENT AND NON–CURRENT CONTRACT LIABILITIES TO CUSTOMERS

ACCOUNTING POLICIES

Contract liabilities to customers are obligations related to contracts with customers. The amounts include transactions where Volvo Cars either;

- Has an obligation to transfer goods or services to the customer for which Volvo Car Group has received consideration, or an amount of consideration is due, from the customer. This applies to sales with repurchase commitment, recognised as an operating lease, sales related to extended service as well as advance payments from customers.
- Has transferred goods or services to the customer but a variable consideration or a consideration payable, such as a discount, is not yet to be paid out or settled by Volvo Car Group.

The contract liability is derecognised, and revenue is recognised, when the good or service is transferred to the customer and the performance obligation is satisfied. The contract liability is derecognised against cash and cash equivalent when it pays out or settles the variable consideration or consideration payable. For more information relating to the interaction between revenue and contract liabilities, see Note 2 – Revenue.

	Sales generated obligations	Residual value guarantees	Deferred revenue – extended service business	Deferred revenue – sale with repurchase commitment	Advance payments from customers	Total
Balance at 1 January 2022	**14,075**	**4,928**	**5,954**	**1,535**	**3,404**	**29,896**
Provided for during the year	44,977	1,045	7,175	1,272	101,438	**155,907**
Utilised during the year	–42,965	–2,492	–6,030	–1,403	–101,965	**–154,855**
Translation differences and other	946	617	525	8	194	**2,290**
Balance at 31 December 2022	**17,033**	**4,098**	**7,624**	**1,412**	**3,071**	**33,238**
Of which current	17,033	2,166	2,620	1,205	3,070	**26,094**
Of which non-current	—	1,932	5,004	207	1	**7,144**
Balance at 1 January 2023	**17,033**	**4,098**	**7,624**	**1,412**	**3,071**	**33,238**
Provided for during the year	58,187	2,502	7,368	4,520	103,828	**176,405**
Utilised during the year	–53,013	–2,565	–5,395	–3,920	–104,859	**–169,752**
Translation differences and other	–504	–93	–150	–8	–171	**–926**
Balance at 31 December 2023	**21,703**	**3,942**	**9,447**	**2,004**	**1,869**	**38,965**
Of which current	21,703	2,255	3,239	1,751	1,869	**30,817**
Of which non-current	—	1,687	6,208	253	—	**8,148**

Sales generated obligations
Sales generated obligations refer to all variable marketing programmes not effectuated on the balance sheet date, including discounts.

Residual value guarantees
Volvo Car Group on some markets offer residual value guarantees to customers, who in most cases are financial institutions. These arrangements guarantee the customer a specific value for the car when it is sold at a future point in time and that Volvo Car Group will compensate the customer with the difference between the future selling price of the car and this guaranteed residual value. Estimated losses are recognised at the point of sale as a contract liability and gains are only recognised when realised at the end of the contract when the car is sold by the customer.

Deferred revenue – extended service business
Volvo Car Group offers on some markets service contracts to customers, normally referred to Extended Service Business where the customer signs up for regular services paid for upfront.

Deferred revenue – sale with repurchase commitment
Deferred revenue – sale with repurchase commitment, is recognised as an operating lease contract, where the revenue is recognised over the contract period.

Advance payments from customers
Advance payments from customers refer to payments related to customer contracts where Volvo Car Group has received a payment in advance of transfer of control over the product or service.

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NOTE 27 OTHER NON–CURRENT LIABILITIES

	31 Dec 2023	31 Dec 2022
Liabilities related to repurchase commitments	1,659	695
Other liabilities[1)]	3,726	4,031
Total	**5,385**	**4,726**

1) The internal profit elimination related to sale of licences and technology to Polestar amounted to 2,117 (2,365) MSEK.

NOTE 28 OTHER CURRENT LIABILITIES

	31 Dec 2023	31 Dec 2022
Accrued expenses and prepaid income	21,893	18,348
Liabilities related to repurchase commitments	6,599	6,042
Personnel related liabilities	6,330	6,719
VAT liabilities	5,211	3,427
Other liabilities	3,224	3,154
Total	**43,257**	**37,690**

NOTE 29 PLEDGED ASSETS

	31 Dec 2023	31 Dec 2022
Restricted cash	786	799
Inventory	466	332
Floating charges	73	108
Other pledged assets	385	399
Total	**1,710**	**1,638**

NOTE 30 CONTINGENT LIABILITIES

ACCOUNTING POLICIES

When a possible obligation does not meet the criteria for recognition as a liability it may be disclosed as a contingent liability. These possible obligations derive from past events and their existence will be confirmed only when one or several uncertain future events, which are not entirely within Volvo Car Group's control, take place or fail to take place. A contingent liability could also exist for a present obligation, due to a past event, where an outflow of resources is less likely (<50 per cent) or when the amount of the obligation cannot be reliably measured.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Legal proceedings

Companies within Volvo Car Group may at times be involved in legal proceedings, such proceedings may cover a range of different matters in various jurisdictions. These include, but are not limited to, commercial disputes such as alleged breach of contract, insufficient supplies of goods or services, product liability, patent infringement or infringement of other intangible rights. The various matters raised are often of a difficult and complex nature and often legally complicated, it is therefore difficult to predict the final outcome of such matters. The companies within Volvo Car Group work closely with legal advisors and other experts in the various matters in each jurisdiction. A provision is made when it is determined that an adverse outcome is more likely than not and the amount of the loss can be reliably estimated. In instances where these criteria are not met, a contingent liability has been disclosed provided the risk qualifies as such a liability.

Other processes

Volvo Car Group is as well, like other global companies, from time to time involved in processes of varying scope and in various stages with regards to for instance import duties and transfer prices. These processes are evaluated regularly and provisions are made when it is more likely than not that additional fees must be paid and the outcome can be reliably estimated. If it is not probable that the additional fees will be paid but the risk is more than remote, such amounts are disclosed as contingent liabilities.

	31 Dec 2023	31 Dec 2022
Guarantees to insurance company FPG	254	224
Legal claims	6	—
Other claims[1)]	78	21
Guarantee commitments	6	34
Other contingent liabilities[2)]	135	466
Total	**479**	**745**

1) In addition to the contingent liabilities related to other claims there is also tax related contingent asset amounting to SEK — (71) m.
2) Apart from the above contingent liabilities, there are other commitments and guarantees that are not recognised since the likelihood of an outflow of resources is very low.

NOTE 31 CASH FLOW STATEMENTS

	2023	2022
Adjustments for other non-cash items:		
Capital gains/losses on sale of tangible and intangible assets	1,267	1,142
Share of income in joint ventures and associates	5,628	–4,443
Interest effect from the measurement of repurchase obligations	–348	–235
Provision for variable pay	2,544	1,196
Other provisions	1,832	1,137
Deferred revenue	–666	–864
Reclassification of residual value guarantee	–1,700	–2,687
Inventory impairment	238	–159
Elimination of intra-group profit	292	235
IFRS16 adjustments	–2,451	–1,594
Assets held for sale	—	–383
Other non-cash items	–549	–480
Total	**6,087**	**–7,135**

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Change in net cash	1 Jan 2022	Cash flows	Non-cash changes: Reclassifi-cations	Foreign exchange movement	Fair value changes	Other non-cash changes	31 Dec 2022
Cash and cash equivalents	62,265	–1,090	—	2,568	—	—	63,743
Marketable securities	7,996	–5,030	—	473	–24	—	3,415
Liabilities to credit institutions, non-current	–2,543	–511	179	–217	—	–4	–3,096
Bonds, non-current[1]	–18,401	–5,260	1,998	–1,621	—	38	–23,246
Bonds, current[1]	—	—	–1,998	—	—	–2	–2,000
Other interest-bearing non-current liabilities	—	—	—	—	—	—	—
Liabilities to credit institutions, current	–4,471	3,959	–179	–65	—	1	–755
Net cash	**44,846**	**–7,932**	**—**	**1,138**	**–24**	**33**	**38,061**

Change in net cash	1 Jan 2023	Cash flows	Reclassifi-cations	Foreign exchange movement	Fair value changes	Other non-cash changes	31 Dec 2023
Cash and cash equivalents	63,743	–14,226	—	–1,656	—	—	47,861
Marketable securities	3,415	6,677	—	–203	29	—	9,918
Liabilities to credit institutions, non-current	–3,096	–2,664	732	83	—	383	–4,562
Bonds, non-current[1]	–23,246	–1,500	6,751	–106	—	–20	–18,121
Bonds, current[1]	–2,000	2,000	–6,751	88	—	–9	–6,672
Other interest-bearing non-current liabilities	—	—	—	—	—	—	—
Liabilities to credit institutions, current	–755	–627	–732	16	—	1,161	–937
Net cash	**38,061**	**–10,340**	**—**	**–1,778**	**29**	**1,515**	**27,487**

1) The bonds are presented above at amortised cost. The fair value risk of the EUR-denominated bonds is hedged and the bonds with fixed interest payments have been swapped into floating interest payments. Part of the bonds is therefore measured at fair value through the income statement and the remaining part is measured at amortised cost. On 31 December 2023, the fair value component amounted to SEK –46 (–287) m.

NOTE 32 BUSINESS COMBINATIONS AND DIVESTMENTS

ACCOUNTING POLICIES

In a business combination Volvo Car Group measures all acquired identifiable assets and liabilities at fair value. Any surplus amount from the purchase price, possible non-controlling interest and fair value of previously held equity interests at the acquisition date compared to Volvo Car Group's share of acquired net assets is recognised as goodwill. Any deficit amount (bargain purchase), so called negative goodwill, is directly recognised as income in the income statement. In step acquisitions, a business combination occurs only on the date control is achieved. Transactions with non-controlling interest are recognised within equity as long as control of the subsidiary is retained.

All acquisition-related transaction costs are expensed. Companies acquired are consolidated as of the date of acquisition. Companies that have been divested are included in the consolidated financial statements up to and including the date of the divestment.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

One area of critical judgement relevant to Volvo Car Group is the one of common control, a situation where there is an acquisition or divestment between parties under common control.

This means the acquired or divested company has the same ultimate parent as the acquiring or divesting company respectively. IFRS 3 Business Combinations is silent on the subject of acquisitions under common control and Volvo Car Group has therefore made a policy choice when it comes to handle common control transactions. Volvo Car Group has elected to apply predecessor accounting, meaning that the acquirer consolidates the predecessors respective carrying values for assets and liabilities. These are the carrying values that are related to the acquired entity from the consolidated financial statements of the highest entity that has common control, and for which consolidated financial statements are prepared. Any difference between the cost of the combination or the costs of the divestment (i.e. the fair value of the consideration paid or received) and the carrying values for assets and liabilities are recognised directly in equity within retained earnings.

Divestment under common control

Volvo Car Group Financial Leasing (Shanghai) Co., Ltd.

On 18 January 2023, Volvo Car Corporation and Zhejiang Genius & Guru Investment Co., Ltd signed a joint venture agreement regarding Volvo Car Group Financial Leasing (Shanghai) Co., Ltd.

On the same date a subscription agreement had been signed between the parties whereby Zhejiang Genius & Guru Investment Co., Ltd subcribed to all the newly issued shares representing 45 per cent of the shareholdings. Volvo Car Group Financial Leasing (Shanghai) Co., Ltd is engaged in financial leasing. The divestment is between parties under common control, see section Critical accounting estimates and judgements.

Volvo Car Group has consolidated the wholly-owned subsidiary until 25 June 2023 when control was ceased. The disposal consideration received amounted to SEK 0 m and at the time of disposal, cash and cash equivalents over which control was lost amounted to SEK 178 m. The carrying value of assets and liabilities as at the date of the divestment were SEK 774 m. Deficit of consideration received

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recognised in equity amounted to SEK 0 m. In the consolidated balance sheets, the subsidiary's assets and liabilities have been derecognised, and replaced by an investment in joint venture. See Note 13 – Investments in joint ventures and associates. The investment retained in Volvo Car Group Financial Leasing (Shanghai) Co., Ltd was recognised at its fair value at the date when control was lost.

The difference between fair value and carring value of the investment was recognised directly in equity, due to the common control transaction. The remeasured value at the date control was lost, is regarded as the cost on initial recognition of the investment in the joint venture.

The total cost of divestment and carrying values have been determined provisionally, thus, the divestment analyses may be subject to adjustment during a twelve months period.

Adoption of preliminary divestment analysis

A divestment analysis is preliminary until adopted which must take place within twelve months from the divestment. The preliminary divestment analysis previously recognised for Volvo Car Bern AG, Upplands Motor Personvagnar AB, Upplands Motor Mark KB as well as the Uppsala retail business were adopted in 2023. The Uppsala retail business resulted in a SEK 81 m reduction of the gain on sale of operations.

NOTE 33 SEGMENT REPORTING

ACCOUNTING POLICIES

Volvo Car Group is considered to have one operating segment.

CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Critical judgements in the determination of Volvo Car Group having one operating segment relates to the level of integration across the different functions of the Group, the identification of the Chief operating decision-making body and how resources are allocated.

The activities that the automotive business engage in relates to development, design, manufacturing, assembly and sale of vehicles, as well as sale of related parts and accessories from which Volvo Cars derives its revenues. All of the activities of the Group are not managed individually but globally on a highly integrated basis. Volvo Car Group is managed by the Executive Management Team (EMT) with 7 (7) members, led by the CEO and overseen by the Board of Directors. EMT take all significant operating decisions and members of EMT have the responsibility for implementing the decisions in their respective areas. The operating decision-making is at EMT level as a whole and Volvo Car Group consider the EMT to be the Chief operating decision-making body. All substantial decisions regarding allocation of resources as well as the assessment of performance is based on Volvo Car Group as a whole. Therefore, Volvo Car Group is considered to have only one operating segment.

For further information of the geographic spread of revenue, see Note 2 – Revenue. The geographic spread of non-current assets is disclosed below.

	Sweden	China	Rest of the world
31 Dec 2023			
Non-current assets, %	62	13	25
31 Dec 2022			
Non-current assets, %	66	13	21

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Alternative performance measures presented by Volvo Car Group

The alternative performance measures presented and disclosed in this annual report are used internally by management in conjunction with IFRS measures to measure performance and make decisions regarding the future direction of the business. The Group believes that these alternative performance measures, when provided in combination with reported IFRS measures, provide helpful supplementary information for investors. These alternative performance measures are not a substitute for or superior to IFRS measures and should be used in conjunction with reported IFRS measures. Further, these alternative performance measures, as defined by the Group, may not be comparable to other similarly titled measures used by other groups. For general definitions, see page 204.

Volvo Cars has applied the guidelines from ESMA (European Securities and Markets Authority) regarding alternative key figures (APMs, Alternative performance measures). Although these key figures are not defined or specified according to IFRS they provide the valuable supplementary information to investors and the company's management regarding the company's performance.

Gross margin
Gross margin is defined as Gross income as a percentage of revenue. Gross margin presents the per cent of revenue that Volvo Cars retains after incurring the direct costs associated with producing the goods and services sold.

EBIT
EBIT is defined as Net income excluding financial income, financial expenses and Income taxes, that is operating income presented in the income statement. EBIT presents the operating income of Volvo Car Group.

EBIT margin
EBIT margin is defined as EBIT as a percentage of revenue. The EBIT margin presents the profitability of the operation in relation to the recognised revenue earned by Volvo Car Group during the accounting period.

EBIT margin excl. share of income from JVs & associates
EBIT margin excl. share of income in JVs & associates is defined as EBIT less the result from share of income in JVs & associates. This presents the profitability of the operation excluding share of income in JVs & associates during the accounting period.

EBIT margin excl. share of income in JVs & associates is also presented as a percentage of revenue. The margin presents the profitability of the operation excluding share of income in JVs & associates in relation to the recognised revenue earned by Volvo Car Group during the accounting period.

EBITDA
EBITDA is defined as EBIT excluding depreciation and amortisation of non-current assets. EBITDA presents an overview of the profitability of Volvo Car Group operations.

EBITDA margin
EBITDA margin is EBITDA as a percentage of revenue. The EBITDA margin presents the profitability of the operation in relation to the recognised revenue earned by the Group during the accounting period.

Return on invested capital, ROIC
ROIC is defined as EBIT divided by invested capital. Return on invested capital ratio gives an overview of how efficient Volvo Car Group is at allocating capital to profitable investments. Invested capital is the amount of net assets needed in day to day operations (total assets less receivables on parent company less other long-term securities holding less cash and cash equivalents less marketable securities plus operating cash (average two-year revenue*10%) less total current liabilities less current liabilities to parent company plus total current interest-bearing liabilities (including liabilities to credit institutions, bonds current, other current interest-bearing liabilities) calculated on two-year average figures.

Equity ratio
The equity ratio is defined as total equity divided by total assets in the balance sheet. This measures the Volvo Car Group's long-term solvency and financial leverage level.

Net cash
Net cash is defined as cash, cash equivalents and marketable securities less liabilities to credit institutions, bonds and other interest-bearing non-current liabilities (excluding non-current lease liabilities). Net cash represents Volvo Car Group's ability to meet its financial obligations.

Items affecting comparability
Transactions that are not related to recurring business operations, but affecting the financial outcome in a material way, and where the probability of reoccurrence over the coming years is limited.

Share of investing cash flow
Share of investing Cash Flow is defined as the share of investing cash flow allocated to certain types of development as a percentage of the total investing cash flow. Share of investing cash flow presents the allocation the Group's cash resources to certain investments during the reporting period.

Other measures presented by Volvo Car Group
Other measures presented and disclosed in this report are used internally by management. The Group believes that these measures provide helpful supplementary information for investors. The measures are not a substitute for or superior to the Alternative performance measures or IFRS measures and should be used in conjunction with reported Alternative performance measures and IFRS measures. Further, the measures, as defined by the Group, may not be comparable to other similarly titled measures used by other groups.

Liquidity
Liquidity is defined as cash, cash equivalents, undrawn credit facilities and marketable securities.

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RECONCILIATION OF ALTERNATIVE PERFORMANCE MEASURES

SEKm	2023	2022
Revenue	399,343	330,145
Revenue per new car, BEV (SEKk)[1]	465.4	448.8
Revenue per new car, non-BEV (SEKk)[1]	440.4	415.2
Cost of sales	–321,916	–269,813
Research and development expenses	–12,884	–11,514
Operating income, EBIT	19,939	22,332
EBIT margin, excl. share of income from JVs & associates	25,567	17,889
Net income	14,066	17,003
EBITDA	37,388	38,423
Gross income per new car, BEV (SEKk)[1]	40.3	36.8
Gross income per new car, non-BEV (SEKk)[1]	102.9	88.9
Gross margin, %	19.4	18.3
Gross margin BEV, %[1]	8.7	8.2
Gross margin non-BEV, %[1]	23.4	21.4
EBIT margin, %	5.0	6.8
EBIT margin, excl. share of income from JVs & associates, %	6.4	5.4
EBITDA margin, %	9.4	11.6
Equity ratio, %	36.6	35.4
Net cash	27,487	38,061
Share of investing cash flow BEV, %	68.4	68.5
Share of investing cash flow non-BEV, %	5.9	6.2
Return on invested capital, ROIC %	12.4	16.7

Total revenue	2023	2022
BEV vehicles, new cars[1]	52,630	29,658
Non-BEV vehicles, new cars[1]	255,830	223,594
Other revenue	90,883	76,893
Total revenue	**399,343**	**330,145**

	2023		2022	
Revenue per new car	BEV	Non-BEV	BEV	Non-BEV
Revenue, new cars[1]	52,630	255,830	29,658	223,594
Vehicles, wholesales new cars (units)	113,089	580,937	66,080	538,549
Revenue per new car (SEKk)	**465.4**	**440.4**	**448.8**	**415.2**

	2023				2022			
Gross income split	BEV (new cars)	Non-BEV (new cars)	Other	**Total**	BEV (new cars)	Non-BEV (new cars)	Other	**Total**
Gross income[1]	4,554	59,777	13,097	**77,428**	2,429	47,858	10,045	**60,332**

	2023		2022	
Gross income per new car	BEV	Non-BEV	BEV	Non-BEV
Gross income, new cars	4,554	59,777	2,429	47,858
Vehicles, wholesales new cars (k units)	113.1	580.9	66.1	538.5
Gross income per new Car (SEKk)	**40.3**	**102.9**	**36.8**	**88.9**

	2023				2022			
Gross margin BEV/ Non-BEV	BEV (new cars)	Non-BEV (new cars)	Other	**Total**	BEV (new cars)	Non-BEV (new cars)	Other	**Total**
Gross income	4,554	59,777	13,097	**77,428**	2,429	47,858	10,045	**60,332**
Revenue	52,630	255,830	90,883	**399,343**	29,658	223,594	76,893	**330,145**
Gross margin, %	**8.7**	**23.4**	**14.4**	**19.4**	**8.2**	**21.4**	**13.1**	**18.3**

1) Includes amounts for 2023 relating to emissions credits earned amounting to SEK 93 (190) m and SEK 378 (315) m relating to BEV and Non-BEV, respectively. See Note 2 – Revenue, for more information.

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Operating income, EBIT/EBIT margin, %	2023	2022
Operating income, EBIT	19,939	22,332
Revenue	399,343	330,145
EBIT margin, %	**5.0**	**6.8**

EBIT and EBIT margin, excl. share of income from JVs & associates, %	2023	2022
Operating income, EBIT	19,939	22,332
Share of income from JVs & associates	–5,628	4,443
EBIT excl. share of income from JVs & associates	**25,567**	**17,889**
Revenue	399,343	330,145
EBIT margin, excl. share of income from JVs & associates, %	**6.4**	**5.4**

EBITDA/EBITDA margin, %	2023	2022
Operating income, EBIT	19,939	22,332
Depreciation and amortisation of non-current assets	17,449	16,091
EBITDA	***37,388***	***38,423***
Revenue	399,343	330,145
EBITDA margin, %	**9.4**	**11.6**

Gross margin, %	2023	2022
Gross income	77,428	60,332
Revenue	399,343	330,145
Gross margin, %	**19.4**	**18.3**

Operating cash, SEKm	2023	2022
Average two-year revenue* 10%	36,474	30,610
Operating cash	**36,474**	**30,610**

Invested capital[1], SEKm	2023	2022
Total assets	343,643	307,141
Receivables from parent company	—	—
Other long-term securities holdings	–8,210	–3,059
Cash and cash equivalents	–55,802	–63,004
Marketable securities	–6,667	–5,706
Operating cash	36,474	30,610
Total current liabilities	–155,187	–137,746
Current liabilities to parent company	—	—
Total current interest-bearing liabilities	6,547	5,094
Total invested capital	**160,799**	**133,330**

1) Calculated on two-year average figures.

Return on invested capital, ROIC, %	2023	2022
EBIT (last 12 months)	19,939	22,332
Invested capital	160,799	133,330
Return on invested capital, ROIC, %	**12.4**	**16.7**

Equity ratio, SEKm	31 Dec 2023	31 Dec 2022
Total equity	130,485	117,278
Total assets	356,362	330,924
Equity ratio, %	**36.6**	**35.4**

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Share of Investing Cash Flow, %	2023 BEV (new cars)	2023 Non-BEV (new cars)	2023 Other	2023 Total	2022 BEV (new cars)	2022 Non-BEV (new cars)	2022 Other	2022 Total
Investments in intangible assets	–15,511	–1,667	–3,502	**–20,680**	–13,903	–1,369	–3,056	**–18,328**
Investments in property, plant and equipment	–7,686	–319	–5,251	**–13,257**	–5,029	–343	–3,946	**–9,318**
Investments in other tangible assets[1]	—	—	–5,227	**–5,227**	—	—	–4,466	**–4,466**
Subtotal	***–23,197***	***–1,986***	***–13,981***	***–33,937***	***–18,932***	***–1,712***	***–11,468***	***–32,112***
Share of investing cash flow[2], %	**68.4**	**5.9**	**25.8**	**100.0**	**68.5**	**6.2**	**25.3**	**100.0**

Net cash, SEKm	31 Dec 2023	31 Dec 2022
Cash and cash equivalents	47,861	63,743
Marketable securities	9,918	3,415
Liabilities to credit institutions, non-current	–4,562	–3,096
Bonds, non-current[2]	–18,121	–23,246
Other interest-bearing liabilities[3]	—	—
Liabilities to credit institutions, current	–937	–755
Bonds, current[2]	–6,672	–2,000
Net cash[2]	**27,487**	**38,061**

1) Investments in other tangible assets is excluded when calculating the Share of investing cash flow.
2) The bonds are presented above at amortised cost. The fair value risk of the EUR-denominated bonds is hedged and the bonds with fixed interest payments have been swapped into floating interest payments. Part of the bonds is therefore measured at fair value through the income statement and the remaining part is measured at amortised cost. On 31 December 2023, the fair value component amounted to SEK –46 (–287) m.
3) The net cash calculation excludes current SEK –1,266 (–1,500) m and non-current SEK –4,786 (–4,845) m financial liabilities related to IFRS 16.

Liquidity, SEKm	31 Dec 2023	31 Dec 2022
Cash and cash equivalents	47,861	63,743
Undrawn credit facilities	17,242	16,674
Marketable securities	9,918	3,415
Liquidity	**75,021**	**83,832**

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Income Statements and Comprehensive Income – Parent Company

SEKm	Note	2023	2022
Administrative expenses	3, 4, 5	–30	–27
Operating loss		**–30**	**–27**
Income from participation in subsidiaries	3	3,000	1,500
Interest income and similar credits	3	1,452	942
Interest expenses and similar charges	3	–825	–640
Other financial income and expenses	3, 4, 6	–21	–28
Income before tax		**3,576**	**1,747**
Income tax	7	–95	889
Net income		**3,481**	**2,636**

Other comprehensive income and Net income are consistent since there are no items in other comprehensive income.

Balance Sheets – Parent Company

SEKm	Note	31 Dec 2023	31 Dec 2022
ASSETS			
Non-current assets			
Participation in subsidiaries	8	18,022	17,913
Deferred tax assets	7	2,923	3,018
Receivables from Group companies	3	21,422	24,332
Total non-current assets		**42,367**	**45,263**
Current assets			
Receivables from Group companies	3	25,973	22,207
Other current assets		26	27
Total current assets		**25,999**	**22,234**
TOTAL ASSETS		**68,366**	**67,497**

SEKm	Note	31 Dec 2023	31 Dec 2022
EQUITY & LIABILITIES			
Equity	9		
Restricted equity			
Share capital		61	61
		61	**61**
Non-restricted equity			
Share premium reserve		31,654	31,654
Retained earnings		4,709	1,964
Net income		3,481	2,636
		39,844	**36,254**
Total equity		**39,905**	**36,315**
Non-current liabilities			
Bonds	10	18,121	23,246
Liabilities to credit institutions	10	3,217	996
Total non-current liabilities		**21,338**	**24,242**
Current liabilities			
Bonds		6,672	2,000
Liabilities to Group companies	3	1	4,533
Accounts payable		3	—
Accrued expenses and prepaid income		447	407
Total current liabilities		**7,123**	**6,940**
TOTAL EQUITY & LIABILITIES		**68,366**	**67,497**

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Changes in Equity – Parent Company

	Restricted equity	Non-restricted equity			
SEKm	Share capital[1]	Share premium reserve	Other contributed capital	Retained earnings	**Total**
Balance at 1 January 2022	**61**	**31,655**	**–3,500**	**5,440**	**33,656**
Net income for the year	**—**	**—**	**—**	**2,636**	**2,636**
Transactions with owners					
New issue	—	–1	—	—	**–1**
Share-based payments	—	—	—	24	**24**
Transactions with owners	**—**	**–1**	**—**	**24**	**23**
Balance at 31 December 2022	**61**	**31,654**	**–3,500**	**8,100**	**36,315**
Net income for the year				**3,481**	**3,481**
Transactions with owners					
Share-based payments	—	—	—	109	**109**
Transactions with owners	**—**	**—**	**—**	**109**	**109**
Balance at 31 December 2023	**61**	**31,654**	**–3,500**	**11,690**	**39,905**

1) Share capital amounted to SEK 60,947,709 (60,947,709).

Statement of Cash Flows – Parent Company

SEKm	Note	**2023**	2022
OPERATING ACTIVITIES			
Operating income		–30	–27
Interest received		1,390	766
Interest paid		–789	–485
		571	**254**
Movements in working capital			
Change in current receivables Group companies	3	1,543	–15
Change in current receivables		1	12
Change in current liabilities Group companies	3	–4,532	2
Change in liabilities		2	–92
Cash flow from movements in working capital		**–2,986**	**–93**
Cash flow from operating activities		**–2,415**	**161**
Investments in shares and participations		—	—
Cash flow from investing activities		**—**	**—**
Cash flow from operating and investing activities		**–2,415**	**161**
FINANCING ACTIVITIES			
Proceeds from bond issuance	10	1,523	5,214
Proceeds from credit institutions	10	2,285	996
Repayment of bond	10	–2,000	—
Repayment of loan to credit institutions	10	—	–3,999
Change in non-current receivables Group companies	3	–3,884	–2,360
Dividend received from subsidiary	3	4,500	—
Other		–9	–12
Cash flow from financing activities		**2,415**	**–161**
Cash flow for the year		**—**	**—**
Cash and cash equivalents at beginning of year		**—**	**—**
Cash and cash equivalents at end of year		**—**	**—**

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Notes to The Parent Company Financial Statements

All amounts are in SEKm unless otherwise stated.
Amounts in brackets refer to the preceding year.

NOTE 1 SIGNIFICANT ACCOUNTING POLiCIES

Basis of preparation

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. Changes in RFR 2 applicable to the fiscal year beginning 1 January 2023, have had no material impact on the financial statements of the Parent company.

All specific accounting policies considered significant to Volvo Car Group are described in conjunction with each presented note in the consolidated financial statements. The main deviations between the accounting policies applied by the Volvo Car Group and the Parent company are described below.

Shares and participations in Group companies

Shares and participations in Group companies are recognised at cost in the Parent company's balance sheet and test for impairment is performed annually or whenever there is an indication to do so. Dividends are recognised in the income statement. All shares and participations are related to business operations and profit and loss from these are reported within operating income.

Transaction costs directly attributable to acquisitions of shares and participations in Group companies are accounted for as an increase in the carrying amount.

Group contributions made to subsidiaries are reported as an increase of investments in these subsidiaries. A review is at the same time made to conclude whether or not there is an impairment risk with regards to the same shares of the subsidiaries having received the Group contribution. Tax effect of these Group contributions are recognised in the income statement. Group contributions made to the parent company are recognised in equity, along with the tax effect. Received Group contributions from subsidiaries are recognised as financial income. Tax effect on received Group contributions are recognised in the income statement. Received Group contributions from the parent company are recorded in equity, along with the tax effect.

Made shareholders' contributions are recognised in shares in subsidiaries and as such they are subject to impairment testing.

Income taxes

Deferred tax liability on untaxed reserves is included in untaxed reserves in the parent company.

Financial guarantees

The company applies the exemption according to RFR 2 in the application of IFRS 9, which relates to accounting and valuation of financial guarantee agreements for the benefit of subsidiaries and associated companies. The parent company reports the financial guarantee agreements as contingent liabilities.

NOTE 2 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

Preparation of the financial statements in accordance with the Swedish Annual Accounts Act (1995:1554) and RFR 2 requires the Company's Executive management and Board of Directors to make estimates and judgements as well as to make assumptions that affect application of the accounting policies and the reported assets, liabilities, income and expenses. Critical accounting estimates and judgements applied by the Volvo Car Group are described in conjunction with applicable note in the consolidated financial statements. None of these critical accounting estimates are applicable to the parent company. Shares and participations in Group companies recognised at cost in the Parent company are being tested for impairment annually or if an indication of impairment exists.

NOTE 3 RELATED PARTY TRANSACTIONS

During the year, the parent company entered into the following transactions with related parties:

	Sales of goods, services and other		Purchase of goods, services and other	
	2023	2022	**2023**	2022
Companies within the Volvo Car Group, %	100	100	1	1

	2023	2022
Interest income from subsidiaires	1,449	941
Interest income from parent company	3	1

	Receivables		Payables	
	31 Dec 2023	31 Dec 2022	**31 Dec 2023**	31 Dec 2022
Companies within the Volvo Car Group	47,325	46,472	1	4,533
whereof short-term	*25,973*	*22,207*	*1*	*4,533*
Companies within the Geely Sweden Holdings Group	70	67	—	—
whereof short-term	—	—	—	—

Business transactions between the parent company and related parties all arise in the normal course of business and are conducted on the basis of arm's length principles. Volvo Car AB (publ.) has given Group contribution of SEK — (4 530) m to its subsidiary, Volvo Car Corporation. Further, Volvo Car AB (publ.) has received dividend of SEK 3,000 (1,500) m from its subsidiary, Volvo Car Corporation.

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Volvo Car AB (publ.) does not engage in any transactions with Board members or senior executives except ordinary remunerations for services. For further information regarding remunerations, see Note 8 – Employees and remuneration and Note 9 – Share-based remuneration, in the consolidated financial statements.

NOTE 4 AUDIT FEES

TSEK	2023	2022
Deloitte		
Audit fees	–147	–136
Audit-related fees	–265	–454
Other services	—	—
Total	**–412**	**–590**

Audit fees involve audit of the Annual Report, financial accounts and the administration by the Board of Directors and the Managing Directors. The audit also includes advice and assistance as a result of the observations made in connection with the audit.

Audit-related fees refer to other assignments to ensure quality in the financial statements including consultations on reporting requirements and internal control.

All other work performed by the auditor is defined as **other services**.

NOTE 5 REMUNERATION TO THE BOARD OF DIRECTORS

Information on remuneration to Board members by gender is shown in Note 8 – Employees and remuneration and Note 9 – Share-based remuneration, in the consolidated statements.

NOTE 6 OTHER FINANCIAL INCOME AND EXPENSES

	2023	2022
Bond fees	–12	–12
Expenses for credit facilities	–9	–12
Other financial expenses	—	–4
Total	**–21**	**–28**

NOTE 7 TAXES

Income tax recognised in income statement	2023	2022
Deferred taxes	–95	889
Total	**–95**	**889**

Information regarding current year tax expense compared to tax expense based on the applicable Swedish tax rate	2023	2022
Income before tax for the year	3,576	1,747
Tax according to applicable Swedish tax rate, 20.6 % (20.6%)	–737	–360
Non-taxable dividends	618	309
Non-taxable income	24	7
Tax effect of Group contributions	—	933
Total	**–95**	**889**

Total deferred tax assets of SEK 2,923 (3,018) m relates to loss-carry forward, with an indefinite period of utilisation. Deferred tax assets are only accounted for to the extent there are taxable temporary differences or other factors that convincingly indicate there will be sufficient future taxable profit.

NOTE 8 PARTICIPATION IN SUBSIDIARIES

	31 Dec 2023	31 Dec 2022
At beginning of the year/acquired acquisition value	17,913	13,359
Group contribution	—	4,530
Share-based payments	109	24
Total	**18,022**	**17,913**

Volvo Car AB's (publ.) investments in subsidiaries:	Corp. ID no.	Registered office	No. of shares	% interest held	Book value 31 Dec 2023	Book value 31 Dec 2022
Volvo Personvagnar AB[1)]	556074-3089	Gothenburg / Sweden	724,889	100	18,022	17,913

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Details of Volvo Car Corporation's directly owned subsidiaries at the end of the reporting period are presented in the following table.

Legal entity	Corp. ID no.	Registered office	% interest held
Sweden			
Automotive Components Floby AB	556981-8874	Falköping / Sweden	100
CLPE AB	556955-7118	Gothenburg / Sweden	100
Fastighetsbolag Sörred 8:9 AB	559176-3890	Gothenburg / Sweden	100
Fastighetsbolag Sörred 8:11 AB	556994-2351	Gothenburg / Sweden	100
Fastighetsbolag Sörred 8:17 AB	559394-9851	Gothenburg / Sweden	100
HaleyTek AB	559307-9485	Gothenburg / Sweden	60
NVC Energy VII AB	559344-2410	Gothenburg / Sweden	100
PSINV AB	559140-6409	Gothenburg / Sweden	100
Volvo Bil i Göteborg AB	556056-6266	Gothenburg / Sweden	100
Volvo Car Australia Holding AB	556152-2680	Gothenburg / Sweden	100
Volvo Car Försäkrings AB	556877-5778	Gothenburg / Sweden	100
Volvo Car Insurance Distribution AB[2)]	559140-6417	Gothenburg / Sweden	100
Volvo Car Investment and Borrowing AB	556130-4246	Gothenburg / Sweden	100
Volvo Car Mobility AB	556955-6441	Stockholm / Sweden	100
Volvo Car NSC Holding AB	556754-8283	Gothenburg / Sweden	100
Volvo Car Real Estate and Assets 1 AB	556205-7298	Gothenburg / Sweden	100
Volvo Car Real Estate and Assets 3 AB	559176-3908	Gothenburg / Sweden	100
Volvo Car Real Estate and Assets 7:24 AB	559064-3457	Gothenburg / Sweden	100
Volvo Car Services 6 AB	559140-6433	Gothenburg / Sweden	100
Volvo Car Services 9 Holding AB[3)]	559228-9366	Gothenburg / Sweden	100
Volvo Car Services Sweden AB	556601-7843	Gothenburg / Sweden	100
Volvo Car Sverige AB[4)]	556034-3484	Gothenburg / Sweden	100
Volvo Car Technology Fund AB	556877-5760	Gothenburg / Sweden	100
Volvo Personvagnar Norden AB	556413-4848	Gothenburg / Sweden	100
Zenseact AB	559228-9358	Gothenburg / Sweden	100
Europe			
Volvo Car Austria GmbH		Austria	100
Volvo Car Czech Republic s.r.o.		Czech Republic	100
Volvo Car Denmark A/S		Denmark	100
Volvo Car Finland Oy Ab		Finland	100
Volvo Car France SAS		France	100
Volvo Car Germany GmbH		Germany	100
Volvo Car Hellas Anonymous[5)]		Greece	100
Volvo Car Hungary Trading and Service Ltd		Hungary	100
Volvo Car Gallery Ltd		Hungary	100
Volvo Car Ireland Ltd		Ireland	100

Legal entity	Registered office	% interest held
Volvo Car Italia S.p.A.	Italy	100
Volvo Car Nederland B.V.	The Netherlands	100
Volvo Car Nederland Financial Services B.V.	The Netherlands	100
SNEBE Holding B.V.	The Netherlands	100
SNITA Holding B.V.	The Netherlands	100
SWENE Holding B.V.	The Netherlands	100
Volvo Car Norway AS	Norway	100
Volvo Car Poland Sp. z.o.o.	Poland	100
Volvo Car Portugal S.A.	Portugal	100
Volvo Car Espana S.L.	Spain	100
Volvo Car Slovakia s.r.o	Slovakia	100
Volvo Car Switzerland AG	Switzerland	100
Volvo Car UK Ltd	United Kingdom	100
North and South America		
Volvo Car Brasil Importacao e Comercio de Veiculos Ltda	Brazil	100
Volvo Car do Brasil Automoveis Ltda	Brazil	100
Volvo Car Canada Ltd	Canada	100
Volvo Car Mexico S.A. de C.V.	Mexico	100
Volvo Car Financial Services U.S., LLC	USA	100
Volvo Car North America, LLC	USA	100
Africa and Asia		
Volvo Cars (China) Investment Co., Ltd.[6)]	China	100
Volvo Cars Technology (Shanghai) Co., Ltd.	China	100
Volvo Auto India Pvt. Ltd	India	100
Volvo Car Japan Ltd	Japan	100
Volvo Car Korea Co., Ltd	Korea	100
Volvo Car Manufacturing Malaysia Sdn Bhd	Malaysia	100
Volvo Car Singapore PTE Ltd	Singapore	100
Volvo Car South Africa Pty Ltd	South Africa	100
Volvo Car Taiwan Ltd	Taiwan	100
Volvo Car Turkey Otomobil Ltd Sirketi	Turkey	100
Volvo Car RDC Middle East FZE	United Arab Emirates	100

1) Referred to as Volvo Car Corporation.
2) Prior name: Volvo Car Pension Management AB.
3) Prior name: Volvo Car Services 9 AB
4) Care by Volvo Car AB, effective as of 31 October 2023, was merged into Volvo Car Sverige AB.
5) Legal name in full: Volvo Car Hellas Anonymous and Industrial company of car and spare parts imports and trade.

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The share of voting power corresponds to holdings in per cent as seen in the table above. The countries where the subsidiaries are registered are also where their main operations are carried out.

Significant restrictions

For some subsidiaries there are restrictions on the Volvo Car Group's ability to access or use cash from these subsidiaries, for more information on cash that is not available or with other limitations, see Note 22 – Marketable securities and cash and cash equivalents in the consolidated financial statements.

Change in the Group's ownership interest in a subsidiary

On 25 June 2023, Zhejiang Genius & Guru Investment Co., Ltd, a related company with the same ultimate shareholder as Volvo Car Group, subscribed to all the newly issued shares, representing 45 per cent of the shareholdings, in the wholly-owned subsidiary Volvo Car Group Financial Leasing (Shanghai) Co., Ltd. As a consequence Volvo Car Group lost control and the subsidiary was deconsolidated and from 25 June, classified as a joint venture company, see Note 13 – Investments in joint ventures and associates and Note 32 – Business combinations and divestments.

On 14 July 2023, Volvo Car Corporation divested its wholly-owned subsidiary Volvo Car Services 7 AB to its joint venture company Novo Energy Production AB. Volvo Car Group has consolidated the company until 14 July when control was ceased. Thereafter the company is classified as a joint venture company within the Novo Energy Group. As part of the divestment, the registered company name was changed to Fastighetsbolag Sörred 15:7 AB, see Note 4 – Related party transactions and Note 13 – Investments in joint ventures and associates.

On 15 December 2023, Volvo Car Corporation divested its wholly-owned subsidiary Volvo Car Services 11 AB. Volvo Car Group has consolidated the company until 15 December when control was ceased. Thereafter the registered company name was changed to PropCo Sörred 8:18 AB.

Details of non-wholly-owned subsidiaries that have non-controlling interests[6)]

On 25 June 2015, Volvo Car Group, through one of its wholly-owned subsidiaries, Volvo Cars (China) Investment Co., Ltd, acquired an additional 20 per cent in Volvo Cars' Chinese joint venture companies. In the consolidated financial statements, these joint venture companies are classified as subsidiaries and fully consolidated with a non-controlling interest of 50 per cent since Volvo Car Group has the decision-making power over the operations.

Additionally, Daqing Volvo Car Manufacturing Co., Ltd has acquired 100 per cent of the shares in Volvo Car (Asia Pacific) Investment Holding Co., Ltd which holds 100 per cent of Zhongjia Automobile Manufacturing (Chengdu) Co., Ltd and Shanghai Zhawo Auto Sales Co., Ltd.

On 31 January 2022, Volvo Cars (China) Investment Co., Ltd divested its shareholding in the 50 per cent owned subsidiary Zhangjiakou Volvo Car Engine Manufacturing Co., Ltd and consequently the non-controlling interest ceased.

On 1 September 2021, ECARX Technology Co., Ltd, a related company with the same ultimate shareholder as Volvo Car Group, but outside the Geely sphere of companies, acquired 40 per cent of the shareholding in the wholly-owned subsidiary HaleyTek AB. HaleyTek AB is still classified as a subsidiary and fully consolidated with a non-controlling interests of 40 per cent since Volvo Car Group have the power of control.

On 31 December 2022, Volvo Car Corporation acquired the non-controlling interest of 13.5 per cent in Zensact AB, and consequently the non-controlling interest ceased.

The table below shows details of non-wholly-owned subsidiaries of the Group that have non-controlling interests.

	Registered office	% interest held		Profit allocated to non-controlling interests		Accumulated non-controlling interests	
Legal entity:		**31 Dec 2023**	31 Dec 2022	**31 Dec 2023**	31 Dec 2022	**31 Dec 2023**	31 Dec 2022
Daqing Volvo Car Manufacturing Co., Ltd.[7)]	China	50	50	1,068	1,441	3,753	2,908
Shanghai Volvo Car Research and Development Co., Ltd.[7)]	China	50	50	3	—	114	118
Zhangjiakou Volvo Car Engine Manufacturing Co., Ltd.[7)]	China	—	—	—	62	—	—
HaleyTek AB	Sweden	40	40	–58	–52	247	305
Zenseact AB	Sweden	—	—	—	–25	—	—
Total non-controlling interests				**1,013**	**1,426**	**4,114**	**3,331**

7) 50 per cent held by Zhejiang Geely Holding Group Co., Ltd, which is the ultimate parent company of the Volvo Car Group.

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NOTE 9 EQUITY

In 2021, Volvo Car Group AB (publ.) was listed on the Nasdaq Stockholm. For further information, see Note 23 – Equity in the consolidated financial statements.

Equity-settled share-based payments in connection with employee incentive plans are recognised in equity. For further information, see Note 9 – Share-based remuneration.

NOTE 10 FINANCIAL INSTRUMENTS

Bond issuance

In February 2023 Volvo Cars issued a bond loan of SEK 1,500 m. The bond issuance was divided into fixed and floating rate tranches of 650 million and 850 million respectively. In February 2023 Volvo Car AB (publ.) repaid a bond loan, issued in February 2019, of SEK 2,000 m. During 2022 Volvo Cars issued a 6-year EUR 500 m green bond with Svensk Exportkredit.

Liabilities to credit institutions

In November 2023, a drawdown of EUR 200 m was made under an existing bilateral credit facility with Nordic Investment Bank, entered into in 2022 and maturing in 2030.

In December 2023 a new bilateral 10-year credit facility agreement of EUR 250 m was entered into. The current EUR 1,300 m Revolving Facility with Swedbank was extendeed during 2022 from January 2025 to January 2026. At year end the credit facilities are not yet drawn upon.

During 2022 Volvo Cars entered into a bank loan of SEK 1,000 m and repaid a another bank loan of SEK 4,000 m with Svensk Exportkredit.

For more information see Note 21 – Financial risks and financial instruments in the consolidated financial statements.
No fair value hegde is applied in Volvo Car AB (publ.).

NOTE 11 CONTINGENT LIABILITIES

Volvo Car AB (publ.) has a parental guarantee for Volvo Car Corporation for the purpose of securing the various obligations and liabilities under facility agreement with EIB. The guarantee is in total of EUR 345 (345) m.

Proposed Distribution of Non-Restricted Equity

The parent company

The following funds are at the disposal of Annual General Meeting (AGM):

Share premium reserve	SEK	31,653,517,859
Retained earnings brought forward	SEK	4,709,563,345
Net income for the year	SEK	3,480,942,490
At the disposal of the AGM	**SEK**	**39,844,023,694**

The Board of Directors proposes that no ordinary dividend is distributed and that the retained earnings, SEK 39,844,023,694, shall be carried forward.

Through the proposed distribution of a portion of Volvo Cars' shareholding in Polestar Automotive Holding UK PLC ("Polestar") subject to approval at the Annual General Meeting to be held on March 26, 2024, Volvo Cars makes an extraordinary value transfer to its shareholders of no more than SEK 35 bn, equivalent to approximately SEK 11.75 per Volvo Cars' series B share. The Board proposes that the distribution is made by way of a share split followed by a share redemption and that the Board of Directors is authorised to finally determine the portion of the Polestar shareholding to be distributed, the redemption amount per share as well as the timetable for the share redemption. The detailed transaction structure and conditions of the Board of Directors' proposal are set out in the notice for the Annual General Meeting available at investors.volvocars.com/agm24.

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The Board of Directors and the CEO hereby affirm that the consolidated financial statements have been prepared in accordance with International Financial Reporting Standards, IFRS, as adopted by the EU and provide a true and fair view of the Group's financial position and earnings. The Annual Report has been prepared in accordance with generally accepted accounting principles and provides a fair and true view of the parent company's financial position and earnings. The Board of Directors' report for the Group and the Parent Company provides a true and fair overview of the development of the operations, financial position and earnings of the Group and parent company and describes material risks and uncertainty factors facing the parent company and the companies included in the Group.

Gothenburg, 4 March 2024

Eric Li (Li Shufu)
Chairperson of the Board

Jim Rowan
CEO

Lone Fønss Schrøder
Vice Chairperson of the Board

Ruby Lu
Board member

Daniel Li (Li Donghui)
Board member

Diarmuid O'Connell
Board member

Jonas Samuelsson
Board member

Lila Tretikov
Board member

Anna Mossberg
Board member

Adrian Avdullahu
Employee representative

Jörgen Olsson
Employee representative

Björn Olsson
Employee representative

Our audit report was submitted on 4 March 2024
Deloitte AB

Fredrik Jonsson
Authorized Public Accountant

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Auditor's Report

This auditor's report is a translation of the Swedish language original. In the events of any differences between this translation and the Swedish original the latter shall prevail.

To the general meeting of the shareholders of Volvo Car AB (publ.) corporate identity number 556810-8988

Report on the annual accounts and consolidated accounts

Opinions

We have audited the annual accounts and consolidated accounts of Volvo Car AB (publ) for the financial year 2023-01-01–2023-12-31. The annual accounts and consolidated accounts of the company are included on pages 44–58, 76–131, 136–143 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 2023 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 2023 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.

Accounting for campaign warranty

The Company grants product warranties to their end customers, which are contractual warranties covering certain defects in material and workmanship of Volvo Car products sold. Estimated warranty costs include contractual warranty and other costs not covered by standard contractual commitments. All warranty provisions are recognized at the point of time when the sale of the vehicles or spare parts are made, subsequently adjusted for trends in claims data. Provision for campaign warranty is adjusted when campaign decisions for specific quality problems are made. The accounting principles for warranty and management's significant judgments applied in relation thereto are further described in Note 25 "Current and Other Non-Current Provisions" to the annual report.

Sufficient level of supporting data is required before the Company can make campaign decisions regarding specific quality problems and account for related campaign warranty provisions. Once decisions are taken, judgements and estimates are made by management to assess the expected campaign warranty spend and to conclude whether adjustments to provisions are required. Considering that the accounting for campaign warranty involves complexities and significant uncertainties, the accounting for completeness and measurement of provisions for campaign warranty was determined to be a key audit matter.

Our audit procedures included, but were not limited to:

- Evaluating the process used, and assessing the assumptions applied, in determining the estimated standard provision for campaign warranty.
- Assessing the reasonableness of the methodology used in determination of provision for campaign warranty, including accounting principles applied.
- Evaluating the design and implementation of relevant internal controls related to accounting for campaign warranty.
- Performing substantive analytical procedures on campaign warranty provisions based on relevant data and expected changes.
- On a sample basis, assessing and challenging the reasonableness of management´s significant assumptions in relation to expected number of products returned and the valuation of estimated cost for approved campaigns.
- Reading minutes and making inquiries to management to evaluate if decisions on campaigns have been taken subsequent to December 31, 2023 up to the signing of the annual report, that should have been reflected in the provision as of December 31, 2023.
- In collaboration with our IT-specialists, audited relevant general IT-controls for IT-systems used in the financial reporting of warranty provisions.

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 1–43, 59–74, 132–135, 147–195, 198–204. The Board of Directors and the Managing Director are responsible for this other information.

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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 Managing Director

The Board of Directors and the Managing Director 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 Managing Director 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 Managing Director 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 Managing Director 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.

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 Managing Director of Volvo Car AB (publ) for the financial year 2023-01-01–2023-12-31 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 Managing Director 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 Managing Director

The Board of Directors is 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 Managing Director 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 Managing Director 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.

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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/rn/showdocument/documents/rev_dok/revisors_ansvar.pdf. 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 Managing Director 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 Volvo Car AB (publ) for the financial year 2023-01-01–2023-12-31.

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 Volvo Car AB (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 Managing Director

The Board of Directors and the Managing Director 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 Managing Director 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 Managing Director, 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 Managing Director.

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 Volvo Car AB (publ) by the general meeting of the shareholders on the 2023-04-03 and has been the company's auditor since 2010-06-22.

Gothenburg March 4, 2024
Deloitte AB

Fredrik Jonsson
Authorized public accountant

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Our sustainability performance

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OUR SUSTAINABILITY AMBITIONS

Materiality analysis and stakeholder input inform our internal strategies, scenario and gap analyses, risk assessments, benchmarking, forecasts, and consumer perception data. From this analysis, we have defined our sustainability focus areas, as well as our ambitions and strategic initiatives.

Materiality analysis

In 2023, we have performed a double materiality assessment. The assessment evaluates both how we impact people, environment and economy, as well as financial risks and opportunities arising from sustainability matters. This was carried out in four phases: identification of relevant sustainability matters (including dependency on natural, social and human resources), assessment of impact materiality, assessment of financial materiality, and prioritisation and validation of material impacts, risks and opportunities. The assessment focuses on impacts, risks and opportunities in our own operations and our value chain, to determine material sustainability topics.

Stakeholder engagement helps us identify material topics and manage material impacts, risks and opportunities, providing valuable input for our sustainability work and corporate strategy. For more information about our stakeholder engagement, see page 175. In addition to stakeholder dialogue, we conduct international surveys, which ask stakeholder groups to prioritise our sustainability-related topics. We have conducted this survey every two year from 2014 to 2021.

Double materiality assessments, stakeholder engagement, reporting standards and frameworks, including the Global Reporting Initiative (GRI) and the recommendations from the Task Force on Climate-Related Financial Disclosures (TCFD), have determined disclosures in this annual report. We have specifically developed our disclosures on nature-related topics as a result of the materiality assessment and stakeholder engagement discussions.

A further refined double materiality assessment following ESRS standards will be made in 2024 and a more detailed description of the process and results will be described for each topic in next year's annual report.

List of material topics

Based on our double materiality assessment and stakeholder discussions, we assess the following sustainability areas to be the most material topics for Volvo Car Group.

Material topic
Climate action
Ethical leadership
Responsible sourcing
Circular economy
Own workforce
Data privacy and protection
Sustainable work life
Electrification ecosystem
Water and waste
Biodiversity impact
Green and responsible financing
Societal and community engagement
Traffic safety
Pollutions

The list of material topics has been adjusted, in comparison with last year's reporting. Climate action remains the most important topic, with ethical leadership also as a top priority. Responsible sourcing is considered highly important by our stakeholders, particularly in relation to battery production, and has been frequently raised in dialogue with investors, the media, and NGOs.

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Climate Action

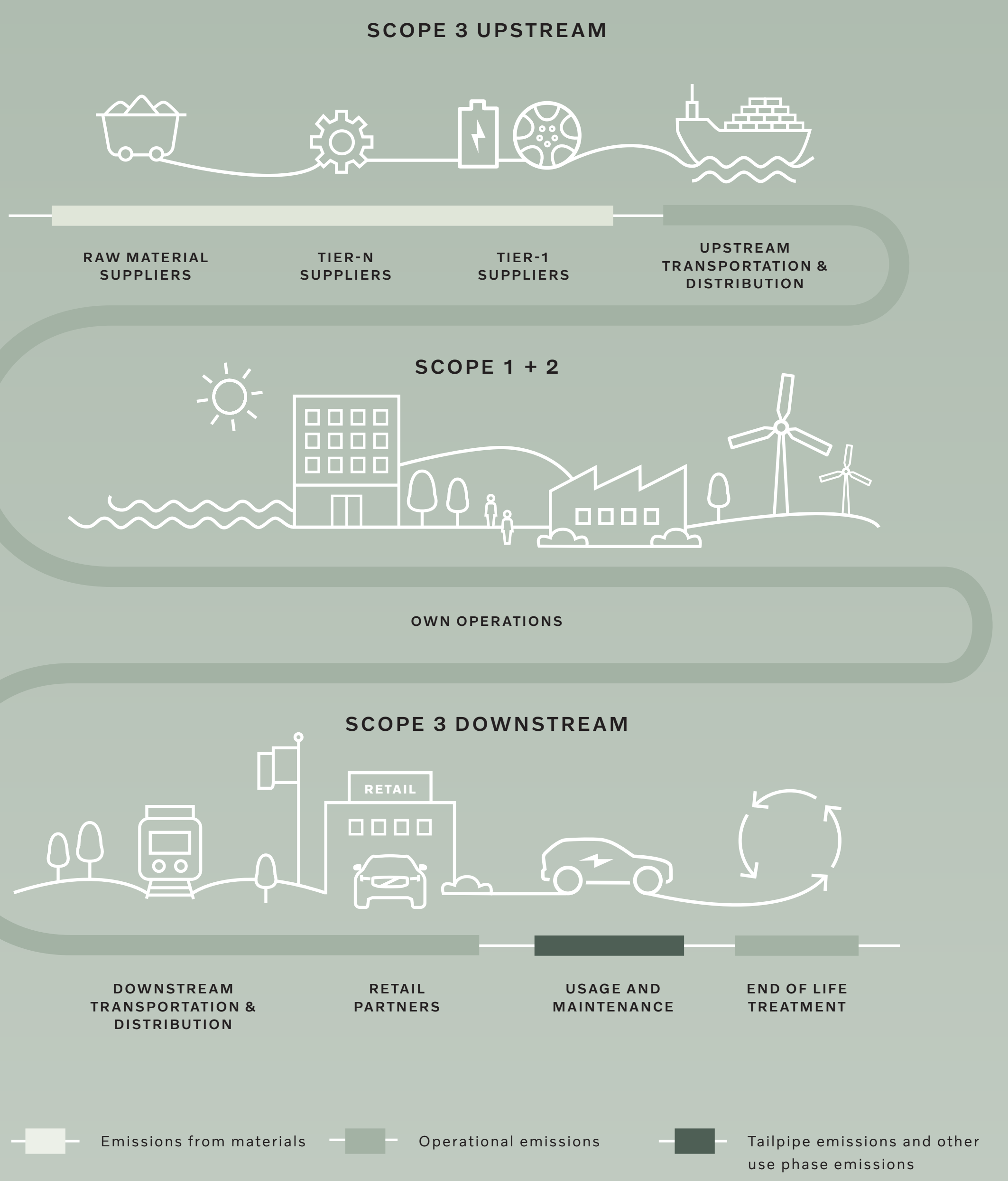
We aim to reach net zero greenhouse gas emissions by 2040. This requires reducing emissions throughout our value chain, as far as possible, including emissions from our operations, materials, and the use and maintenance of our cars. We focus on real emission reductions, and intend to reach our net zero ambition using carbon removal only to neutralise unavoidable emissions.

We have set clear interim ambitions towards 2040, seeking to reduce the CO_2 footprint of an average vehicle by 40 per cent by 2025 and 75 per cent by 2030 (from a 2018 baseline) over 200,000 kilometres of driving.[1] Our climate action ambitions are supported by three key drivers:

Transform to pure electrification
- To reduce tailpipe CO_2 emissions per average vehicle from a 2018 baseline:
  - By 50 per cent by 2025
  - By 100 per cent by 2030

Minimise emissions from materials
- To reduce CO_2 emissions from materials per average vehicle from a 2018 baseline:
  - By 25 per cent by 2025
  - By 30 per cent by 2030

Minimise operational emissions
- To reduce operational CO_2 emissions per average vehicle from a 2018 baseline:
  - By 25 per cent by 2025
  - By 30 per cent by 2030



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Greenhouse gas emissions

Volvo Cars' climate impact amounted to 43 million tonnes of CO_2 in 2023, according to our Greenhouse Gas Protocol. This is an increase by five million tonnes compared to 2022 and half a million tonnes compared to our 2018 base year. 0.2 per cent of these emissions are in Scope 1 and 2, and 99.8 per cent in Scope 3. By far, our most significant impacts are within purchased goods and services and use of sold products. We are addressing these by applying the three pillars of our climate action strategy: Transform to pure electrification, Minimise emissions from materials, and Minimise operational emissions. By applying these pillars, we focus on high-impact areas where we have the greatest ability to act, including all our Scope 1 and 2 emissions and 78 per cent of our Scope 3 emissions.

Emissions breakdown[9] (kilo tonnes CO_2)	2023	2022	2021	2018 Base year
Tailpipe emissions (GHG Protocol: Use of sold products, Combustion of fuel)	16,812	15,839	17,924	23,785
Emissions from operations (GHG Protocol: All other categories)	2,336	2,363	2,385	2,497
Emissions from materials (GHG Protocol: Purchased goods and services)	14,588	12,113	11,650	10,435
Total	**33,736**	**30,315**	**31,959**	**36,717**
Other use-phase emissions (GHG Protocol: Use of sold products, Production and distribution of fuel and electricity)	9,323	7,702	7,202	5,865
Grand Total	**43,059**	**38,017**	**39,161**	**42,582**

Emissions per average vehicle	2023	2022	2021	2018 Base year
CO_2 emissions per average vehicle[1,9,10] (tonnes)	43.9	46.7	49.7	54.9
Tailpipe emissions per average vehicle[1,9,10] (tonnes)	21.9	24.4	27.9	35.6
Emissions from materials per average vehicle[1,9,10] (tonnes)	19.0	18.7	18.1	15.6
Emissions from operations per average vehicle[1,9,10] (tonnes)	3.0	3.6	3.7	3.7
Emission intensity (tonnes CO_2/SEKm revenue)	108	115	139	—

GHG Protocol[9] (kilo tonnes CO_2)		2023	2022	2021	2019 Base year	2018 Base year
Scope 1 (Direct GHG emissions)	Company facilities	67	68	72	87	83
	Company vehicles	6	6	7	12	12
	Total	**73**	**74**	**79**	**99**	**95**
Scope 2 (Indirect GHG emissions)	Purchased electricity, steam, heating and cooling	7	39	43	128	93
	Total (market-based)	**7**	**39**	**43**	**128**	**93**
	Total (location-based)	179	—	—	—	—
Scope 3 (Upstream indirect GHG emissions)	Purchased goods and services	14,588	12,113	11,650	11,327	10,435
	Transportation and distribution	620	770	625	680	596
	Waste generated in operations	9	6	7	8	8
	Business travel	62	33	12	75	100
	Employee commuting*	47	47	40	70	70
	Leased assets upstream	—	—	8	14	—
	Total	**15,326**	**12,969**	**12,342**	**12,174**	**11,209**
Scope 3 (Downstream indirect GHG emissions)	Transportation and distribution	540	486	413	343	396
	Use of sold products	26,135	23,541	25,126	30,694	29,650
	– Production and distribution of fuel and electricity	9,323	7,702	7,202	6,349	5,865
	– Combustion of fuel	16,812	15,839	17,924	24,345	23,785
	End of life treatment of sold products	472	402	404	419	385
	Leased assets downstream	4	4	4	4	4
	Retailers	502	502	750	750	750
	Total	**27,653**	**24,935**	**26,697**	**32,210**	**31,185**
	Grand Total (market-based)	**43,059**	**38,017**	**39,161**	**44,611**	**42,582**

*2022 has been retroactively updated to fully account for occupancy rate. Previous years occupancy rates are correct and does not need to be updated.

For further definitions and reporting principles see page 192–195.

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Transform to pure electrification

Tailpipe emissions
Continuous monitoring of tailpipe emissions, changes in our product mix and developing efficient technological solutions are key factors in meeting and exceeding the requirements of current and future emissions legislation. Our average tailpipe emissions decreased from 122 to 110 grams CO_2 per kilometre between 2022 and 2023, primarily due to increased sales of our Recharge cars.

Energy solutions
In 2023, we launched Energy Solutions, a new business unit, which aims at unlocking values from charging, energy management and batteries. Our goal is to make the connected car and batteries central components in energy systems.

Producing fully electric cars and eliminating tailpipe emissions is a big step, but it is not enough.

Electricity also has a carbon footprint, and the emission intensity of electricity generation depends on how it is produced. As the electricity production mix in the grid fluctuates, the carbon footprint of the electricity also changes throughout the day and the week. Using data and automation, the charging can be optimised for lowest cost and emission and thereby create values for our customers, Volvo Cars and the society at large.

Our new EX90 takes this further as it enables bi-directional charging. This function will be launched in a few selected markets during 2024. When adopted widely, this allows the battery to be used for energy storage that can power homes or the grid at times when the electricity price or emission intensity is high. If widely adopted, bi-directional charging could play an important role in supporting a higher share of renewable electricity in the grid. It also has the potential to increase the efficiency of power grids by supplying energy in periods of high demand.

Electrified vehicles	2023	2022	2021
Fully electric vehicles (BEVs) sold	113,419	66,749	25,727
Fully electric vehicles (BEVs) sold (%)	16.0	10.9	3.7
Plug-in hybrid electric vehicles (PHEVs) sold	152,561	138,603	189,216
Electrified vehicles sold* (%)	37.5	33.4	27.1
Energy efficiency BEV[11)] (average) (Wh/km)	179	198	234

*Electrified vehicles is defined as plug-in hybrids and fully electric vehicles.

Tailpipe emissions[12)]	2023	2022	2021
Total CO_2 tailpipe emissions avoided[13)] (kilo tonnes)	3,060	1,870	750
CO_2 emissions of products – Global fleet average[11)] (g/km, WLTP)	110	122	139

For further definitions and reporting principles see page 192–195.

Minimise emissions from materials

Materials
While the transition to fully electric vehicles eliminates tailpipe emissions, the carbon footprint from materials typically increases – mainly due to the battery. According to our published carbon footprint report, the XC40 BEV has a 70 per cent higher carbon footprint from the materials production and refining stage compared to the XC40 ICE. This implies that reducing emissions from materials per car from our baseline year as we transition to fully electric vehicles requires significant changes.

The main sources of emissions from materials in our cars are aluminium, steel, and batteries. Tackling emissions from these materials is undertaken in slightly different ways.

In aluminium production, most of the CO_2 emissions are caused by the smelting process, which is most often a few steps up in our value chain. Therefore, we direct our suppliers to buy aluminium ingots from our list of approved aluminium smelters, who use low-CO_2 electricity in their refining process. We are continuously evaluating additional aluminium smelters, to increase the number of approved smelters on our list.

For steel, we aim to increase the degree of material utilisation in our internal manufacturing processes to reduce the amount of waste we generate. As steel production causes hard-to-abate emissions, we are collaborating closely with steel producers seeking to replace their existing production methods with near-zero emission steel, based on high recycled content or direct reduction using renewable hydrogen.[8]

We work closely with our suppliers to reduce CO_2 emissions from batteries and actively encourage the use of climate neutral energy and recycled content.

Construction of the Novo Gigafactory in Gothenburg, a joint venture with Northvolt, was given local authority approval in 2023. The facility is expected to become operational in 2026.

To support the development of breakthrough production technologies, we are active members of SteelZero, First Movers Coalition and Aluminium Forward 2030, organisations that aim to increase the availability of near-zero emission materials.

Supplier engagement
As part of our ambition to minimise emissions from materials, one of our ambitions is that our directly contracted suppliers shall use climate neutral energy at their production sites. In 2023, 15 per cent of these sites have reported that they use only climate neutral energy. Overall consumption of climate-neutral energy at directly contracted supplier sites increased from 19 to 21 per cent. By the end of 2023, 41 per cent of our active supplier sites have signed a commitment to use only climate neutral energy by 2025. Wherever possible, we select business partners that share our strategic ambitions. If new suppliers are not already compliant with our requirements, we offer guidance on how to achieve them.

As participants in the Carbon Disclosure Project's (CDP) Supply Chain Program 2023, we collected data from our top 144 suppliers, based on emission intensive product categories, as well as spending. The results show that these suppliers used 13 per cent renewable energy in their global operations during 2022.

In 2023, we initiated a project to integrate CO_2 emissions into our sourcing process by asking suppliers to calculate carbon footprint per component. The project has targeted selected components and will expand to cover more in 2024.

Directly contracted suppliers, climate-neutral energy consumption (%)	2023	2022	2021
Climate neutral energy at directly contracted supplier sites[15)]	20.8	19.0	8.5
Share of directly contracted suppliers that have signed a commitment to reach 100% climate neutral energy by 2025	40.5	12.0	–

For further definitions and reporting principles see page 192–195.

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Minimise operational emissions

Manufacturing operations

We aim to make our own manufacturing operations climate neutral by 2025.[9] In 2023, 71 per cent of the energy consumed in our manufacturing facilities was climate neutral (including 100 per cent climate neutral electricity), with total CO_2 emissions amounting to 65 kilo tonnes.

Our approach is based on three main activities:
1. Reducing energy consumption through efficiency improvements and energy recovery
2. Using climate neutral energy from energy and utility suppliers
3. On-site generation and extraction of renewable energy

Energy efficiency measures at our production plants reduced annual energy consumption by 26 GWh during 2023. We have carried out systematic energy-saving projects since 2010, which resulted in direct and indirect savings of approximately SEK 18 m in 2023. Solar panels and wind turbines at our production facilities generated 50 GWh, with on-site power generation accounting for eight per cent of electricity consumption in our manufacturing plants.

Measures taken in 2023 include the introduction of electric ovens to replace natural gas consumption with renewable electricity at our Chengdu plant. Our Charleston and Kuala Lumpur production facilities secured a supply of climate neutral electricity, making a significant contribution to our climate-neutral manufacturing ambition. All our manufacturing operations are now powered by renewable electricity.

Non-manufacturing operations

We aim to make our own non-manufacturing operations climate neutral by 2025. This requires reducing CO_2 emissions from electricity, heating and cooling at all the research and development facilities, warehouses, offices and showrooms we own or lease. In 2023, we reduced total emissions at these facilities by 21 per cent, compared with 2022, and by 49 per cent compared with our 2018 baseline. In 2022, our efforts focused on procuring climate neutral energy. In 2023, we initiated a programme to replace natural gas consumption with heat pump installations between 2024 and 2025, which will lead to further emission reductions in the coming years.

Logistics

In 2023, our efforts to reduce CO_2 emissions from from upstream and downstream transportation started to make progress. Emissions per vehicle were 22 per cent lower than in 2022. In 2023, we continued to optimise our transport solutions. For instance, we were able to reduce use of air freight, and introduced renewable biofuels for all intercontinental container transport to Europe, China, and the US. Thereby, all containers shipped intercontinentally for inbound components and spare parts are using 100 per cent renewable biofuel, using a book & claim approach based on the amount of energy needed to transport our containers over the oceans. The fuel has International Sustainability and Carbon Certification (ISCC), contains no feedstock streams from the palm oil industry and reduces carbon emissions per container by 84 per cent, compared with conventional bunkering.

Retailer network

We continue taking action to help our retail partners reduce emissions from their operations and facilities by 50 per cent between 2018 and 2025. Despite regional differences, many retailers have made strong commitments, with local action plans for emission reductions.

Energy consumption in own operations[16,17,19]		**2023**	2022	2021
Total energy consumption[18] (direct and indirect) (MWh)	Europe	796,000	751,000	807,000
	Asia	401,000	403,000	335,000
	Americas	135,000	106,000	102,000
	Global	**1,332,000**	**1,260,000**	**1,244,000**
Energy consumption intensity* (MWh/SEKm revenue)		3.3	3.8	4.4
Energy consumption per vehicle (MWh/vehicle)	Europe	1.6	1.7	1.8
	Asia	1.3	1.5	1.7
	Americas	6.5	11.3	6.4
	Global	**1.6**	**1.8**	**1.9**
Energy consumption reduction per vehicle in own operations (%) (2018 baseline – 2.0 MWh/vehicle)		–18	–9	–2

Energy types and properties in own operations[16,19,20]	**2023**	2022	2021
Climate neutral electricity (%)	98	93	91
Climate neutral energy (i.e. including heating) (%)	74	69	65
Renewable electricity (%)	98	92	90
Renewable energy (i.e. including heating) (%)	61	56	50
On-site generation of renewable energy[21] (MWh)	53,000	49,000	27,000
Non-renewable fuel use (MWh)	336,000	341,000	359,000
Energy efficiency savings (GWh)	30	33	38
Energy efficiency savings (SEKm)	19	38	18

For further definitions and reporting principles see page 192–195.

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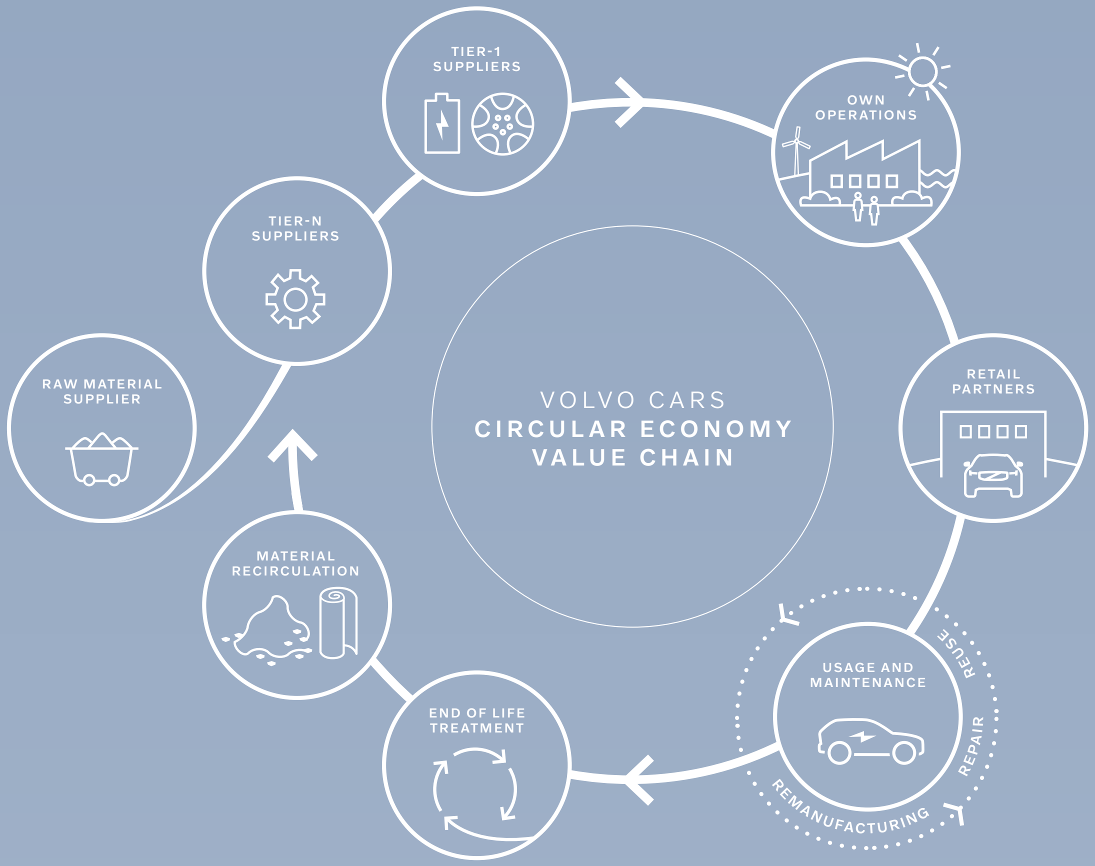
Circular Economy

Circular economy is the only known operating model we currently have to combat both the climate and biodiversity crises, while still retaining and enabling the levels of human development we need in order to fulfil the UN Sustainable Development Goals. We have developed a comprehensive set of measures and ambitions to become a circular business in 2040, with a set of milestones to be reached already in 2030.

As a vehicle manufacturer and mobility provider, we must ensure we continue to deliver the products and services our customers expect, while displacing less sustainable products on the market. We cannot do this without resources but realise that we must continue to apply the circular economy principles we have set out:

1. Minimise primary resource use by avoiding primary material and freshwater use and increasing overall efficiency.
2. Eliminate waste and pollution by preventing it, redirecting outputs to high-value circular loops, and tackling biodiversity impact.
3. Grow our circular business by generating more circular revenue to support the decoupling of revenue and primary resource use.



On route to our ambitions for 2030 and 2040, our 2025 aims are:

To generate an additional one billion SEK from circular economy initiatives (from a 2018 baseline)

- In 2023, we generated an additional SEK 508 (413) m compared to 2018 baseline, reaching a total for the year of SEK 1,893 (1,798) m
- We are identifying and implementing actions to achieve our 2025 ambitions

25 per cent recycled content in new vehicle models (values below represents an estimated average car)

- EX30 – 17%
- EX90 – 13%
- EM90 – 7%

Our new ambitions for 2030 and 2040 outline how we will measure circularity, as well as the targets we believe will drive us towards being a circular business by 2040. We acknowledge that our electrification programme, while crucial for our climate action ambitions, has an impact on biodiversity due to increased material use and specifically critical metals. As we can now quantify our impact on biodiversity, we can set ambitions to reduce biodiversity impact and restore nature where the impact is most significant. We believe it is important that we use a range of metrics to monitor our progress, as there is not one measure that effectively covers the full scope of circular business.

Advocacy is important to us. We are members of the Ellen MacArthur Foundation, through which we aim to create opportunities that accelerate the transition to a circular economy. Additionally, as members of the World Economic Forum, we participate in the circular cars initiative and programmes focusing on nature and circular industries. We also intend to update our biodiversity impact ambitions to align with The Global Biodiversity Framework and The Science Based Targets Network, when appropriate.

While we use the best available data, we acknowledge that improving data quality and transparency will increase our ability to accurately evaluate and make improvements throughout our value chain. Currently, our ambitions primarily concern our own operations. In the coming years, we will expand our scope and set ambitions for the value chain as a whole.

More information can be found in the upcoming circular economy position paper update.

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Minimise primary resource use

Avoiding primary material and freshwater use and increasing overall efficiency.

We seek to reduce the use of materials, and water throughout our value chain, as means to limit our overall environmental impact. We also aim to replace the use of primary materials and freshwater with recycled raw materials and recirculated water, where possible. In partnership and open dialogue with companies in our value chain, we seek to lessen the environmental impact their operations have. Life cycle analysis highlights that our upstream value chain stands for the majority of our environmental impacts which underlines the importance of collaborations across our value chain to tackle environmental pressures.

Steel

Iron and steel account for the largest percentage of material content in our vehicles. To mitigate the environmental impact made by use of these materials, we are securing supplies of recycled and low-carbon emission steel. In 2023, we secured supply of both SSAB Fossil-freeTM and SSAB ZeroTM steel planned for future car programmes. A pilot delivery of SSAB's Fossil-freeTM material was used to make treadplates for C40 vehicles participating in an event for EU ministers in Stockholm during the spring. We aim to use 25 per cent recycled steel in our vehicles by 2025 and have now set ambitions for 2030 to increase the amount of recycled steel. As members of Responsible Steel and SteelZero, we have advocated for change in the steel industry and released a position paper on sustainable steel in 2023, which can be found at www.volvocars.com.

Aluminium

In order to reduce our impact on the climate and biodiversity, we have set ambitions for the use of recycled aluminium (40 per cent in our new models released after 2025) and climate-neutral energy among smelters in our value chain. In 2023, we installed mega casting presses at our Torslanda facility, which increase efficiency and sustainability in our manufacturing process. During 2023 we also introduced closed-loop recycling systems for aluminium scrap at our factories in Taizhou and Chengdu, China. Along with equivalent process in place in Sweden, we help to ensure high-value recycling of our aluminium stamping waste. During the year we joined The First Movers Coalition – aluminium procurement and Aluminium forward 2030; initiatives that advocate for sustainable aluminium production.

Material value retention in vehicles (%)	2023	2022	2021
Recycled and bio-based materials[24,25]*	10	10	10
Recycled plastics and bio-based materials[24,25]*	4	4	4
Recycled steel[25]*	15	15	15
Recycled aluminium[25]*	10	10	10

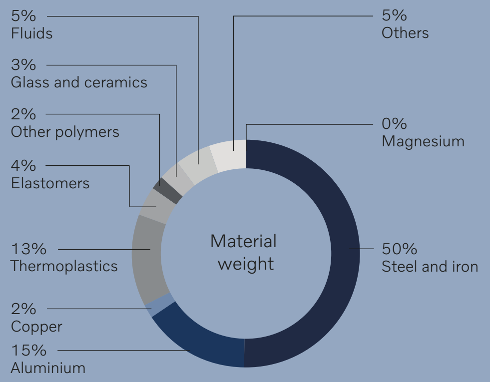
*Based on estimates. Includes Volvo car models, i.e. excluding Polestar.
For further definitions and reporting principles see page 192–195.

Recycled plastics and bio-based materials

By 2025, we aim for 25 per cent of the total plastic content in our new models to come from recycled plastics (pre- and post-consumer) and bio-based materials. In order to further reduce our use of primary resources, we are collaborating with other actors to increase the use of post-consumer plastics in our vehicles. We are an active member of the Polymer Institute in Sweden, a neutral test facility for sustainable plastics. We are also participating in multiple international research projects, like Sustainable Vehicle Interior Solutions (SVIS).

In 2023, we released position papers on sustainable plastics and chain of custody models. These can be found at www.volvocars.com.

MATERIAL BREAKDOWN PER AVERAGE VEHICLE (WEIGHT)*



*Based on emission factors per material type, weighted average of materials and sales volumes for 2023.

Material breakdown per vehicle model (kg)	XC40	V60	XC60	V90	XC90 (Plug in hybrid)	S60 (Plug in hybrid)	XC60 (Plug in hybrid)	S90L (Plug in hybrid)	XC40 (BEV)	C40 (BEV)	EX30 (BEV)	Total material in fleet (kilo tonnes)
Steel and iron	999	937	985	907	1,177	1,087	1,065	1,136	862	850	795	757
Aluminium	222	263	292	267	358	295	335	323	386	371	270	237
Copper	26	35	33	32	62	51	60	59	70	70	51	36
Magnesium	1	7	10	7	9	7	10	10	4	4	3	5
Thermoplastics	221	237	237	226	293	229	261	271	237	237	197	186
Elastomers	77	74	81	80	96	74	87	84	69	67	62	60
Other polymers	69	64	85	90	93	96	88	116	80	85	79	64
Glass and ceramics	50	55	54	49	61	53	58	55	49	55	34	41
Fluids	68	76	85	75	89	81	88	82	25	25	21	53
Others	35	37	44	41	108	76	110	87	268	268	230	82
Total	**1,768**	**1,782**	**1,904**	**1,773**	**2,345**	**2,049**	**2,162**	**2,223**	**2,048**	**2,031**	**1,743**	**1,521**

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Substances of Concern

We have more than 30 years of experience in establishing processes and requirements to eliminate Substances of Concern from our products. We started with the Volvo Cars Black and Grey list of substances, which was further developed into our Restricted Substance Management Standard that is still in place today. We are co-founders of the Global Automotive Declarable Substance List that promotes harmonisation and transparency in substance management, throughout our industry. Our approach to substance management uses the same stringent requirements, linked to hazard and risk, worldwide.

Rapid developments in the science of substance management have led us to take a proactive approach in eliminating the use of materials, in advance of future legislation. These efforts aim to be in line with EU taxonomy, and its requirements in appendix c, as well as future planning for the recirculation of materials. In 2024 we will produce a formal position paper outlining our evolving strategy on substances of concern.

Case study – recycled content in the EX30

The EX30 contains more recycled and bio-based materials than any model we have produced so far. Our 2025 ambition is to use 25 per cent recycled plastics and bio-based materials, 25 per cent recycled steel and 40 per cent recycled aluminium in our new models from 2025 and onwards. Using recycled content in new products is cross-functional work. We need to identify the right suppliers that can provide the materials, test and verify both materials and designs. 17 per cent of the plastic used in the EX30 comes from recycled and bio-based sources, while 17 per cent of its steel and 25 per cent of its aluminium is recycled material. 30 per cent of the plastic in the under-surface of the deco panels and bumpers comes from recycled sources and the upholstery uses up to 100 per cent recycled polyester.

Research into copper cabling

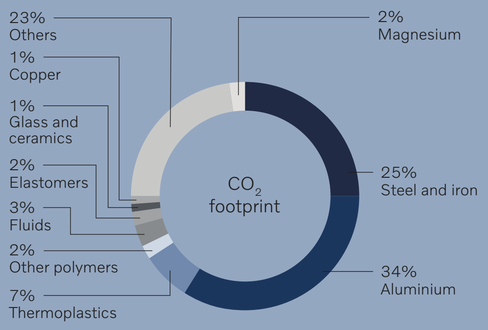
The use of copper in our vehicles makes a significant impact on biodiversity, due to the pollution caused by mining. By securing technical feasibility for an automotive cable with 100 per cent recycled copper Volvo Cars strengthen its path to carbon-neutrality and becoming a circular business. The total carbon footprint reduction of the copper is significant, 85 per cent. An essential part to reduce the carbon footprint comes from excluding the energy intensive electrorefining process. The improvement in biodiversity impact is equally high, >80 per cent.

Water management

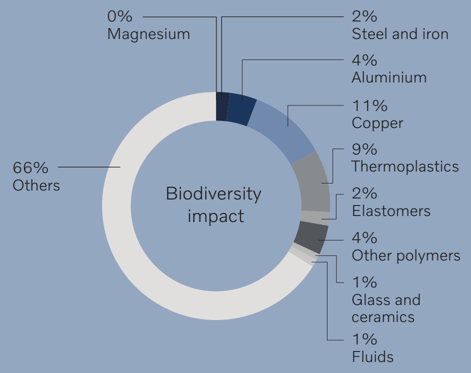
Volvo Cars' impact and dependency on water is mainly on freshwater and much less so with marine resources. The impact of our operations on marine resources comes from pollution and is about one per cent of the total impact from pollution in our value chain. We are, however, highly dependent on freshwater as a resource in the complete value chain. Approximately 0.5 per cent of total freshwater withdrawal in our value chain comes from our operations, approximately 84 per cent comes from our supply chain, particularly steel production, and the remainder from the downstream customer use phase. We became members of the ResponsibleSteel initiative in 2022, which provides a global standard and certification programme for sustainable steel production, with specific requirements for water stewardship. This is one way of tackling our upstream water withdrawal.

As part of the procurement process, we request that our suppliers reduce water withdrawals, and monitor the quality of the wastewater discharges.

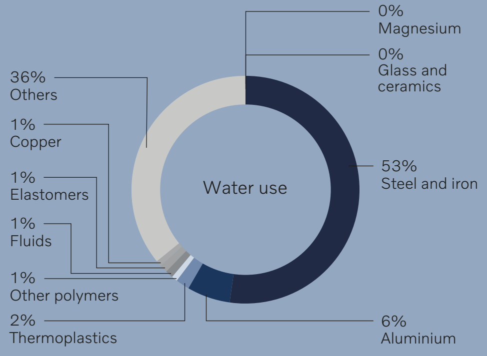
MATERIAL BREAKDOWN PER AVERAGE VEHICLE (CO_2)*



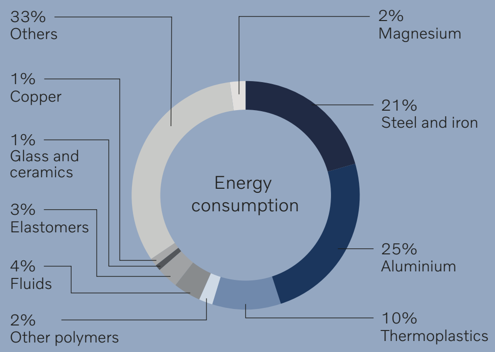
BIODIVERSITY IMPACT OF MATERIALS PER AVERAGE VEHICLE (SPECIES.YEAR)*



WATER USE OF MATERIALS PER AVERAGE VEHICLE (M^3)*



ENERGY CONSUMPTION OF MATERIALS PER AVERAGE VEHICLE (MJ)**



* Based on emission factors per material type, weighted average of materials and sales volumes for 2023. Numbers might not add up to 100 per cent due to rounding.
** Primary energy demand from renewable and non renewable resources (gross cal. value). Based on emission factors per material type, weighted average of materials and sales volumes for 2023. Numbers might not add up to 100 per cent due to rounding.

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We also request water withdrawal reporting from our retail partners. More than 70 per cent currently submit reports. We support their improvement work with guidance on water management initiatives, including rainwater harvesting, filtration, recycling, and water-saving equipment.

Manufacturing accounts for approximately 80 per cent of water consumption in our operations. Our water management work aims to reduce contamination and reuse wastewater. These efforts have led to significant achievements. Best practices are shared and evaluations are made to determine their suitability for other facilities.

In 2023, we set an ambition to reduce water withdrawal in own operations, per car, by 50 per cent by 2030 (from our 2018 baseline). By increasing leakage control, recirculation and upgrading to more efficient assets and processes, we aim to reduce water withdrawal in our manufacturing facilities, offices, logistic centres, research, development and testing facilities. In 2023, we reduced water withdrawal, per car, by 3 per cent, compared to 2022.

For more detail we refer to position paper on Water management, which can be found at www.volvocars.com.

Water		2023	2022	2021
Own operations[19] (m^3)				
Total water withdrawn* (mainly from third party)	Europe	1,012,435	848,722	876,849
	Asia	918,439	958,640	730,039
	Americas	221,259	168,336	153,682
	Total	**2,152,133**	**1,975,698**	**1,760,570**
Total water withdrawn per manufactured car[17]* (m^3/vehicle)	Average	2,70	2,80	2,72
Total water discharge[23]	Europe	550,395	541,735	—
	Asia	575,038	596,794	—
	Americas	152,026	118,323	—
	Total	**1,277,459**	**1,256,852**	**—**
Total water consumption**	Europe	462,040	306,987	—
	Asia	343,401	361,846	—
	Americas	69,233	50,013	—
	Total	**874,674**	**718,846**	**—**
Water withdrawal reduction per vehicle in own operations[17] (Baseline 2018 – 3.5 m^3/vehicle), %		–23	–20	–22
Water consumption and withdrawal in water-stressed areas (own operations)[22]*				
Megaliters of water withdrawn in areas with high or extremely high baseline water stress		489	523	614
Share of water withdrawn in areas with high or extremely high baseline water stress, %		23	26	35
Megaliters of water consumed in areas with high or extremely high baseline water stress		117	137	—
Share of water consumed in areas with high or extremely high baseline water stress, %		13	19	—

*Water withdrawn was called water used in previous reports
**Water consumption = Water withdrawal-water discharge
For further definitions and reporting principles see page 192–195.

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Eliminate waste and pollution

Preventing waste, redirecting outputs to high-value circular loops, and tackling biodiversity impact.

We strive to eliminate waste and pollution in resource use and processing throughout our value chain. While we aim to minimise waste and pollution in our operations, the highest proportion is generated by mining and refining processes in our supply chain. In our assessment of biodiversity we recognise pollution as a high priority and we continue to improve our knowledge base in this area.

Waste

Our long-term ambition is to eliminate waste across our value chain. In 2023, we set an ambition to send more than 99 per cent of all waste from our operations to recycling or reuse operations by 2030 and limit waste sent for incineration or landfill to less than 1 per cent, e.g. hazardous waste. In pursuit of this aim, we are expanding our use of open and closed-loop recycling, planning and implementing waste management processes, reducing packaging and improving material sorting.

In 2023, manufacturing generated 97 per cent of the total waste in our operations; manufacturing, offices, logistic centres and engineering facilities. The largest waste stream is metals, which is all recycled. We are focusing efforts to avoid downgrading and instead retain the quality and value of metals and other wasted material.

81 per cent of our directly contracted suppliers, who have completed our Environmental Assessment, are complying with our request to set ambitions for waste reduction, an important part of our waste elimination ambition.

Waste (tonnes)		2023	2022	2021
Own operations[19]				
Hazardous waste	Europe	11,465	9,060	9,513
	Asia	1,315	2,000	1,400
	Americas	13	30	15
	Total	**12,793**	**11,090**	**10,928**
Non-hazardous waste	Europe	237,531	197,134	229,808
	Asia	60,062	56,249	49,699
	Americas	6,085	5,734	5,612
	Total	**303,678**	**259,118**	**285,119**
whereof metal	Europe	*179,630*	*102,320*	*136,259*
	Asia	*31,469*	*86,031*	*70,034*
	Americas	*446*	*3,204*	*5,004*
	Total	***211,545***	***191,555***	***211,297***
Total waste (excluding reuse)	Europe	248,996	206,194	239,321
	Asia	61,377	58,249	51,099
	Americas	6,098	5,764	5,627
	Total	**316,471**	**270,208**	**296,047**
Total waste per manufactured vehicle[17]*, kg/vehicle		397	383	457
Recirculation rate (including reuse, byproducts and recycling)**, %		92	—	—
Closed-loop returns of aluminium***, %		86	72	79
Waste to recycling, %		89	93	94
Waste to landfill, %		6	1	1
Waste to incineration, %		5	5	5
Supply chain				
Directly contracted suppliers' sites with a waste reduction target		1,327	1,151	—
Directly contracted suppliers' sites with a waste reduction target, %		81	79	—

*In 2023, we observed an increase in total waste per manufactured vehicle. This rise is attributed to a significant increase in non-production related waste, largely due to excavation activities undertaken at several manufacturing sites.
**KPI of recirculation rate includes reuse, closed and open loops (i.e., reuse, byproducts and recycled waste), included in both to the nominator and denominator.
***All aluminium sheet scrap is recycled with retained material value, 86% in closed loops.
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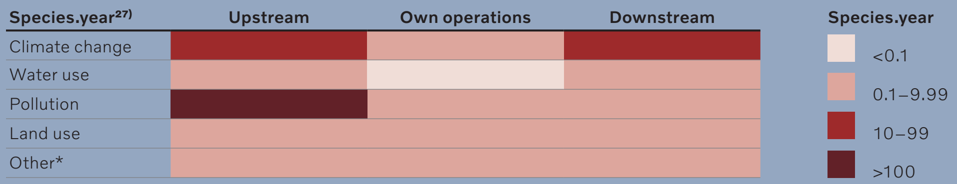
Biodiversity and nature

We recognise that our operations have a negative impact on nature and biodiversity. We aim to be net positive across our value chain and contribute towards a Nature Positive future[26].

676 hectares of the manufacturing and non-manufacturing sites we own or lease are in or adjacent to Key Biodiversity Areas, which represent 25 per cent of the total area we occupy. We have set up an analysis framework to assess the impact on biodiversity of our value chain (using ReCiPe model), in collaboration with external experts. We aim to update these assessments annually and continuously revise the metrics we use in order to continuously improve the assessment of impact and progress. The 2023 assessment, performed on data from 2022, resulted in a somewhat lower impact than the previous year. This was mainly due to the fact that fewer vehicles were put on the market. The main pressures we put on biodiversity are: pollution, water use, land use and climate change.



Relative biodiversity impact on species and ecosystems from Volvo Cars' full value chain 2022.
*Includes photochemical ozone formation.
For further definitions and reporting principles see page 192–195.

Biodiversity – Land use and ecological sensitivity	2023	2022	2021
Sites in or adjacent to KBA[28]* (location of adjacent sites)	30	21	20
Hectares in or adjacent to KBA[28]*	676	497	564
Share of hectares in or adjacent to KBA[28]* (%)	25	18	20
Estimated impact on biodiversity from Volvo Cars' value chain[29] (range of units of species.year)	151–501	171–547	–

*During 2023, we have improved our methodology of determining the number of sites in or in adjacent to KBA (using 5km distance). These changes have also been applied to historical data to ensure comparability over time, which means that we have added a few sites to the 2021 data, as well as refined the total land area for all years.
For further definitions and reporting principles see page 192–195.

80 per cent of our impact on biodiversity and ecosystems occurs in our material supply chain, approximately one per cent caused in our operations and the remainder in the use of our products. Our assessment highlights the need to reduce our consumption of primary materials and increase recycled content in our vehicles. We also focus on the impact of critical parts of our supply chain – in steel, battery and electronics production. An assessment of electronics production has resulted in more knowledge of the critical elements and processes for the main impact areas; pollution and climate.

Impact assessment is expressed in a range of 'species.year'. The lower value excludes ecotoxicity, which is the effect of chemical pollutants, and the higher value includes it. This is due to the relatively high uncertainty of underlying ecotoxicity data.

Longer term, Volvo Cars strives to be Net Positive across our value chain and to contribute to a Nature Positive future. We aim to minimise our impact on biodiversity by implementing for example circular economy initiatives for high-impact materials, such as steel, aluminium, copper and battery contents, and by working with our suppliers in reducing their impact. We are establishing programmes to reduce impacts in climate, pollution, land use and water use and implementing ecosystem protection and restoration activities. At our Torslanda facility in Sweden, we are investigating restorative action in the adjacent key biodiversity area and applying biodiversity net gain principles at our planned site in Košice, Slovakia.

Electronics

On average, our vehicles contain seven kilos of electronic components. In 2023, we mapped the raw material composition of electronic components and switchboards in our current models. We also conducted a pilot scheme to recover raw materials by an extraction process called bio leaching. Recovering electronics from end-of-life vehicles remains challenging and we welcome the EU ELV directive that will address the issue. We aim to combine vital electronic systems, which will reduce the amount of components, cabling and housings. The Volvo EX90 has a reduced number of buttons and switch packs and a core computer that centralises heavy computation functions.

Grow circular business

Generating more circular revenue to support the decoupling of revenue and primary resource use.

To be a circular business we know it means maximising new value pools and cost saving, both which help be a more profitable and resilient company. We have a 2025 ambition on circular revenue which we have reported progress on this year for the first time.

Circular Revenue

While the circular economy is beneficial to both climate and biodiversity, it also plays an important role of generating revenue. By implementing circular initiatives, we aim to generate an additional one billion SEK by 2025 in revenue from a 2018 baseline and this year we released our progress towards that ambition. We are seeking to raise revenue, primarily, by increasing reuse and recycling in our waste streams, remanufacturing components and our car sharing business Volvo On Demand. We have made positive steps but we still have work to do to achieve the 2025 ambition.

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Circular Business and Packaging – Repurposing single-use packing material

Wooden pallets and other packing materials arriving at our Torslanda and Ghent facilities, which previously were sorted as waste, are now sorted and shipped to our central distribution centre in Gothenburg and reused for global distribution of spare parts. This scheme, when fully implemented, will avoid approximately 180,000 pallets and packing material becoming waste products per year.

This solution was made possible thanks to a change in packaging footprint for spare part distribution. Thereby, not only transport costs and CO_2 emissions could be lowered by improving the fill rate of containers used for spare part distribution. It also allowed several expendable packaging solutions that previously ended up in the production plants now can be used one more time. Reuse of expendable packaging started in 2023 and during the year more than 1,200 tonnes of packaging material has been reused in the spare part distribution network instead ending up as waste in the production facilities.

Circular Parts and Materials

We recover electronic, and mechanical components, as well as batteries, and remanufacture or reuse them in our service operations. Batteries, electronics, and mechanical equipment, such as motors, recovered from service and damaged cars are high-value components and an increasingly important source for exchange parts in our service operations.

Circular parts

The Volvo Cars Exchange System collects, remanufactures, and replaces parts at our partners' workshops. The components we collect are reused, wherever possible, or recycled. We intend to increase this part of our service business in order to support our environmental and financial ambitions. Remanufacturing reduces the consumption of raw materials by as much as 85 per cent and energy consumption by up to 80 per cent, in comparison with the production of new components.

We are currently piloting a programme to harvest parts from end-of-life vehicles, and crashed cars/write offs, in order to recirculate their components in our service operations and reduce consumption of raw materials.

High Voltage Battery value retention

As part of our circular strategy for HV batteries, we have established regional battery centres in the EU, US and China and expanding this network in Asia-Pacific and Latin America, to support worldwide capability for repairing, refurbishing, and remanufacturing of batteries. The purpose of our battery centres is to ensure that repairable HV batteries coming from vehicles that needed a battery-exchange, are recovered and brought back into a circular flow. Inside the battery centres these batteries get refurbished and brought back into our cars as service- and replacement-parts. By this we can offer cost-efficient and sustainable replacement batteries for vehicles that might otherwise be economically lost due to battery-damage.

Securing battery health and extended life is a key component in the transition towards selling 100 per cent battery electrical vehicles as from 2030. Many factors apart from mileage affect the battery life span. A key initiative has been to initiate monitoring of batteries remotely to enable us to offer our customers an efficient service experience and maximise the battery life span.

HV batteries that are no longer repairable or suitable for any other application, are guided into a Volvo Cars designed recycling process, respecting high sustainability and safety standards, which recovers most of the raw material for reuse in the production of new HV batteries. Volvo Cars provides collection service of End-of-life High-Voltage Batteries through our global battery disposal website.

Material productivity

We believe that circular economies drive the decoupling of revenue and primary material use. We calculate this by dividing revenue generated by primary materials as a means of assessing their productivity.

Pushing for decoupling will require changing the products and services we offer and the way we generate revenue throughout their lifecycles. While we believe this to be a significant challenge, we see it as a fundamental part of being a circular business. We aim to achieve this by:

- Decreasing the use of primary materials by reducing vehicle weight and increased use of recycled materials
- Finding low-resource intensive revenue across the lifecycle of our vehicles
- Evaluating alternative resource flows for end-of-life vehicles

Material efficiency

The World Economic Forum and The Circular Cars Initiative highlight the relationship between primary resources used and the use of the products on the market. As members of both organisations, we seek to support more sustainable consumption patterns and rethink product lifecycles. In 2024, we will work on our approach towards resource efficiency, based on the recommendations of The Circular Cars Initiative – although our definition of resource efficiency considers a broader range of utility – and aim to deliver greater utility with less materials.

Component value retention	2023	2022	2021
Aluminium saved due to remanufacturing, tonnes	145	155	132
Copper saved due to remanufacturing, tonnes	5	7	10
Steel saved due to remanufacturing, tonnes	265	284	260
Total material saved due to remanufacturing (weight of parts), tonnes	553	509	457
CO_2 saved from reuse of aluminium, steel and copper, tonnes	4,508	4,857	4,222
Number of remanufactured parts	29,615	33,133	37,567
Number of batteries collected for repair, reuse, repurpose and recycle*	14,448	—	—
whereof number of batteries collected for recycling	*8,968*	—	—
Parts and components being recycled, tonnes	1,907	1,055	—

*Battery number in this report refers to complete high voltage battery pack (one per vehicle) and is not directly comparable to the numbers reported in previous annual report hence, 2022 and 2021 have been excluded due to the methodological change, preventing a reliable comparison with historical data.

Vehicle utilisation	2023	2022	2021
Average number of kilometres driven per vehicle – owned/leased vehicles[30]	16,614	18,145	17,570
Average number of kilometres driven per vehicle – Volvo on demand vehicles	24,852	25,110	21,027
Average number of passengers per vehicle and kilometre – owned/leased vehicles[31]	1.82	1.84	1.87

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1,500 DAYS MILESTONE

Volvo Car Manufacturing Malaysia proudly celebrated a remarkable milestone on September 1, by achieving 1,500 days with zero lost time case rate (LTCR). This marks a significant milestone of a focused safety approach based on the unified effort of our employees onsite.

Responsible business

Ensure employee wellbeing

Building a supportive, people-centric culture is at the core of how we operate. We care about our people just as much as we do for the environment and the wider community. We aim to be an employer of choice for people who want to make a difference. Volvo Cars is committed to nurturing an environment where ideas can be freely expressed, creativity can flourish and employees can contribute to our shared purpose and future. Every person should have the freedom to be who they are – echoing our purpose of freedom to move in a personal, sustainable and safe way.

We would like our people to be proud ambassadors, who are inspired to make an impact. Therefore, we are determined to focus on people experience in everything we do. Feedback is the cornerstone of our commitment to continuous improvement and enhancing overall employee experience. In 2023, we used the results of our May 2023 full engagement survey, conducted through the Glint platform, to drive ongoing improvements. Our survey yielded a 78 per cent response rate, surpassing the benchmark by three points. Furthermore, our engagement score reached 76, exceeding the benchmark by one point. Additionally, we measured work-life balance, achieving two points above the benchmark.

As an employer of approximately 44,600 people, we have a major impact on the health, safety, workplace experience and development of our employees and actively pursue fair employment conditions.

Total FTE by employees and supervised workers as per December 31	**2023**	2022	2021
Employees	42,438	44,559	43,069
Supervised workers (consultants)	3,547	3,881	4,017
Total	45,985	48,440	47,086

Total workforce* by employees and supervised workers as per December 31	**2023**	2022	2021
Employees	44,589	46,345	—
Blue collar	25,359	27,502	—
White collar	19,230	18,843	—
Supervised workers (consultants)**	11,602	11,123	—
Total	56,191	57,468	—

*Head count summary.
**The most common type of worker (non-employee) is white collar consultants working within Engineering. This year we are including all Consultant workers not only FTE's. Change for 2022 is 11,123 instead of 3,986.

Total number of employees*[39] by employment contract and gender as per December 31 (absolute number and %)	**2023**	2022	2021
Women	11,732 (26)	11,346 (24)	—
Permanent contract	10,794 (26)	10,391 (24)	—
Temporary contract	938 (32)	955 (27)	—
Non-guaranteed hours employees	—	—	—
Full-time employees	10,277 (25)	10,114 (24)	—
Part-time employees	1,455 (36)	1,232 (34)	—
Men	32,857 (74)	34,999 (76)	—
Permanent contract	30,890 (74)	32,450 (76)	—
Temporary contract	1,967 (68)	2,549 (73)	—
Non-guaranteed hours employees	—	—	—
Full-time employees	30,220 (75)	32,616 (76)	—
Part-time employees	2,637 (64)	2,383 (66)	—

*Head count summary.
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People Policy

Our People Policy defines our values and expectations concerning human rights, non-discrimination, equal opportunities, child labour, forced labour, freedom of association, collective bargaining, health, safety, remuneration and working hours. Our principles on employee wellbeing, diversity and inclusion guide our efforts to safeguard vulnerable groups, regardless of gender, age, ability, sexual orientation, social group, ethnicity, political beliefs, culture, or religious background. The values of our People Policy form the basis for negotiations with unions and work councils, as well as dialogue with our employees.

Our People Policy aims to ensure that we uphold labour rights in our operations and are legally and ethically compliant throughout our value chain. These ambitions are reflected in our human rights initiatives, which include risk based activities to detect and manage risks in our operations and value chain. These measures will be carried out to meet upcoming regulations, such as the European Union's Corporate Sustainability Reporting Directive (CSRD) and Corporate Sustainability Due Diligence Directive (CSDDD). Following the due diligence initiative from 2021, we have continued to work according to the guidance of the new standards and further expand our People Policy and human rights due diligence activities. Link to Volvo Cars approach to safeguard human rights" with subtitle "Due Diligence Programme.

To ensure our People Policy is compliant with legislation, we review our operations regularly, covering all aspects of human rights, including child and forced labour. In 2023, we trained our indirect procurement organisation in the prevention of human rights risks related to our planned new production facility in Košice, Slovakia. A legal rider was also added to procurement contracts that further clarifies due diligence and the obligations of the UN guiding principles. We also performed an assessment of our Polish tech hub in Kraków, regarding gender equality and inclusion, actions will be monitored by the tech hub management.

Total number of employees by region as per December 31, 2023 (absolute)	Europe	Asia	Americas	Total
Employees	31,224	10,426	2,939	44,589
Permanent employees (permanent contract)	29,108	9,743	2,833	41,684
Temporary employees (temporary contract)	2,116	683	106	2,905
Non-guaranteed hours employees	—	—	—	—
Full-time employees	27,338	10,262	2,897	40,497
Part-time employees	3,886	164	42	4,092

Breakdown of permanent contract employees by gender and age group as per December 31, 2023 (%)	Board Members[40]		Executive Management Team		Senior Leaders[32]		Leaders[33]		All other White collar employees		Blue collar employees	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
<25	—	—	—	—	—	—	0	0	1	1	12	4
25–29	—	—	—	—	—	—	2	1	5	4	14	5
30–34	—	—	—	—	1	—	8	4	12	7	14	4
35–39	—	—	—	—	3	2	13	5	13	6	9	2
40–44	—	—	—	—	8	5	14	7	9	5	6	2
45–49	7	7	29	29	15	10	11	6	7	4	5	1
50–54	7	20	—	—	21	7	11	4	8	3	7	1
55–59	20	0	29	14	14	5	8	3	7	3	7	2
60–65	20	13	—	—	9	1	3	1	4	1	4	1
>65	7	0	—	—	0	—	0	—	0	0	0	0
Total share	**60**	**40**	**57**	**43**	**70**	**30**	**69**	**31**	**67**	**33**	**79**	**21**

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New employee hires and employee turnover (absolute and %)*	2023	2022	2021
Internal transfers[41]	1,080	1,360	—
New employee hires	3,351	6,782	5,875
Gender			
Women	1,253 (37)	1,341 (20)	1,299 (22)
Men	2,098 (63)	5,441 (80)	4,576 (78)
Age group			
<30 years old	1,274 (38)	3,270 (48)	2,553 (43)
30–50 years old	1,887 (56)	3,254 (48)	3,070 (53)
>50 years old	190 (6)	258 (4)	252 (4)
Region			
Europe	1,301 (39)	2,177 (32)	2,410 (41)
Asia	800 (24)	3,922 (58)	3,043 (52)
Americas	1,250 (37)	684 (10)	422 (7)
Employee turnover**	5,972 (14)	5,098 (12)	3,861 (10)
Gender			
Women	1,113 (10)	1,040 (10)	896 (10)
Men	4,859 (15)	4,058 (12)	2,965 (10)
Age group			
<30 years old	2,437 (28)	2,010 (21)	1,083 (16)
30–50 years old	2,544 (11)	2,271 (10)	1,786 (9)
>50 years old	991 (9)	816 (8)	992 (9)
Region			
Europe	2,476 (9)	2,304 (8)	2,042 (7)
Asia	2,832 (26)	2,402 (22)	1,537 (18)
Americas	664 (25)	392 (18)	282 (15)

*Permanent employees only.
**Number of employees leaving divided by average head count.

Inclusion (%)	2023	2022	2021
Women in Senior Leadership[32]	30.1	29.6	—
Women in leading positions[33]	30.2	29.2	29.0
Women in external recruitment and internal promotion for leading positions	33.0	31.0	32.0

Inclusion and belonging

We are dedicated to foster a diverse and inclusive culture in which individuals are encouraged to express their authentic selves and freely share ideas, the “freedom to be”. We are a global organisation with 131 nationalities. In 2023, we updated our goals for gender equality in senior leadership. By 2030, we aim to have women in 34 per cent of our senior leadership positions[32]. There has been a positive development of gender diversity in new recruited employees, with an increase of women from 20 per cent in 2022 to 37 per cent this year.

An inclusive culture will bring greater diversity to our people, therefore, we have in 2023 implemented an Inclusion index that measures inclusion and belonging, based on questions in our employee survey on Respectful treatment and Speaking my mind.

We are committed to equality in recruitment, compensation, training, development, retention, and career advancement, which is reflected in inclusive leadership training, mentorship programmes, and targeted development plans.

In 2024, we will enhance our training programmes by introducing inclusive hiring practices and cultural intelligence.

Learning and development

In 2023, we invested in a digital learning ecosystem to improve training, achieve our ambitions and to enable employee continuous development. We prioritise upskilling and reskilling programmes in software development, sustainability, electrification, cyber security, and online sales. During 2023, 72 per cent of our employees globally have completed career or skills-related learnings in our different learning systems.

An executive leadership programme was introduced to improve managerial capabilities, especially in relation to the company’s transformation objectives. A global sustainability programme was introduced to underscore the company’s commitment to both its employees and the environment.

In our performance process, called Continuous Dialogues, employees have quarterly conversations with their managers to review performance, progress of priorities, development, learning and wellbeing. Feedback is encouraged to take place anywhere and between anyone (360 perspective), not just between manager and employee, to spur a high-performing culture. Therefore, all employees are encouraged to have feedback conversations and 1-on-1 dialogues

Learning & Development Indicators	2023	2022	2021
Training provided, average hours per FTE[37]	27	20	25
White collars	26	25	30
Blue collars	28	16	21
Training and development, average expenditures per FTE (SEK)	1,747	1,378	1,307
Employees entitled to regular performance and career development reviews[38] (%)	100	100	—
Women	100	100	—
Men	100	100	—
Blue collars	100	100	—
White collars	100	100	—

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Accidents, ill-health and sick leave	2023	2022	2021
Accidents			
Total number of Lost Time Injuries reported – employees	21	22	17
Injury rate (LTCR)* – employees	0.06	0.07	0.06
Total number of Lost Time Injuries reported – supervised worker (consultants)	2	2	—
Injury rate (LTCR)* – supervised worker (consultants)	0.06	0.05	0.05
High-consequence work-related injuries (excluding fatalities)	1	1	—
Rate of high-consequence work-related injuries (excluding fatalities)	0.003	0.003	—
Fatalities[42] as a result of work related injury	0	0	0
Rate of fatalities as a result of work-related injury	0	0	0
Number of hours worked (LTCR) – employees	66,441,342	65,064,659	56,986,946
Number of hours worked (LTCR) – supervised worker (consultants)	7,094,000	7,972,000	7,351,333
Main type of work related injury and number of cases (fall in the same level – stumble) – employees	3	6	9
Main type of work related injury and number of cases – supervised worker (consultants)	—	—	—
Ill-health[43]			
Total number of work related ill-health reported – employees	13	12	—
Total number of work related ill-health reported – supervised worker (consultants)	2	0	—
Fatalities[42] as a result of work related ill-health	0	0	—
Main type work related ill-health (Muscular skeletal and connective tissue-related disorders) and number of cases – employees	11	6	—
Main type work related ill-health (Muscular skeletal and connective tissue-related disorders) and number of cases – supervised worker (consultants)	2	—	—
Sick leave			
Sick leave – employees** (%)	3.9	4.4	4.6

*Injury rate (LTCR) is defined as the number of work and occupational accidents reported with at least one day sick leave, divided by hours worked and multiplied by 200,000. Supervised worker (consultants) include consultants and agencies working under our supervision.
**Figures for employees in Sweden only.

Workers covered by an occupational health and safety (OHS) management system (absolute and %)	2023	2022	2021
Employees covered by OHS management system	44,589 (100)	46,345 (100)	—
Supervised workers (consultants) covered by OHS management system**	11,602 (100)	11,123 (100)	—
Employees covered by OHS management system that has been audited	44,589 (100)	46,345 (100)	—
Supervised workers (consultants) covered by OHS management system that has been audited**	11,602 (100)	11,123 (100)	—
Employees covered by OHS management system that has been certified by a external party*	9,412	11,120	—
Supervised workers (consultants) covered by OHS management system that has been certified by an external party*	38	61	—

*China is covered to 100 per cent, no other regions are certified.
**All consultants workers not only FTEs. Change for 2022 is 11,123 instead of 3,986.
For further definitions and reporting principles see page 192–195.

with their managers and colleagues as part of daily work to drive performance, learning, growth, and inclusion. Creating learning and development pathways are also an essential part of driving performance and growth, read more on page 24.

Safety and wellbeing

Our People Mission and People Policy promote health and wellbeing throughout the company. Our occupational health and safety management system sets standards for all our employees and contractors. A health and safety training programme is provided for all employees and supervised contractors, customised for their work tasks. In 2023 we launched our wellbeing strategy to support physical, social, and mental wellbeing for all our employees.

In all of our locations globally we conduct frequent health and safety risk assessments and preventative actions to avoid accidents and ill-health. These assessments are overseen in formal health and safety committees comprised by management and employee representatives, representing 100 per cent of our workforce. We also share best practices and recognise individuals and teams for their positive contributions. In 2023, we reached a milestone by identifying and eliminating more than 500,000 safety risks, over ten years, and achieving our lowest case of workplace injuries.

Our work environment committees, including employee representatives, conduct regular safety walks and inspections. We encourage all employees to identify and report risks, which are logged in our risk management system and addressed.

We aim to improve the psychosocial work environment by conducting campaigns and stress surveys, offering health-promoting benefits and checks, as well as ergonomic tools. We have implemented a scheme in Sweden and Belgium to identify stress-related illness and offer support from our Occupational Health Service. While the scheme covers approximately 50 per cent of our total workforce, we aim to expand coverage in 2024.

Our health and safety training programme is for all employees and supervised contractors. All external contractors in high-risk areas, such as construction workers and machine builders, are required to undergo our Contractor Safety programme.

In 2024, we will organise training in safety issues connected with technology in all-electric vehicles and the operation of new production sites. We will continue to improve our wellbeing and safety activities, stress prevention programme, workplace ergonomics and strive to reduce our use of hazardous chemicals.

Labour rights

We aim to lead our industry in upholding labour rights in our value chain. We believe that dialogue with our employees about working conditions creates value and contributes to the development of the company. In 2023, a large part of our workforce (71 per cent) was covered by collective labour agreements.

Labour rights	2023	2022	2021
Total number of reported cases of discrimination or harassment*	43	52	54
Incident reviewed by the organisation	43	52	—
Remediation plans that have been implemented, with results reviewed through routine internal management review processes	13	43	—
Incident no longer subject to action	43	52	—
Coverage of collective labour agreements (%)	71	67	70

*In 2023, there were 17 discrimination cases, 26 harassment cases and 25 reported cases turned out to be neither harassment nor discrimination after review. Remediation plans for 2023 have been calculated based on performed actions while 2022 we measured overall processes.

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We treat all our employees on equal terms, regardless of their union membership. Our People Policy ensures fair working conditions and terms of employment for all our staff and on-site contractors, including 24 consecutive hours rest per week as a minimum requirement.

We take a zero-tolerance stance on harassment and discrimination, which is pursued through our directive against discrimination, harassment, and bullying, with mandatory training on detection and taking appropriate action. In 2023, all discrimination, harassment, and bullying cases raised were investigated, where substance were found corrective and supportive action was taken. Our independent whistle-blower hotline is an important grievance channel, as defined in our discrimination, harassment, and bullying directive. All employees also participated in a training course on grievance reporting.

Working conditions are assessed in our people engagement survey, with follow-up actions being undertaken by management.

Fair compensation

Our global pay philosophy, principles and policy ensures implementation of fair and equitable pay for our employees. We aim for a living wage standard according to our People Policy and continuously analyse pay equity and wage levels, compared with minimum wages.

In 2023, we analysed global pay equity focusing on our main sites in Sweden, US, Belgium (Ghent), and China (Chengdu). We found an average base pay gap of 3.4 per cent, varying by location and job type, but within the five per cent limit set by the EU transparency directive. The largest gap is in the US among blue collar workers, mainly due to more men in higher-paying roles like technicians and operators. Additionally, we analysed total cash compensation that includes all cash items paid to active employees at these sites. The gender pay gap is 4.8 per cent for white collar and 6.4 per cent for blue collar. This is a result of night shift pay, overtime, tenure and type of roles. We will further investigate these gaps and take appropriate actions.

Our People Committee oversees and approves and/or prepares all remuneration issues for the Executive Management Team, including but not limited to, our Remuneration Guidelines. Some remuneration matters, such as the Remuneration Guidelines and share-based incentive schemes, are also subject to approval by the Board of Directors and the Annual General Meeting.

An independent advisor shares relevant industry benchmarks with the People Committee and recommends action. In advance of our Annual General Meeting, the People Committee prepares guidelines, share-based incentives solutions and other approvals, in alignment with major shareholder groups. Minutes from the Annual General Meeting, are published on the Investor Relations homepage.

All employees, regardless of their role, are important to us and contribute to our success. Volvo Cars' Pension & Insurance Principles ensure that all employees are insured against disability, death in service and business travel. Our Family Bond policy allows all employees, regardless of gender, to take up to 24 weeks of parental leave at 80 per cent of their base salary.

Our Employee Share Matching Programme is an annual programme (that requires yearly AGM approval). The programme is offered to employees throughout Volvo Car Group, as applicable in the respective country, and provides the opportunity to invest up to SEK 10,000 in Volvo Cars' shares. The number of shares invested at the start of the programme will be matched by Volvo Car Group after two years. We also offer company cars as benefit to permanent employees.

Parental Leave*	2023	2022	2021
Total number of entitled employees** (%)	100	100	—
Women	100	100	—
Men	100	100	—
Total number of employees that took parental leave (absolute)	6,164	5,827	—
Women	1,850	1,728	—
Men	4,314	4,099	—

*Parental leave (regardless of duration of absence) is based on 2022 Q4–2023 Q3 reporting period.
**Our family Bond policy applies to all active permanent employees who have been employed by Volvo Cars for one year or more, if parental leave is not covered by social insurance.

Wage level (ratio)		2023	2022	2021
Entry wage level compared to agreement[34]	Belgium	1.16	1.15	1.14
	China	2.48	2.38	2.71
	Sweden	1.31	1.17	1.17
	United States	2.55	2.55	2.55
Men – entry wage level compared to agreement[34]	Belgium	1.16	1.15	—
	China	2.48	2.38	—
	Sweden	1.31	1.17	—
	United States	2.55	2.55	—
Women – entry wage level compared to agreement[34]	Belgium	1.16	1.15	—
	China	2.48	2.38	—
	Sweden	1.31	1.17	—
	United States	2.55	2.55	—
Wage level CEO (highest paid) comparison[35]		67 to 1	102 to 1	98 to 1
Total Cash Compensation increase CEO (highest paid) comparison[36] (%)		—	2.5 to 1	—

Pay equity – Gap between women's and men's average base pay[44] (%)		2023	2022	2021
White collar employees	Belgium – Ghent	2.1	–2.0	—
	China – Chengdu	–2.2	–1.6	—
	Sweden – Total	–1.2	–2.3	—
	United States – Total	–5.1	–5.7	—
Blue collar employees	Belgium – Ghent	–5.4	–5.7	—
	China – Chengdu	–5.6	–6.3	—
	Sweden – Total	–2.1	–1.2	—
	United States – Total	–8.9	–6.7	—

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Safeguard human rights

International commitments

Human rights compliance plays a vital role in our aim to protect and improve people's lives in our value chain and wider society. We are proud to be founding members of the UN Global Compact and have endeavoured to observe its Ten Principles. In addition, we have included the ambition of the following international norms and guidelines into our Code of Conduct and Code of Conduct for Business Partners (see page 166):

- The International Bill of Human Rights
- UN Convention on the Rights of the Child
- The eight core conventions of the UN's International Labour Organisation (ILO) – Child Labour (138 and 182), Forced Labour and Compulsory Labour (29 and 105), Equal Remuneration and Discrimination (100 and 111) and Freedom of Association and Collective Bargaining (87 and 98)
- UN Guiding Principles on Business and Human Rights
- OECD Guidelines for Multinational Enterprises
- OECD Due Diligence Guidance for Responsible Business Conduct
- OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas

Several of these international guidelines form the basis of current and future legislative requirements for human rights due diligence, including the Modern Slavery Acts in Australia and the UK, the Transparency Act in Norway, Canada's Bill S-211, the EU Taxonomy Minimum Safeguards criteria and the upcoming EU Corporate Sustainability Due Diligence Directive. We support these developments and recognise the increasing demand for legislation from other stakeholders and society as a whole. Our annual progress reports on compliance with global and national legislation can be found in this sustainability report and our global or national websites. In addition, our UN Global Compact Communication of Progress report is published on the UNGC website.

Human rights risk assessment and due diligence procedures

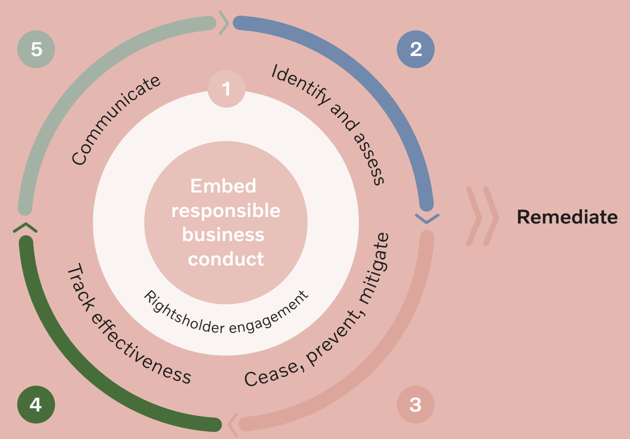
We take a risk-based approach and prioritise potential Salient Human Rights Issues (SHRIs). We have identified our five most severe potential SHRIs in our value chain, based on methodologies described in international guidelines:

- Impacts on people's right to clean, healthy and sustainable environments
- Impacts on people's right to health and safety
- Slavery (including forced labour)
- Child labour
- Threat or occurrence of abuse or violence

It is important to note there are several other potential human rights impacts in Volvo Cars' value chain. We expect our employees and business partners to respect all human rights, as defined in our Code of Conduct, People Policy and Code of Conduct for Business Partners.

In 2023, we conducted a risk analysis of the five salient human rights issues we identified, in order to identify people at risk in our value chain. Using global risk indices, previous due diligence results and consultation with human rights experts and rights holders, we identified high-risk countries and activities, and corresponding locations where people may be at higher risk. Based on the result, we developed a value chain due diligence plan for 2024 that aims to prevent, mitigate, cease, and remedy potential or actual SHRIs in our operations and value chain, using existing and newly-identified due diligence activities. These include expanded supply chain due diligence, people policy assessments in our operations and initiating human rights due diligence processes for retailers and importers. We will issue human rights due diligence progress statements in our annual reporting and required national statements. During 2023 we have also initiated a human rights compliance function within the Compliance and Ethics Office, read more on page 167. Read about our remediation of Code of Conduct violations on page 170. Above you will find a schematic overview of the general steps of Volvo Cars human rights due diligence process.

SCHEMATIC OVERVIEW OF VOLVO CARS ENHANCED DUE DILIGENCE PROCEDURES



The figure illustrates the general steps of Volvo Cars human rights due diligence process:

- Embed responsible business conduct into policies, contracts, and management systems.
- Identify and assess adverse impacts that we may cause, contribute to or which are directly linked to our operations, products, or services by our business relationships.
- Cease, prevent or mitigate potential and actual impact and provide for or cooperate in remediation when appropriate.
- Track effectiveness of due diligence processes and measures.
- Communicate how identified potential and actual impacts are addressed.

Meaningful engagement with rightsholders, as well as other relevant stakeholders, is essential to ensure a rightsholder perspective throughout every step of the process.

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Source responsibly

Our suppliers

We have a complex and diverse supply chain involving many companies and people across the world. In 2023, we purchased goods and services to the value of SEK 309 bn from approximately 11,371 directly-contracted suppliers. Of these, 10,452 supplied services and 919 (at 2,418 supplier sites) supplied parts and components. 31 per cent of these supplier sites are in China, 14 per cent in Germany, eight per cent in Sweden, five per cent in the US, five per cent in France, five per cent in Poland, four per cent in the Czech Republic, 21 per cent in other European countries and seven per cent in other Asian and North America countries and Africa.

Our large supplier base, which includes thousands of sub suppliers, makes a significant impact on people and the environment. The long-standing relationships we have with our key suppliers enable us to collaborate on improving sustainability throughout this network.

Opportunities and challenges

- We support legislation for human rights, environmental, and governance due diligence that promotes responsible business.
- Encouraging sustainability in our supplier network allows us to make a positive impact on people and the environment.
- At the same time, due to the large number of suppliers and high complexity of our supply chain, it is often challenging to achieve greater transparency. For example, identifying suppliers beyond the first and second tier and building an understanding of their sustainability performance, including their potential impacts on human rights and the environment.

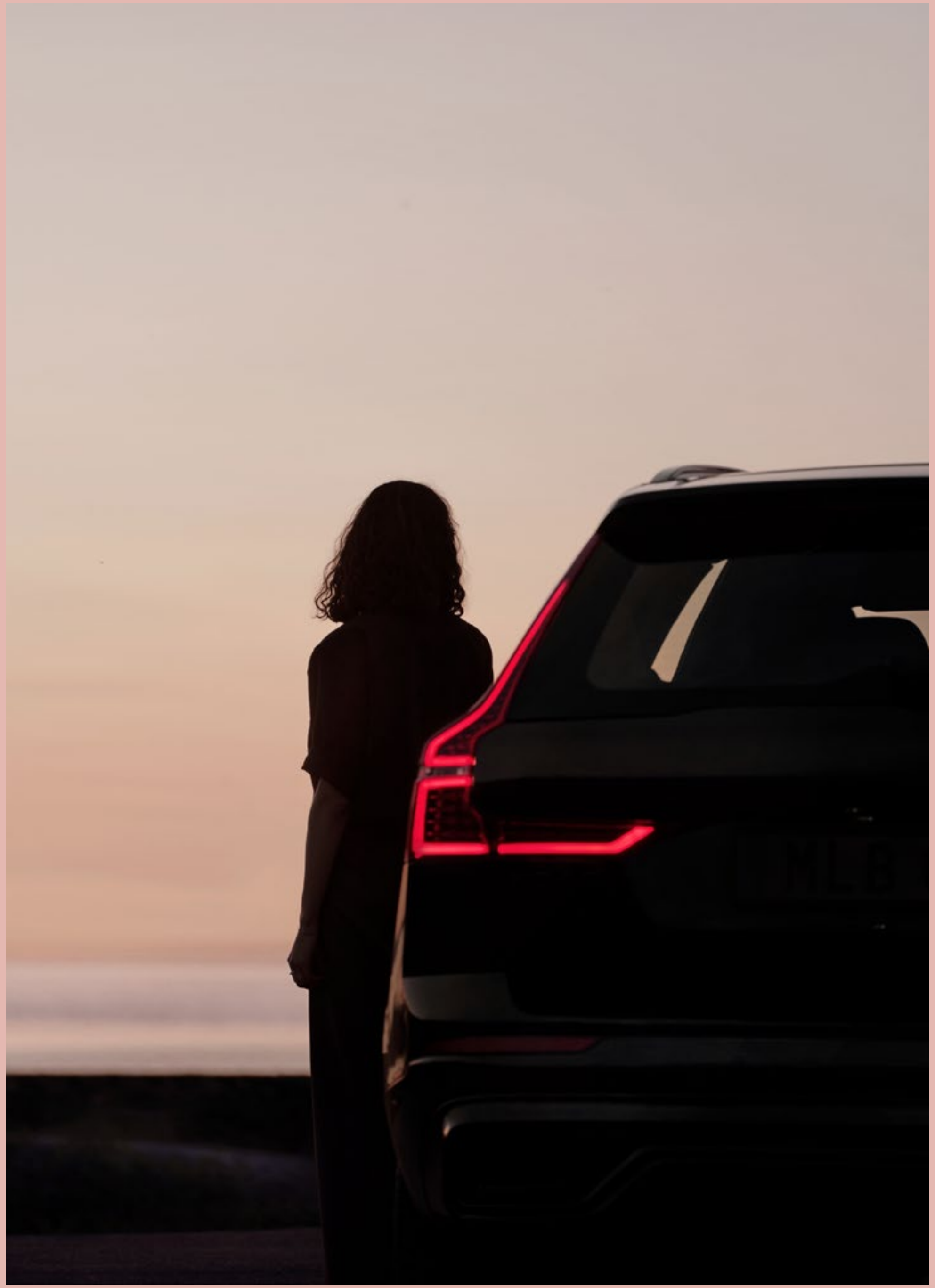
Actions in 2023

- After identifying Salient Human Rights Issues (SHRIs), we conducted supply chain risk assessments and defined a due diligence plan for 2024.
- Conducted 68 audits of directly contracted suppliers and 20 audits in our battery supply chain. The audits were performed in seven countries.
- Prepared for the implementation of our updated management system for our Raw Materials of Concern.
- Expanded the use of blockchain traceability for battery raw materials to include graphite.
- Continued expansion of the battery supply chain audit programme.
- Joined the Responsible Mica Initiative.

Sustainability requirements for suppliers

Volvo Car Group's Code of Conduct for Business Partners (CoC BP) states our requirements for suppliers. It covers areas such as legal compliance, human rights, working conditions, environmental care, and business integrity. All our suppliers are obliged to comply with the CoC BP and implement management systems that ensure their employees and sub suppliers adhere to its requirements. In 2023, we initiated a review of the CoC BP. An updated CoC BP is planned to be released in 2024.

Our Position on Responsible Sourcing (which can be found at www.volvocars.com) applies to suppliers of components containing raw materials associated with severe negative environmental, social and governance (ESG) impacts or Raw Materials of Concern. This includes suppliers of batteries and components containing tantalum, tin, tungsten and gold (known as conflict minerals or 3TG).



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Supplier due diligence

We conduct risk-based due diligence to ensure compliance with our responsible sourcing requirements, identify ESG risks and initiate improvements across our supply chain.

Our process consists of assessments on two levels:

- Basic due diligence for directly contracted suppliers
- Enhanced due diligence for directly contracted suppliers operating in high-risk countries and suppliers of parts containing prioritised Raw Materials of Concern.

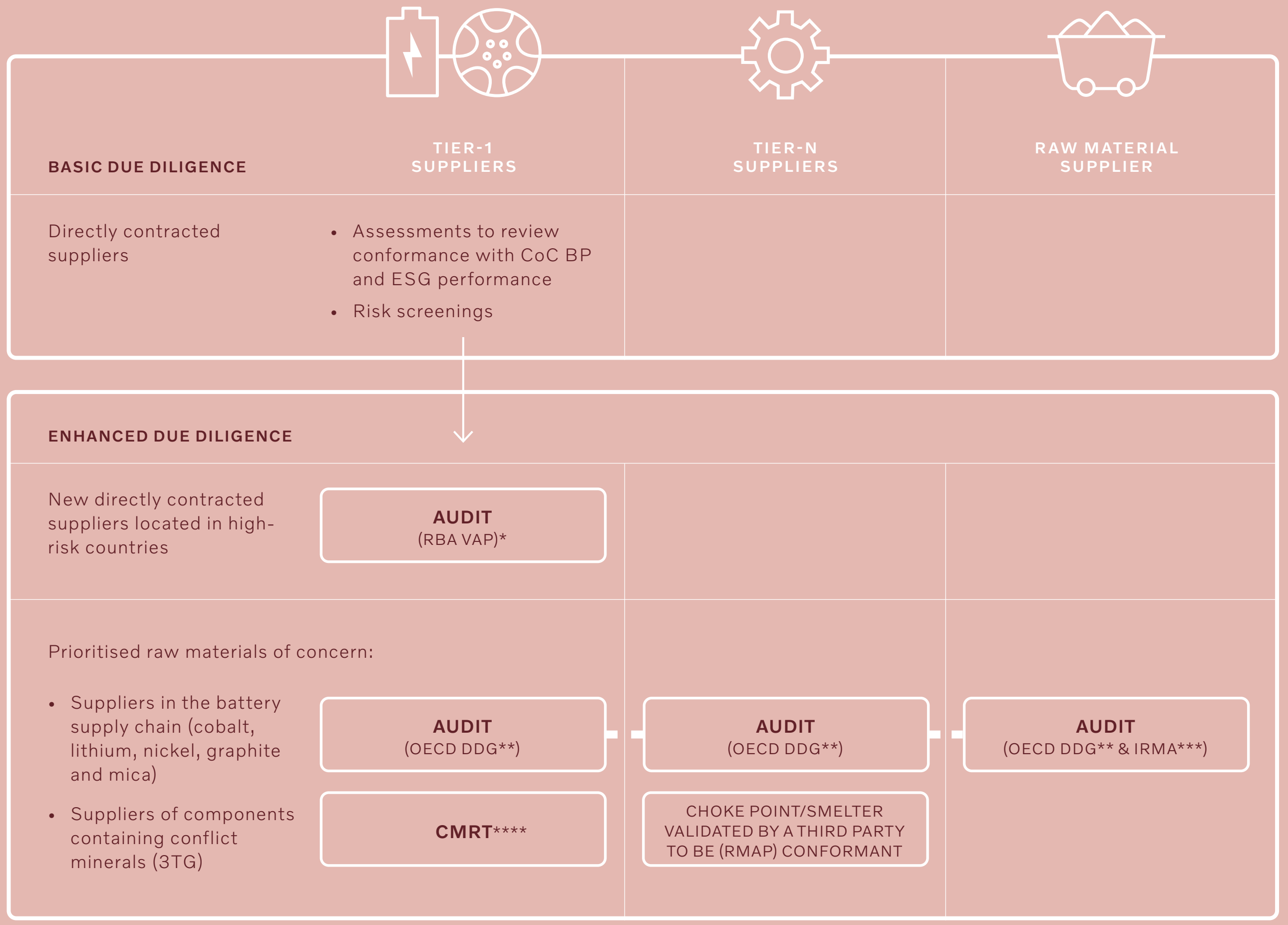
Assessments are performed both before contracting suppliers and periodically thereafter.

Meeting our sustainability requirements is a prerequisite to be part of our supplier choice process in which sustainability is being put on a par with cost and quality. We aim to motivate suppliers to invest in sustainable business and promote sustainability within their own supply chain.

Basic due diligence

Compliance with our Code of Conduct for Business Partners and ESG requirements is evaluated by self-assessment questionnaires, on-site visits and other assessments.

SUPPLY CHAIN DUE DILIGENCE OVERVIEW



Blockchain technology enables the tracing of raw materials from the mine to the car and thus the identification of the actors in our supply chain tier by tier. We are working with implementation of blockchain for cobalt, lithium, nickel and graphite used in our battery cathodes, and mica in isolation sheets.

*Responsible Business Alliance (RBA) Validated Assessment Program (VAP)

**OECD Due Diligence Guidance (DDG) for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas

***Critical Requirements in the Initiative for Responsible Mining Assurance (IRMA) Standard

****Conflict Mineral Reporting Template (CMRT)

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Other assessments	2023	2022	2021
Number of directly contracted suppliers having performed a SAQ	1,402	769	847
Share of the directly contracted suppliers being conformant with our requirements in the SAQ (%)	93	93	—
RMAP-compliant smelters in the 3TG supply chain (%)	65*	78	82
Suppliers being classified as high/medium/low risk			
High risk	123	158	—
Medium risk	2,962	3,535	—
Low risk	1,817	1,059	—

*Figures disclosed for the last full reporting period October 2022–May 2023.
For further definitions and reporting principles see page 192–195.

Audits in the supply chain	2023	2022	2021
Number of audited directly contracted suppliers (RBA VAP)	32	27	29
Number of audited new directly contracted suppliers located in risk countries (RBA VAP)	36	42	—
Share of addressed RBA VAP audit improvement findings (%)	78	80	94
Number of audits in the battery supply chain	20	16	—

Drive Sustainability SAQ

The Sustainability Assessment Questionnaire (SAQ) has been mandatory in our sourcing process since 2019 and was developed by Drive Sustainability, a collaborative initiative within the automotive industry. It requires suppliers to report on topics including business ethics, human rights, environmental management and responsible sourcing. Existing suppliers are required to complete the SAQs every two years. All responses are validated by an external assessor and recommendations are made for improvement work.

At the end of 2023, 1,402 suppliers (89 per cent) had submitted SAQs. Of these, 93 per cent are compliant with our requirements. Non-compliant suppliers are required to form action plans, which are monitored to ensure progress. See the Other assessments table.

Anti-corruption and trade sanctions

Suppliers are screened to identify and mitigate legal risks concerning corruption, trade sanctions, money laundering and violations of human rights. This is done prior to sourcing and during ongoing business.

Risk screening

We use a risk-screening tool, provided by the Responsible Business Alliance (RBA), to evaluate supplier risk, based on geographical location, our expenditure and the product type they supply. This annual assessment determines which suppliers will be subject to enhanced due diligence (as outlined below).

In 2023, 4,902 of our directly contracted suppliers were included in the risk assessment which corresponds to 100 per cent of the suppliers that deliver parts and components as well as selected number of service suppliers. Of these, 123 (three per cent) were rated as high-risk, 2,962 (60 per cent) medium-risk and 1,817 (37 per cent) as low-risk (see our Other Assessments table).

Enhanced due diligence

Enhanced due diligence is conducted on suppliers highlighted by the RBA risk-screening tool and suppliers of components containing prioritised Raw Materials of Concern.

Raw Materials of Concern (RMoC)

We define 20 minerals, metals, and bio-based materials associated with high ESG risks, including cobalt, lithium, aluminium, and nickel, as Raw Materials of Concern[45]. In 2023 the methodology of selecting RMoCs was updated. This work guides us in determining the level of due diligence to perform on suppliers delivering components containing these materials. We aim to increase transparency in these supply chains, enhance traceability and mitigate ESG risks. This will facilitate responsible sourcing and continuous improvements, in line with industry norms, good practice frameworks and regulatory requirements. In 2023, we continued the work to further enhance our management system for the RMoC and started to prepare for the implementation.

Audits

We run two different audit programmes – 1) for existing directly contracted suppliers that are highlighted by the RBA risk-screening tool, new directly contracted suppliers in high-risk countries and 2) for our battery supply chain. We also carry out audits based on information received from buyers and stakeholders or if other risks have been identified.

Audits on directly contracted suppliers

We make comprehensive onsite audits of our suppliers' sustainability performance using the RBA's Validated Assessment Program (VAP) from the Responsible Business Alliance (RBA), which evaluates labour rights, environment, business ethics, management systems, health and safety. An onsite audit at a manufacturing site may take two to five days and is conducted by an accredited third-party auditor.

Of the 123 high-risk suppliers, identified in the RBA risk assessment, 29 were selected for auditing, based on factors including expenditure and audit history. By the end of 2023, 25 of these audits were carried out. Additionally, seven audits performed on suppliers highlighted in the risk assessment conducted in 2022 were completed in 2023. Hence, in total 32 audits were performed.

Moreover, all new suppliers of components in high-risk countries (based on the RBA risk map) are required to undergo an audit before starting production. Since this requirement was introduced in May 2021, 217 suppliers (101 during 2023) have been in scope for this audit. In 2023, 36 of these were conducted (out of the 101). To improve the pace of implementation, we are developing new processes, which will be introduced at the beginning of 2024. The audits on directly contracted suppliers were performed in China, Germany, Mexico, Malaysia and Vietnam (for the countries in which audits in the battery supply chain were conducted, see below). See table Audits for a summary of the number of audits.

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Audits in the battery supply chain

Volvo Cars does not currently source battery raw materials directly. We recognise that battery supply chains are complex and the raw materials they contain are associated with significant ESG risks. Hence, establishing traceability is key since it allows us to identify supply chain actors, tier by tier, assess their ESG performance and promote good practice. After introducing the use of blockchain technology in 2019, in collaboration with Circulor, to trace cobalt, we have added lithium, nickel (used for battery manufacturing), and mica (for isolation sheets) and, in 2023, graphite (used for battery manufacturing) to the traceability programme. Blockchain enables the tracing of raw materials from the mine to the car and thus the identification of the actors in our supply chain tier by tier. Work is also being carried out to track CO_2 emissions in these supply chains.

Since 2019, we have commissioned independent audits (conducted by RCS Global Group), of battery material suppliers for in-depth evaluations of their responsible sourcing performance. Between 2019 and 2022, we conducted 41 audits of suppliers in our cobalt, lithium, nickel and mica supply chains. In 2023, with support from RCS Global Group, we have continued to execute the audit programme while expanding the scope to include the graphite supply chain. The aim of the programme is to ensure that suppliers at all tiers in these battery material supply chains are conformant with relevant standards and frameworks (see below), specifically in the context of the newly adopted EU Battery Regulation. The purpose is also to ensure continuous improvement of ESG performance across our battery supply chain by monitoring the implementation of corrective action plans.

The programme executes audits according to the OECD Due Diligence Guidance. For mine sites audits are also conducted against the IRMA Standard for Responsible Mining Critical Requirements or equivalent schemes. The broader audit scope allows us to gain a better understanding of the environmental and human rights performance of the mine sites in our supply chain and meet stakeholder expectations for upstream due diligence.

In 2023, we conducted 20 audits in our battery materials supply chain, including one directly contracted suppliers, five anode/cathode producers, eight refiners and five combined audits at treatements units and mine sites. In the mica insulation sheets supply chain we conducted one audit at a directly contracted supplier and one audit at the mica paper producer. See the Audits and illustration Battery supply chain table. The audits were conducted in Brazil, China, Democratic Republic of the Congo, South Korea and Australia (see above for the countries in which audits on directly contracted suppliers were performed).

BATTERY SUPPLY CHAIN

VOLVO CARS – BATTERY PRODUCER – ANODE/CATHODE PRODUCER – REFINER – TREATMENT UNIT – MINE

Audit results

Audit findings are summarised in a report, which includes non-conformities and a list of agreed corrective actions for the supplier to take with due dates. We monitor the corrective action plan (CAP) implementation progress to ensure that the needed measures are taken. If a supplier does not take the agreed actions, discussions are initiated to understand the root cause and identify ways we can support the supplier in meeting the audit requirements and CoC BP.

In 2023, the most frequent non-conformities in RBA audits of our directly contracted suppliers concerned: excessive working hours, insufficient days off and a lack of effective policies and systems to determine and control working hours. We also found a few cases of young workers (16–18 years old) working overtime, workers having paid fees in the recruitment process (including health checks fees) to labour agents and limitations to workers' ability to voluntarily terminate their employment without wage deductions. We are monitoring the concerned suppliers to ensure that the agreed corrective measures are taken.

Since 2018, 262 RBA audits have been conducted on our directly contracted suppliers, 68 of which were conducted in 2023. In 2023, we have continued monitoring the findings of audits conducted in 2022. Of these, 78 per cent have been addressed (see the Audits table). To improve the rate of closed findings, we are developing new processes, which will be implemented in 2024.

In 2023, the most common findings in audits of our battery supply chain, were related to deficiencies in management systems for responsible sourcing, based on the OECD Due Diligence Guidance. Other frequent findings related to risk assessments e.g. absence of procedures to evaluate supply chain risk data. Common findings from the audits conducted against the IRMA Standard for Responsible Mining Critical Requirements concerned missing policies (and lacking training according to policies) in the areas of child labour and forced labour. However, no evidence of actual cases of forced labour or child labour were identified. We are working closely with RCS Global Group and the suppliers to ensure that corrective actions to address these non-conformances are implemented within the agreed timeframe. To improve the rate of closed findings in the battery supply chain we have, with the support from RCS Global Group, developed a training, targeting the auditees in the battery supply chain. The training is carried out after the audit is conducted to increase the awareness and knowledge of the audit standard and what actions are needed to take to close the findings. The training was developed during end of 2023 and prior year end two suppliers were trained. We will continue to conduct the trainings during 2024 and track the effectiveness of them.

Conflict Minerals

Our ambition is to only source components containing tantalum, tin, tungsten and gold (commonly referred to as conflict minerals) from supply chains where all smelters and refiners have completed third-party assurance against a relevant due diligence standard. Every year we request suppliers of such components to declare their due diligence measures and disclose the smelters used in their supply chain. This disclosure is made using the Conflict Minerals Reporting Template (CMRT) supplied by the Responsible Minerals Initiative (RMI). By tracing the minerals in our supply chain and buying components cointaining material from smelters validated to be conformant with the Responsible Minerals Assurance Process (RMAP) – RMI's third-party verification of smelter and refiner management systems and sourcing practices – we are working to secure responsible sourcing in line with global standards. This accumulated information creates the foundation of our due diligence process for conflict minerals where we identify potential discrepancies and, if needed, follow up with suppliers on risk mitigation action plans to address adverse impacts.

Since 2017, we have reviewed whether smelters in our conflict minerals supply chain feature on the RMI list of conformant smelters and refiners. As the current reporting period is ongoing, we will disclose the figures for the last full reporting year, 2022. After evaluating the data, we conclude that the level of RMAP-compliant smelters in our conflict minerals

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supply chain was 65 per cent. The conflict mineral supply chain has been adversely impacted by the current geopolitical situation. We are reviewing our due diligence activities to improve our performance in this area.

Risks to people identified by external and internal stakeholders

We appreciate the work of NGOs, journalists and other external stakeholders that drives sustainability improvements in our industry. In 2023 we have had valuable dialogues with investors, NGOs and academic institutions about responsible business in global supply chains.

In response to the Driving Force report, published by Sheffield Hallam University in December 2022 conveying information about connections between the automotive industry and forced labour, we launched an internal investigation that confirmed we do not have directly contracted suppliers in the region subject of the report (which also is the case in December 2023). We have conducted screenings on this topic regularly since 2019. Furthermore, in 2023, we commissioned an external company to support us in our supply chain mapping efforts. The mapping is done through web scraping and applying artificial intelligence on publicly available information and proprietary data sources and algorithms, providing us with predictive risk insights and the latest on the global supply chain environment.

In parallel, we are putting internal efforts into increasing our understanding of our supply chains and conduct due diligence following a risk-based approach.

A case was identified by procurement professionals about the possible use of forced labour at the production facility of one of our directly contracted suppliers' in Eastern Europe. A RBA VAP audit is planned and will be performed.

Better Mining

We support the continuous improvement of working and living conditions in cobalt, copper, tantalum, tin and tungsten artisanal and small-scale mining (ASM) communities in the Democratic Republic of Congo (DRC) and Rwanda by collaborating with Better Mining. This is an assurance and impact programme led by RCS Global Group that work at ASM sites to directly improve conditions and reports on the sites' development to the programme participants. Trained monitoring agents are permanently deployed at the sites, who gather information and identify risks. The data is verified and analysed by experts who ensure completeness and consult with agents on risks. To mitigate identified risks, monthly Corrective Action Plans (CAPs) are reviewed with local stakeholders and implementation is overseen by Better Mining agents and project teams. Volvo Cars receives communication on the CAP implementation progress every quarter.

Sustainability training and collaboration

Training

We offer training, via RBA and Drive Sustainability, to our suppliers and employees in order to raise awareness of ESG issues in our supply chain and promote responsible sourcing. In 2023, procurement professionals and suppliers received training to clarify our sustainability monitoring and targets. Buyers and managers working on the construction of our new production site in Slovakia underwent training on human rights, trade sanctions and anti-corruption, Training has also been arranged for procurement professionals on our Code of Conduct. As mentioned above, specific training has also been given suppliers in the battery supply chain.

Another sustainability awareness increasing initiative within the Procurement department is our internal network of sustainability champions. The role of the champions is to act as ambassadors in their teams of buyers. Regular meetings are hosted by procurement sustainability experts with the sustainability champions to keep them updated on relevant topics.

Collaborations

In 2023 Volvo Cars joined the Responsible Mica Initiative. Due to its exceptional heat resistance and elasticity, mica is integral to automotive materials, such as coating and insulation. However, the mica supply chain is characterised by a lack of transparency and significant risks related to mining practices. Volvo Cars joined the Responsible Mica Initiative with the aim of addressing these challenges. Mica is also included in Volvo Cars' list of RMoC.

We collaborate with other organisations and industry bodies in support of our sustainability goals. These include:

- The UN Global Compact
- Drive Sustainability
- The Responsible Business Alliance
- The Responsible Minerals Initiative
- The Carbon Disclosure Project

Learning from risk assessment

We acknowledge that due diligence is a continuous proactive and reactive process. Our due diligence efforts are continuously developed and adjusted, based on learnings and changing prerequisites. Risk analyses, conducted of Volvo Cars value chain in 2023, have informed our 2024 supply chain due diligence plan and helped us to identify actions to undertake to support this work e.g., updated processes and refined risk assessments. All in all, these efforts aim at proactively cease, prevent, and mitigate potential and actual salient human rights impacts in our supply chain, read more on page 166.

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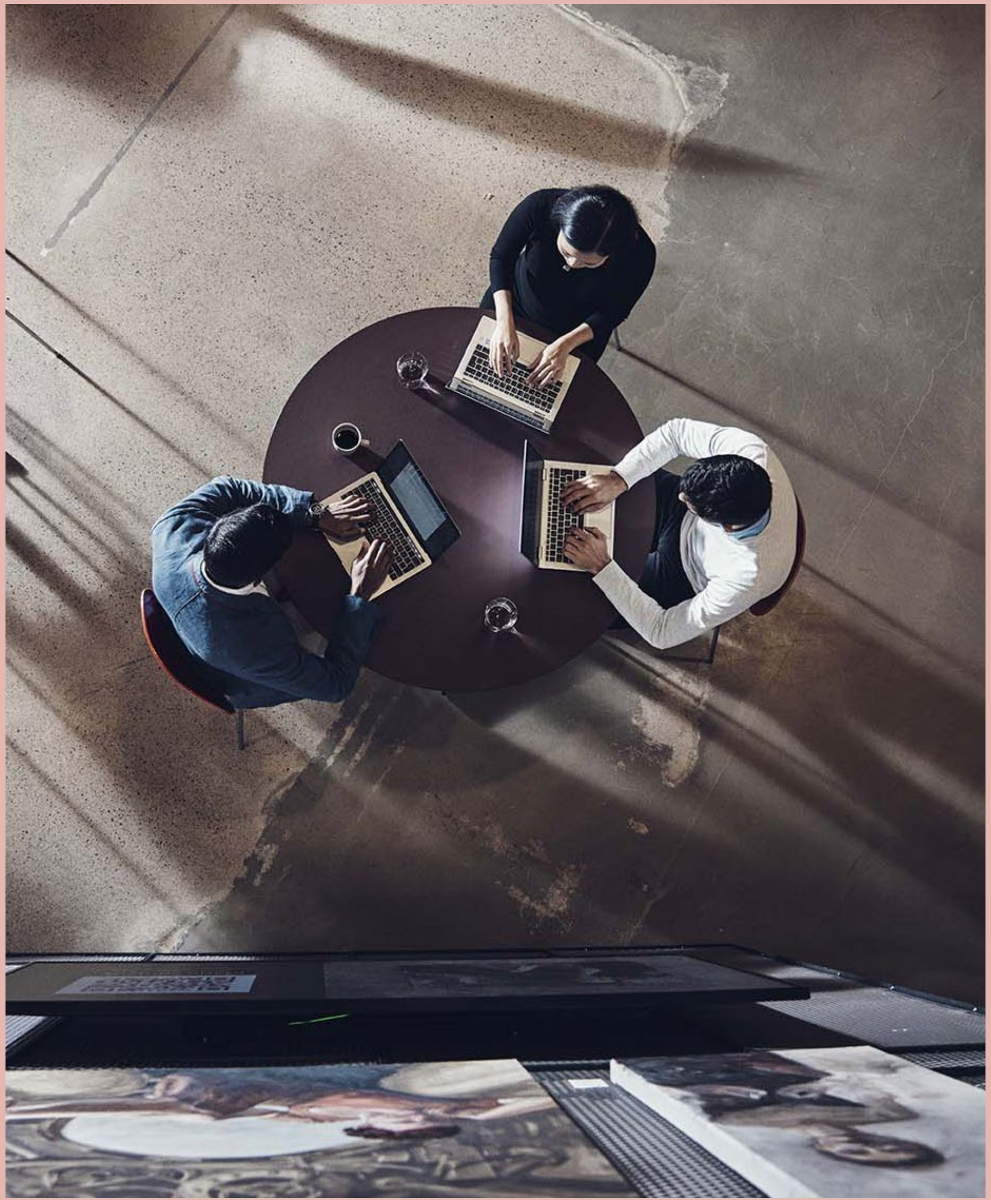

Contribute to a sustainable society

Communities and society
We recognise our responsibility to make a positive impact on the communities in which we operate and society as a whole. In collaboration with stakeholders, we seek to support and protect the most vulnerable in society and make sustainable investments.

Partnership with Girls Who Code
On International Women's Day 2023, we announced our partnership with international non-profit organisation Girls Who Code (GWC).

Founded in 2012, GWC seeks to close gender gaps and assist students, who identify as female or non-binary, in pursuing opportunities in the technology sector. Over ten years, GWC has reached over 580,000 students, half of whom come from historically-underrepresented groups and low-income households. We help grow GWC's foundational programmes that support girls at all stages of their educational journey. We also engage directly, through our employees, with the students and give a perspective on how the coding concepts they are learning are applied in the real world.

Humanitarian Aid
Following 2023's devastating earthquakes in Turkey and Syria, we donated SEK 1.5 m to support the relief work of Save the Children. This includes providing emergency kits (containing blankets, food, temporary shelters and hygiene items) to families and establishing safe spaces for children to play and receive emotional support.

We have lent over 25 vehicles to Save the Children and UNICEF for use in Ukraine, neighbouring countries, as well as in Sweden. These enable aid workers to support Ukrainian children and their families who have been forced to flee their homes.

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Local Programmes

Sweden

- The Volvo Experience Program, in collaboration with the City of Gothenburg, aims to reach groups that are unable to meet standard employment requirements. By combining study with work at our Torslanda plant, we seek to nurture talent and prepare the participants for future recruitment. Since 2020, 139 people have taken part and over 30 are now in employment.
- Jobbsprånget is an internship programme for academics who have recently arrived in the country. It aims to utilise the skills of people educated in other countries and facilitate their entry into the Swedish job market. Funded by the Swedish government and the Knut and Alice Wallenberg Foundation, the four-month programme offers work experience within Volvo Cars. 27 graduates joined the programme in 2023, of whom 74 per cent were women. In total, approximately 100 people have taken part, with 30 per cent of them securing employment.
- Destination Tynnered is an initiative, co-founded by Volvo Cars, which aims to improve academic performance, employment opportunities and local development in the Tynnered suburb of Gothenburg. In 2022 and 2023, more than 300 summer jobs were offered, which could potentially lead to long-term employment within the company. This initiative is currently being introduced in other areas of the city.
- The Gothenburg Green City Zone initiative supports sustainable development in the city. In 2023, its activities focused on freight transport and vehicle-to-grid projects that support green energy. By carrying out pilot projects that evaluate engagement and user behaviour, we aim to make Green City Zones a transferable freight transport and mobility concept.
- The Volvo Cars' Talent Programme targets talented graduates from low-income backgrounds by offering them internships. As well as offering them valuable work experience and increasing their knowledge, the scheme helps expand their professional networks, showcase their talents, and improves their employability. Each participant is paired with a dedicated company mentor and provided with migration and housing expenses, as well as a monthly salary. So far, twenty young people from foundations and universities in Botswana, Kenya, India, Bosnia and Herzegovina and Venezuela have taken part. In 2024, the scheme will mentor ten people from Kenya, The Republic of Congo, India, and Venezuela, with talents in mathematics, software development, and mechanical engineering.

China

- The 'Xiao Hong Ma' (Little Red Horse) Safety Education Programme enables Chinese children between seven and twelve to learn about road safety and sustainability. In 2023, more than 10,000 children participated in courses led by over 100 employee volunteers. The project has extended its scope to online teaching, with help from local partners. In 2023, more than 500 children in remote and underprivileged areas joined our weekly online classes, led by 24 employee volunteers, in subjects including science, art and music.

- As participants in the Doctors on the Run initiative in Shanghai, we contribute 10 RMB for every kilometre run by local doctors. The money raised supports families who qualify for public assistance. In 2023, 200 doctors took part, with their combined distance expected to reach 100,000 kilometres.
- Volvo Cars China donated RMB 4.2 m, which funded the treatment of 74 people with congenital heart disease.

USA and Canada

- In a long-term collaboration with Alex's Lemonade Stand, an organisation that helps fight childhood cancer, the company, its employees and retailers contribute with over one million dollars per year by making donations for every car they produce, sponsoring events and fundraising.
- The company and its retailers donated 75,000 dollars and loaned 30 cars for the NGO Best Buddies event which supports people with intellectual and development disabilities.
- We lend vehicles and support for Baby2Baby events, which provide children living in poverty with basic necessities.
- In 2016, we formed the Volvo Cars Good Neighbor collaborative initiative, which consults with local organisations in the neighbourhood of our Charleston facility.
- We provide advanced manufacturing equipment to schools for training and open channels for high school graduates to go directly into employment.
- Since 2017, we have given two million dollars in Charleston community grants to non-profit groups for improvements in education, the environment, safety and quality of life.

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Green financing

As part of our transformation to manufacturing only fully-electric cars, we seek funding for investment in green technology. Our 2025 ambition is to have transferred all outstanding debt into green or sustainability-linked funding in accordance with our green financing framework and, where feasible, allocation of these funds will be in projects aligned with the EU Taxonomy. In 2023, we expanded our green financing portfolio and issued SEK 1.5 bn in green bonds. In addition, a new bilateral 10-year loan agreement of EUR 250m was signed in late 2023 and a drawdown of EUR 200 m was made under an existing facilities. More information is found in our Green Financing Report on pages 188–189.

Economic performance and social contributions

Sustainable business requires more than green financing. As a large global employer and business partner, we have responsibilities to our employees, suppliers, retailers and consumers. We aim to make a positive business impact and create sustainable value for all stakeholders.

- In 2023, more than 56,000 employees and consultants have contributed to our operations and received fair compensation and benefits.
- We source sustainable raw materials and contribute to communities in which our suppliers operate.
- Improving road safety benefits to our customers and society as a whole.
- Potential dividends reward our shareholders' investments.
- Paying taxes and pension contributions benefit society as a whole.

These contributions adhere to the UN Sustainable Development Goals, see page 190. Volvo Cars is committed to making positive contributions to society, through direct and indirect means.

Economic performance and contribution, SEKm	2023	2022	2021
Direct economic value generated and distributed (EVG&D)*			
Revenue	399,343	330,145	282,045
Operating costs	–373,395	–313,812	–262,462
Employee wages and benefits (personnel)**	–39,713	–34,518	–32,332
whereof social taxes and pension contributions	–10,644	–9,633	–9,364
Payments to providers of capital	–1,405	–1,756	–11,340
whereof interest expenses	*–1,405*	*–910*	*–878*
whereof dividend payments	—	*–846*	*–10,462*
Payment to government***	–4,774	–3,098	–3,493
Financial assistance received from the government	395	409	472
Financial investment contribution			
Capital expenditures	–39,165	–32,112	–23,324
Depreciation and amortisation	–17,449	–16,091	–15,005
Share buybacks	—	—	—
Dividend payments	—	–846	–10,462
Total R&D expenses******	**–12,884**	**–11,514**	**–12,714**

*For information about our community investments see page 172–173.
**For information about pensions see Note 24, page 123.
***For information about taxes see Note 7, page 139.
****R&D expenses in accordance with IFRS, restated compared to previous year (2022: SEK –26,661 m, 2021: SEK –23,544 m).

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Stakeholder engagement

We identify stakeholders as those who have environmental, social and governance interests in our activities or are potentially affected by our purpose, products, and business. Open and continuous dialogue with stakeholders allows us to discuss and manage issues as they arise. In 2023, we established a Stakeholder Engagement team that engages with key groups and organisations to help further our strategic objectives and deliver on our purpose. We also conduct interviews, surveys, and participate in conferences. We respond to website inquiries, citizen@volvocars.com and requests from our Tell Us reporting line. The table below gives an overview of our primary stakeholder groups, examples of main ESG topics of interest and channels of communication with them (in addition to the materiality analysis).

See page 149 for the performed materiality analysis.

Stakeholder groups	Examples of Stakeholder main ESG topics of interest (non-exhaustive)	Main internal Volvo Cars stakeholder interface(s)	Examples of stakeholder dialogue types and frequency (yearly*, quarterly/monthly**) (non-exhaustive)
Academia (universities/schools)	Carbon footprint reduction Resource efficiency and circularity Sustainable work life	People Experience Departments with topic expertise	School fairs* Guest lectures* Thesis and scholarships*
Authority, Politicians, Governments	Carbon footprint reduction Resource efficiency and circularity Ethical leadership and human rights	Public Affairs Sustainability Team	Meetings with governmental representatives, including the European Commission* Conferences and round table participation**
Communities	Societal and community engagement Carbon footprint reduction Traffic Safety	People Experience Regions National Sales Companies	Local community engagement, see local initiatives**
Customers	Ethical Leadership Traffic Safety Sustainable work life Carbon footprint reduction	Commercial Cluster with Regions National Sales Companies Direct sales/Customer Care	Throughout the customer journey process with the buying and usage of our products and services**
Retailers	Traffic safety Carbon footprint reduction Ethical Leadership Competence development	Commercial Cluster with Regions National Sales Companies	Retailer meetings and negotiations** Retailer trainings* Retailer audits*
Industry Associations	Carbon footprint reduction Resource efficiency and circularity Responsible sourcing Ethical Leadership and human rights	Public Affairs Concerned Functions	Memberships in industry associations* Meetings including conferences and round table participation*
Investors and Banks	Carbon footprint reduction Responsible sourcing Ethical leadership and human rights Diversity	Investor Relations Sustainability Team	Focused stakeholder dialogues** Owner meetings and AGM* Investor and bank calls**
Media	Carbon footprint reduction Workforce and sustainable work life Responsible sourcing	Communications Sustainability Team	Media interviews** Media coverage** Events and product launches*
NGOs	Ethical Leadership and human rights Responsible sourcing Carbon footprint reduction	Public Affairs Sustainability Team	Meetings and inquiries** Conferences** Events**
Suppliers	Responsible sourcing Carbon footprint reduction Sustainable work life	Procurement	Supplier dialogues* Contract negotiations** Supplier audits*
Employees and Union Representatives	Sustainable work life Ethical Leadership and human rights Carbon footprint reduction Workforce	People Experience Line managers	GLINT employee surveys** People development plans and manager dialogues* Union dialogues**

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Collaboration and advocacy

We collaborate with companies and organisations that share our objectives in order to effect positive change and further our sustainability strategy. We are particularly focused on reducing carbon emissions, in accordance with the goals of the Paris Agreement. This includes dialogue with policy-makers, signalling demand for low-carbon materials and participating in major climate action events.

2023 Summary

- Joined the World Economic Forum which includes engagement with the Centre for Nature and Climate, in order to further our climate action and biodiversity impact work.
- CEO Jim Rowan joined the World Economic Forum Alliance of CEO Climate Leaders, a group committed to addressing emissions within their companies and engaging in global efforts to combat climate change. In October 2023, he was among over 100 members who lobbied world leaders to set ambitious emission-reduction targets and invest in renewable energy and low-carbon technology, ahead of COP28.
- Our CEO urged EU Member States to recommit to a ban on sales of vehicles powered by internal combustion engines by 2035, after attempts were made by others to seek loopholes, enabling fossil fuel vehicles to continue to be sold, if they used e-fuels.
- We became founding supporters of the We Mean Business Coalition's Fossil to Clean campaign, urging governments to commit to a rapid phase out of fossil fuels at COP28.
- At Climate Week New York, our Head of Global Sustainability and Head of Stakeholder Engagement took part in the following activities:
  – Announcing our decision to cease production of diesel-powered vehicles at an Accelerating to Zero Coalition event.
  – Participating in a panel discussion, as part of the SteelZero initiative, a coalition committed to the procurement of low-carbon steel.
  – Speaking at the Ocean Summit at the United Nations HQ, organised by The Ocean Race. Volvo Cars is a long-standing partner of the Race and at the Summit we gave our support of their efforts to secure a universal declaration on ocean rights, and announcing our signing of the WWF's Moratorium on Deep Sea Mining.
- Volvo Cars was represented at the UN Climate Conference (COP28) in Dubai, as part of the Business Sweden delegation. Our team consisted of our Deputy CEO, Javier Varela, as well as our Heads of Global Sustainability and Climate Action. They highlighted the collaborative climate action Volvo Cars is taking across our value chain and urged greater partnership between the public and private sector to accelerate the low-carbon transition in the automotive sector, as well as to meet global climate targets. The team actively participated in a number of events and panel discussions, including ones hosted by WEF's Alliance of CEO Climate Leaders, BloombergNEF, We Mean Business and the Clinton Global initiative.
- Ahead of COP, Volvo Cars announced that we have joined WEF's First Movers Coalition, a group of progressive companies who signal demand for near zero and low-carbon material, which is currently hard to abate, to stimulate greater supply. We will put our purchasing power behind emerging clean technologies that support the shift to near-zero emission aluminium.

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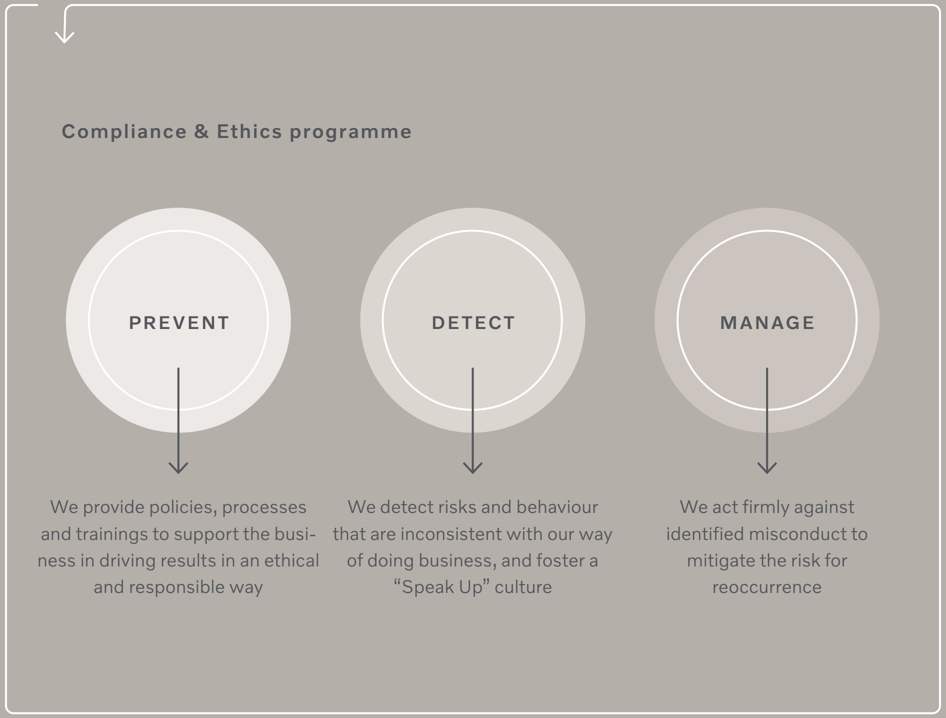
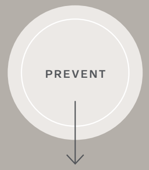
Compliance and ethics

Ethical and Responsible Business Conduct

Introduction
As part of our commitment to ethical, responsible and sustainable business, we have implemented a Compliance & Ethics Programme designed to Prevent, Detect and Manage our compliance risks.





Prevent
We are actively committed to pursuing ethical and responsible business in our own operations and throughout our value chain.

Our goals for ethical and responsible business are determined by our Code of Conduct (see p. 21) and a framework of corporate policies adopted by our Board of Directors, executed by executive management, and setting the tone from the top for our company culture and commitment to being ethical and responsible. These goals are further cascaded to our business partners and other relevant third parties through our Code of Conduct to our business partners and other relevant third parties which describes the standards and principles we require from those we do business with.

Risk areas
The Compliance & Ethics Office supports the company in managing risks related to corruption, competition law, data protection, human rights, trade sanctions and export control. It conducts annual risk assessments in order to identify and mitigate operational compliance risks. The results are reported to the Executive Management Team, via the Global Compliance Committee), and the Audit Committee. The Compliance & Ethics Programme is periodically reviewed and updated to enhance its effectiveness.

Anti-corruption
Volvo Cars has a zero-tolerance policy towards all forms of bribery and corruption. The Code of Conduct for Business Partners has been communicated to our business partners and we conduct risk-based due diligence of our business partners and monitor their adherence to our Code of Conduct for Business Partners. In addition, our value-based culture supports our efforts to ensure that business is conducted in an ethical and responsible way. Our compliance and ethics e-learning and in-depth training on anti-corruption reinforces these commitments.

In addition to the Enterprise Risk Management assessment (read more p. 52), 18 operations were selected for anti-corruption risk assessment in 2023. No critical corruption risks were identified. An updated risk assessment methodology has been implemented to obtain a broad overview of the key risk areas of bribery and corruption to further focus our compliance efforts.

Risk Areas	2023	2022	2021
Number of closed authority-led investigations relating to competition law	—	—	—
Number of pending authority-led investigations relating to competition law	—	—	—
Number of customer complaints addressed by the DPO	15	6	—
Number of regulatory authority investigations managed by the DPO	1	1	—
Number of substantiated personal data incidents relating to customer data	74	58	—

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Competition law
Volvo Cars is committed to fair competition. Employees who have a need to interact with competitors are required to seek specific approvals and tailored training before any such interaction.

Data protection
We are committed to respecting privacy and taking appropriate action to protect the personal data we hold. The Global Data Protection Office (GDPO) drives our strategy for ensuring compliance and setting standards for all our employees, business partners and suppliers.

Our Group Data Protection Officer (DPO) is the designated contact person for inquiries related to our data protection practices. In 2023, the Group DPO addressed 15 customer complaints and managed one regulatory authority investigation, in relation to customer surveys sent to a specific customer in Germany. The regulatory authority decided not to take any actions, such as issuing a fine or a reprimand, against the German sales company. There were 74 substantiated personal data incidents relating to customer data in 2023.

Trade sanctions and export control
The Compliance & Ethics Office is responsible for overseeing our trade sanctions and export control compliance programmes and implementing our trade sanctions programme on a global basis. In 2023, the geopolitical environment remained challenging, with the war in Ukraine and the tech competition among countries, such as China and the U.S., making an impact on our trade sanctions and export control compliance programmes and operations. Measures were taken to manage risks associated with trade sanctions and export controls.

Human Rights
We are establishing a human rights compliance programme within the Compliance and Ethics Office. As part of this programme, we have appointed a Head of Global Human Rights Compliance and established a cross-functional collaboration network that includes representatives for different parts of our value chain and specialists within certain human rights areas. We are currently reviewing our policy framework to enhance our human rights statements and introducing new risk assessments and due diligence procedures. Read more in chapter Safeguarding human rights, page 166.

Training, awareness and communication
We provide training and communication to ensure our ethical values and commitments are implemented, including:

- Annual e-learning and certification for all non-production employees. In 2023, these focused on our Code of Conduct, which incorporates our 12 corporate policies, with specific emphasis on trade sanctions, anti-corruption & bribery, conflicts of interest and our Speak Up culture. This training was also provided to the Board members.
- Compliance and ethics modules in our internal leadership programmes.
- A responsible business discussion kit, enabling leaders to facilitate discussions on ethical and responsible business with their teams.
- Targeted training on the five main compliance and ethics risk areas. In 2023, 5,222 people took part in face-to-face, risk training. Training in other parts of our Code of Conduct, including cyber security, discrimination and harassment are provided by other units.
- Training for production employees. In 2023, training in our Code of Conduct was provided to production employees at five of our plants. Staff at our remaining production facilities received this training in 2022.
- Breakfast seminars, where senior leaders shared their experience and thoughts on ethical and responsible business, which reiterates the tone from the top within the company.
- In total, 12,114 participants received face-to-face training in ethical and responsible business through initiatives organised by our Compliance & Ethics Office.

Training and Communication	2023	2022	2021
Share of (non-production) employees trained in ethical and responsible business through the yearly C&E e-learning (e.g. including anti-corruption) (%)	97	79	83
AMERICAS completion rate	100	100	—
APAC completion rate	99	99	—
EMEA completion rate	96	74	—
Number of production sites where production employees were trained on our Code of Conduct (e.g. including anti-corruption)	5	5	—
Total number of people trained face-to-face through C&E-related initiatives (e.g. including anti-corruption)	12,114+	12,900+	—

For further definitions and reporting principles see page 192–195.

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DETECT

Detect

Speak Up culture

We encourage our employees to raise questions and seek advice about suspected violations of our Code of Conduct and make grievance channels available, including a dedicated whistleblowing function – the Tell Us reporting line. External stakeholders, such as suppliers and other business partners, may also use Tell Us reporting to raise concerns and submit reports. Rightsholders (such as factory workers or indigenous people) or organisations representing rightsholders (such as human rights NGOs) can also report potential human rights abuses anonymously, using our public Tell Us reporting channel.

All reports made via the Tell Us reporting line are received by the Compliance Investigations Unit and handled confidentially, according to our compliance investigation procedure and relevant regulatory requirements. Volvo Cars does not accept any form of retaliation against individuals who report concerns in good faith.

MANAGE

Manage

Investigations and disciplinary action

In 2023, 166 suspected violations of our Code of Conduct were reported to the Compliance & Ethics Office. After review, 71 reports were transferred to other departments and 38 reports lacked sufficient information to launch an investigation. Following 57 investigations, 36 cases were substantiated, and disciplinary action was taken in 22 cases, including employee dismissals and termination of supplier contracts. Of the 36 substantiated cases, 19 related to corruption. No public legal cases regarding corruption were brought against Volvo Cars or its employees.

The Global Compliance Committee is informed, at least on a quarterly basis and as otherwise necessary, about the status of ongoing cases. The audit committee is, during the year as part of the regular compliance updates, informed about ongoing cases. Furthermore, the annual compliance reporting to the Board of Directors includes information about the total number and nature of the cases handled, including details of cases that may have a severe impact on the company.

Speak Up Culture and Investigations	2023	2022	2021
Cases of suspected violations of our Code of Conduct reported to the Compliance & Ethics Office	166	112	104
Number of cases that could have a severe impact to the company	—	—	—
Substantiated cases of corruption	19	5	5
Public legal cases regarding corruption brought against Volvo Cars or its employees	—	—	—

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Quality

Volvo Cars' quality work is guided by the company-wide quality strategy that shows our vision and how we get there. We have established cross-functional collaborations and ways of working that set our quality goals and identify actions that need to be taken to achieve them. We have furthermore established a corporate quality dashboard where a set of quality metrics covering different part of the company and the entire customer journey have been identified, all contributing to drive customer satisfaction improvement and are followed-up on a regular basis.

Volvo Cars is ISO 9001 certified. External management system audits are performed annually by third-party agency in addition to the internal audits.

Volvo Cars Quality Strategy

Satisfied customers are crucial for Volvo Cars to be able to deliver on growth and profitability. The quality strategy is based on the quality commitment and identifies important quality objectives and describes at a high-level how we intend to achieve them. It promotes a quality culture and always has the customer in focus.

We apply a mindset and a culture that foster quality in everything we do. This means we aim to neglect no problems and do not pass problems on to the next in line or to our customers. We have methods and tools to support that this happens.

The Volvo Cars Quality Strategy covers all aspects of our products, offers, services and interactions with our customers.

Quality targets

Volvo Cars has both long- and short-term targets for quality, connected to customer satisfaction, including future products. These targets reflect both things gone right and things gone wrong, to enable customer satisfaction and avoid dissatisfaction. To set the right targets, insights and data are collected across the customer journey, including data from vehicles, customer care centres, retailers, workshops, Volvo Cars App, social media, targeted surveys and benchmarking.

Our approach to quality

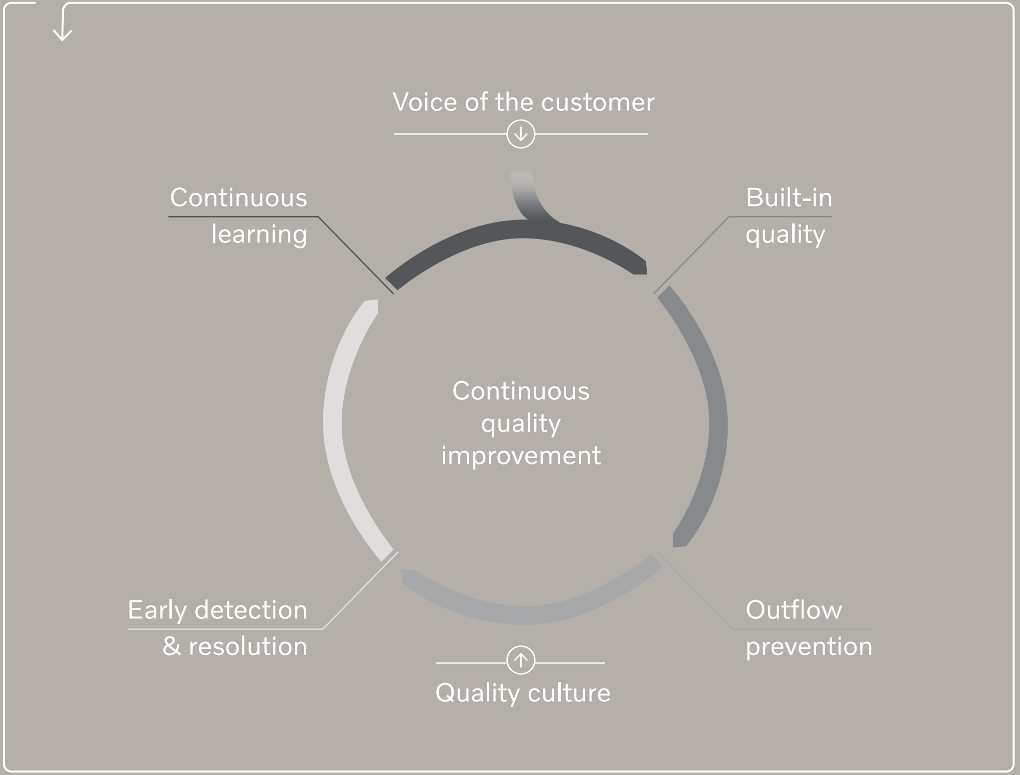
To strengthen the quality work we have a five-step approach that we use in operations.

Voice of the customer: listen to and understand customer needs and use customer feedback data in our daily work and decision-making

It is crucial that the voice of the customer reaches the teams that can act and improve the products, services and/or experiences. This enables us to continually improve and further build on customer centricity.

Built-in quality represents the proactive work we need to design and deliver high quality

Volvo Cars' ambition is to secure built-in quality in all processes and areas of our operations; e.g. design, launches, releases, production and service, where we take responsibility for the quality we deliver to each other and to our customers through a principle of "Right from me".



Outflow prevention secure quality before the car or service is delivered to the customer by setting up quality confirmation and/or quality gates

To ensure quality in every step and protecting the customer across the process, Volvo Cars works on quality assurance of all processes and sites, both internally and in collaboration with partners and suppliers. This is done by setting up confirmation and/or quality gates before delivering to the next step.

Early detection & resolution: quickly and efficiently minimise the impact on our customers, should problems arise when the car or service is delivered

Volvo Cars works to identify and solve issues as early as possible. This includes responding quickly to feedback from customers and providing efficient processes to report problems. Over-the-air (OTA) software updates provide an advantage, where resolution of issues can be done without the customer needing to take their car into service.

Continuous learning addresses the root cause and solves the real problem to prevent the same problem from happening again

The culture to systematically learn from problem solving initiatives is critical. We are working on creating awareness and engagement for quality across the value chain, sharing knowledge to prevent same issues happening again. In this way, for each new customer release, car launch and updated service or offer we should improve on our quality.

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Quality improvements in electric cars

Our conscious quality work generates clear results that can be demonstrated by the improvement journey for our electric vehicles over recent years.

In the journey towards being an electrified company, the quality of introducing electric drivelines and the connected quality of the over-the air (OTA) updates have improved significantly.

Since 2021 the failure rate of the BEV cars has decreased by 75 per cent, which shows the result in our commitment to work continuously and persistently with quality improvements.

The possibilities to enable product quality improvement actions via OTA is one of the main key elements in making significant failure rate improvements for the vehicle fleet that has OTA possibility. This is an essential step since the amount of software functionalities and features are constantly growing.

Quality throughout the development and industrialisation process

Through the Volvo Product Development System, we have a robust process on what and when to integrate and verify solutions needed to launch on time with correct quality, customer and business value. The process stretches across the value chain from concept phase to industrialisation, of course including our suppliers. Throughout, workforce readiness is crucial, so that our employees are trained in quality.

The system builds on checkpoints throughout the development to be able to see if we are on track or that we are able to act if we are not. This includes overarching corporate milestones and several operational level gates. Each milestone and gate in turn have several checkpoints across functions that need to be fulfilled or corrective actions completed to proceed.

In early development phases, these checkpoints might include virtual testing and ultimately leading to testing on component, system or complete car level, covering both hardware and software. These cover also supplier selection and quality assurance of suppliers across the development phases. Towards industrialisation, the tools and processes for manufacturing plants are secured.

Quality within Volvo Cars Manufacturing

The production of Volvo cars is key to ensure built-in quality, as the physical car is produced, the steps to ensure quality are critical so that we are able to meet and exceed our customers' expectations on their products. This stretches across various quality checks in all phases of production.

In Volvo Cars Manufacturing the focus is on operator readiness. All team members working in production should have sufficient training to create the necessary conditions to operate safe, with the right quality and in the right time. There are steps for all new operators. Firstly, with the focus on basic skills off-line and simulated work environment, with guidance from trainers. Secondly, the training continues off- and on-line out on the shop floor. Thirdly, and finally, the supervisor verifies that the operator has received the right training and by standardised work can operate independently. Employees assigned to new stations will receive a training starting from the second phase.

Quality audits on complete vehicles

The quality of complete vehicles is inspected according to a quality audit. This has been developed during the decades of experience and refined annually to reflect the constant developments in the industry. The testing methods and sample sizes are standardised and controlled globally to secure that manufacturing quality meet all our requirements, regardless of region for production.

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EU Taxonomy Report

Introduction

The EU Taxonomy Regulation (hereinafter "Taxonomy") is a classification system of environmentally sustainable activities that supports the EU's climate and energy targets as part of the objectives of the EU Green Deal to scale investments in sustainable projects and activities.

In order to comply with the Taxonomy, Volvo Cars must report on its Taxonomy-eligible and aligned activities for turnover, capital expenditure (CapEx) and operational expenditure (OpEx) during 2023. To be aligned with the EU Taxonomy, Volvo Cars must comply with the technical screening criteria for substantial contribution to one of the environmental objectives and Do No Significant Harm (DNSH) to the other environmental objectives. In order to be Taxonomy-aligned, we must also meet minimum safeguards at the entity level, for Volvo Car Group.

Our assessment and associated KPIs can be found on page 185 to 187. Additional commentary on our activities, accounting policies and assessment of alignment are described in the following sections.

Assessment of Eligibility

In 2022, we reported on the two environmental objectives published by the EU Commission – Climate Change Mitigation (CCM) and Climate Change Adaptation (CCA). In 2023, the four remaining environmental objectives were published – Sustainable Use and Protection of Water and Marine Resources (WTR), Transition to a Circular Economy (CE), Pollution Prevention and Control (PPC) and Protection and Restoration of Biodiversity and Ecosystems (BIO). In 2023, we assessed the eligible economic activities for the new environmental objectives, as well as eligibility and alignment assessment for CCM and CCA.

During 2023, we have reclassified activities CCM 6.5 and CCM 7.4, hence the comparison year has been recalculated.

Using the definition of economic activities in the EU Taxonomy, we have identified the following as eligible and material to our business operations in 2023.

- Activity CCM 3.3 – Manufacture of low carbon technologies for transport. This relates to our development, manufacturing and sales of Volvo Cars' branded vehicles. We have excluded contract manufacturing activities for Polestar as we do not control vehicle specifications, and included the new Volvo car models EX30 and EM90, contract manufactured by different legal entities within the Zhejiang Geely Holding Group (hereinafter "Geely").
- Activity CCM 3.18 – Manufacture of automotive and mobility components. This relates to spare parts we sell to customers that are not included in the purchase price of the car.
- Activity CE 5.4 – Sale of second-hand goods. This relates to our sales of used cars.

The following activities Volvo Cars engages in, however, have been assessed as immaterial to our business in FY2023, but we will continue to monitor their development and materiality.

- CCM 3.4 – Manufacture of batteries.
- CCM 7.3 – Installation, maintenance and repair of energy efficiency equipment.
- CCM 7.4 – Installation, maintenance and repair of charging stations for electric vehicles in buildings and parking spaces attached to buildings.
- CCM 7.5 – Installation, maintenance and repair of instruments and devices for measuring, regulating and controlling energy performance in buildings.
- CCM 7.7 – Acquisition and ownership of buildings.
- CE 5.5 – Product-as-a-service, other circular use and result-oriented service models.

Accounting Policies

Our calculation of turnover, CapEx and OpEx for material and eligible economic activities (CCM 3.3, CCM 3.18 and CE 5.4) are outlined below.

Turnover

In calculating the proportion of eligible turnover, we have used Volvo Car Group's total revenue as a denominator. See Note 2 – Revenue on page 86.

We have allocated eligible turnover based on the economic activities CCM 3.3, including turnover related to sales of new cars, repurchase contracts and Care by Volvo, CCM 3.18 including turnover related to spare parts and CE 5.4 including turnover related to used cars. The numerator for turnover is the aligned proportion of each economic activity.

Capital Expenditure (CapEx)

In calculating the proportion of eligible CapEx, we have used Volvo Car Group's additions for tangible assets, including right of use assets, (see Note 17 – Tangible assets on page 107) and intangible assets, excluding trademark and goodwill, (see Note 16 – Intangible assets on page 105) as a denominator. We have excluded IT and other investments in the calculations of eligibility.

We have allocated CapEx based on the economic activities CCM 3.3, CCM 3.18 and CE 5.4 within Additions. In 2023, the numerator is calculated based on the CapEx plan for Taxonomy-eligible activities relating to CCM 3.3 to become Taxonomy-aligned.

Operational Expenditure (OpEx)

In calculating the proportion of eligible OpEx which constitutes the denominator, we have used Volvo Car Group's expenses related to research and development, expenses for short-term leases and expenses related to our property, plant, and equipment, for example maintenance and repair.

We have allocated OpEx based on expenses related to the economic activities CCM 3.3, CCM 3.18 and CE 5.4. In 2023, the numerator is calculated based on the CapEx plan for Taxonomy-eligible activities relating to CCM 3.3 to become Taxonomy-aligned. The Taxonomy reporting of OpEx is not comparable with other operating expenses in the income statement.

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CapEx Plan

In accordance with the Taxonomy, a distinction must be made between CapEx and OpEx activities that are currently aligned and investments that are intended to expand aligned activities or upgrade activities for future alignment. CapEx plans must seek to convert eligible activities into Taxonomy-aligned activities within a period of five years and be approved by management.

In 2023, we made a commitment to increase our alignment related to CCM 3.3 within five years. Currently, the DNSH criteria for pollution prevention is our primary obstacle to achieve alignment. In addition to our CapEx plan, we have developed an operational action plan to address the use of substances in our manufacturing processes. This includes working with suppliers to reduce the use of substances of concern and investigate the availability of suitable, alternative substances or technologies (see section Pollution prevention). The CapEx plan outlines how we aim to convert our current activities to be Taxonomy-aligned and includes investments that support Taxonomy-aligned manufacturing processes. The CapEx plan has been approved by management. The CapEx plan also applies to the OpEx associated with the investments. In 2023, as per tables on page 186–187, our aligned CapEx and OpEx is 12 per cent and 7 per cent respectively. Our projected CapEx and OpEx during the period of the CapEx plan is expected to grow in relation to our total investments.

Additional Commentary

All turnover, CapEx and OpEx values in other currencies have been converted to SEK. In calculating KPIs, we have ensured that there is no double counting of values.

In 2023, we clarify our involvement in nuclear and fossil gas related activities in the following table as required within the Taxonomy.

Nuclear and fossil gas related activities

Row	Nuclear energy related activities	
1	The undertaking carries out, funds or has exposures to research, development, demonstration and deployment of innovative electricity generation facilities that produce energy from nuclear processes with minimal waste from the fuel cycle.	No
2	The undertaking carries out, funds or has exposures to construction and safe operation of new nuclear installations to produce electricity or process heat, including for the purposes of district heating or industrial processes such as hydrogen production, as well as their safety upgrades, using best available technologies.	No
3	The undertaking carries out, funds or has exposures to safe operation of existing nuclear installations that produce electricity or process heat, including for the purposes of district heating or industrial processes such as hydrogen production from nuclear energy, as well as their safety upgrades.	No
Row	**Fossil gas related activities**	
4	The undertaking carries out, funds or has exposures to construction or operation of electricity generation facilities that produce electricity using fossil gaseous fuels.	No
5	The undertaking carries out, funds or has exposures to construction, refurbishment, and operation of combined heat/cool and power generation facilities using fossil gaseous fuels.	No
6	The undertaking carries out, funds or has exposures to construction, refurbishment and operation of heat generation facilities that produce heat/cool using fossil gaseous fuels.	No

Assessment of Alignment

In 2023, we have assessed the alignment of Volvo Cars models that are manufactured by Volvo Cars.

The EX30 and EM90 are contract manufactured at Geely's manufacturing facilities and for 2023 the products has been assessed as not aligned.

CapEx and OpEx at our manufacturing sites, that could be separately attributed to climate change adaptation activities, have been included within Activity CCM 3.3.

Activity CCM 3.3. Manufacturing of low carbon technologies for transport

Substantial contribution

Vehicles with tailpipe emissions of less than 50g of CO_2 per km meet the climate mitigation technical screening criteria for CCM 3.3. In 2023, all fully-electric and plug-in hybrid electric vehicles, except some versions of the XC40 Recharge PHEVs, meet this criteria. Our internal combustion engine (ICE) cars and the aforementioned XC40 Recharge models do not meet the substantial contribution criteria.

Do No Significant Harm (DNSH)

Climate change adaptation

We continuously assess our compliance with climate change adaptation for CCM 3.3 through our climate risk assessments at our manufacturing sites. Material physical climate risks have been identified and a robust climate risk and vulnerability assessment has been performed. This includes assessment of adaptation solutions for physical climate risk and considered IPCC pathways 4.5 and 8.5 with the time horizons 2030, 2050 and 2100.

Based on our assessment, our manufacturing sites fulfil the DNSH climate change adaptation criteria for CCM 3.3.

For more information on our climate change adaptation activities, see pages 57–58.

Water and biodiversity

In 2023, we assessed our compliance with the DNSH criteria for water and biodiversity through our gap analyses for permit status, including our Environmental Impact Assessment (EIA) status. EIAs have been conducted at all our European production sites, as part of manufacturing permit applications. At our Torslanda site, an EIA was carried out in 2022, as part of a permit application for battery manufacturing. Water risk assessments have also been made in accordance with legislation and risk-mitigation procedures, where required, are implemented in relation to water quality and water stress. There are currently no requirements in our permits related to mitigation or compensation measures on biodiversity. However, we continuously seek to reduce the negative impact of our manufacturing processes on biodiversity and water. At our sites outside the EU, we use checklists to assess our alignment with requirements from the European Directive 2011/92/EU and local legislation, as well as Key Biodiversity Area and Water Risk Index assessments.

Based on our assessment, we fulfil the CCM 3.3 criteria for DNSH to water and biodiversity.

See page 156–157 about water use and page 159 about biodiversity impact.

Circular economy

In 2023, we assessed our compliance with the DNSH criteria for circular economy, through the potential of our production activities to implement techniques that support circular economy. This included an assessment of reuse, use of secondary raw materials and the design of our cars and batteries for durability, recyclability, and disassembly. We also assessed if our waste management practices prioritise recycling and the traceability of substances of concern for all vehicles and spare parts.

Volvo Cars set targets to increase the use of recycled content and secondary raw materials (see pages 39–40). We have a policy on substances of concern

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and trace the substances within the policy using the International Material Data System (IMDS) platform, which is an online platform used within the automotive industry.

Based on our assessment, we fulfil the DNSH to circular economy criteria for CCM 3.3.

Pollution prevention

In 2023, we assessed our compliance with the DNSH criteria, by assessing whether Volvo Cars manufactures, places on the market or uses chemical substances referenced within Appendix C of the EU Taxonomy*. Volvo Cars does not manufacture or place them in their pure form on the market. However, chemical substances on the EU REACH candidate list are used within our manufacturing process and as part of components used in our vehicle production.

For 2023 the EU Taxonomy text has been amended, where the DNSH criteria can be met if the substances: have no other suitable alternative or technology available, they are used under controlled conditions and there is documented evidence of this assessment by operators. Based on our 2023 assessment we have concluded that we do not fulfil the DNSH to pollution prevention criteria for CCM 3.3.

Volvo Cars regularly engages with our suppliers on substances of very high concern and substances of concern. As part of our commitment to Taxonomy-alignment and CapEx plan, Volvo Cars will undertake a larger engagement programme with suppliers on the availability of suitable, alternative substances and technologies as well as the documentation of the assessment.

Minimum safeguards criteria

The Taxonomy requires companies to align with the OECD Guidelines for Multinational Enterprises (MNE) and the UN Guiding Principles on Business and Human Rights (UN GP), to ensure that companies meet the minimum safeguards. In line with the Taxonomy we have assessed minimum safeguards at the entity level, this assessment has included Volvo Car Group as the entity and has not expanded to business entities within our value chain.

In accordance with the minimum safeguards relating to human rights, we have assessed, to the best of our knowledge using available information, we are compliant with the minimum safeguards. Our evaluation is:

- We have established adequate human rights due diligence processes, as outlined in the UN Guiding Principles and the OECD Guidelines for Multinational Enterprises.
- We have not finally been held liable or found to be in breach of labour law or human rights in certain types of court cases on labour law or on human rights.
- We have not declined requests to engage with a National Contact Point (NCP) or other relevant parties and have not been found to contravene the OECD Guidelines by an NCP.
- We have not been the subject of allegations from the Business and Human Rights Resource Centre (BHRRC).

In accordance with the minimum safeguards relating to corruption, taxation, and fair competition, we have assessed that to the best of our knowledge we are compliant with the minimum safeguards. Our evaluation considered:

- Anti-corruption processes, and any convictions of corruption for senior management (including senior management of subsidiaries).
- Treatment of governance and compliance as important elements of oversight.
- Adequacy of tax risk management strategies and processes (including subsidiaries) and violation of tax laws.
- Promotion of the importance of compliance with all applicable laws and regulations among our employees.
- Convictions of violating competition laws for senior management (including senior management of subsidiaries).

For more information on corruption, taxation and fair competition, please refer to pages 177 to 179.

We seek to continually improve our due diligence processes and meet the standards of the forthcoming Corporate Sustainability Due Diligence Directive. See page 166.

Looking ahead

The objectives of the EU Taxonomy align with our climate action plan and electrification ambitions. We aim to fulfil the technical screening criteria of zero tailpipe emissions for all the vehicles we manufacture by 2030.

In 2023, Volvo Cars has improved on our Taxonomy-alignment for CapEx and OpEx which is associated with our commitment to future alignment. Volvo Cars has an ambition to have 50 per cent CapEx alignment by 2025 and 70 per cent CapEx alignment by 2030. We will continue to be transparent in our Taxonomy reporting.

We maintain the view that there will be significant work required in meeting the technical screening criteria to be Taxonomy-aligned, particularly related to the criteria for Appendix C within DNSH to pollution prevention, which will be more extensive in 2025.

We aim to maintain focus on alignment in our core operations, namely CCM 3.3. We have already initiated the process of engaging with suppliers to understand their capabilities in phasing out substances and suitable alternatives that exist in the market. This is a crucial step towards achieving our alignment ambitions.

EXTENT OF ELIGIBILITY AND ALIGNMENT

The following is a summary of the proportion of aligned and eligible Turnover, CapEx and OpEx per each environmental objective.

	Proportion turnover/Total turnover	
	Taxonmy-aligned per objective	Taxonomy-eligible per objective
CCM	0%	85%
CCA	0%	0%
WTR	0%	0%
CE	0%	5%
PPC	0%	0%
BIO	0%	0%

	Proportion CapEx/Total CapEx	
	Taxonmy-aligned per objective	Taxonomy-eligible per objective
CCM	12%	95%
CCA	0%	0%
WTR	0%	0%
CE	0%	0%
PPC	0%	0%
BIO	0%	0%

	Proportion OpEx/Total OpEx	
	Taxonmy-aligned per objective	Taxonomy-eligible per objective
CCM	7%	88%
CCA	0%	0%
WTR	0%	0%
CE	0%	0%
PPC	0%	0%
BIO	0%	0%

*Appendix C section (f) refers to substances (in a concentration above 0.1% weight by weight) within the candidate list related to the EU REACH regulation.

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Proportion of turnover from products or services associated with Taxonomy-aligned economic activities – disclosure covering year 2023

TURNOVER

Financial year 2023	Year			Substantial Contribution Criteria						DNSH Criteria ('Does Not Significantly Harm')									
Economic activities	Code	Turnover	Proportion of Turnover, year 2023	Climate Change Mitigation	Climate Change Adaptation	Water	Pollution	Circular Economy	Bio-diversity	Climate Change Mitigation	Climate Change Adaptation	Water	Pollution	Circular Economy	Bio-diversity	Minimum Safeguards	Proportion of Taxonomy aligned (A.1.) or eligible (A.2.) turnover, year 2022	Category Enabling Activity	Category Transac-tional Activity
		SEKm	%	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	E	T
A. Taxonomy-eligible activities																			
A.1 Environmentally-sustainable activities (Taxonomy-aligned)																			
Turnover of environmentally sustainable activities (Taxonomy-aligned) (A.1)		—	0%	0%	0%	0%	0%	0%	0%	—	—	—	—	—	—	—	0%		
Of which Enabling		—	0%	0%	0%	0%	0%	0%	0%	—	—	—	—	—	—	—	0%	E	
Of which Transitional		—	0%	0%						—	—	—	—	—	—	—	0%		T
A.2 Taxonomy-Eligible but not environmentally sustainable activities																			
				EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**										
Manufacture of low carbon technologies for transport	CCM 3.3	311,536	78%	EL	N/EL	N/EL	N/EL	N/EL	N/EL								77%		
Manufacture of automotive and mobility components***	CCM 3.18	29,143	7%	EL	N/EL	N/EL	N/EL	N/EL	N/EL								—		
Sale of second-hand goods***	CE 5.4	18,505	5%	N/EL	N/EL	N/EL	N/EL	EL	N/EL								—		
Turnover of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		359,184	90%	85%	0%	0%	0%	5%	0%								77%		
CapEx of Taxonomy eligible activities (A.1 + A.2)		359,184	90%	85%	0%	0%	0%	5%	0%								77%		
B. Taxonomy-non-eligible activities																			
Turnover of Taxonomy-non-eligible activities		40,159	10%																
Total		**399,343**	**100%**																

*Y – Yes, Taxonomy-eligible and Taxonomy-aligned activity with the relevant environmental objective, N – No, Taxonomy-eligible but not Taxonomy-aligned activity with the relevant environmental objective, N/EL – not eligible, Taxonomy-non-eligible activity for the relevant environmental objective.
**EL – Taxonomy-eligible activity for the relevant objective, N/EL – Taxonomy-non-eligible activity for the relevant objective.
***The activity is new for 2023 and has not been assessed for alignment.

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Proportion of CapEx from products or services associated with Taxonomy-aligned economic activities – disclosure covering year 2023

CapEx

Financial year 2023		Year		Substantial Contribution Criteria						DNSH Criteria ('Does Not Significantly Harm')									
Economic activities	Code	CapEx	Proportion of CapEx, year 2023	Climate Change Mitigation	Climate Change Adaptation	Water	Pollution	Circular Economy	Bio-diversity	Climate Change Mitigation	Climate Change Adaptation	Water	Pollution	Circular Economy	Bio-diversity	Minimum Safeguards	Proportion of Taxonomy aligned (A.1.) or eligible (A.2.)CapEx, year 2022	Category Enabling Activity	Category Transac-tional Activity
		SEKm	%	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	E	T
A. Taxonomy-eligible activities																			
A.1 Environmentally-sustainable activities (Taxonomy-aligned)																			
Manufacture of low carbon technologies for transport	CCM 3.3	6,008	12%	Y							Y	Y	Y	Y	Y	Y	0%	E	
CapEx of environmentally sustainable activities (Taxonomy-aligned) (A.1)		6,008	12%	12%	0%	0%	0%	0%	0%		—	—	—	—	—	—	0%		
Of which Enabling		6,008	12%	12%	0%	0%	0%	0%	0%		Y	Y	Y	Y	Y	Y	0%	E	
Of which Transitional			0%	0%							—	—	—	—	—	—	0%		T
A.2 Taxonomy-Eligible but not environmentally sustainable activities																			
				EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**										
Manufacture of low carbon technologies for transport	CCM 3.3	40,181	82%	EL	N/EL	N/EL	N/EL	N/EL	N/EL								85%		
Manufacture of automotive and mobility components***	CCM 3.18	5	0%	EL	N/EL	N/EL	N/EL	N/EL	N/EL								—		
Sale of second-hand goods***	CE 5.4	—	0%	N/EL	N/EL	N/EL	N/EL	EL	N/EL								—		
CapEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		40,186	82%	82%	0%	0%	0%	0%	0%								85%		
CapEx of Taxonomy eligible activities (A.1 + A.2)		46,194	95%	95%	0%	0%	0%	0%	0%								85%		
B. Taxonomy-non-eligible activities																			
CapEx of Taxonomy-non-eligible activities		2,655	5%																
Total		**48,849**	**100%**																

*Y – Yes, Taxonomy-eligible and Taxonomy-aligned activity with the relevant environmental objective, N – No, Taxonomy-eligible but not Taxonomy-aligned activity with the relevant environmental objective, N/EL – not eligible, Taxonomy-non-eligible activity for the relevant environmental objective.
**EL – Taxonomy-eligible activity for the relevant objective, N/EL – Taxonomy-non-eligible activity for the relevant objective.
***The activity is new for 2023 and has not been assessed for alignment.

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Proportion of OpEx from products or services associated with Taxonomy-aligned economic activities – disclosure covering year 2023

OpEx

Financial year 2023		Year		Substantial Contribution Criteria						DNSH Criteria ('Does Not Significantly Harm')									
Economic activities	Code	OpEx	Proportion of OpEx, year 2023	Climate Change Mitigation	Climate Change Adaptation	Water	Pollution	Circular Economy	Bio-diversity	Climate Change Mitigation	Climate Change Adaptation	Water	Pollution	Circular Economy	Bio-diversity	Minimum Safeguards	Proportion of Taxonomy aligned (A.1.) or eligible (A.2.) OpEx, year 2022	Category Enabling Activity	Category Transac-tional Activity
		SEKm	%	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y; N; N/EL*	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	E	T
A. Taxonomy-eligible activities																			
A.1 Environmentally-sustainable activities (Taxonomy-aligned)																			
Manufacture of low carbon technologies for transport	CCM 3.3	544	7%	Y							Y	Y	Y	Y	Y	Y	0%	E	
OpEx of environmentally sustainable activities (Taxonomy-aligned) (A.1)		544	7%	7%	0%	0%	0%	0%	0%		—	—	—	—	—	—	0%		
Of which Enabling		544	7%	7%	0%	0%	0%	0%	0%		Y	Y	Y	Y	Y	Y	0%	E	
Of which Transitional		—	0%	0%							—	—	—	—	—	—	0%		T
A.2 Taxonomy-Eligible but not environmentally sustainable activities																			
				EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**	EL; N/EL**										
Manufacture of low carbon technologies for transport	CCM 3.3	6,238	81%	EL	N/EL	N/EL	N/EL	N/EL	N/EL								84%		
Manufacture of automotive and mobility components***	CCM 3.18	3	0%	EL	N/EL	N/EL	N/EL	N/EL	N/EL								—		
Sale of second-hand goods***	CE 5.4	5	0%	N/EL	N/EL	N/EL	N/EL	EL	N/EL								—		
OpEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		6,247	81%	81%	0%	0%	0%	0%	0%								84%		
OpEx of Taxonomy eligible activities (A.1 + A.2)		6,791	88%	88%	0%	0%	0%	0%	0%								84%		
B. Taxonomy-non-eligible activities																			
OpEx of Taxonomy-non-eligible activities		893	12%																
Total		**7,684**	**100%**																

*Y – Yes, Taxonomy-eligible and Taxonomy-aligned activity with the relevant environmental objective, N – No, Taxonomy-eligible but not Taxonomy-aligned activity with the relevant environmental objective, N/EL – not eligible, Taxonomy-non-eligible activity for the relevant environmental objective.
**EL – Taxonomy-eligible activity for the relevant objective, N/EL – Taxonomy-non-eligible activity for the relevant objective.
***The activity is new for 2023 and has not been assessed for alignment.

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Green Financing Report

The Green Financing Framework

In 2020, Volvo Cars introduced its first Green Financing Framework. To better reflect our ambitious sustainability strategy and the integration of market practices and standards, the framework was subsequently updated in May 2023. The framework defines how green financing instruments are used by Volvo Cars to financially accompany its sustainability journey. The updating of the framework included alignment with the 2021 ICMA Green Bond Principles (including the updated Appendix I from June 2022) and the 2023 LMA, LSTA, APLMA Green Loan Principles. We aim to, where feasible, transfer all outstanding debt into green or sustainability-linked funding by 2025 and diversify the source of external debt.

Volvo Cars has issued bonds linked to the Green Financing Framework but also entered into bilateral and multilateral credit facilities referencing the Green Financing Framework. Not all our facilities are referred to as green by our lending counterparties, but are in fact solely financing Eligible Projects in accordance to the Green Financing Framework.

Our framework has been reviewed by CICERO Shades of Green, now part of S&P Global, an independent research-based assessment company of green finance frameworks. Our updated framework received the highest possible rating, Dark Green, as did our first version in 2020. Included in the overall rating is an assessment of Volvo Car Group's governance structure and processes, which are rated as excellent.

For more information about our Green Financing Framework and Cicero's statement, click here: https://investors.volvocars.com/en/debt-information/green-financing

Financing under the Green Financing Framework

In February 2023, Volvo Cars issued SEK 1,500 m in SEK bonds. The issuance was well received by investors and marked another milestone in our transition to full electric car production by 2030 and net-zero emissions by 2040. All the capital raised will fund the development of our next-generation, all-electric vehicles platforms. The bond issuance was divided into a fixed and a floating rate tranche of SEK 650 m and SEK 850 m, respectively. All Volvo Cars' bonds are listed on the Luxembourg Stock Exchange.

A new bilateral 10-year loan agreement of EUR 250 m was entered into in late 2023, with the purpose to finance investments that meet the eligibility criteria set out in the Green Financing Framework. The loan facility remains undrawn as per end of 2023.

Moreover, in November 2023, a drawdown of EUR 200 m was made under an existing bilateral loan facility entered into in 2022 and maturing in 2030.

Use of Proceeds and Allocation as per 31 December	Green Bonds			Loan Facilities[1]		
Issuance/Date of signing	Oct 2020	May 2022	Feb 2023	May 2022	Dec 2022	Dec 2023
Maturity	Oct 2027	May 2028	Mar 2026	May 2030	Dec 2030	10Y tenor
ISIN	XS2240978085	XS2486825669	XS2593141604 XS2593137917	N/A	N/A	N/A
Currency	EUR	EUR	SEK	SEK	EUR	EUR
Amount Issued (mn)	500	500	1,500	1,000	200	250
Amount drawn (mn)	N/A	N/A	N/A	1,000	200	0
Unallocated[2] (%)	**0.0**	**3.2**	**0.0**	**0.0**	**10.0**	**0.0**
Allocated[3] (%)	**100.0**	**96.8**	**100.0**	**100.0**	**90.0**	**0.0**
Finance (%)	**4.4**	**67.2**	**70.0**	**65.0**	**52.5**	**0.0**
R&D	2.7	45.7	70.0	65.0	52.5	0.0
Manufacturing[4]	1.8	21.5	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	0.0
Refinance (%)	**95.6**	**29.6**	**30.0**	**35.0**	**37.5**	**0.0**
R&D	31.2	29.6	30.0	0.0	37.5	0.0
Manufacturing[4]	33.1	0.0	0.0	35.0	0.0	0.0
Other[5]	31.2	0.0	0.0	0.0	0.0	0.0

	2023	2022	2021
Share of green debt or sustainability-linked financing of assets eligible under the Green Financing Framework as percentage of Outstanding Debt[6] (%)	52.3%	41.6%	20.2%

1) Refers to facilities with the purpose of financing projects meeting the eligibility criteria under the Green Financing Framework.
2) Refers to total amount of unallocated proceeds invested in cash and/or cash equivalent and/or other liquid marketable instruments earmarked for Eligible Green Projects as of 31 December 2023.
3) Refers to total amount of allocated proceeds in Eligible Green Projects as of 31 December 2023.
4) Includes tooling and facilities.
5) Equity injection in Polestar.
6) See Note 21 – Financial Instruments and Financial Risks for definition of Outstanding Debt. For more information about the Green Financing Framework, please see https://investors.volvocars.com/en/debt-information/green-financing.

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Allocation Report and Use of Proceeds

The net proceeds from any issuance of either loans linked to our Green Financing Framework or green bonds will be used to finance and/or refinance, in whole or in part, new or existing projects, assets and activities according to the Eligibility Criteria (“Eligible Green Projects”) outlined in our framework.

The table in previous page outlines all such outstanding debt, the share of financing and refinancing and sets out the respective allocation of proceeds to the respective category of Eligible Green Projects (R&D, Manufacturing or Other), as of 31 December 2023. The balance of unallocated net proceeds is held in cash, cash equivalents and/or invested in other liquid marketable instruments until these are allocated.

Approximately 99 per cent of the funds from the green bonds have been allocated. For our loans that finance investments that meet the eligibility criteria in the Green Financing Framework, 93 per cent of the proceeds have been allocated (with the remaining net proceeds being held in cash, cash equivalents and/or invested in other liquid marketable instruments until these are being allocated).

Impact Report

The environmental impact and benefits of the Eligible Category Clean Transportation are estimated and evaluated using the selected impact indicators listed in the Impact Report table. As the estimated impact of the allocated proceeds will be realised over several years and be dependent on manufacturing and sales volumes of fully-electric vehicles, it is not possible to precisely attribute the share of allocated proceeds to the specific indicators. Therefore, we have selected the annual corporate performance of these impact indicators as representative of the environmental impact of the allocated proceeds. In our view, the positive development of these indicators over time will be the best indication that the allocated proceeds are producing the environmental benefits of clean transportation that are expected and contribute to climate-change mitigation. New projects are vetted against the company’s ERM assessment of ESG risks and EU Taxonomy alignment. For definitions and calculation methodology of the indicators, see the Sustainability Report on page 192–195.

Impact Report	2023	2022	2021
Fully electric vehicles (BEVs) sold	113,419	66,749	25,727
Fully electric vehicles (BEVs) sold (%)	16.0	10.9	3.7
Total CO_2 tailpipe emissions avoided, kilo tonnes[1,3]	3,060	1,870	750
Tailpipe CO_2 emission reduction per average vehicle[1,9,10] (baseline 2018) (%)	–38.5	–31.5	–21.6

For further definitions and reporting principles see page 192–195.

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Volvo Cars and the UN Sustainable Development Goals

In 2015, the United Nations established its 17 Sustainable Development Goals (SDGs) as a blueprint for achieving a better and more sustainable future for all. We are committed to these goals and use them to guide our sustainability work. Our products and operations have the largest impact on SDGs 3, 5, 7, 8, 11, 12, 13 and 16. In addition, we contribute to SDGs 1, 4, 6, 9 and 17. We recognise that we have both a positive and negative effect on the Goals and aim to improve our net impact overall.

Abbreviations:
- CoC = Code of Conduct
- CoC BP = Code of Conduct for Business Partners

UN SDG Goal	Examples of Volvo Cars impact and/or contribution (SDG sub target reference X.X)
1 No poverty	• We aim to ensure a living wage for our employees, as well as for the workers throughout our value chain. Volvo Cars supports the requirements of the International Labour Organization (ILO) and expects its Business Partners to adhere to and respect the ILO standards. (1.2)
3 Good health and well-being	• Safety is at the core of our business. We have established a zero-collision vision and strategy. (3.6) • We aim to reach net zero greenhouse gas emissions by 2040, with interim ambitions. (3.9)
4 Quality education	• In collaboration with academic institutions and by providing job training for unemployed people, we aim to building a better future for local communities. (4.4)
5 Gender equality	• Our business culture is described in our CoC and People Policy. (5.1, 5.2) • Volvo Cars Family Bond offers gender-neutral parental leave to all employees. (5.4) • We seek to increase gender equality, both in terms of pay and senior management positions. (5.5)
6 Clean water and sanitation	• By 2030, we aim to reduce water withdrawal in own operations by 50 per cent per manufactured vehicle (from a 2018 baseline). (6.4)
7 Affordable and clean energy	• By 2025, we aim to use only climate-neutral energy in our own operations. (7.2) • By 2030, we aim to reduce energy consumption in own operations by 40 per cent per vehicle (2018 baseline). (7.3)
8 Decent work and economic growth	• Through our growth, electrification and digitalisation strategies, we create jobs and sustainable development. (8.2, 8.5) • We aim to become a circular business. (8.4) • We aim to build a better future in local communities, through education, job training and employment. (8.6) • We aim to protect human rights within our organisation and throughout our value chain. (8.7, 8.8)

UN SDG Goal	Examples of Volvo Cars impact and/or contribution (SDG sub target reference X.X)
9 Industry, innovation and infrastructure	• We have strategic programmes for sustainability and electrification, with interim and long-term objectives. (9.4)
11 Sustainable cities and communities	• We support safe and sustainable mobility through electrification, safety technology and car sharing offers. Safety is at the core of our business. We have a zero-collision vision and strategy. We are active participants in the Gothenburg Green City Zone project. (11.2, 11.3)
12 Responsible consumption and production	• By contributing to the circular economy, we aim to significantly reduce waste and consumption of virgin raw materials. We seek to optimise the lifecycles of our products and components (12.2, 12.4, 12.5) • We publish our sustainability report in accordance with international standards and guidelines. (12.6)
13 Climate action	• We are committed to reducing the carbon footprint in our value chain. We aim to reach net zero greenhouse gas emissions by 2040. (13.1) • Our contributions towards helping limit climate change are defined in our sustainability strategy. (13.2) • We inform and influence our stakeholders on the importance of climate change mitigation through stakeholder dialogue, position papers and conferences, among other measures. (13.3)
16 Peace, justice and strong institutions	• We have a zero-tolerance for discrimination, harassment and bullying. (16.1) • Volvo Cars and its business partners work actively to prevent all forms of child labour. We aim to ensure there are no forced labour of any kind relating to Volvo Cars' business, products and services. (16.2) • We monitor adherence to our CoC and CoC BP. We encourage concerns or suspected violations to be reported via the Tell Us grievance channel for investigation and action. (16.3) • Volvo Cars strives to act at all times as a fair and responsible market participant and expects the same from its Business Partners. (16.5) • We respect the right to privacy and take all appropriate precautions to protect personal data. (16.10)
17 Partnerships for the goals	• We inform and influence our stakeholders on the importance of climate change mitigation through stakeholder dialogue, position papers and conferences, among other measures. (17.16)

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Sustainability ratings and assessments of ESG performance

We participate in independent assessments and engage with ESG rating institutes to monitor and evaluate the sustainability performance of our organisation and our suppliers. We value external opinion and benchmarking against our industry. Our performance has improved incrementally, with results suggesting we are on course to achieve our sustainability ambitions.

Sustainability ratings	Interval	Score	Date
CDP Climate – For more information: CDP	D– to A	**A**	As of Feb. 6, 2024
CDP Water – For more information: CDP	D– to A	**B**	As of Feb. 6, 2024
EcoVadis – For more information: EcoVadis	1–100	**72**	As of Dec. 31, 2023
ISS ESG Corporate Rating – For more information: ISS	D– to A+	**C**	As of Feb. 12, 2024
MSCI ESG Rating* – For more information: MSCI	CCC to AAA	**A**	As of Feb. 12, 2024
S&P Global Corporate Sustainability Assessment (CSA) – For more information: S&P Global	1–100	**72**	As of Dec. 31, 2023
Sustainalytics ESG Risk Rating overall score** – For more information: Sustainalytics	Severe (40+) to Negligible (>10)	**18.6**	As of Feb. 12, 2024

* The use by Volvo Cars of any MSCI Research LLC or its affiliates ("MSCI") data, and the use of MSCI logos, trademarks, service marks or index names herein, do not constitute a sponsorship, endorsement, recommendation, or promotion of Volvo Cars by MSCI. MSCI services and data are the property of MSCI or its information providers, and are provided 'as-is' and without warranty. MSCI names and logos are trademarks or service marks of MSCI.

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About this sustainability report

Volvo Car Group's 2023 sustainability report was prepared in accordance with GRI Standards (2021) and the World Economic Forum white paper, Measuring Stakeholder Capitalism, Core Metrics and Disclosures. The reporting period is from 1 January to 31 December 2023 (except where otherwise stated). Our previous report was published in March 2023. Volvo Car Group's sustainability report is also prepared in accordance with the Swedish Annual Accounts Act 6, Chapter 11§.

Our sustainability reporting is found on pages 35 to 43 and 147 to 195 of this report, with enterprise risk management information on pages 52 to 58. Definitions regarding boundaries, as well as measuring techniques and calculations for performance indicators, are given in respect to the disclosure concerned. There have been no significant reporting changes since the previous reporting period. Our auditors have provided limited assurance of the Sustainability Report and the Green Financing Report in accordance with ISAE 3000, see page 196 and 197. Our 2023 UNGC's Communication on Progress (COP) will be published in on the UNGC website.

We continuously identify, analyse, and, if relevant, implement initiatives that support our ambitions. Climate action and financial risks related to climate change and nature-related topics are focus areas within our organisation. We have incorporated the eleven disclosures recommended by the Task Force on Climate-Related Financial Disclosures (TCFD) into our annual reporting since 2022.

We have started to take the recommended disclosures by the Task Force on Nature-Related Disclosures (TNFD) into consideration when preparing the sustainability report. Our aim is to continue working with these requirements in the coming year for future alignment. We have also started to prepare for the disclosure requirements within the European Sustainability Reporting Standards (ESRS) to secure alignment of our next Annual Report 2024 regarding those standards.

For full GRI, WEF and TCFD indexes, references linked to the statutory sustainability reporting according to the Swedish Annual Accounts Act and our sustainability polices, see Appendices: Sustainability reference index.

Internal control over sustainability reporting

We have an internal control system for sustainability reporting. Process maps for all KPIs and our internal control activities are documented in Volvo Car Group's Internal Control Framework for Sustainability Reporting.

SUSTAINABILITY TEAM

The Sustainability Team is responsible for the day-to-day governance and coordination of sustainability strategy and targets, which form a part of our sustainability strategy framework and the ambitions therein, and are embedded in the business plan, our missions, OKRs, and relevant operational and functional plans.

It monitors the progress of key corporate sustainability KPIs, and together with Sustainability Finance it is ensuring transparent reporting and validation of progress.

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Definitions, reporting principles and sources

Carbon footprint

1 **Emission reduction per vehicle:** Covers all emissions in Volvo Cars GHG protocol except the sub category "Production and distribution of fuel and electricity" within the category "Use of sold products".

2 The name of the ambition "reduction in supply chain emissions" by 25 per cent per average vehicle by 2025 has been renamed to "reduction of emissions from materials" to reflect the updated sustainability strategy. The scope of the target is unchanged.

3 Our Scope 1 and Scope 2 targets are in line with the 1.5°C pathway as verified by the Science-Based Targets initiative (SBTi). Our Scope 3 target is in line with the well-below 2°C pathway – the SBTi did not classify any Scope 3 targets as 1.5°C aligned at the time of submission. The SBTi has currently paused automaker target validations and updates until the Interim 1.5°C Target-Setting Pathway for Automakers is finalised.

4 Throughout the report, CO_2, carbon, and carbon dioxide refer to and is used interchangeably with CO_2 equivalents (CO_2e), unless otherwise stated.

5 The lowest carbon footprint of any Volvo car to date statement relates to globally available products over 200,000 km of driving, with an average EU27 energy mix according to the IEA STEPS model.

6 Volvo Cars will commit to at least 10 per cent (by volume) of all our primary aluminium procured annually will be near-zero emissions primary aluminium by 2030 (as per the First Movers Coalition definition). This voluntary commitment made by joining the First Movers Coalition is subject to the availability of technology supply, that enables companies to meet their 2030 purchase pledges, and to Volvo Cars' business prerequisites as approved by Volvo Cars leadership.

7 For more information and definitions see Volvo Cars position on chain of custody models.

8 For more information and definitions see Volvo Cars position on sustainable steel.

9 **GHG Protocol:** (including the greenhouse gases CO_2, CH_4, N_2O, HFC, PFC and SF_6, among others) is calculated based on the guidance of the GreenHouse Gas protocol including emissions within our financial control. The following categories have been excluded; capital goods, fuel and energy related activities, processing of sold products and investments. Due to updated methodologies as well as new input data from an external service provider, previously reported values are adjusted (Company facilities, Purchased electricity, steam, heating and cooling for own use, Purchased goods and services, Waste generated in operations) compared to prior communication to ensure accuracy, completeness and comparability.

Scope 1

Company facilities: GHG emissions from our global manufacturing plants and non-manufacturing sites include the energy used, multiplied with an emission factor for each different energy type. Data for non-manufacturing operations is reported for Q4 – Q3 and data for manufacturing operations is reported from 1 December – 30 November. Data gaps are filled with relevant energy use assumptions. (1) if historical data is available for the site with data gap, average of previous reported data is applied and (2) if no historical data is available, the data gap is filled using normalised averages of the facility type. The building scope includes all Volvo Cars owned/leased non-manufacturing facilities (R&D, warehouses, offices) excluding owned retailers which are included in Scope 3. The list of buildings to be included in reporting is updated annually. Due to slight corrections of activity data from our sites, emissions for year 2022 and 2021 have been adjusted from 67 to 68 ktCO_2e and from 72 to 73 ktCO_2e respectively.

Company vehicles: GHG emissions from company vehicles are related to the fuel consumed by our test cars, estimated using external emission factors from DEFRA (Department for Environment, Food and Rural Affairs) and global procured volume of fuels for test cars. Emissions related to the production and end of life treatment of test cars are reported in Scope 3.

Scope 2

Purchased electricity, steam, heating and cooling for own use: Indirect GHG emissions for manufacturing facilities are calculated based on purchased energy and supplier specific emission factors, where such are available. The calculation follows the same methodology as described under Company Facilities in the previous section. Due to slight corrections of activity data from our sites, emissions for year 2022 has been adjusted from 40 to 39 ktCO_2e.

Scope 3

Purchased goods and services: GHG emissions from purchased materials are derived from material compositions of representative vehicles and CO_2 emission factors from Sphera´s LCA modelling software LCA for Experts (GaBi), multiplied with the global manufactured Volvo Cars vehicle. GHG emissions caused by materials and services not directly relating to the car are calculated on a spend-based approach using an extended environmental input-output life cycle assessment model developed by CIRAIG, deemed to have enough accuracy for selected emissions. Emissions from packaging is calculated based on kg materials and relevant emissions factors. The emissions for purchased goods and services have been slight updated for year 2022, from 12 102 to 12 113 ktCO_2e due to emission factor updates and a more detailed breakdown of materials in our cars.

Transportation and distribution: GHG emissions from logistics (1 December – 30 November) are calculated by including inbound, outbound and parts supply logistics transports managed and paid for by Volvo Cars. Emission factors derived from NTM (Network for Transport Measures) and, for biofuels, emission factors obtained from suppliers.

Waste generated in operations: GHG emissions from waste generated in our operations are calculated by categorising waste volumes into types and treatment methods. Waste for non-manufacturing operations is reported for Q4–Q3 and for manufacturing operations it is reported from 1 December – 30 November. Due to slight corrections of activity data from our sites, emissions for year 2022 has been adjusted from 7 to 6 ktCO_2e.

Business travel: GHG emissions from air travel are calculated by using the flight distance reported by our travel agency, as well as emissions factors from NTM. Radiative forcing factor is applied for air travel. Emissions caused by other modes of business travel are calculated

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on a spend-based approach, using relevant emissions factors from public sources.

Employee commuting: GHG emissions from employee commuting are based on a simulation conducted in 2022 in Sweden with 27,000 employees and travel choice taken into account. Due to occupancy rate not being accounted for correctly in previous calculations, emissions for year 2022 have been updated from 70 to 47 ktCO₂e, now properly taking occupancy rate into account.

Leased assets upstream: Emissions from leased assets upstream includes emissions from the manufacturing plant in Luqiao, China, owned by Geely between year 2019 and 2021. Energy used is multiplied with an emission factor per energy type. Volvo Cars' share of Luqiao emissions is calculated based on the total number of produced Volvo cars in Luqiao compared to the total number of cars produced in Luqiao. Emissions from waste generated by the production of Volvo cars is included.

Use of sold products: Total GHG emissions from use of manufactured products are calculated by applying the CO_2 tailpipe emissions per km, (see definitions for tailpipe emissions), on our global manufactured Volvo Cars vehicles and an average mileage of 200,000 km per vehicle.

The emissions from production and distribution of electricity is based on a global energy mix from 2018. Production and distribution of fuels is based on an internal assessment of upstream CO_2 emissions from diesel and petrol.

Average GHG emissions from use of sold products are based on official data Worldwide Harmonized Light Vehicle Test Procedure (WLTP) of Volvo sold cars in Europe (EU27 and UK), applied on car types and the global number of manufactured Volvo Cars vehicles. Volvo Cars product offer is global and EU data is a fair estimate of similar products worldwide. Many markets have car variants that are not tested on WLTP. These variants have been assigned fuel consumption values using a rule-based, automated method.

The accuracy of the calculation method can be influenced by real world factors not covered by the official data such as driving behaviour and different usage of auxiliary loads.

End of life treatment of sold products: GHG emissions caused by the end of life treatment of sold products are estimated based on emission factors from the Battery electric C40 Recharge carbon footprint study and our global manufactured volume.

Leased assets downstream: Emissions from leased assets downstream are calculated by summarising the Volvo Cars share of emissions reported by leased spare parts warehouses.

Retailers: The 2018 baseline calculation of GHG emissions caused by retailers are based on financial data of EMEA Volvo Cars retailers and a detailed analysis of seven selected retail sites. This methodology is updated in the 2022 reporting with data collected from from Volvo Cars Facility Environmental Sustainability Tool (FEST). In FEST a larger set of retailers report on sustainability than the original sample. Year 2023 retailer emissions are based on data collected from retailers for year 2021.

Market and regional averages are used to extrapolate emissions to retailers that was not part of the data collection. The GHG emissions from retailers are based on the GHG protocol and includes the categories company facilities, company vehicles, purchased electricity steam, heating and cooling for own use, purchased goods and services, capital goods, waste generated in operations, business travel and employee commuting.

10 Based on global manufactured Volvo Cars vehicles.

Tailpipe emissions

11 BEV vehicles energy efficiency is based on official data Worldwide Harmonized Light Vehicle Test Procedure (WLTP) of Volvo sold cars in Europe (EU27 and UK), applied on car types and the global number of manufactured cars. Many markets have car variants that are not tested on WLTP. These variants have been assigned an electric consumption based on a selected similar WLTP tested variant. This selection process is rule-based and automated to ensure consistency. Volvo Cars product offer is global and EU data is a fair estimate of similar products worldwide. The accuracy of this method can be influenced by real world factors not covered by the official data such as driving behaviour and different usage of auxiliary loads.

12 Tailpipe emissions are based on official data Worldwide Harmonized Light Vehicle Test Procedure (WLTP) of Volvo sold cars in Europe (EU27 and UK), applied on car types and the global number of manufactured Volvo Cars vehicles. Many markets have car variants that are not tested on WLTP. These variants have been assigned a fuel consumption based on a selected similar WLTP tested variant. This selection process is rule-based and automated to ensure consistency. Volvo Cars product offer is global and EU data is a fair estimate of similar products worldwide. The accuracy of this method can be influenced by real world factors not covered by the official data such as driving behaviour and different usage of auxiliary loads.

13 Total CO_2 tailpipe emissions avoided multiplying number of sold BEVs with the global average CO_2 emissions (WLTP) for all manufactured Volvo Cars vehicles per year, respectively, excluding BEVs. For calculation purposes an assumed average milage of 200,000 km per car has been applied.

Emissions, other

14 Volvo Car Group commits to reduce absolute Scope 1 and 2 GHG emissions by 60 per cent by 2030 from a 2019 base year.

Volvo Car Group commits to reduce Scope 3 GHG emissions from Use of sold products 52 per cent per vehicle kilometre by 2030 from a 2019 base year (this includes Production and distribution of fuel and electricity related to use of sold products).

Energy, Waste and Water

15 For 2021 the data only includes renewable energy.

16 Source for conversion factors: For sites measuring natural gas usage by the volume, conversion to energy usage is done by multiplying with Higher Heating Value (HHV) from natural gas supplier.

17 Manufactured vehicles includes manufacturing of other brands, and excludes Volvo car models manufactured by third party. When manufacturing plants have been added or removed, the baseline number (2018) have been adjusted accordingly. During 2023 manufactured vehicles are defined based on central data rather than collected from each site, this has lead to historical figures being adjusted accordingly. For manufacturing sites, data is reported from 1 December–30 November and for non-manufacturing sites Q4–Q3.

18 Direct energy refers to energy from sources that are owned or controlled by Volvo Cars. Indirect energy refers to procured energy.

19 Own operations includes manufacturing and non-manufacturing facilities (i.e., R&D, warehouses, offices, etc., excluding owned retailers). For manufacturing sites, data is reported from 1 December–30 November and for non-manufacturing sites Q4–Q3. For Energy efficiency savings, data is based on financial year data 1 January–31 December.

20 We define a plant or facility as climate neutral (Scope 1 and 2) if the electricity, heating, cooling, and compressed air it consumes causes no net increase in emissions of greenhouse gases.

21 Charleston, Ghent, Olofström, Hällered, R&D Americas, Volvo Cars UK, Volvo Cars Netherlands, Volvo University Americas, Warehouse Lammhult.

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22 According to WRI Aqueduct water risk atlas tool.

23 Excluding Olofström and Malaysia. Legal permits on these sites do not require the plants to measure their water discharge, therefore it is considered not to be of environmental significance.

Material value retention

24 At Volvo Cars, we use the term bio-based materials instead of renewable materials, as renewable materials have high demands on fast renewal of the biomass.

25 This estimate is calculated based on the recycled and bio-based materials produced during the period.

Biodiversity and nature

26 Net positive means that Volvo Cars will take actions to avoid and reduce its impacts, as well as engage in restoration and regeneration of nature to the extent that it positively balances its negative impacts. Nature positive means that Volvo Cars will not only aim to be net positive but also aim at continuously reducing its negative impact relative to a 2021 baseline. Please find more information on for example definitions at https://www.naturepositive.org/.

27 The species.year metric reflects the impact of Volvo Cars' full value chain on biodiversity. It is the common metric used by the ReCiPe model when translating emissions and resource extractions into impacts on land use, water use, climate change and various types of pollution. The metric represents the relative overall risk of damage to species and ecosystems and can be used to compare the biodiversity impacts of different products, processes, components and parts of the value chain.

28 In the case of a fully leased building, the total area of the building is used to represent land use (even though area over multiple floors is an over-representation). In the case of partial lease of a building (i.e., leasing one floor in a multi-floor building), the total leased space is used to represent the land use. Rented outdoor land areas are not included due to contractual circumstances.

29 Based on LCA method using ReCiPE. Based on 2021 biodiversity impact data and 2022 sales data. Range reflects the uncertainty of underlaying data with regards to impact from ecotoxicity.

Grow circular business

30 Calculated from Volvo On Call vehicles approximately two million vehicles. Can be compared to 11,260 km driven on average by a registered car in Sweden 2022 (Sources; Trafikanalys and SCB). Data extraction methodology has been improved during 2023 and the comparison periods have also been updated for comparability. Previously reported figures were, 2022: 13,710 and 2021: 14,532.

31 Calculated on a subset of Volvo vehicles; a fleet of cars mainly driven by Volvo Cars employees in Sweden which is not fully representative for all Volvo Cars vehicles.

Inclusion

32 Senior Leadership refers to a population, which is in 2023 consists of our 332 most senior leaders. Women in Senior Leadership ambition reduced for 2030 34 per cent instead of 38 per cent. This is to allow the employees to adapt to the recent changes in the organisation and new people leaders across the business.

33 Leading position refers to all our positions above a certain grade.

Wage level

34 Entry level wage is compared to the local labour agreement in Sweden and Belgium, and to the statutory minimum wage in China and US.

35 Calculated ratio between two values: Annual total CEO compensation and Median annual Swedish employee total compensation, in each year respectively.

36 No wage increased in Sweden during 2023.

Training indicators

37 Increase in training hours compared to 2022, due to more systems involved in data collection, primarily linked to EMEA and China.

38 It is mandatory for all managers to have performance reviews with their employees according to our people process. 100 per cent due to yearly salary review process.

Number of employees

39 The main employment form within Volvo Cars is permanent employment, but depending on the need and duration of assignment temporary solutions will be used such as consultants, agency and temporary employment contracts. Key positions should always be employed on a permanent basis. Depending on national labour regulations and market situation the approach may vary in Volvo Cars' different locations.

Breakdown by gender

40 Only appointed Board Members are included in these figures. In addition to these, there are three representatives from the unions on the Board of Directors. However, Volvo Cars does not have any influence of their appointment.

41 The percentage shows the amount of open white collar positions filled by internal transfers. It covers only white collar employees year to date.

Accidents and sick leave

42 Includes all employees, supervised contractors and independent contractors at our sites. Independent contractors are defined as contractors involved in the construction/reconstruction of Volvo Cars' factories. Fatalities among contractors are only reported for projects in which Volvo Cars is the developer.

43 Work related illness – with sick leave, medically treated hospital care, other medical care, occupational health care, actual sick days 15 days and more.

Pay Equity

44 Average annualised base salary for permanent employees in our four most significant sites.

Raw Materials of Concern (RMoC)

45 The defined 20 minerals, metals, and bio-base materials are Aluminium/Bauxite, Cobalt, Copper, Graphite (natural), Gold, Lead, Leather, Lithium, Magnesium, Manganese, Mica, Natural Rubber, Nickel, Phosphorous, Rare Earth Elements, Steel/Iron, Tantalum, Tin, Tungsten, Wool.

Green Financing Framework

46 For definition of Outstanding Debt, see Note 21 – Financial Instruments and Financial Risks. For more information about the Green Financing Framework, please see https://investors.volvocars.com/en/debt-information/green-financing.

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Auditor's Limited Assurance Report on Volvo Cars' Sustainability Report and statement regarding the Statutory Sustainability Report

To Volvo Car AB (publ.), corporate identity number 556810–8988

Introduction
We have been engaged by the Board of Directors and the Executive Management of Volvo Car AB (publ.) ("Volvo Cars") to undertake a limited assurance engagement of the Volvo Cars Sustainability Report for the year 2023. The Company has defined the scope of the Sustainability Report in connection to the table of content in the Annual and Sustainability Report on page 2 and the Statutory Sustainability Report on page 48.

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 192 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 Volvo Cars 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.

Göteborg 4 March 2024
Deloitte AB

Fredrik Jonsson
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.

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Auditor's Limited Assurance Report on Volvo Cars' Green Financing Report

To Volvo Car AB (publ.), corporate identity number 556810–8988

Introduction

We have been engaged by Volvo Car AB (publ.) (”Volvo Cars”) to undertake a limited assurance engagement of the Green Financing Report (“Reporting”) for the year 2023 set out on pages 188 and 189 in the Annual and Sustainability Report.

Responsibilities of Management

Volvo Cars Management is responsible for the preparation of the Reporting in accordance with the applicable criteria, as explained in the Volvo Cars Green Financing Framework dated May 2023 (available at https://investors.volvocars.com/en/debt-information/green-financing) 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 the Reporting 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 Reporting based on the limited assurance procedures we have performed. 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 Reporting, and applying analytical and other limited assurance procedures. The procedures performed in a limited assurance engagement vary in nature from, and are less in extent than for, a reasonable assurance engagement conducted in accordance with International Standards on Auditing and other 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 Volvo Cars in accordance with professional ethics for accountants in Sweden and have otherwise fulfilled our ethical responsibilities in accordance with these requirements.

The procedures performed consequently do not enable us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement.

Accordingly, the conclusion of the procedures performed do not express a reasonable assurance conclusion.

Our procedures are based on the criteria defined by Volvo Cars Management as described above. We consider these criteria suitable for the preparation of the Reporting.

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 Reporting for the year 2023, is not prepared, in all material respects, in accordance with the applicable criteria, as explained in the Volvo Cars Green Financing Framework.

Göteborg 4 March 2024
Deloitte AB

Fredrik Jonsson
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.

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The Share

The Volvo Cars' share is listed on Nasdaq Stockholm, where it trades with the ticker VOLCAR. Basic earnings per share in 2023 was SEK 4.38.

Share performance and trading volume
Based on the closing share price on 29 December 2023, SEK 32.6, the Group's market capitalisation was SEK 97,013 million. The share price decreased by 31.3 per cent during 2023, while the broad index (OMXSPI) increased 15.5 per cent. The highest closing price quoted was SEK 56.0 on 2 February and the lowest closing price quoted was SEK 31.6 on 13 December.

A total of approximately 850 million Volvo Car AB's (publ.) shares were traded on all marketplaces with average daily trading volume of 3.4 million shares.

Dividend
Dividend pay-out will be assessed from year to year based on Volvo Car Group's net income, financial position and investments needs. Volvo Cars continues to focus on delivering its fastest transformer and growth strategy. As visibility on the transformation increases in the medium-term, the ambition is to increase dividend pay-outs towards industry averages.

The Board of Directors proposes that no ordinary dividend is distributed and that the retained earnings shall be carried forward. Further, a distribution of a portion of Volvo Cars' shareholding in Polestar is proposed, as an extraordinary value transfer to its shareholders. For more information regarding this, see the Board of Directors' Report.

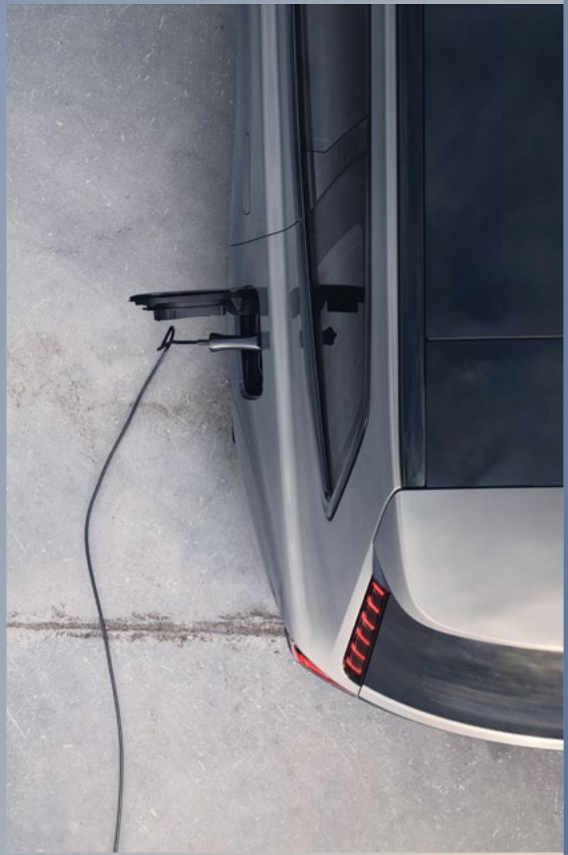
The share
The number of Volvo Cars shares amounts to 2,979,524,179. Each share has a quota value of 0.02 SEK and the share capital amounts to SEK 60,947,709. Volvo Car AB's (publ.) share capital comprises one series of B-shares, with each share carrying equal voting rights and equal rights to dividends. The most recent occasion when new shares were issued was in conjunction with the IPO in October 2021.

Ownership structure
As of 31 December 2023, 78.7 per cent of the shares is owned by principal owner Geely Sweden Holdings AB. No other shareholder owns – directly or indirectly – more than 10 per cent of the shares in Volvo Cars. Foreign ownership excluding Geely Holding at year-end corresponded to 8.64 per cent of the share capital. The largest foreign ownership excluding Geely Holding is in the United States, United Kingdom and Norway.

The Employee Share Matching Programme (ESMP)
Volvo Cars wants to put its employees in the driver's seat of its transformation. Through our Employee Share Matching Programme (ESMP), Volvo Cars welcome employees to become an owner of the company by making a private investment to buy Volvo Cars shares. If employees hold onto the shares for two years and are still employed by the company, the company will double the initial number of shares up to a maximum amount of SEK 10,000 value at purchase and match it with the same number of shares purchased.

Shareholder communication and financial calendar 2023
Information for the capital market and other interested parties is provided on investors.volvocars.com. On the website, it is possible to access financial reports, Annual and Sustainability reports, past events recordings and sales and regulatory press releases. Printed copies of Annual and Sustainability reports are only distributed to shareholders upon request.

Dialogue with the shareholders and the market is important for Volvo Cars. Apart from the Annual General Meeting, Volvo Cars maintained active discussions through events, livestream with Q&A in conjunction with the publication of interim reports, investor meetings and visits, meetings with retail shareholders' associations, as well as roadshows. Volvo Cars also hosted a Capital Markets Update in June 2023 in conjunction with the launch of Volvo EX30.



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VOLVO CARS SHARE AS OF YEAR-END 2023

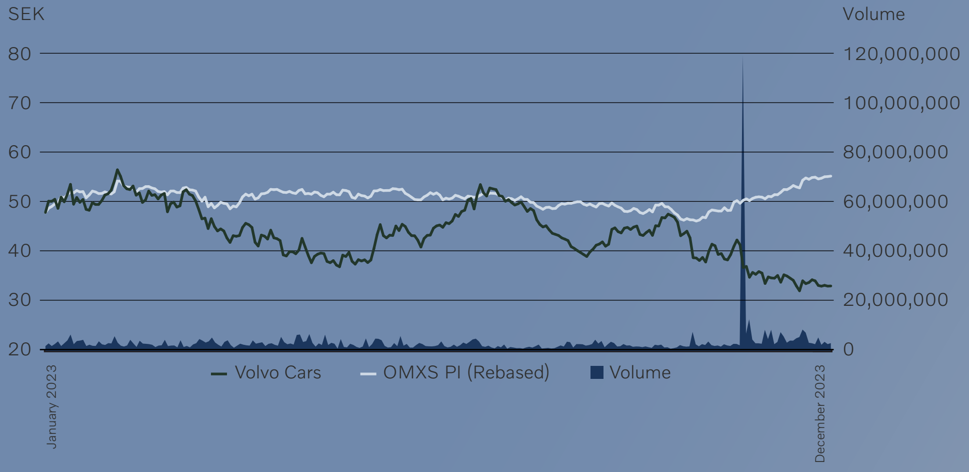
Symbol: VOLCAR
Market cap: SEK 97.0 billion
Number of known shareholders: 174,608
Basic earnings per share: SEK 4.38

Financial Calendar
26 March 2024: Annual General Meeting, Gothenburg, Sweden
24 April 2024: Q1 2024 report
18 July 2024: Q2 2024 report
23 October 2024: Q3 2024 report
6 February 2025: Q4 and Full Year 2024 report

Annual General Meeting 26 March 2024
The shareholders of Volvo Car AB (publ.), Reg. No. 556810-8988, ("Volvo Cars") are invited to participate in the Annual General Meeting (the "AGM") to be held on 26 March 2024, at 13.00 CEST at Volvohallen, Gunnar Engellaus väg 2, SE-418 78 Gothenburg, Sweden.

More information:
https://investors.volvocars.com/en/AGM24

VOLCAR B – SHARE PRICE DEVELOPMENT



TEN LARGEST SHAREHOLDERS 31 DECEMBER 2023

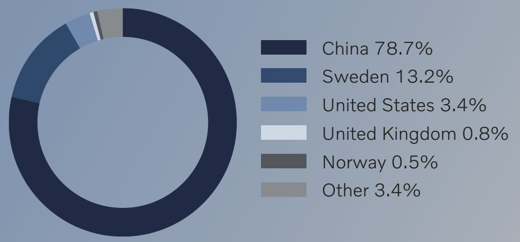
Owners	Number of B-shares	Capital	Votes
Geely Sweden Holdings*	2,343,396,227	78.7%	78.7%
AMF Pension & Funds	107,622,822	3.6%	3.6%
Folksam	63,113,490	2.1%	2.1%
Alecta Pension Insurance	29,650,000	1.0%	1.0%
Vanguard Funds	24,091,680	0.8%	0.8%
BlackRock	23,150,064	0.8%	0.8%
Fourth Swedish National Pension Fund	20,382,538	0.7%	0.7%
Third Swedish National Pension Fund	18,339,000	0.6%	0.6%
Handelsbanken Funds	17,854,520	0.6%	0.6%
SEB Investment Management	17,263,260	0.6%	0.6%
Ten largest owners, total	**2,664,863,601**	**89.4%**	**89.4%**
Others	314,660,578	10.6%	10.6%
Total	**2,979,524,179**	**100%**	**100%**

*Geely Sweden Holdings AB is owned by Shanghai Geely Zhaoyuan International Investment Co., Ltd., registered in Shanghai, China, and ultimately owned by Zhejiang Geely Holding Group Ltd., registered in Hangzhou, China.

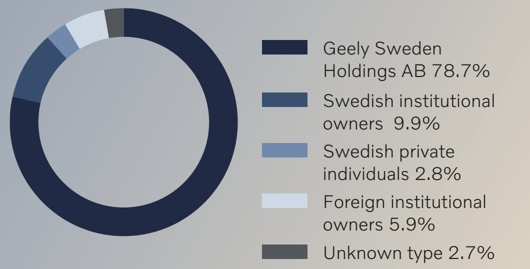
BREAKDOWN BY SIZE 31 DECEMBER 2023

Size class	Number of known shareholders	Share of known shareholders	Number of B-shares	Capital	Votes
1–500	150,052	85.9%	19,376,561	0.7%	0.7%
501–1,000	12,730	7.3%	9,650,079	0.3%	0.3%
1,001–5,000	9,615	5.5%	19,927,234	0.7%	0.7%
5,001–10,000	1,124	0.6%	8,268,811	0.3%	0.3%
10,001–20,000	526	0.3%	7,588,499	0.3%	0.3%
20,001–	561	0.3%	2,914,778,978	97.8%	97.8%
Information not available	0	0.0%	65,983	0.0%	0.0%
Total	**174,608**	**100%**	**2,979,524,179**	**100%**	**100%**

OWNERSHIP BY COUNTRY



OWNERSHIP BY CATEGORY



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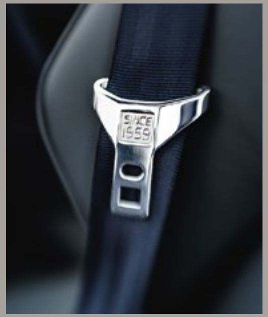
Our Heritage – An exciting journey and decades of innovations

Volvo Cars was founded upon the concepts of quality and safety by Assar Gabrielsson and Gustaf Larson in Gothenburg, Sweden, and in 1927 the first Volvo car, was released. Ever since our founding in 1927, we've been designing cars that put people first and we have become a truly global company renown for safety selling approximately 700,000 cars all over the world.

1927 - Assar Gabrielsson and Gustaf Larson launch the first Volvo car in Gothenburg, Sweden. The car was an open tourer with a four-cylinder engine.

’40s–’60s



1944 - “The little Volvo” (PV444), was a car that turned Volvo into an international car company was unveiled in Stockholm.

1953 - The Volvo Duett was launched as “two cars in one” – for both work and leisure.

1955 - The first PV 444 was unloaded at a port in Long Beach, California. Two years later Volvo Car had become the second-biggest import brand in California.

1959 - Volvo engineer Nils Bohlin invents the three-point safety belt.

1964 - Our plant in Gothenburg was inaugurated and is still our largest production facility.

’70s

1972 - Environment was added to our core values, Safety and Quality. Volvo invented the rearward-facing child safety seat.

1976 - Volvo released the Lambda Sond, the world’s-first catalytic exhaust control system that reduces harmful emissions. Volvo was officially chosen as the safety standard benchmark for all new cars in the USA.

1977–1978 - Volvo 240, was awarded the American National Environmental Industry Award and named the cleanest car by the California Air Resources Board.

1978 - Volvo Cars was spun out as a separate entity from AB Volvo.

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’80s

The sales of Volvo 740 and 760 was a great success. - **1984**

’90s

1991 - Volvo presented Volvo 850 – the largest product investment since Volvo introduced the Side Impact Protection System.

1998 - Volvo developed the Inflatable Curtain.

1999 - Volvo Cars was acquired by Ford Motor Company.

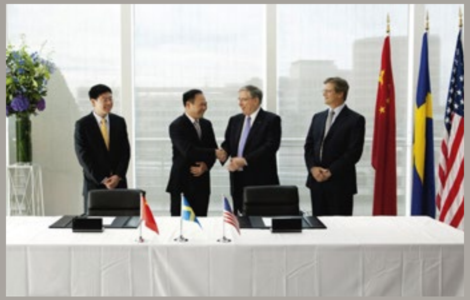
’00s

A new generation of environmentally adapted diesel engines was launched. - **2001**

Volvo XC90 was launched and became an instant success all over the world. - **2002**

Volvo ReCharge Concept Car, a plug-in hybrid was first displayed. - **2007**

The City Safety, a low-speed auto brake solution that automatically is braking the car in the event of imminent risk of collision was introduced. The popular DRIVe series encompassed seven models classed as green cars. - **2008**



’10s

2010 Geely Holding acquired Volvo Car from Ford.

2011 Volvo Cars appointed top car maker in Sustainable Brands.

2013 The four-cylinder powertrains featuring a lightweight base powertrain replaced its fourteen-engine powertrain family predecessor. We established a manufacturing joint venture with Geely Holding and built two manufacturing plants in Chengdu and Daqing, China. Volvo C30 awarded “Green Car of the Year” in China.

2014–2015 The in-house development of the Scalable Product Architecture (SPA) was completed and the new generation XC90, the first car model built on the SPA, started a new chapter in our history.

2017 We announced our electrification strategy.

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2017

The Volvo XC40, the first model based on our compact modular vehicle architecture (CMA) was introduced. It set our new standard in design, connectivity and safety.

2018

Engine production facility in Skövde, Sweden becomes a climate neutral (in terms of CO_2 emissions) production facility. A solar energy installation was unveiled at the Ghent factory.

The production facility in Charleston, South Carolina, was opened establishing a global manufacturing footprint.

Subscription based Care by Volvo and Volvo Car Mobility was announced.

We partnered with NVIDIA for the development of a highly capable, AI-based, central computer for the next generation of Volvo cars.

2019

Our long-term sustainability ambitions to become a climate neutral company and circular business by 2040 was announced.

We launched XC40 Recharge P8, our first fully electric SUV. Our first model equipped with an infotainment system powered by Android.

2020

Production of XC40 Recharge starts in Ghent.

The climate plan, under which Volvo Cars strives to become a climate neutral company by 2040, was scientifically verified by the Science Based Targets initiative (SBTi), a collaboration that provides companies with a clear pathway to support the Paris Agreement.

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2021

We announced that Volvo Car will be fully electric by 2030.

Started production of second fully electric model C40 recharge.

On 29 October Volvo Cars became a listed company on the Nasdaq Stockholm stock exchange.

2022

We in collaboration with Northvolt announced the establishment of a new battery plant in Gothenburg.

Announced that we will establish an electric car manufacturing plant in Slovakia.

We become a founding member of Accelerating to Zero Coalition, calls for more climate action from governments.

Launched the new Volvo EX90.

Divested its 33 percent holding in Aurobay to Geely Holding, aligned with the electrification ambitions.

2023

Launched the new Volvo EX30.

Revealed the Volvo EM90, our first MPV.

Opened new Tech Hubs in Krakow, Poland and Singapore.

Volvo Cars continued the commercial transformation as shown by the transition of the UK market to a direct model.

Volvo Cars declared the end of diesel at Climate Week NYC – our last diesel car will be produced in early 2024.

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DEFINITIONS

Volvo Cars and Volvo Car Group
Volvo Car AB (publ.) together with its wholly-owned subsidiary Volvo Car Corporation and its subsidiaries are jointly referred to as "Volvo Car Group" or "Volvo Cars".

Volvo Car AB (publ.), with its registered office in Gothenburg, Sweden, is a publicly listed company on the Nasdaq Stockholm Stock Exchange. The largest owner, holding 78.65% of shares and capital, is Geely Sweden Holdings AB, owned by Shanghai Geely Zhaoyuan International Investment Co., Ltd., registered in Shanghai, China, and ultimately owned by Zhejiang Geely Holding Group Ltd., registered in Hangzhou, China.

Volvo Car AB (publ.) holds shares in its subsidiary Volvo Car Corporation and provides the Group with certain financing solutions. Volvo Car AB (publ.), indirectly through Volvo Car Corporation and its subsidiaries, operates in the automotive industry with business relating to design, development, manufacturing, marketing and sale of cars and thereto related services.

Associated companies
Associated companies are companies in which Volvo Car Group has a significant but not controlling influence, which generally is when Volvo Car Group holds between 20% and 50% of the shares.

Joint venture companies (JVs)
Joint ventures refer to companies in which Volvo Car Group, through contractual cooperation together with one or more parties, has joint control over the operational and financial management and has rights to the net assets of the arrangement.

Retail sales
Retail sales refer to sales to end customers (including a portion of cars used as customer loaner and demo cars) and is a relevant measure of the demand for Volvo Cars from an end customer point of view.

Wholesales
Wholesales refer to new car sales to dealers and other customers including rentals.

Europe
Europe is defined as EU+EFTA+UK.

Passenger cars
Passenger cars are vehicles with at least four wheels, used for the transport of passengers, and comprising no more than eight seats in addition to the driver's seat.

Traditional premium segment
Traditional premium segment is the premium market brands such as Volvo Cars, Audi, BMW, Lexus, Mercedes, Tesla and so on.

Battery Electric Vehicles (BEV)
BEV cars include all vehicles which are 100% fully electrified cars.

Non Battery Electric Vehicles (Non-BEV)
Non-BEV cars include all vehicles which are not 100% fully electrified cars (BEV). For Volvo Cars, it includes plug-in hybrid (PHEV), mild hybrid (MHEV) and internal combustion engine cars (ICE).

Electrified cars
Electrified cars include 100% fully electric cars, the same as the Battery Electric Vehicles (BEV), and Plug-in hybrids (PHEV), in both petrol and diesel with cord for charging.

Recharge cars / Recharge line-up
"Recharge" is the overarching name for all Volvo chargeable car models including plug-in hybrids (PHEV) and fully electric vehicles (BEV).

ICE
Internal combustion engine, including all powertrain types except plug-in hybrids (PHEV) and fully electric vehicles (BEV).

Agency personnel / Consultant
Agency personnel/consultant is referred to as specific competence that is sourced externally and assigned to meet fluctuating business resource needs.

Contract manufacturing
A business model in which a third-party company is contracted for the production of goods or components over a specified contract period.

Online/direct
Our online/direct business model is available in 10 markets (UK, Sweden, Netherlands, Norway, Germany, USA, Canada, China, Malaysia, and India) and defines as a car ordered online with national online price and direct invoice where available. For US and Canada, the transaction is executed by our retail partners as per our agreement with retailers and in line with franchise laws.

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Forward looking statements
This report contains statements concerning, among other things, Volvo Car Group's financial condition and results of operations that are forward-looking in nature. Such statements are not historical facts but, rather, represent Volvo Car Group's future expectations. Volvo Car Group believes that the expectations reflected in these forward-looking statements are based on reasonable assumptions. However, forward-looking statements involve inherent risks and uncertainties, and a number of important factors could cause actual results or outcomes to differ materially from those expressed in any forward-looking statement. Such important factors include but may not be limited to: Volvo Car Group's market position, growth in the automotive industry, and the effects of competition and other economic, business, competitive and/or regulatory factors affecting the business of Volvo Car Group, its associated companies and joint ventures, and the automotive industry in general. Forward-looking statements speak only as of the date they were made and, other than as required by applicable law, Volvo Car Group undertakes no obligation to update any of them in light of new information or future events.

Language
In the event of inconsistency or discrepancy between the English and the Swedish version of this publication, the Swedish version shall prevail.

Totals and roundings
Totals quoted in tables and statements may not always be the exact sum of the individual items because of rounding differences. The aim is that each line item should correspond to its source, and rounding differences may therefore arise.

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