

Annual Report
2022



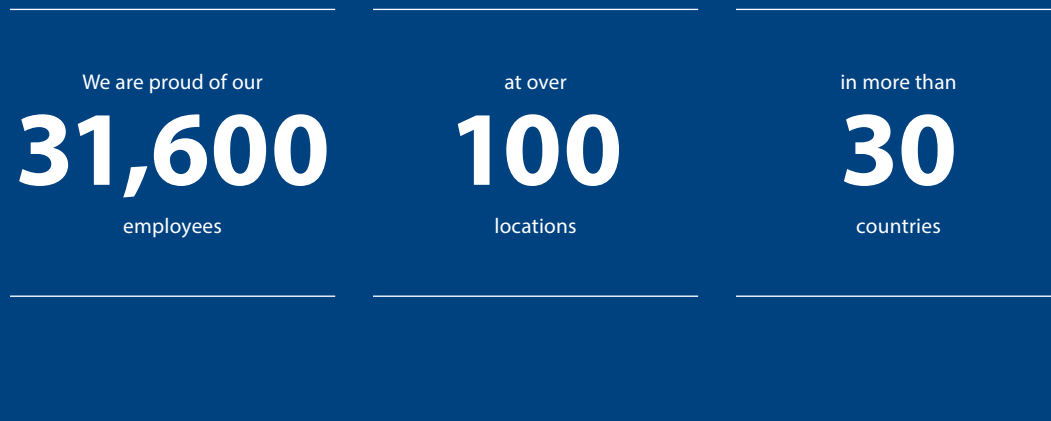
KNORR-BREMSE

Profile



For over 115 years, Knorr-Bremse has been shaping the future of mobility as a major innovator of sustainable system solutions. We are the global market leader in braking systems and a leading provider of other systems for rail and commercial vehicles, and play a major role in improving safety, efficiency and reliability on road and rail.

As a high-performance partner of vehicle manufacturers and operators, Knorr-Bremse also has leading market positions in door and air-conditioning systems for rail vehicles and driver assistance systems for commercial vehicles.



Key performance indicators

		2022	2021	+ / -
Revenues	In € million	7,149.7	6,705.6	+6.6 %
EBITDA	In € million	1,045.6	1,206.5	-13.3 %
EBITDA margin	%	14.6	18.0	
EBIT	In € million	721.3	916.1	-21.3 %
EBIT margin	%	10.1	13.7	
EBT	In € million	688.8	880.8	-21.8 %
EBT margin	%	9.6	13.1	
Net income	In € million	506.3	647.4	-21.8 %
Return on sales after tax	%	7.1	9.7	
Earnings per share	€	3.03	3.85	-21.5 %
Incoming orders	In € million	8,114.1	7,286.7	+11.4 %
Order book (31.12.)	In € million	6,907.5	5,558.1	+24.3 %
Free Cash Flow	In € million	219.3	600.0	-63.4 %
Operating Cash flow	In € million	541.6	975.5	-44.5 %
Capital expenditure	In € million	352.2	375.5	-6.2 %
Capital expenditure in % of sales	%	4.9	5.6	
R&D costs	In € million	466.1	431.4	+8.1 %
R&D costs in % of sales	%	6.5	6.4	
Total assets	In € million	8,011.9	7,199.2	+11.3 %
Equity	In € million	2,691.3	2,425.5	+11.0 %
Equity ratio	%	33.6	33.7	
ROCE	%	16.8	24.9	
Net Working Capital	days' sales	56.7	47.0	+9.7
Knorr-Bremse share				
Number of shares		161,200,000	161,200,000	
Dividend per share	€	1.45	1.85	-21.6 %
Employees*		31,599	30,544	+3.5 %



Rail vehicle systems

		2022	2021	Veränderung in %
Revenues	In € million	3,401.9	3,336.8	+2.6 %
EBITDA	In € million	589.5	764.2	-17.5 %
EBITDA margin	%	17.3	22.9	
Capital expenditure	In € million	108.0	109.0	-9.1 %
R&D costs	In € million	207.9	202.6	-1.5 %
R&D costs in % of sales	%	6.1	6.1	
Employees*		16,370	16,074	+0.4 %



Commercial vehicle systems

		2022	2021	Veränderung in %
Revenues	In € million	3,750.0	3,390.2	+10.6 %
EBITDA	In € million	481.0	500.6	-3.9 %
EBITDA margin	%	12.8	14.8	
Capital expenditure	In € million	223.6	234.1	-4.5 %
R&D costs	In € million	258.2	220.3	+17.2 %
R&D costs in % of sales	%	6.9	6.5	
Employees*		14,284	13,459	+6.1 %

* The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

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“We can also deal with a crisis.” This has been true of Knorr-Bremse for decades. But seldom has our self-image as entrepreneurs, our optimism been so tested as it was in the crisis year 2022 – one of the toughest for a long time. Among the biggest challenges for our Company were the consequences of the covid pandemic, rampant inflation, massive disruptions to supply chains, exploding energy prices and Russia’s terrible invasion of Ukraine. The war has had a horrifying impact on the people there and caused unimaginable suffering. From the outset, Knorr-Bremse did everything to give people on the ground and those fleeing the country the best possible help – in the form of donations, emergency aid and assistance with finding jobs in Germany.

Despite this global upheaval we delivered a result last year that we are proud of. Our business model and its two strong divisions, Rail Vehicle Systems and Commercial Vehicle Systems, again proved to be very resilient in the face of a crisis. We are on the right track. What makes us so successful as a global market leader and technology leader are our 31,600 colleagues around the world. Their inventiveness (more than 12,000 patents), their commitment and their passion for our Company are what drive Knorr-Bremse’s sustainable growth day after day.

Thank you, dear colleagues!

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Letter from the CEO

Dear Readers,

I am delighted to have been appointed the new Chief Executive Officer of Knorr-Bremse as of the beginning of this year. It is an honor for me to lead this Company, with its heritage and long history of success, into the future. Just to introduce myself briefly: my name is Marc Llistosella. I am 56 years old, married, and a proud father of 6 children. I was born in Cologne, though I have spent most of my career outside Germany. That's all I want to say about myself, in fact, because this is not about me as the new CEO. It is the Company that takes center stage.

On my first day in the job I sent an email to all employees worldwide and said: everything revolves around our Company, Knorr-Bremse. And the Company's most important asset is you, the employees. In my first few months as CEO the many in-depth discussions with numerous colleagues have shown me that the Company has great reserves of strength. There is an impressive amount of expertise gathered here. As the world market leader at the forefront of technology, we at Knorr-Bremse know precisely what we are doing and what we are capable of.

Before I talk about last year's strong results, I would like to say thank you. Because we owe this performance to our 31,600 employees around the world. It is their extraordinary dedication that made this result possible. And on behalf of the entire Executive Board I would like to thank them sincerely for their amazing commitment. I would also like to take this opportunity to thank Frank Weber. In his twin role as CEO and CFO last year he showed great commitment and was highly successful in his leadership of Knorr-Bremse. He thereby not only ensured continuity, but also made a vital contribution to setting the course for this year.

2022 was another extremely challenging year for our customers, our employees and our Company: high inflation, the consequences of the covid pandemic, worldwide supply shortages, rocketing energy costs and the terrible human and economic toll of Russia's attack on Ukraine all added up to another stress test for our Company and the industry as a whole. The war in Ukraine has had a horrifying impact on the people there and caused unimaginable suffering. But the war has also had a massive influence on our business.



»The most important asset at Knorr-Bremse are its employees. There is an impressive amount of expertise gathered here. We at Knorr-Bremse know precisely what we are doing and what we are capable of.«

— Marc Llistosella, Chief Executive Officer

We decided, due to the sanctions and from a sense of moral obligation, to phase out our operations in Russia, which was an extremely profitable market for us. In the spirit of expectations management I cannot emphasize enough what this means for our business: At the start of last year, in the first quarter, i.e. before the Russian invasion, Knorr-Bremse's Russian business was doing very well. From the second quarter of 2022 onwards this profitable business has been lost.

Our structure of two strong divisions has once again proved to be highly resilient, particularly in this difficult situation. We even reported a very good result and a further increase in revenues. Our incoming orders and order book again reached record highs. This is a very strong performance that gives us great momentum.

Expressed in numbers, this means that revenues of Knorr-Bremse in the full year 2022 grew by 6.6% to approximately €7.1 billion. Profitability, with an operating EBIT margin of 11.1%, is very solid despite the adversities in the global market environment. Stockpiling inventories to ensure our delivery capability and delays in payments by customers had a particular impact on free cash flow, which came to €220 million. Our order intake rose by a significant 11.4% to a record level of €8.1 billion while our order book grew significantly by 24.3% to some €6.9 billion, which is also a new record. These results mean that we have achieved our forecast for the 2022 fiscal year regarding revenue and profitability. Given this performance, the Executive Board and Supervisory Board will propose payment of a dividend of €1.45 per share at the Annual General Meeting.

Our customers' great trust in the quality of our products can be seen in the performance of our two divisions. Our RVS division again signed key international contracts with major vehicle manufacturers in 2022. Of particular note is the contract with Alstom to equip 130 Coradia Stream regional trains in Germany with brake, entry, air-conditioning and sanitary systems. Also the contract with Siemens to equip additional ICE 3 trains in Egypt. The Hitachi contract for couplings on passenger trains is another major milestone that we are proud of. Another highlight was the launch of our Digital Automatic Coupling for goods trains and passenger trains at the leading global trade fair InnoTrans in Berlin.

Our CVS division also signed a large number of key contracts in 2022. They included the truck services agreement with the Hamburg public transport provider and a long-term contract with a large truck manufacturer. At the leading commercial vehicles exhibitions Automechanika and IAA Transportation we gave impressive demonstrations of our product portfolio for automated driving, e-mobility and aftermarket products. Our customers were particularly convinced by our product innovations, which include the rotary vane compressor, our global scalable brake control system and our electric power steering (EPS).

In future we intend to focus even more on the aftermarket and on data-driven solutions. This is a core element of our strategy. With three successful takeovers and strategic partnerships in precisely these areas we delivered on our promises last year. The investments in Cojali, Nexxiot and DSB will sustainably strengthen our digital and aftermarket business. Here too, Knorr-Bremse intends to continue its profitable growth.

As the covid-19 situation eased, the market for rolling stock recovered slowly but surely. The RVS division even grew slightly in the crisis year 2022, with revenues of €3.4 billion. The operating EBIT margin came to 14.9% due to sanctions on Russia and the situation in China. The commercial-vehicle market is seeing sustained strong demand. Thanks to the positive performance of commercial vehicle production rates in Europe and North America, the CVS division reported a strong result, increasing revenues by 10.6% to €3.75 billion. The division's profitability was down on 2021 with an operating EBIT margin of 9.0%.

The challenges ahead are still enormous, but we are already well placed for the future. And wherever we see the potential for improvement we make changes quickly and consistently. We will continue to keep a close eye on our costs, because 2023 will be another tough year. But with a clearly coordinated portfolio as well as products and processes that are consistently aligned with market needs, we will defend our position as a global market and technology leader. Against this backdrop, we are anticipating revenues between €7.3 billion and €7.7 billion, an operating EBIT margin from 10.5% to 12.0% and free cash flow between €350 million and €550 million for the 2023 fiscal year, based on today's perspective.

Quality and innovation are part of Knorr-Bremse's DNA. For a leading global technology group like Knorr-Bremse, investments in research and development open up concrete growth prospects. So we further increased our research and development spending even in the crisis year 2022: our investment in this area went up by 9% to €470 million.

*The outlook for 2023 is conditional on current exchange rates, largely stable geopolitical and macroeconomic conditions, no new lockdowns in response to covid, no significant increase in inflation and no additional supply chain problems due to potential energy shortages

Sustainability has long been an integral part of our corporate strategy. We want to shape the future of sustainable transport. So in 2022 we again consistently developed our activities in various ESG areas. We are well on track to achieve our goal of halving our production-related CO₂ emissions (Scope 1 and 2) by 2030. In addition, we intend to expand our climate action goals to our upstream and downstream value chain (Scope 3).

And we have made a commitment to define our climate action goals in accordance with the requirements of the Science-Based Target initiative (SBTi). This year we are aiming for an SBTi validation; a corresponding submission was made back in November. Knorr-Bremse is also treading new ground in terms of "green financing". Last year we arranged a syndicated loan, issued our first bond with sustainability covenants and started the Supply Chain Finance Program to reward our suppliers for doing business sustainably. All three of these financing structures are linked to ESG criteria.

As you can see, Knorr-Bremse is focused firmly on the future. Consistent action and partnerships with our customers based on trust help to make us more resilient. And with the knowledge and passion of our customers and colleagues worldwide we will be tackling the challenges that lie ahead of us this year with confidence.

Munich, March 17, 2023



Marc Llistosella
CEO

The Executive Board

Frank Markus Weber
Chief Financial Officer

—
Worldwide responsibility for Finance, Accounting, Controlling, Taxes, Treasury, M&A, Sustainability, and Investor Relations



Dr. Jürgen Wilder
Member of the Executive Board

—
Worldwide responsibility for the Rail Vehicle Systems division

Marc Llistosella
Chief Executive Officer

—
Worldwide responsibility for Strategy, Communications, Brand Management, Digitalization, IT, Security, and Internal Audit



Dr. Claudia Mayfeld
Member of the Executive Board

—
Worldwide responsibility for Integrity, Legal, and Human Resources



Bernd Spies
Member of the Executive Board

—
Worldwide responsibility for the Commercial Vehicle Systems division

Report of the Supervisory Board

Dear shareholders,

Following my predecessor Prof. Dr. Klaus Mangold's retirement from the Supervisory Board at the end of last year's Annual General Meeting, it is now my responsibility to report to you about the work performed by the Supervisory Board over the last fiscal year. First, however, I wish to take this opportunity to thank my predecessor for his commitment to Knorr-Bremse and for including me in essential decision-making early on. Prof. Dr. Mangold chaired the Supervisory Board since 2018 and influenced not only the work it performed, but also Knorr-Bremse's development after the company's IPO. Both the Covid-19 pandemic as well as the start of Russia's invasion of Ukraine happened during his time as Chairman. Very importantly, Prof. Dr. Mangold also led the Supervisory Board with a high level of personal dedication after the sudden death of majority shareholder Heinz Hermann Thiele, a time when such leadership was critical.

As Chairman of the Supervisory Board, I would like to take a look with you at the preceding 2022 fiscal year, which was marked by the direct and indirect impacts of the Covid-19 pandemic. Like the preceding year, business was negatively influenced by disrupted supply chains, with these disruptions manifesting in the form of extraordinary shortages of certain raw materials and intermediate products as well as price rises. Russia's invasion of Ukraine and the subsequent economic sanctions imposed on Russia resulted in additional, significant increases in procurement and energy costs and, alongside the persistently difficult situation in China, represented an additional negative impact on KB's business. Both topics were the subject of regular discussions by the Supervisory Board.

At the Annual General Meeting on May 24, 2022, Dr. Sigrid Nikutta, Board Member for Freight Transport at Deutsche Bahn AG, was elected to succeed Dr. Thomas Enders as a member of the Supervisory Board. Dr. Nikutta is a proven industry expert with long-standing, extensive knowledge of the international rail and logistics industries. I am delighted that she can contribute her experience to the work performed by the Supervisory Board. The company supports the newly elected members of the Supervisory Board in familiarizing themselves with their roles via a structured onboarding program to provide them with a comprehensive overview of the company and the global position of the Group, its operations and the products of the two divisions. The current members of the Supervisory Board are personally responsible for pursuing the training and professional development that they need for their duties. They are given the company's full support for this. This was particularly relevant recently for the members of the Audit Committee, given the increased requirements for financial experts.

The Supervisory Board regularly assesses how effectively it is fulfilling its duties as a whole as well as through its committees (so-called efficiency review under section D.12 of the German Corporate Governance Code). The Supervisory Board last performed such an efficiency review in 2021, drawing on external support and including the members of the Executive



Dr. Reinhard Ploss,
Chairman of the Supervisory Board

Board. In light of the latest changes on the Executive Board, especially the commencement of the new Chief Executive Officer just several months ago, as well as the changes on the Supervisory Board, the Supervisory Board will perform its next corresponding efficiency review in 2023.

Collaboration of the Supervisory Board and Executive Board

In the reporting period, the Supervisory Board continued to fulfill its duties pursuant to the law, the Articles of Association and the rules of procedure with great care. The Supervisory Board was directly involved in all decisions of fundamental importance to the company. The relevant recommendations found in the German Corporate Governance Code (GCGC) were considered. The compliance declaration published on December 8, 2022, contained only one deviation from the GCGC, namely, from recommendation G.11 in relation to clawback/withholding provisions in the contracts of Executive Board members.

Furthermore, the Supervisory Board advised the Executive Board on the company's leadership, on acquisitions (e.g., closing the purchase of a majority stake in Cojali) and on divestment (especially the preparation of a sale of the Kiepe Group) as well as on further strategic initiatives. At the same time, the Supervisory Board monitored the senior management of the Executive Board on the basis of regular reports with which the Supervisory Board remained informed regarding business development, planning and risks. A recent example of this was the Russian business of the Knorr-Bremse Group in light of the economic sanctions. The Supervisory Board is constantly guided by the principles of responsible and sound corporate governance. They include a regular examination of the Supervisory Board's understanding of corporate governance and of the legal framework for the Supervisory Board's work and developments in relation to it (including Germany's new FISG, ARUG II and LkSG laws and the revision of the GCGC). The focus of its monitoring and advisory activities is on the legality and propriety, expediency and efficiency of senior management and Group management. The Supervisory Board's individual advisory and monitoring duties are governed by the rules of procedure of the Supervisory Board, Audit Committee and Executive

Board, which were partially revised and added to when Mr. Llistosella started as Chief Executive Officer. They stipulate, for example, that the Supervisory Board be closely involved in corporate planning and discussions of strategic projects. Furthermore, a catalog of approval requirements applies to certain Executive Board decisions, some of which necessitate comprehensive preliminary review and consideration of complex matters from a supervisory and advisory perspective. The Supervisory Board and its committees take care to always have an appropriate information base and make decisions at their own discretion, though in the interests of the company.

A number of transactions were presented to the Supervisory Board for approval during the 2022 fiscal year, such as Knorr-Bremse's acquisition of the 20% minority interests held by Robert Bosch in the European and Japanese truck subsidiaries and the acquisition of a majority interest in Cojali, a Spanish remote diagnostics manufacturer. The Supervisory Board also gave the approval that was required for the issue of an up to € 700 million sustainability-linked bond.

The Executive Board regularly, immediately and comprehensively reported to the Supervisory Board by means of written and oral reports, both in and outside of meetings. The reports contained all relevant information on the strategic development, planning, business development within the year and position of the company, risk situation and risk management, compliance, competitors of the Commercial Vehicle Systems and Rail Vehicle Systems divisions (peers), situation in the capital market including expectations of analysts and investors; and current events. We jointly discussed the business transactions important for the company as well as its further development together with the Executive Board. The Supervisory Board was included in a timely manner in all decisions of fundamental importance for the company. The Executive Board also informed the Supervisory Board about urgent matters between the regular meetings. Additionally, as the Chairman of the Supervisory Board, I also received reports from the Executive Board on the current business situation and on significant business transactions of the company as part of regular business reviews. I held regular discussions with important investors on key topics and questions of the Supervisory Board after I commenced my position.

In fiscal year 2022, we maintained a consistently high attendance rate in our meetings. The average attendance at full-board meetings was over 93%. All members of the Supervisory Board – except for Dr. Enders, whose inability to attend several meetings was excused – each attended more than 75% of meetings. The meetings during the reporting period were held almost exclusively in person, although there was an option of taking part virtually. Two of the total of nine full-board meetings during the reporting period were fully virtual, while three of the Executive Committee's altogether eleven meetings were fully virtual. The meetings of the Audit, Nomination and Strategy Committees were all held in person.

The attendance presented below is evidence of the high degree of commitment that the members of the Supervisory Board have. Supervisory Board and committee members took part in the resolutions by sending voting messages if they were prevented from attending individual meetings. Documents for meetings were distributed in advance at an early stage for the attendees' preparation; handouts were only used for late-notice developments and changes.

1.01 MEETING ATTENDANCE OF THE SUPERVISORY BOARD MEMBERS IN FISCAL 2022

Name	Supervisory Board (full board)	Executive Committee	Audit Committee	Nomination Committee	Strategy Committee
Dr. Reinhard Ploss (Chairman as of May 24, 2022)	4 (4)	4 (4)	3 (3)	1 (1)	2 (2)
Prof. Klaus Mangold (Chairman until May 24, 2022)	7 (7)	12 (12)	6 (7)	3 (3)	6 (6)
Kathrin Dahnke	9 (9)		7 (7)	2 (2)	
Dr. Thomas Enders (until May 24, 2022)	3 (5)				0 (2)
Dr. Sigrid Nikutta (as of May 24, 2022)	4 (4)				
Dr. Stefan Sommer	9 (9)				4 (4)
Julia Thiele-Schürhoff	9 (9)			2 (2)	2 (2)
Dr. Theodor Weimer	8 (9)	11 (11)			
Franz-Josef Birkeneder (Deputy Chairman)	9 (9)	11 (11)	7 (7)		4 (4)
Michael Jell	9 (9)	11 (11)			
Werner Ratzisberger	9 (9)		6 (7)		
Annemarie Sedlmair	9 (9)				
Erich Starkl	7 (9)				
Sylvia Walter	7 (9)				
Meeting attendance in %	93.18%	100%	97.14%	100%	83.33%

(in parentheses: number of meetings held during the term of the respective Supervisory Board or committee member)

Discussions of the Supervisory Board and Its Committees

The meetings and decisions of the Supervisory Board as a whole are usually prepared by the Executive Committee and, based on the topic, the Audit and Strategy Committees. The Supervisory Board established a Mediation Committee, whose services were not needed during the reporting period. The Nomination Committee convened for a total of two meetings during the reporting period (see below). Ms. Dahnke, Dr. Sommer and I myself, as committee chairs, provided regular reports to the Supervisory Board on the work done in the committees. The significant topics of discussions are detailed in the following.

The shareholder representatives (the owners' panel) and employee representatives regularly held separate advance meetings prior to the Supervisory Board meetings. Members of the Executive Board also took part in these meetings on an ad hoc basis. Internal discussions were regularly held at the end of Supervisory Board meetings without the presence of the Executive Board members.

Significant Topics of Supervisory Board Work

A total of nine Supervisory Board meetings took place during the reporting period, including the strategy meeting, and these meetings were largely held in person in Munich or Altdersbach, as explained above. In two cases, the Supervisory Board made a decision through a written circulation procedure, although in both cases they built on a prior discussion held at a meeting. The following presents a chronological overview of the substantive focuses for the meetings of the full Supervisory Board, which – as explained above – were chaired by my predecessor until May 24, 2022:

1. On February 11, 2022, the Supervisory Board dealt with the preliminary figures for the preceding 2021 fiscal year and with the full-year guidance. It also concerned itself with the search for a successor for the Truck division (since Dr. Peter Laier had departed from the Executive Board on December 31, 2021, as communicated) and with replacements for Prof. Mangold and Dr. Enders with effect from the Annual General Meeting.

2. In light of Russia's invasion of Ukraine, the Supervisory Board on March 4, 2022, deliberated over the company's general positioning, over the impact on Knorr-Bremse's business had by the conflict and the economic sanctions on Russia; and over the (initial) measures in relation to this. The conflict remained the subject of regular deliberations by the Supervisory Board as the year progressed, too.

3. On March 11, 2022, the Supervisory Board made decisions regarding a number of changes in the Executive Board's membership. Dr. Jan Mrosik resigned from his position as an Executive Board member and Chief Executive Officer with immediate effect and left the company at the end of April. Taking over his duties were Frank Weber on an interim basis (including the role of Executive Board Spokesman) and Dr. Claudia Mayfeld, who initially took on responsibility for Human Resources on an interim basis and now leads it in a permanent capacity. Dr. Wilder took over Digitalization and Business Services temporarily alongside his responsibility for Rail. The Supervisory Board also made a decision regarding the appointment of Bernd Spies as a member of the Executive Board responsible for the truck division. Mr. Spies had been a member and Chairman of the Board of Management of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, which meant that he was able to discharge his duties fully in a very short space of time. Lastly, the Supervisory Board made the decision, ahead of time, to extend the appointment of Frank Weber as Chief Financial Officer and member of the Executive Board by five years. The items on the agenda included personnel-related issues as well as compensation-related ones, specifically the setting of the STI payout amounts and the (first-time) preparation of a compensation report in accordance with section 162 of the German Stock Corporation Act (AktG).

4. At its balance sheeting meeting on March 30, 2022, the Supervisory Board discussed with the auditor the annual and consolidated financial statements and the outcomes of the audit, and – based on the preceding deliberations of the Audit Committee – gave the necessary approval. Furthermore, the Supervisory Board approved the nominations of Dr. Sigrid Nikutta and myself as Supervisory Board candidates for the election at the Annual General Meeting on May 24, 2022. The Supervisory Board gave the necessary approvals unanimously for the Executive Board's proposal for appropriating net profit (distributing a dividend of € 1.85 per share), for the further proposed resolutions and for holding the Annual General Meeting in a virtual format.

5. At the Supervisory Board meeting on May 23, 2022, the Executive Board reported on the current business situation and explained the content and agenda for the Annual General Meeting on the following day as well as the key shareholder questions that had been submitted in advance. After the Annual General Meeting on the following day, the Supervisory Board elected me as its new Chairman and confirmed the positions of Franz-Josef Birkeneder and Dr. Theodor Weimer, my deputies. Moreover, the Supervisory Board elected Julia Thiele-Schürhoff to succeed Dr. Enders as a member of the Strategy Committee. In addition to these topics, which were more of a formal nature, the Supervisory Board dealt with the renewal of the debt issuance program, under which Knorr-Bremse can issue public bonds of up to € 3 billion in the capital market.

6. The discussions at the two-day strategy meeting on July 7 and 8, 2022, focused on the strategic direction of the Truck and Rail divisions at the Knorr-Bremse Group, strategic financial planning and the central innovation projects in the CVS and RVS divisions. Furthermore, the Supervisory Board gave the necessary approval for the issue of a € 700 million sustainability-linked bond under the aforementioned debt issuance program.

7. At its meeting on October 13, 2022, the Supervisory Board appointed Marc Llistosella as a member of the Executive Board and new Chief Executive Officer with effect from January 1, 2023. The appointment was preceded by a selection process that had been overseen intensively by the Executive Committee based on a predefined job profile. Mr. Llistosella has an international background in the capital goods industry and extensive experience in top-level management, primarily in Asia. He has held responsibility for Corporate Strategy, Communications, Internal Audit and Knorr Excellence at Knorr-Bremse since January 1, 2023. As Chief Digital Officer and Chief Information Officer, he is also responsible for Digitalization, Corporate Information Technology and Business Services. Finally, the rules of procedure make him responsible for the coordination of the company's active strategic direction and further development, for internal and external communication on crossfunctional issues and for the development and dissemination of a consistent leadership culture. On behalf of the Supervisory Board and myself, I wish to take this opportunity to thank Mr. Weber, who led the Executive Board on an interim basis from March until the commencement of Mr. Llistosella.

8. On December 8, 2022, the Supervisory Board dealt with the Group's and both divisions' annual planning for 2023 and medium-term planning, which was shortened to two years (2023-2024), and approved this planning after in-depth discussion. Furthermore, the meeting also covered certain changes in the corporate governance documentation in light of the revisions to the German Financial Market Integrity Strengthening Act (FISG) and GCGC as well as a readjustment of the collaboration within the Executive Board in conjunction with the commencement of the new Chief Executive Officer. In the context of the FISG, separate rules of procedure were also adopted for the Audit Committee for the first time.

Executive Committee

The Executive Committee coordinates the work of the Supervisory Board, prepares the Supervisory Board meetings and monitors the execution of the resolutions adopted by the Supervisory Board. Further, it is in charge of resolutions regarding transactions with members of the Executive Board, the approval of contracts with Supervisory Board members and long-term succession planning for the Executive Board. In matters relating to the Supervisory Board, the Executive Committee also makes decisions about delaying the public disclosure of inside information in accordance with Market Abuse Regulation Article 17 (4), as in the reporting period in connection with the departure of Dr. Mrosik and the appointment of Mr. Llistosella.

A total of eleven Executive Committee meetings took place during the reporting period (four ordinary and seven extraordinary), three of which were purely virtual and eight in person. The purpose of the meetings was to prepare for specific issues such as the change of personnel on the Executive Board in 2022 and the implementation of relevant decisions by the Supervisory Board. If the Supervisory Board was due to vote on a resolution, the Executive Committee would usually conclude its deliberations by issuing to the Supervisory Board a recommendation for the resolution. As the Chairman of the Executive Committee, I regularly reported to the Supervisory Board about the work done by the Executive Committee.

The Executive Committee dealt with general compensation issues and also focused on personnel-related issues concerning the Executive Board, specifically the appointment of a successor for Commercial Vehicle Systems and the search for a successor to Dr. Mrosik as Chief Executive Officer. In this context, the Executive Committee also dealt with general questions regarding the Executive Board's allocation of responsibilities and roles. The core considerations from these deliberations were added to the revision of the Executive Board's rules of procedure in December 2022.

Members of the Executive Committee:

- Dr. Reinhard Ploss (Chairman as of May 24, 2022)
- Prof. Dr. Klaus Mangold (Chairman until May 24, 2022)
- Franz-Josef Birkeneder
- Dr. Theodor Weimer
- Michael Jell

Audit Committee

The Audit Committee gives the Supervisory Board recommendations about auditor appointments. It prepares Supervisory Board resolutions regarding the approval of financial statements and proposals for appropriating net profit. It takes the place of the Supervisory Board to engage auditors for specific audits. The composition, duties and competencies of the Audit Committee comply with the new specifications of the FISG. In particular, the Chairwoman of the Audit Committee, Kathrin Dahnke, enjoys a direct right to obtain information from the heads of Internal Audit, Controlling, Risk Management and Compliance, which are the relevant central departments. Moreover, she maintains regular and partly bilateral communication with the auditor. The information provided in the Corporate Governance Statement explains the composition of the Audit Committee (in relation to "financial experts"). Ms. Dahnke regularly reports to the Supervisory Board about the Audit Committee's work.

The Audit Committee convened for a total of seven meetings during the fiscal year, six of which were in a hybrid format and one purely in person. The Audit Committee worked on matters such as the preliminary figures for the 2021 fiscal year and the quarterly and half-yearly financial reporting. The Audit Committee examines the risk management system, internal control system, compliance management system, reports from Internal Audit and the status of significant litigation at regular intervals. A key component of the committee's work is its involvement in the annual and consolidated financial statements, beginning with the definition of audit focus topics; as well as in approving the proposed fee for the auditor, in the relevant audit reports from the auditor KPMG, in the dependency report, in the combined non-financial report (sustainability report) and in the Executive Board's proposal for appropriating net profit.

Members of the Audit Committee:

- Kathrin Dahnke (Chairwoman)
- Franz-Josef Birkeneder
- Dr. Reinhard Ploss (as of May 24, 2022)
- Prof. Dr. Klaus Mangold (until May 24, 2022)
- Werner Ratzisberger

Strategy Committee

The Strategy Committee advises the Supervisory Board and Executive Board on core issues relating to the Group's strategy, including the Group's business policy and commercial direction. A key focus is the analysis and ongoing development of the Truck and Rail divisions, new business ideas and potential development prospects, which also requires alternative methods and evaluation perspectives. The committee's duties further include providing strategy advice for divestments, mergers and acquisitions, including monitoring performance after transactions have closed. Moreover, it is also responsible for performing strategic evaluations of the Knorr-Bremse Group's global footprint with its sites and subsidiaries and discussing potential improvement with the Executive Board. The Strategy Committee also supports the Executive Board with the development and evaluation of proposals for managing the company's innovation. Following the revision of the Supervisory Board's rules of procedure, the Strategy Committee also has a special role in the topic of sustainability. Specifically, it advises the Executive Board on the systematic identification of the company's risks and opportunities that are associated with social and environmental factors, and on the appropriate consideration of environmental and social objectives alongside commercial ones.

The Strategy Committee convened for a total of four meetings held in person during the reporting period. The committee dealt with matters including the strategic direction of the Knorr-Bremse Group, key M&A opportunities and transactions, the Knorr-Bremse Group's China strategy, its business in Russia and central options for growth.

Members of the Strategy Committee:

- Dr. Stefan Sommer (Chairman)
- Franz-Josef Birkeneder
- Julia Thiele-Schürhoff (as of May 24, 2022)
- Dr. Reinhard Ploss (as of May 24, 2022)
- Dr. Thomas Enders (until May 24, 2022)
- Prof. Klaus Mangold (until May 24, 2022)

Nomination Committee

If necessary, the Nomination Committee proposes appropriate candidates to the Supervisory Board that the latter may propose for election as new Supervisory Board members at Annual General Meetings.

The Nomination Committee convened for a total of two meetings during the reporting period. It dealt with succession and appointment issues and gave specific recommendations for elections of new shareholder representatives in light of the departure of Dr. Enders and Prof. Mangold from the Supervisory Board.

Members of the Nomination Committee:

- Dr. Reinhard Ploss (Chairman as of May 24, 2022)
- Prof. Klaus Mangold (Chairman until May 24, 2022)
- Kathrin Dahnke
- Julia Thiele-Schürhoff

Mediation Committee

The Mediation Committee did not convene during the reporting period.

Members of the Mediation Committee:

- Dr. Reinhard Ploss (as of May 24, 2022)
- Prof. Klaus Mangold (until May 24, 2022)
- Franz-Josef Birkeneder
- Kathrin Dahnke
- Michael Jell

Corporate Governance

The Supervisory Board attaches a great level of importance to ensuring satisfactory corporate governance. It examined its own understanding of corporate governance and compliance separately and intensively during the reporting period. The framework for this consists of the corporate governance requirements for listed German companies, in particular the ones under the German Stock Corporation Act (AktG), German Codetermination Act (MitbestG) and German Corporate Governance Code as amended. The Supervisory Board made a declaration of compliance pursuant to section 161 AktG for the reporting period in conjunction with the Executive Board on December 8, 2022. This declaration of compliance was made available on the company's website and is also printed in the Corporate Governance Statement. Knorr-Bremse AG fulfilled all recommendations of the German Corporate Governance Code in fiscal 2022 except for recommendation G.11 of the 2022 GCGC (which pertains to withholding and clawback provisions in the service agreements of Executive Board members). The reasoning for this exception is explained in detail in the declaration of compliance.

Conflicts of Interest

The Supervisory Board conducts continuous monitoring to see if there are potential conflicts of interest in its decision making. The outcome of this monitoring was that there were no conflicts of interest relevant to the Supervisory Board's decision-making during the 2022 fiscal year or the current fiscal year.

Audit of Annual and Consolidated Financial Statements

The Supervisory Board and the Audit Committee in particular performed relevant audit procedures to ensure that the annual and consolidated financial statements and further financial statements for the 2022 fiscal year met the applicable requirements.

The annual financial statements of Knorr-Bremse AG as compiled by the Executive Board in accordance with Germany's generally accepted accounting principles (HGB), the combined management report of Knorr-Bremse AG and the Knorr-Bremse Group and the consolidated financial statements for the 2022 fiscal year based on International Financial Reporting Standards (IFRS) were audited by KPMG AG Wirtschaftsprüfungsgesellschaft, Munich and each awarded an unqualified opinion. KPMG was elected as the auditor of the financial statements for the 2022 fiscal year at the Annual General Meeting on May 24, 2022. KPMG has been the auditor of the Knorr-Bremse Group since its IPO in 2018. KPMG had also previously been engaged as the auditor for annual and consolidated financial statements prior to the IPO. Johannes Hanshen was the main auditor overseeing the audit for the purposes of section 319a (1) sentence 4 HGB. Klaus Becker is a further audit partner with responsibility for the audit.

Furthermore, the auditor discussed the half-yearly financial report in detail with the Audit Committee prior to its publication and reported on the status of the audit of the annual and consolidated financial statements when the preliminary figures were published. The auditor audited the report on relations with affiliated companies (section 312 AktG) that was compiled by the Executive Board. The auditor issued the following opinion in regard to the report: "After our professional audit and evaluation, we confirm that 1. the actual disclosures in the report are accurate, 2. the consideration provided by the company for the transactions listed in the report was not inappropriately large or the disadvantages from these transactions were offset, and 3. there are no circumstances that call for an evaluation of the measures listed in the report that differs significantly to the one performed by the Executive Board."

The aforementioned reports, the Executive Board's proposal for the appropriation of net profit and the auditor's reports were provided to all members of the Supervisory Board in a timely fashion or were displayed for their perusal at the Supervisory Board meeting on March 17, 2023. The Audit Committee conducted a preliminary audit of all documents at its meetings on February 22, 2023 (preliminary figures), and March 13, 2023, with Audit Committee Chairwoman Kathrin Dahnke reporting to the Supervisory Board about this at the Supervisory Board meeting on March 17, 2023. The financial statements and reports were presented to the Supervisory Board by the Executive Board and discussed in detail. The auditors present at the meetings reported on the results of their audits. In particular, the Audit Committee had previously set the following focus points for these audits in the reporting period: the process for preparing the consolidated and annual financial statements, realization of revenues in project-based business under IFRS 15, fraud risks when recognizing

revenues at cut-off dates, continuous reporting on the system conversion accompanying a project ("IFRS Goes ERP") and impairment of specific interests in affiliated companies, of specific accounts receivable from affiliated companies and of inventories.

The Audit Committee did not find any vulnerabilities in the risk management system, internal control system, internal audit system or compliance management system. After our own audit of the annual financial statements, consolidated financial statements and combined management report, we did not have any cause to raise objections, for which reason we agreed with the Executive Board's assessment of the position of Knorr-Bremse AG and the Knorr-Bremse Group. The Supervisory Board approved the financial statements for the 2022 fiscal year in line with the recommendation of the Audit Committee, which means that the annual financial statements of Knorr-Bremse AG are hereby adopted. We discussed the proposal for appropriating the net profit in detail with the Executive Board and agree with the Executive Board's proposal that a dividend of € 1.45 per share with dividend rights be distributed for the 2022 fiscal year. We are therefore proposing a distribution within the range of 40% to 50% of net income that was announced at the time of the IPO. A resolution will be made about this distribution at this year's virtual Annual General Meeting on May 5, 2023. The Compensation Report will also be subject to a resolution at the Annual General Meeting. The Supervisory Board made its decision about the compilation of this report on March 13, 2023, in accordance with section 162 (1) AktG as amended.

Membership Changes to Supervisory Board and Executive Board

The composition of the Executive Board and Supervisory Board as at December 31, 2022, is illustrated in the overviews on page 24 for the Supervisory Board and page 11 for the Executive Board.

Supervisory Board

As explained above, Prof. Dr. Klaus Mangold and Dr. Thomas Enders stepped down from the Supervisory Board at the end of last year's Annual General Meeting on May 24, 2022 (the former as Chairman). Dr. Reinhard Ploss and Dr. Sigrid Nikutta were elected to the Supervisory Board as their successors at the Annual General Meeting, representing the shareholders. Following the Annual General Meeting, the Supervisory Board elected me as Chairman and confirmed the positions of Mr. Birkeneder and Dr. Weimer as Deputy Chairmen.

Executive Board

Also as explained above, Dr. Jan Mrosik resigned as a member of the Executive Board and as the Chief Executive Officer on March 11, 2022, by mutual agreement. The Supervisory Board appointed Marc Llistosella as his successor with effect from January 1, 2023. Bernd Spies was also appointed as a member of the Executive Board on March 11, 2022, overseeing Commercial Vehicle Systems and succeeding Dr. Peter Laier, who left the company on December 31, 2021. Mr. Spies had already been the Chairman of the Board of Management of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, the truck subsidiary, since 2014 and was therefore highly familiar with the division.

I would like to offer my thanks once more to the Executive Board members, and Mr. Weber in particular, who took on additional responsibility on an interim basis following the departure of Dr. Mrosik.

Acknowledgment

The year 2022 was especially influenced by high inflation and disrupted supply chains, and overshadowed by Russia's invasion of Ukraine and the ongoing Covid-19 lockdowns in China. It was a year with major challenges for Knorr-Bremse, its managers and its people. The Supervisory Board thanks the members of the Executive Board and all employees of the Group who have guided and are continuing to guide the company through numerous crises with success and security. The Supervisory Board will continue to provide its constructive support for this in the future, too.

Munich, March 17, 2023

*best regards and all the best
yours Reinhard Ploss*

Dr. Reinhard Ploss
Chairman of the Supervisory Board

Supervisory Board of Knorr-Bremse AG

Dr. Reinhard Ploss, Munich (from May 24, 2022)

- Chair of the Supervisory Board
- President of acatech – Deutsche Akademie der Technikwissenschaften (until November 2022)
- Ordinary Member on the TUM Board of Trustees
- Member of the Board of Trustees of the foundation Stiftung für Demoskopie Allensbach
- Member of the Quantum Computing Scientific-Technical Advisory Council of the German Aerospace Center (DLR)
- Chairman of the Executive Committee of Qutac (Quantum Technology & Application Consortium)
- Honorary member of the Board of Trustees of the Stifterverband für die Deutsche Wissenschaft (Benefactors' Association for the Promotion of Sciences and Humanities in Germany)

Franz-Josef Birkeneder*, Aldersbach

- Deputy Chair of the Supervisory Board
- Plant Manager at Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Aldersbach site (until March 2022)
- Support global projects

Kathrin Dahnke, Bielefeld

- Self-employed Management consultant, Munich
- Chairwoman of the Audit Committee of the Supervisory Board
- Member of the Supervisory Board and Chairwoman of the Audit Committee of B. Braun SE, Melsungen
- CFO of Ottobock SE & Co. KGaA (until July 31, 2022)
- Member of the Supervisory Board and Chairwoman of the Audit Committee of Jungheinrich AG, Hamburg
- Member of the Supervisory Board of Aurubis AG

Michael Jell*, Munich

- Full-time Member of the Works Council at Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Knorr-Bremse AG, Knorr-Bremse Services GmbH
- Member of the Supervisory Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH

Dr. Sigrid Evelyn Nikutta, Berlin (from May 24, 2022)

- Member of the Management Board (Freight Transport) of Deutsche Bahn AG; CEO of DB Cargo AG
- Chairwoman of the Board of Trustees of the German Institute for Economic Research (DIW)
- Member of the Supervisory Board and Deputy Chairwoman of the Senate of the German Aerospace Center (DLR)
- Member of the University Council of Bielefeld University

Werner Ratzisberger*, Aldersbach

- Full-time member of the Works Council of Knorr-Bremse at Systeme für Nutzfahrzeuge GmbH, Munich

Annemarie Sedlmair*, Munich

- Regional Lawyer at IG Metall, Bavarian department, Munich
- Member of the Supervisory Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH
- Member of the Supervisory Board of Bosch Sicherheitssysteme GmbH (until June 2022)
- Member of the Advisory Board of the Labor Law Academy of the Critical Academy Inzell
- Member of the Supervisory Board of Bosch Rexroth AG

Dr. Stefan Sommer, Meersburg

- Chair of the Strategy Committee
- Chairman of the Supervisory Board of Jost Werke AG (from 05/2022)
- Member of the Presidential Council of DEKRA e.V.
- Chair of the Advisory Board In-Tech GmbH

Erich Starkl*, Passau

- First Authorized Representative of IG Metall, Passau office

Julia Thiele-Schürhoff, Munich

- Chairwoman of the Executive Board of Knorr-Bremse Global Care e.V.

Sylvia Walter*, Berlin

- Commercial Administration Officer – Balance Sheet Accountant
- Member of the Works Council of Hasse & Wrede GmbH

Dr. Theodor Weimer, Frankfurt/Main

- Deputy Chair of the Supervisory Board
- Chief Executive Officer of Deutsche Börse AG
- Member of the Supervisory Board of Deutsche Bank AG

Dr. Thomas Enders, Tegernsee (until May 24, 2022)

- President of the German Council on Foreign Relations
- Member of the Supervisory Board of Lufthansa AG
- Member of the Board of Directors of Linde plc
- Member of the Supervisory Board of Lilium GmbH

Prof. Dr. Klaus Mangold, Stuttgart (until May 24, 2022)

- Chair of the Supervisory Board (until May 24, 2022)
- Independent contractor
- Chair of Mangold Consulting GmbH, Stuttgart
- Member of the Administrative Board of Baiterek National Managing Holding JSC, Nur-Sultan, Kazakhstan
- Vice-Chair of Rothschild Europe, Paris
- Chairman Advisory Board, Eastsib Holding, London
- Member of the Board of Directors, ACRA Analytical Credit Rating Agency, Moscow (until 10/2022)
- Chairman of the Foundation, Tiriac International Foundation, Vaduz

The Supervisory Board

Dr. Reinhard Ploss

Chairman of the Supervisory Board (from May 24, 2022)
CEO of Infineon Technologies AG, retired, Munich



Dr. Theodor Weimer

Deputy Chairman of the Supervisory Board,
CEO of Deutsche Börse AG, Frankfurt



Michael Jell *

Full-time Member of the Works Council of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Knorr-Bremse AG, Knorr-Bremse Services GmbH, Munich

Franz-Josef Birkeneder*

Deputy Chairman of the Supervisory Board,
Global Project Support Knorr-Bremse Commercial Vehicle Systems;
Aldersbach Plant Manager until 2022



Kathrin Dahnke

Chairwoman of the Audit Committee of the Supervisory Board,
formerly CFO of Ottobock SE & Co. KGaA,
Self-employed Management Consultant, Bielefeld

Werner Ratzisberger *

Full-time Member of the Works Council of Knorr-Bremse Systeme für Nutzfahrzeuge GbmH, Munich



Julia Thiele-Schürhoff

Chairperson of the Executive Board of Knorr-Bremse Global Care e.V., Munich



Sylvia Walter*

Balance Sheet Accountant, Commercial Administration Officer, Member of the Hasse & Wrede Works Council, Berlin



Dr. Sigrid Evelyn Nikutta
(from May 24, 2022)
Member of the Management Board (Freight Transport) of Deutsche Bahn AG; CEO of DB Cargo AG, Berlin

Dr. Stefan Sommer

Former Member of the Board of Management of Volkswagen AG with responsibility for the Components and Procurement business, Consultant, Meersburg



Erich Starkl *

General Representative of IG Metall trade union, Passau



Annemarie Sedlmair*

Regional Lawyer at IG Metall, Bavarian department, Munich

* Employee representative

02

Combined Management Report*

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** Combined Management Report: We have combined the management report of the Knorr-Bremse Group with the management report for Knorr-Bremse AG, in accordance with Section 315 (3) of the German Commercial Code (HGB) in conjunction with Section 298 (2) HGB. The management report is therefore termed a combined management report. Unless otherwise specified, the information below is applicable to both the Knorr-Bremse Group and Knorr-Bremse AG. Statements which refer exclusively to Knorr-Bremse AG are marked as such, and appear at the end of the combined management report.*



Combined Management Report

About the Group

Overview of the Group

Organizational Structure of the Group

Knorr-Bremse AG is the listed management holding company of the Group. It controls the divisions and handles central functions such as strategic management, treasury, accounting, controlling, HR management, legal affairs, taxes, internal audit, compliance, intellectual property and corporate communications. Knorr-Bremse AG serves as the corporate center, along with the regional holding companies Knorr Brake Holding Corporation (North America), Knorr-Bremse Asia-Pacific (Holding) Limited, and Knorr-Bremse Brasil (Holding), as well as Knorr-Bremse Services GmbH and KB Media GmbH.

We manage our business operations through two business units (divisions), which also represent our reportable segments under IFRS:

- Rail Vehicle Systems (RVS division) and
- Commercial Vehicle Systems (CVS division)

Divisions, Sales Markets, Market Share, Products and Services

Rail Vehicle Systems Division

The Rail Vehicle Systems division supplies highly advanced, safety-critical products and systems for equipping mass transit vehicles such as commuter trains, metro cars and light rail vehicles as well as freight cars, locomotives and high-speed trains. Knorr-Bremse is the world market leader in the global market for rail vehicle braking systems. Knorr-Bremse is also a leading market player in entrance systems and HVAC systems. Details of the Group's market share are based on internal market analyses and estimates for fiscal year 2021.¹

The product portfolio comprises:

- braking systems;
- entrance systems;
- HVAC systems;
- power electrics;
- train control and management systems (TCMS) and control technology;
- electromechanical components and electrical traction equipment for light rail vehicles;
- sanitary systems;

- digital solutions for optimization of rail traffic;
- automatic coupling systems;
- signal systems;
- stationary and mobile testing equipment;
- wiper and wash systems.

Knorr-Bremse has concentrated its rail aftermarket activities under the banner of RailServices, offering innovative solutions for a vehicle's complete life cycle. RailServices focuses on four areas of service business called Environmental Improvements, Process Optimization, Availability Solutions and Lifetime Expansion. Whether individually or in combination, RailServices always seeks to add the most value possible for its customers' vehicle operation. By purchasing DSB Component Workshops in August 2022, Knorr-Bremse has the possibility of developing an extended service hub for Denmark and neighboring rail markets, leveraging growth potential in the region and enabling innovative services for rail transportation.

Commercial Vehicle Systems Division

Our Commercial Vehicle Systems division supplies products and systems for trucks, buses, trailers and agricultural machinery. Knorr-Bremse is the world market leader in the global market for disk brakes as well as pneumatic braking systems for commercial vehicles. It is also a leading supplier of products for braking systems and vehicle dynamics (including steering systems), energy supply and distribution, and fuel efficiency. Details of the Group's market share are based on internal market analyses and estimates for fiscal year 2021.²

The product portfolio comprises:

- pneumatic braking systems (i.e., brake control systems, disk brakes, drum brakes, brake cylinders, valves and pedal units) and steering systems, plus vehicle dynamics solutions (i.e., anti-lock braking systems and electronic stability programs), driver assistance systems (e.g., emergency braking systems), automated driving and electronic leveling control;
- energy supply and distribution systems, including compressors and air treatment;
- products for boosting fuel efficiency such as engine components and transmission control systems (i.e., vibration dampers, engine air management, transmission control and gear/clutch actuation).

¹ Unaudited; not subject to the auditor's opinion

² Unaudited; not subject to the auditor's opinion

We supply high-quality products and service solutions for commercial vehicles under our aftermarket brand TruckServices. Knorr-Bremse acquired a majority interest in Cojali S.L., based in Spain, in November 2022 to build up its position in digital and data-driven aftermarket solutions. Cojali is one of the leading developers and manufacturers of cross-brand diagnostic solutions for commercial vehicles.

Business Model/Structure of the Group

Legal Structure of the Group

Knorr-Bremse AG is the parent company of the Knorr-Bremse Group. As of December 31, 2022, the Group comprised 126 fully consolidated German and foreign subsidiaries directly or indirectly controlled by the Company. The Group is represented at more than 100 locations in over 30 countries.

Changes to the Group's Portfolio and Asset Deals

Information on changes to our portfolio may be found in the "Events of Material Importance to Business Performance" chapter.

Business Model

Financial Significance of Individual Products, Services and Sales Markets

We sell our products and services to customers around the world and are partners to all major vehicle OEMs, as well as rail and fleet operators. Traditionally, Europe is our strongest sales region. In 2022, we generated 46% of our revenues by region (i.e., based on the country in which the particular vehicle for which we supply systems or components is operating) in Europe/Africa, with the remainder coming from the Asia-Pacific region (26%) and North and South America (28%). Both divisions have a substantial aftermarket business. In 2022, our aftermarket activities accounted for approximately 37% of total revenues (according to our management reporting).

Business Processes and Quality

As many of our products are safety-critical, a high level of availability, reliability and quality is one of the main reasons our customers choose to buy from us. We have therefore implemented integrated management systems in both divisions, based on established processes for meeting quality, environmental, and health and safety standards.

Knorr-Bremse ensures a high level of quality for our products and services. We regularly implement various initiatives in our divisions to increase quality awareness and sustainably foster a quality-oriented mindset across the Group. We employ a 360-degree management system approach to help us meet all requirements during a product's life cycle – from development, testing, careful supplier selection, production and assembly, right through to how the product is used by

customers. Compliance with all relevant quality indicators – such as cost of poor quality, supplier and customer delivery quality, functional test failures and product safety audit results – is monitored by monthly global reports. These management reviews prioritize the continuous improvement of our product and system quality, along with the responsibility of each individual employee for safe production and work processes.

We review and improve the implementation of our process management system by conducting regular internal audits and assessments around the world. This is further confirmed by external certification audits based on IRIS (International Railway Industry Standard) for our Rail Vehicle Systems division and on IATF 16949 (International Automotive Task Force standard) for our Commercial Vehicle Systems division.

Customer Relationships

In both divisions, we cultivate long-term relationships with our customers. These include global and regional vehicle OEMs and operators.

Around 52% of the Rail Vehicle Systems division's revenues are generated by OE business. In 2022, aftermarket sales accounted for 48% of the division's revenues (breakdown based on management reporting).

Sales to OE customers generated around 72% of revenues in the Commercial Vehicle Systems division. Aftermarket sales accounted for around 28% of the division's revenues in 2022 (breakdown based on management reporting).

The breakdown of sales revenues into OE and aftermarket segments based on management reporting for the purposes of this Management Report was not included in the audit of the consolidated financial statements.

Procurement

As well as ensuring our production sites are supplied with materials, our procurement activities focus on achieving cost savings and on establishing collaborative and, preferably, local partnerships with innovative suppliers. The procurement organization plays a key role in the cost-optimized procurement, the quality and the on-time delivery of our end products. The material cost ratio as a percentage of Group revenues was 52.6% in 2022 (2021: 50.4%). This underscores the importance of procurement and supply chain management for Knorr-Bremse.

Our Group-wide Supplier Code of Conduct includes the standards our suppliers are required to meet with respect to working conditions, human rights, environmental protection, health and safety, business ethics and compliance. A large part of our global purchasing volume of direct and indirect materials and services is now covered by suppliers who have

signed up to our Code of Conduct. We will continue systematically rolling out the Code of Conduct to our suppliers over the coming reporting period.

The availability of raw materials and their prices are crucial procurement factors for our production and assembly units. We therefore monitor various commodity indices on a monthly basis (such as the German Bundesverband der Deutschen Gießerei-Industrie, the Metal Bulletin and the London Metal Exchange). In the event of significant market fluctuations (price, availability), we develop risk mitigation or minimization measures for relevant categories of goods and/or suppliers as part of our risk management.

Our procurement and supply chain management focuses on improving our supply chain capabilities, processes and inventory levels along the entire value chain: inbound, within our plants and plant network, outbound and at the recycling stage. Our supply chain management approach is also governed by factors such as integrated planning, parts availability, tariffs and foreign trade, logistics and material handling, transportation, short lead times and parts traceability. We have a coordinated delivery cycle with a standardized process model and synchronized supply chains across multiple locations. This allows us to guarantee reliable delivery and adequate stock levels, plus high-quality logistics and performance, while keeping costs low.

After the three years of the Covid-19 pandemic, the organizational structures for procurement and the supply chain have put a greater focus on potential delivery risks due to the situation with the supply of materials. The extensive supply chain analytics that were developed during the pandemic were refined and enhanced, and is now used for many applications. It continues to represent the backbone of our approach. One of the initiatives in our CVS division was a cross-functional chip task force featuring up to 200 employees from a variety of departments (e.g., purchasing, sales, logistics, R & D, plants, etc.), which was successful in safeguarding supply for our customers.

Global Sourcing

To leverage the potential of Asian supplier markets for the RVS division, we have set up a purchase office in India to support our European and North American purchasing teams. As part of our global commodity management strategy, we installed a team in China which systematically taps into the Chinese procurement market for the RVS division's global requirements, achieving synergies for the Group. We have set up a global supplier selection process for the CVS division. The CVS division has also set up an additional organizational structure for purchasing in India, with an aim of further optimizing the share of supplies sourced from best-cost

countries. It also evaluated the development of a purchasing office in Southeast Asia in light of the geopolitical situation.

We make sure to limit our dependency on individual regions and retain alternative sources of supply. Decision-making regarding purchases in the CVS division is therefore always presented to a multidisciplinary Sourcing Board (which includes representatives from various departments, i.e., Purchasing, Research & Development, Quality and Logistics and Sustainability) for the final decision. A purchasing localization strategy increases supply chain flexibility, supports the further development of local technological know-how and reduces vulnerability to currency volatility and customs barriers thanks to the "natural hedging" provided by localized procurement. In both divisions a "dual sourcing" strategy is pursued that offers a high degree of independence from single suppliers.

For over 10 years, we have operated a Supplier Finance Program for our most important suppliers and constantly further developed this program. Under the program, suppliers receive early payment from the bank in return for deducting a discount from the relevant invoices and consequently benefit from Knorr-Bremse's good rating.

Global Category Strategy

For purchasing in both divisions, there are global organizational structures for categories of goods and they are responsible for developing and enhancing strategies for specific categories of goods. Framework agreements are made with suppliers and the portfolio of suppliers itself is developed further. Given the geopolitical developments, the organization is continuing to focus on supply chain reliability.

In its direct purchasing, the Group consistently pursues cross-divisional category strategies to achieve volume effects and works to ensure uniform framework agreements and establish a strategic supplier panel. Purchasing strategies are under development and in the process of further optimization for a total of six categories in the area of IT, logistics, capital goods, building management, services and travel management in order to improve procurement costs, processes and quality.

Challenges in 2022

Global procurement activity in 2022 was particularly influenced by the impacts of the war in Ukraine, alongside the global Covid-19 pandemic. Thanks to the stable supply of material to our production plants, we were able to counteract short-notice shutdowns among our sub-suppliers. Production downtime was therefore largely avoided. Following the clear maxim of "customer first," we also adjusted our stocks of raw material to ensure our delivery capability. Supply bottlenecks and price increases, especially in the area of logistics, but also in the areas of energy and packaging, plus rising

inflation have made procurement activities more difficult for the two divisions and for indirect purchasing.

Due to a strained supply situation with semiconductors, semi-finished products and raw materials in fiscal year 2022, the challenges for the procurement departments were particularly great this year. It was possible to largely ensure supply with cross-functional task forces set up in each of the two divisions, but alternative supply strategies and product designs are nevertheless being evaluated. In the two divisions, necessary escalations were initiated and pursued at global level during the entire reporting period. The tensions in global supply chains, including due to external influences such as the war in Ukraine or Covid-19 presented additional challenges for the supply of our production plants and customers.

Locations and Distribution of Work within the Group

Knorr-Bremse operates production plants in Europe, Africa, North America, South America and the Asia-Pacific region. In recent years, alongside intensive localization initiatives, we have further expanded our global production and engineering footprint in both divisions by means of multiple acquisitions and joint ventures. Our products are manufactured all over the world, with a global balance between high-tech locations such as Western Europe and North America and best-cost locations such as Eastern Europe, Africa, Asia-Pacific, Mexico and South America.

Production at our sites is based on uniform global standards which deliver a high degree of flexibility coupled with reliable delivery capacity. At the same time, they help us to ensure a uniformly high standard of quality at each site, for example, by deploying the Group-wide Knorr-Bremse Production System (KPS) to manage production. KPS uses a variety of tools and techniques – including key performance indicators, lean management methods, shop floor management and pull principles – that are rolled out by experts and taught by an internal lean training academy.

Control System

Company-Specific Leading Indicators

For many years, Knorr-Bremse has excelled at identifying signs of changes in the marketplace at an early stage and rapidly responding to them. To better control our business, we monitor a range of leading indicators. This enables us to respond to any fluctuations in the economic cycle or changes in demand and implement suitable measures in good time. Four indicator types are used:

- Key leading economic indicators are the money supply, commodity prices, energy prices and procurement manager and business climate indices. Research reports and macroeconomic statistics, on transit volumes for example, also help to identify relevant economic developments at an early juncture. We also pay close attention to interest rate trends. Business performance in our commercial vehicle business correlates with trends in the global economy, while the rail vehicle business, especially in the passenger segment, is usually less cyclical.
- More specific indicators for estimating future potential business include our customers' production and sales plans, as well as order book and order intake statistics and forecasts. We also keep track of financial analysts' expectations for publicly traded companies in the rail and commercial vehicles sector.
- The third leading indicator is actual invitations to tender issued by our customers. We collect information on these in our sales database, together with an assessment of our acquisition opportunities.
- The fourth group of indicators comprises the **incoming orders**³ and **order books**⁴ for our two divisions, both in absolute terms and relative to revenues. Since many orders have a relatively long lead time, both these indicators are useful for estimating capacity utilization and sales revenues over the next few quarters.

External Influencing Factors

The most important external factor influencing the RVS division is order book trends among our customers – the companies that actually build the vehicles. In addition, the size and average age of our installed base and their use are primary factors for the development of our aftermarket business. Regular market studies generally provide orientation for the market development expected within the industry and the trends for sub-system market that is relevant to Knorr-Bremse. The key market studies for this include the "World Market Study, Forecast 2020 to 2025" from UNIFE (Association of the European Rail Industry) and the "Worldwide Market for Railway Industries 2022" study from SCI.

In the CVS division, the truck production rate in the respective countries and regions provides information on the production volume of truck manufacturers, which are in turn among the division's main customers in the original equipment business. For the aftermarket, the vehicle fleet available in the market based on historic production rates and specially available indices (e.g., MacKay) provide insight into market development.

³ Incoming orders are defined as all orders for a specific period; these purchase orders are reported as incoming orders when legally binding documents exist that oblige the company to supply a certain quantity of goods or services within a certain time frame and at certain price; key figure unaudited

⁴ The order book is defined as all incoming orders that have not yet been delivered, rejected or canceled; key figure unaudited

In certain regions, our business is affected by government regulations on emissions and safety. In general, more stringent limit values – for CO₂, for example – are driving the demand for low-emissions vehicle technology. This has a positive effect on our business due to the increasing amount of content per vehicle.

Exchange rate fluctuation has a noticeable influence on our revenues and earnings, however the impact on our margins' development is moderate thanks to the high level of localization. As we have set up local development operations in major foreign markets, with local production plants and procurement structures, our need to export between different regions is low. This lowers the transaction risks arising from currency risks. More significant are the translation effects of converting foreign currency items into euros.

Value Management

The most important financial performance indicators for managing Knorr-Bremse are **revenue**, **EBIT**, the **EBIT margin** and **free cash flow**⁵ as well as the employee head count⁶, which is the most significant non-financial performance indicator. The ROCE as well as the EBITDA and EBITDA margin have served as further key management indicators at Knorr-Bremse since the 2022 fiscal year, as announced in the previous year. The quarterly and annual movements of these figures are compared with the previous reporting period in each case. The performance indicators are regularly reviewed for their significance and adjusted and refined where necessary. See the "Corporate Management Indicators" chapter for further details.

The revenues, EBIT, the EBIT margin and free cash flow indicators also form the basis for our performance management system for the previous fiscal year. Knorr-Bremse uses this performance management system to reward Executive Board members for sustained long-term improvements in the Company's performance. Since January 1, 2020, long-term executive performance has been geared to absolute and relative Knorr-Bremse share price movements and the increase in earnings per share. Further information about our remuneration policy may be found in the separately published "Compensation Report."

Knorr-Bremse practices active portfolio management. The Executive Board continuously monitors the portfolio's performance and future prospects and makes adjustments to the portfolio as required.

⁵ Free cash flow is calculated by deducting disbursements for investments in property, plant and equipment and intangible assets from the cash flow from operating activities, and by adding proceeds from the sale of property, plant and equipment and intangible assets to the cash flow from operating activities.

Research and Development

Our innovation agenda focuses on technological developments that help shape the wider social megatrends of urbanization, sustainability, digitalization and mobility. This agenda is also clearly based on safety, customer benefits, added value and growth. Our divisional development activities have the following focuses:

- RVS division: transit capacity, availability, eco-friendliness and life cycle management;
- CVS division: traffic safety, emissions reduction + e-mobility, automated driving and connectivity.

We strive every day to provide our customers with ultramodern electronics, hardware and software, including in the form of systems, that can be adapted to meet changes in regulatory standards and incorporate the very latest advances in engineering methods and tools.

In our research and development activities, we leverage the potential synergies between our two divisions. Across parts of our product portfolio, the underlying technologies can be applied in both divisions. These include, for example, driver assistance systems (adaptive cruise control, ACC), advanced emergency braking system (AEBS), traction control system (ASR), motion control, brake control, hydraulics, wheelend/bogie equipment and compressed air generation. Synergies between the divisions translate into a faster time to market and reduced development costs. For instance, the technologies for both disk brakes and screw compressors were transferred from our RVS division to our CVS division.

At Group level, we invested € 466.1 million (representing 6.5% of revenues) in our R & D activities in the 2022 fiscal year. Of this, € 207.9 million or 6.1% of associated revenues was spent in the Rail Vehicle Systems division and € 258.2 million or 6.9% of associated revenues in the Commercial Vehicle Systems division. [Table → 2.01](#)

Synergies require close collaboration, valuable innovation and closeness to our customers. Our R & D activities are spread in a correspondingly well-balanced way across globally operating and locally specialized sites. There are significant globally responsible sites in Munich and Schwieberdingen (Germany), Budapest (Hungary) and Pune (India).

Local sites with a significant concentration on customer-specific requirements and projects are to be found in, for example, Elyria and Watertown (USA) and Suzhou (China).

⁶ The size of the workforce has been measured as a head count, i.e., the number of employees regardless of their working hours, since the 2022 fiscal year. The changes from the previously reported full-time equivalent figures (the actual working capacity of a full-time or part-time position) are not material.

We cooperate intensively on joint research & development projects with customers, universities and technical institutes: We have close relationships and partnerships with, for example, RWTH Aachen University, Stuttgart University, the Technical University of Berlin, the Technical University of Munich and Budapest University. To gain access to technology and accelerate our research and development work, we are engaged in partnerships with startups – for example, through the Hackathon Techfest in Munich or through regular comparison of the focus areas of suitable start-ups with our partner Techfounders (partnership until December 2022) to gain access to technology and accelerate our research and development. In total, our external R & D network comprises more than 15 partnerships. Knorr-Bremse is also an active driver and founding member of the most important European research and innovation initiative Europe's Rail (ERJU) and will be jointly investing more than € 1 billion in rail transportation and the EU together with almost 30 other key companies here in the next eight years. This collaboration enables us to help shape the rail industry for the coming decades, anticipate sector trends and create future-proof norms and standards.

The Knorr-Bremse Group's innovations and research findings are regularly presented at the industry's foremost trade shows at IAA TRANSPORTATION, at Automechanika and at

InnoTrans. The leading trade fairs were held once again in 2022 following the pause necessitated by Covid-19. At IAA TRANSPORTATION, we presented SYNACT®, a modular disk brake family for heavy commercial vehicles and buses, and NexTT, a weight-reduced disk brake for trailers. Both are key technologies for the transformation into the accident-free road transportation of the future. Moreover, our GSBC modular brake control system is an important recent development which acts as a central element for our driver assistance systems and for automated driving. With fully electronic power steering (EPS) and advanced hybrid power steering (AHPS), we are cementing our position as one of the world's leading providers of commercial vehicle steering systems and exhibiting two pioneering solutions from our ultramodern portfolio. At Automechanika in Frankfurt am Main, Knorr-Bremse TruckServices presented new products from its portfolio in line with its focuses of new service products, EconX® products, tools, service kits and wearing parts. At InnoTrans in Berlin, Knorr-Bremse showed a range of innovations such as digital automatic coupling (DAC), including the first specification-conforming electric coupling solution; a close-to-production model of an electromechanical (EM) brake, condition-based maintenance (CBM) and cloud solutions in conjunction with our partner Nexxiot as well as our efficient, high-grade "cleanAir" approach for HVAC systems.

2.01 KEY R&D INDICATORS

in € million	2022	2021
R&D costs*	466.1	431.4
Capitalized development costs	105.0	83.1
Amortization of capitalized development costs	19.3	19.4
R&D employees (Dec. 31)	4,216	3,980

* Research and development costs

Research and development costs include all costs over a financial period (including capitalized costs) that can be allocated to research into and development of new products, further development of existing products and pure research.

Availability and efficient life cycle cost management will be the basic requirements for sustainable and reliable rail vehicle operation in the future. This means that they are a core focus for Knorr-Bremse AG. On top of that, solutions for automated train operation (ATO), EcoDesign and production digitalization are increasingly gaining relevance. The trend toward sustainable mobility and the necessary shift of transportation to rail offers the major opportunity of making rail transportation the transportation of the future. As a partner of train manufacturers and train operators around the world, Knorr-Bremse invests in new digital solutions for networked, safe and efficient rail transportation. Digital technologies offer crucial starting points for making the rail system more reliable, more available, more flexible and safer. Knorr-Bremse continues to expand its digital portfolio in the field of data-

based services, digital freight trains, cybersecurity and sensor-based environment monitoring.

Condition-based maintenance means data can be generated for braking systems, entrance systems, HVAC systems and other subsystems, and immediately subjected to smart, algorithmic analysis. This enables high-precision monitoring of the condition of safety- and function-critical subsystems. For example, the early warning system is capable of informing operators that a train door still has a guaranteed number of opening and closing cycles left before potential failure so they can schedule component replacement in advance. Overall, the technology helps train manufacturers and operators to optimize fleet life cycle costs while ensuring that more vehicles are available for passenger transportation more often. What's more, it can deliver valuable information that can in turn be used to enhance products and systems.

Knorr-Bremse makes use of the latest available technologies through its targeted, strategic partnerships with highly innovative start-ups such as Railnova and Nexxiot.

Knorr-Bremse is developing digital solutions for smart, automation-enabled freight trains at railcar, train and fleet level: digital automatic couplers (DACs), smart communication solutions, connecting these solutions to an onboard energy management system for supplying electricity and a new electropneumatic braking and/or automation system for performing a wide variety of new functions.

At train level, Knorr-Bremse is helping rail operators to automate the operational processes for preparing trains: For example, brake testing – previously a time-consuming manual operation that rail crews had to carry out before every journey – can now be automatically performed by digital systems in the driver's cab, making a huge contribution to improved time efficiency.

At fleet level, Knorr-Bremse is rapidly developing features for automating fleet operators' maintenance, service and operational processes. These include, for example, real-time condition monitoring solutions, driver assistance systems for optimizing energy consumption such as LEADER[®] and sensor systems from our Rail Vision investment for detecting obstacles and surroundings for more efficient, safer shunting and freight transportation.

In an increasingly connected world of systems, the requirements for overall control electronics are rising exponentially. Extended and new functions such as data exchange for condition monitoring or cybersecurity, and the varying architectural principles that vehicle manufacturers apply, demand an electronics platform with a high degree of modularity and flexibility. For this reason, Knorr-Bremse is investing a mid-level eight-digit figure into the next-generation platform over the next four years. Through smart combination with tried-and-true components such as the subsidiary Selectron's Threat Detection Solution (TDS) for fulfilling modern cybersecurity demands, Knorr-Bremse is expanding its position in the field of braking systems.

In our Commercial Vehicle Systems division, our research and development activities in recent years have concentrated on the key industry priorities of road safety, automated driving, reduction of emissions, e-mobility and connectivity.

Society's requirements for transportation safety are steadily increasing in all regions of the world. Reliable, ready-to-use advanced driver assistance systems (ADAS) such as blind-spot detection and lane-keeping assist are a focus of development at Knorr-Bremse. It contributes its deeply rooted expertise in safety-critical systems through this development,

enabling things such as the implementation of the EU General Safety Regulation (GSR).

Highly automated driving (HAD, SAE level 4 and up) creates entirely new possibilities for road transportation by reducing the total cost of operation (TCO). The progressive change from human drivers to technical solutions marks a shift in responsibility and places very exacting demands on the safety architecture of future, automated commercial vehicles. Knorr-Bremse is developing a broad and modular approach to fail-safe systems for braking, steering and energy supply. These systems enable commercial vehicle makers and AI businesses to push ahead with HAD and equip truck-trailer combinations with the systems that are needed. With full EPS and electrohydraulic AHPS, Knorr-Bremse – one of the world's leading manufacturers of steering for commercial vehicles – offers no fewer than two platforms for fail-safe steering systems.

In view of developments in e-mobility, fundamental changes to commercial vehicle architecture are to be expected. Knorr-Bremse initiated eCUBATOR[®], the innovation unit for e-mobility, in order to influence these fundamental changes proactively. In it, Knorr-Bremse's experts employ a generalist systems approach to create innovative and intelligent solutions for electric commercial vehicles. For Knorr-Bremse, it unlocks a vast number of possibilities for efficient and scalable technologies, from traction to braking and steering as well as energy supply. For first-generation electric commercial vehicles, for example, Knorr-Bremse has developed screw-type compressors, which are primarily built into electric buses and trucks. Knorr-Bremse is already turning its attention toward second-generation electric vehicles with energy management systems, electromechanical actuators, extended drive integration functions and electronic braking systems.

With increasing vehicle connectivity, the possibilities for connecting intelligent systems and functions are rising. Knorr-Bremse has held a majority interest in Cojali S.L., based in Spain, since November 2022 to build up its position in digital and data-driven aftermarket solutions. Cojali is a global developer and manufacturer of cross-brand diagnostic solutions for commercial vehicles. The ongoing development toward predictive maintenance and other digital services that further increase the availability of customers' vehicle fleets represents another focus for development in the Commercial Vehicle Systems division.

Employees⁷

As of year-end 2022, the Knorr-Bremse Group had a total of 31,599 employees, including temporary staff – up 3.5% on the previous year (previous year: 30,544). Excluding temporary staff, the Group employed 28,709 people (previous year: 27,578). This increase was primarily due to inorganic growth. As of December 31, 2022, the Rail Vehicle Systems division employed a total of 16,571 people (previous year: 16,308) and the Commercial Vehicle Systems division employed a total of 14,188 people (previous year: 13,459).

At year-end 2022, Knorr-Bremse employed 17,242 people (16,495 excluding temporary staff) in the Europe/Africa region, compared with 15,512 (14,765 excluding temporary staff) in the previous year. At 54.6%, the percentage of employees in this region was higher than last year's figure of 50.8%. In Germany, the head count rose from 5,465 (5,262 excluding temporary staff) to 5,537 (5,414 excluding temporary staff) as of December 31, 2022. The number of employees in North and South America as at December 31, 2022, had increased to 6,602 (6,390 excluding temporary staff), from 6,270 (6,016 excluding temporary staff) in the previous year. The percentage of the total number of employees who work in this region rose to 20.9% (previous year: 20.5%). By the end of 2022, the head count in the Asia-Pacific region had fallen to 7,755 (5,824 excluding temporary staff) from 8,763 (6,798 excluding temporary staff) the year before. The number of employees in the region as a percentage of the Group's total workforce thus fell to 24.5%, compared with 28.7% in the previous year.

Further Details of Corporate Governance

Corporate Governance Statement

The Corporate Governance Statement for Knorr-Bremse AG will be published on Thursday, March 23, 2023, on the corporate website at https://ir.knorr-bremse.com/websites/knorr-bremse_ir/English/7000/corporate-governance.html. Further details may also be found in the "Corporate Governance" section.

Takeover-Related Disclosures Pursuant to Sections 289a (1) and 315a (1) HGB and Explanatory Report Pursuant to Section 176 (1) AktG

Composition of Subscribed Capital

The subscribed capital of Knorr-Bremse AG is divided into 161,200,000 bearer shares with full voting rights. The rights and obligations associated with the shares are governed by the German Stock Corporation Act (AktG). As of Saturday, December 31, 2022, Knorr-Bremse AG did not hold any of its own shares, and nor does it currently do so.

Restrictions on Voting Rights/Transfers and Equivalent Agreements

The members of the Executive Board have agreed to be bound for the duration of their appointment by a lock-up commitment covering any Knorr-Bremse shares they hold or are obliged to acquire in accordance with the Share Ownership Guideline (SOG). The Executive Board is not aware of any agreements by Knorr-Bremse AG shareholders containing restrictions on the exercise of voting rights or transfer of shares. There are statutory restrictions on voting rights, for example pursuant to section 28 sentence 1 WpHG (violation of disclosure obligations), section 71b AktG (rights associated with own shares) and section 136 (1) AktG (exclusion of voting rights arising from certain conflicts of interest).

Shareholdings Exceeding 10% of Voting Rights

KB Holding GmbH, Grünwald, Germany, holds 58.99% of Knorr-Bremse AG's capital stock. KB Holding GmbH is indirectly controlled via TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany, and Stella Vermögensverwaltungs GmbH ("Stella"), Grünwald, Germany. To the knowledge of the Executive Board, the majority of shares in Stella were held by Mr. Heinz Hermann until February 23, 2021, who passed away on that day. On March 25, 2021, Mrs. Nadia Thiele informed Knorr-Bremse AG in accordance with sections 33 and 34 WpHG that the stake in Knorr-Bremse AG held by KB Holding GmbH is attributed to her. As evidenced by the voting rights notification of May 17, 2021, made by the executor, Mr. Robin Brühmüller, he has controlled the voting rights from KB Holding GmbH's stake in Knorr-Bremse AG since May 17, 2021, and therefore during the 2022 fiscal year, too. Knorr-Bremse AG has not been notified of any other direct or indirect interests in Knorr-Bremse AG's share capital that exceed 10% of voting rights, nor is it aware of any other such interests.

⁷ The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

Shares with Special Rights

There are no Knorr-Bremse AG shares granting special rights.

Control of Voting Rights Where Employees Hold a Capital Interest and Do Not Directly Exercise Their Control Rights

There are no employee shareholdings in which control rights are not directly exercised. Like other shareholders, employees who hold shares in Knorr-Bremse AG exercise their rights of control directly, in accordance with statutory regulations and the Articles of Association.

Provisions for Appointing and Dismissing Members of the Executive Board

The applicable statutory provisions can be found in sections 84 and 85 AktG and in section 31 of the German Codetermination Act (MitbestG). Knorr-Bremse AG's Articles of Association do not contain any provisions that deviate from the statutory regulations. In addition, Article 8 (1) of the Articles of Association stipulates that the Executive Board shall consist of at least two members and that the Supervisory Board may appoint one member of the Executive Board as Chair of the Executive Board (CEO) and another member of the Executive Board as Deputy Chair.

Provisions for Amending the Articles of Association

The Annual General Meeting passes resolutions on amendments to the Articles of Association. Unless the German Stock Corporation Act (AktG) stipulates otherwise, the resolution shall, in accordance with article 23 (2) of the Articles of Association, be passed by a simple majority of the votes cast and – to the extent that a majority of the capital represented at the time of the resolution is required – by a simple majority of the share capital represented at the time the resolution is passed. Pursuant to section 13 (4) AktG, the Supervisory Board is authorized to resolve amendments to the Articles of Association that only affect their wording. Pursuant to Article 6 (5) of the Articles of Association, the same applies to amendments to Article 6 of the Articles of Association, according to their respective utilization of Authorized Capital 2018 and upon expiry of the authorization period.

Executive Board Powers Relating to the Possibility of Issuing or Repurchasing Shares

The powers of the Executive Board to issue shares are set down in Article 6 of the Articles of Association and in the statutory provisions:

AUTHORIZED CAPITAL

Until May 28, 2023, the Executive Board is authorized, with the Supervisory Board's approval, to increase the Company's capital stock on one or more occasions by up to a total of €40,300,000.00 by issuing up to 40,300,000 new bearer shares against cash and/or non-cash contributions

(Authorized Capital 2018). The new shares should be offered to the shareholders for subscription; they may also be acquired by banks or companies within the meaning of section 186 (5) sentence 1 AktG with the obligation to offer them to shareholders for subscription. However, the Executive Board is authorized, with the consent of the Supervisory Board, to exclude shareholders' subscription rights in whole or in part,

- to dispose of fractional amounts under exclusion of subscription rights;
- in the event of capital increases against non-cash contributions;
- in the event of a capital increase against cash contributions pursuant to section 186 (3) sentence 4 AktG if the issue price of the new shares is not significantly lower than the market price of the Company's listed shares at the time of the final determination of the issue price and the exclusion of subscription rights is limited to a maximum of 10% of the Company's existing share capital in total; and

(a) to the extent necessary to service purchase obligations or purchase rights to Knorr-Bremse shares arising from or in connection with warrant-linked and/or convertible bonds and/or profit participation rights with option and/or conversion rights and/or obligations issued by the Company or Group companies, or (b) to the extent necessary to protect against dilution, in order to grant subscription rights to shares in the Company to holders or creditors of warrant-linked and/or convertible bonds and/or profit participation rights with option and/or conversion rights and/or obligations (or combinations of these instruments) issued by the Company or Group companies, to the extent that they would be entitled to such rights as shareholders after exercising their option or conversion rights or after fulfilling their option or conversion obligations.

CONDITIONAL CAPITAL

Until May 28, 2023, the Executive Board is authorized, with the Supervisory Board's approval, to issue bearer or registered subordinated or non-subordinated convertible and/or warrant-linked bonds, profit participation rights and/or income bonds (or combinations of these instruments) (hereinafter collectively referred to as bonds) in one or more tranches, or simultaneously in multiple series, in a total nominal amount of up to €1,500,000,000.00. Furthermore, the Executive Board is authorized to grant the holders or creditors of the bonds (hereinafter collectively referred to as the holders) conversion or option rights on a total of up to 16,120,000 no-par bearer shares in the Company with a proportionate amount of the share capital of up to €16,120,000.00 in total, in accordance with the more detailed provisions in the terms and conditions of the bonds (hereinafter conditions of issue). The bonds may be issued against payment in cash and/or as contribution in kind. The conditions of issue may also provide

for an option or conversion obligation upon expiry of the term or at an earlier date or on occurrence of a specific event.

Shareholders generally are entitled to a subscription right to the bonds. This subscription right may also be granted in such a way that the bonds are acquired by one or more banks or companies within the meaning of section 186 (5) sentence 1 AktG selected by the Executive Board with the obligation to offer these bonds to shareholders for subscription (indirect subscription right). However, the Executive Board is authorized, with the Supervisory Board's consent, to exclude shareholders' subscription rights,

- to the extent that the bonds carrying conversion or option rights or conversion or option obligations are issued against cash payment and the Executive Board, after due examination, comes to the conclusion that the issue price of the bonds is not substantially lower than their hypothetical market value calculated using recognized mathematical, and in particular actuarial, methods. The authorization to exclude subscription rights applies to bonds with conversion or option rights or obligations for shares representing a proportionate amount of the share capital that may not exceed 10% of the Company's share capital in total;
- to the extent that the bonds are issued against contribution in kind;
- to the extent necessary to grant the holders or creditors of bonds or warrants previously issued by the Company or Group companies within the meaning of section 18 AktG a subscription right in the amount to which they would be entitled after exercising their conversion or option rights or fulfilling their conversion or option obligations; and
- in order to remove fractional amounts from the subscription rights.

To grant shares to holders or creditors of convertible or warrant-linked bonds that were issued on the basis of the Executive Board's authorization, the Company's capital stock was conditionally increased by up to € 16,120,000.00 by issuing up to 16,120,000 new no-par bearer shares (Conditional Capital 2018). The precise details are governed by Article 7 of the Articles of Association.

SHARE BUYBACK

The Company's Executive Board is authorized to repurchase its own shares and sell repurchased shares in the cases provided for in section 71 AktG. The Annual General Meeting held on May 29, 2018, authorized the Company's Executive Board, pursuant to section 71 (1) no. 8 AktG, to buy back Knorr-Bremse AG's own shares up to a total amount of 10% of the capital stock existing at the time of this authorization coming into effect or – where this amount is lower – of the capital stock existing at the time this authorization is exercised, up until May 28, 2023. The shares acquired on the basis

of this authorization, together with other treasury shares that the Company has already acquired and are already held by or attributable to the Company, should at no time account for more than 10% of the capital stock.

At the Executive Board's discretion, shares may be acquired

- as purchases on the stock exchange, through a public purchase offer;
- by sending all shareholders a public invitation to submit sale offers; or
- by granting shareholders rights to tender.

The Annual General Meeting held on May 29, 2018, also authorized the Executive Board to act as follows with treasury shares acquired on the basis of the above or earlier authorizations:

- to sell them on the stock exchange or, subject to the Supervisory Board's approval, by means of a public offer to all shareholders in proportion to their shareholdings;
- with the consent of the Supervisory Board, to offer and transfer them in return for contributions in kind, in particular as (partial) consideration for the direct or indirect acquisition of companies, parts of companies or interests in companies or other assets, including claims against the Company, or for claims to the acquisition of assets or relating to a business combination;
- to use them to service purchase obligations or purchase rights of Knorr-Bremse AG shares arising from or in connection with warrant-linked and/or convertible bonds issued by the Company or Group companies.

Agreements in the Event of a Change of Control Resulting from a Takeover Bid

The principal Knorr-Bremse AG agreements that are subject to a change of control relate to (i) the € 750 million Knorr-Bremse AG bond issued on June 14, 2018, which is due to mature in 2025, and (ii) the € 700 million Knorr-Bremse AG sustainability-linked bond issued on September 21, 2022, which will mature in 2027. According to the terms and conditions, creditors are entitled to demand repayment of the par value of the bonds by Knorr-Bremse AG in the event of a change of control if this change of control results in a downgraded credit rating within 120 days of the implementation of the change of control (change of control period), that is to say if a rating awarded to Knorr-Bremse AG or to the bonds is withdrawn or changed from an investment-grade rating to a non-investment-grade rating.

Sustainability and Non-financial Statement

This non-financial statement pursuant to the CSR Directive Implementation Act applies to the Knorr-Bremse Group in accordance with sections 315b and 315c in conjunction with section 289c to section 289e HGB. The description covers the information material for the Group due to its relevance to business activities with regard to the required aspects of environmental, employee and social matters, as well as respect for human rights and combating corruption and bribery. In the interests of targeted reporting, the non-financial statement does not follow a framework.

To avoid duplication of the content in the management report, we refer to other chapters. Knorr-Bremse's business model is described in the About the Group chapter in the management report. Risk reporting can be found in the Report on Risks, Opportunities and Expected Developments chapter of the management report. No further non-financial risks were identified.

The review of the content of the non-financial statement is the responsibility of the Supervisory Board. The Supervisory Board was supported by KPMG Wirtschaftsprüfungsgesellschaft AG through a limited assurance engagement in accordance with assurance engagement standard ISAE 3000 (revised).

Our 2022 Sustainability Report meets our stakeholders' more far-reaching information and transparency requirements for Knorr-Bremse's sustainability management. This will be published as an online report for the first time in May 2023 on <https://www.knorr-bremse.com/en/responsibility>.

Sustainability Management

As a successful global player in the mobility industry in the field of brakes and in other rail and commercial vehicle systems, developing solutions for safe, efficient and sustainable transportation is an integral part of Knorr-Bremse's corporate identity. By fulfilling our aim of taking a consistently responsible approach to employees, partners, the environment and society, we are making a contribution to sustainable development. We see these high sustainability standards as the basis of our business and success.

The concrete structure of our sustainability management is based on statutory frameworks and internal rules such as policies and guidelines. These include our sustainability guidelines as well as policies such as the Code of Conduct or our Human Rights Policy. We also use our established management systems to realize our sustainability ambitions and

implement corresponding measures. All targets and activities are in harmony with the five Knorr-Bremse company values: entrepreneurship, technological excellence, reliability, passion and responsibility.

International guidelines and conventions also provide us with guidance on sustainable business. These include the UN Global Compact, the UN Guiding Principles on Business and Human Rights, the International Labour Organization (ILO) conventions and international standards such as ISO 14001 (environmental management), ISO 50001 (energy management) or ISO 45001 (health and safety management). In addition, we are guided by the UN Sustainable Development Goals (SDGs).

Sustainability Strategy and Organization

Sustainability needs to be taken into account and implemented along the entire value chain. Knorr-Bremse has therefore also set itself the goal of integrating social, environmental and economic aspects into its business processes to an even greater extent. We are increasingly structuring the resulting sustainability measures in line with the ESG approach (environmental, social, governance). This means we are also following capital market requirements and future legislation more clearly.

We derive our sustainability strategy's specific strategic focus topics and measures from international guidelines, our materiality analysis, external ratings and customer assessments. We also gain important input through communicating with our stakeholders. The focus of our sustainability activities in the reporting period was on strengthening the organization, the expansion of the human rights risk analysis and climate protection. Here, Knorr-Bremse's aim is to expand its own climate targets in the coming year and set them in accordance with the requirements of the Science Based Targets initiative (SBTi) (see the Climate Protection section). In an effort to reduce emissions along the entire value chain, we will therefore focus our activities on not only our own production emissions (Scope 1 and 2) but also the main emissions from the supply chain and product use (Scope 3).

With a clear organizational structure, we want to ensure the integration of the topic of sustainability in the Group's highest decision-making bodies. The organization, which was expanded in 2022, is intended to drive the growing work in sustainability management both strategically and in terms of implementation. The entire Executive Board is responsible for the business strategy's focus on sustainability. The Sustainability department coordinates the sustainability strategy and reports directly to the CFO. To address the topic of sustainability in an organizationally appropriate way and support the implementation of the defined measures, the company relies on the ESG Board (known as the "Corporate Responsibility

Council" until 2022) as the central coordination body. The ESG Board, which meets several times a year, comprises two members of the Executive Board, a representative of the senior management from each of the two divisions, the Chair of Knorr-Bremse Global Care e. V. and the Head of the Sustainability department. In 2022, the ESG Board was expanded to include a representative of the senior management of the Knorr-Bremse Americas region and a representative of the senior management of the Asia-Pacific region to embed the topic of sustainability more strongly in the regions both organizationally and operationally. The ESG Board advises on the development of the sustainability program by defining goals and measures for implementing the strategic topics. The Sustainability department and the ESG Board are centrally responsible for the development, management, implementation and monitoring of sustainability projects. The operational implementation of projects takes place in different areas of activity and divisions.

The ESG Alignment Circle, which was installed in 2022 and is a body that precedes the ESG Board, has the task of coordinating the implementation of the individual sustainability activities across departments and divisions and ensuring systematic process integration. It comprises leading representatives of almost all functional units of the Knorr-Bremse Group. In addition, committees and the departments supplement the implementation and development of the sustainability program. Established bodies – e.g., for the topic of human rights or sustainable purchasing – communicate on individual specialist topics and monitor operational implementation. The Executive Board and the Supervisory Board are regularly informed about sustainability topics and take important decisions. In the year under review, for example, they dealt with the legal requirements of the German Supply Chain Due Diligence Act (SCDDA), with sustainability reporting and the climate strategy, which has been expanded to include Scope 3.

The new remuneration system for management level 0-2 (Executive Board, senior management, regional managing directors, heads of division) sets incentives for achieving our sustainability targets. Implemented for the first time in the 2022 fiscal year, 20% of the short-term variable remuneration (short-term incentive) is now linked to the achievement of sustainability targets on climate protection and occupational safety and to sustainability ratings (see chapter 4 Compensation Report).

Sustainable Financial Market

As a player in the capital market, Knorr-Bremse sees orientation toward ESG criteria as increasingly important. Financial market players measure corporate performance in the area of sustainability by means of ESG criteria and use the findings as criteria for investment decisions. Numerous conversations with investors and rating agencies in 2022 have made the capital market's increasing interest in sustainability issues at Knorr-Bremse clear. Knorr-Bremse has already received many

ratings of above average for its sustainability measures. For example, ISS ESG once again gave Knorr-Bremse the prime status of "C+," thus putting us among the best 10% in the industry comparison. MSCI gave Knorr-Bremse a rating of "AA," and we scored 50 points in the S&P Global Corporate Sustainability Assessment, putting us in the best 24% in the comparison group. In CDP's rating on climate protection performance and mitigation of potential effects of climate change, Knorr-Bremse was rated "C."

Our aim of transparent reporting also includes the transparent presentation expected by investors of our corporate climate risks and opportunities. In 2022, we will again publish these in our Sustainability Report in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In addition, we are continuously working on meeting the statutory reporting obligations, such as the EU Taxonomy (see EU Taxonomy section) and on preparing for further developments in legislation on non-financial reporting (Corporate Sustainability Reporting Directive, CSRD).

The integration of sustainability goals into financial instruments around the world is being driven by Knorr-Bremse. From our perspective, it is a clear sign of the importance of effective sustainability measures for success. Since January 2022, we have had syndicated financing with a credit line of € 750 million in place, the interest rate of which is linked to our sustainability rating by ISS Corporate Solutions. In September 2022, Knorr-Bremse placed its first sustainability-linked bond in the European debt market. The bond has a volume of € 700 million, and a key component is the commitment to define a Scope 3 target in accordance with the international standards of the Science-Based Targets initiative (SBTi) (see Climate Protection section). Moreover, we also set incentive systems for our suppliers. In the reporting period, Knorr-Bremse made its Supplier Early Payment Program more sustainable: The Sustainability-linked Supply Chain Finance Program (SSCF), which was implemented in collaboration with Deutsche Bank, is now linked to the ESG rating of suppliers.

Materiality Concept and Non-financial Matters

We established the material issues presented in this statement in a materiality analysis, which we updated in 2022. In the analysis, we firstly considered Knorr-Bremse's impact on sustainability topics in an inside-out perspective, and the positive or negative effects of our business activities on the environment and society were assessed. Secondly, we analyzed the business relevance of the sustainability topics and the topics' impact on Knorr-Bremse's future viability (outside-in perspective). The results were assessed on the basis of the requirements of the CSR Directive Implementation Act (CSR-Richtlinie-Umsetzungsgesetz – CSR-RUG) and the resulting material facts were established. This confirmed the results of the past materiality analysis, and we again defined nine material topics. These are relevant for the business's

development and performance and impact non-financial matters through our operating activities. The ESG Board critically reviewed and approved the result of the materiality analysis in December 2022. [Table → 2.02](#)

2.02 MATERIAL NON-FINANCIAL ASPECTS PURSUANT TO CSR-RUG

Environmental matters	Climate protection Environmental product design
Employee matters	Employment conditions Personnel development Diversity and equal opportunities Occupational health and safety
Social matters	Product and system safety
Other: sustainability in the supply chain	Sustainability in the supply chain
Human rights*	Sustainability in the supply chain Employment conditions
Combating corruption and bribery	Compliance and combating corruption

* The topic of human rights is an integral component of the issues of sustainability in the supply chain and employment conditions and is operationally managed there. In the Respect for Human Rights section, we describe the strategic management approach of our human rights due diligence duty.

Environmental Matters

Resource consumption and climate change are major challenges for business and society. Knorr-Bremse aims to reduce its environmental impact with optimized production processes and innovative products and solutions. We want to significantly reduce energy consumption and carbon emissions at our own production sites with our Climate Strategy 2030. Knorr-Bremse's EcoDesign approach supports us in ensuring that our products' material sustainability aspects can be taken into account across the entire life cycle. In use, our products promote the safe, efficient and sustainable mobility of rail and commercial vehicles.

Climate Protection

Climate protection is a key focus of Knorr-Bremse's sustainability management. With this approach, we want to live up to our own corporate responsibility and our stakeholders' expectations. As a manufacturing company, Knorr-Bremse primarily consumes energy through the operation of buildings and facilities and in various manufacturing processes. This is associated with corresponding carbon emissions, which Knorr-Bremse wants to minimize with its environmental management and its climate strategy. At the same time, Knorr-Bremse is exposed to potential risks from the consequences of both climate change and global decarbonization to limit climate change. These include, for example, extreme weather events and regulatory requirements entailing costs. We therefore analyze our corporate climate risks and opportunities together as part of Group-wide risk management.

The Health, Safety and Environment (HSE) Policy sets out the principles of environmental and climate protection and energy

management in the Knorr-Bremse Group. In order to be able to realize the corresponding measures, we have put in place divisional HSE management systems using standardized processes at our sites around the world. With regard to the topic of climate protection, environmental and energy management has the task of evaluating and improving processes in the Group on an ongoing basis with respect to energy requirements. Thus, consumption data can be monitored at sites, savings potential can be found and the efficiency of any measures implemented can be reviewed.

HSE management takes account of statutory and customer requirements as well as internal policies and process instructions. It is an integral component of our company management systems (REX in RVS, TEX in CVS). The requirements of the divisional Knorr-Bremse quality management systems (see Product and System Safety section) and the international standards ISO 14001 (environmental management), ISO 45001 (occupational safety) and ISO 50001 (energy management) are integrated in these. We require relevant locations to be certified in accordance with ISO 14001. When implementing energy management, we follow the European Energy Efficiency Directive and have had all our European production sites certified in accordance with ISO 50001 or had energy audits conducted in accordance with EN 16247. Additional, largely energy intensive sites in Brazil, India and the USA are also certified. Knorr-Bremse also conducted internal and external audits in 2022 to monitor its environmental management. These audited compliance with specified standards in the Group and the implementation of defined improvement measures. [Table → 2.03](#)

2.03 NUMBER OF CERTIFIED BUSINESS UNITS

	2022	2021
in accordance with environmental management standard ISO 14001	71	70
in accordance with energy management standard ISO 50001	37	38

The central HSE departments of the RVS and CVS divisions are responsible for managing and implementing the environmental management system. They develop strategic guidelines and bring together all cross-site management and coordination tasks. Knorr-Bremse's senior management is involved in strategic and operational environmental management through regular meetings, ad hoc reporting or via the ESG Board. HSE managers implement the strategic requirements, goals and programs at the Knorr-Bremse sites with the local managers. Local environmental protection and energy officers, regional coordinators and experts from the departments involved provide support. We aim for largely uniform HSE management across both divisions. There is a regular exchange of expertise both within and between the divisions to this end. This addresses aspects relevant to HSE, best practices, legal requirements and the associated reporting.

With the Climate Strategy 2030, Knorr-Bremse wants to make its contribution to the goals of the 2015 UN Paris Agreement to limit global warming to a maximum of 1.5 degrees. In a first step, the focus is on reducing emissions that arise as a result of energy use by Knorr-Bremse's production sites and vehicle fleet (Scope 1 and market-based indirect Scope 2 emissions). In 2019, the company set itself the goal of reducing carbon emissions by at least 50.4% by 2030. This equates to an average CO₂ reduction of 4.2% per year compared with 2018. This is to be achieved through three levers: increasing carbon efficiency and energy efficiency, generating our own renewable energies, and switching to renewable sources when purchasing electricity. In a second step, we will expand the Knorr-Bremse climate targets in 2023. We plan to publish a target validated by the SBTi for relevant greenhouse gas emissions in Knorr-Bremse's value chain (Scope 3) by August 31, 2023. In connection with the placement of its first sustainability bond, Knorr-Bremse submitted corresponding targets to the SBTi for assessment in November 2022. We will report relevant Scope 3 emissions from the upstream and downstream value chain in the Knorr-Bremse Sustainability Report.

As another contribution to climate protection, Knorr-Bremse has committed to the carbon neutrality of its sites from 2021. To this end, we offset during the last reporting period Scope 1 and Scope 2 emissions still remaining after our own measures through investments in selected climate protection projects. Due to changed framework conditions for emission offsetting⁸, the emission reductions achieved in climate protection projects are currently counted toward the country-specific climate goals of the project host countries. Accordingly, we will make a contribution to the reduction targets of the respective project countries in the future⁹. This is because our commitment to climate protection remains unchanged. We will continue to finance selected climate protection projects to prevent global emissions at least by the amount of our remaining Scope 1 and Scope 2 emissions of approximately 50,000 metric tons of CO₂ in the year under review. To this end, we finance two atmosfair gGmbH climate protection projects certified in accordance with the Gold Standard: the project for clean drinking water in Kenya and the project for efficient wood gasifier ovens in India.

The Climate Strategy 2030 is implemented with the divisional HSE managers and with representatives of the Americas and Asia regions, the Sustainability department and Energy Purchasing.

In 2022, Knorr-Bremse recorded total energy consumption of 524 GWh. This is equivalent to an approximately 22% increase compared with the previous year. This increase results largely from the consolidation of the past M&A activities relating to our subsidiaries R.H. Sheppard in the USA, Knorr-Bremse Steering Systems Japan Ltd. in Japan and EVAC

GmbH in Germany. In line with our increased energy consumption, our absolute Scope 1 and market-based Scope 2 emissions in 2022 increased by approximately 15,000 metric tons of CO₂ compared with 2021. Nevertheless, we achieved our climate protection targets in the year under review and were able to reduce our emissions by approximately 69% compared with the base year¹⁰. [Table → 2.04](#), [Table → 2.05](#)

2.04 ENERGY CONSUMPTION*

in GWh	2022	2021
Primary energy consumption	180	131
Natural gas	138	99
Fuels	39	31
Self-generated renewable electricity**	2	1
Secondary energy consumption	344	301
Purchased electricity**	336	287
Of which from renewable energy in %***	94	98
District heating	8	14
Total energy consumption****	524	431
Energy efficiency in MWh/€ million of revenue	73.3	64.3

* The figure for 2022 relates to all sites under operating control, excluding sites with fewer than 50 employees other than production sites or service workshops. This covers around 97% of Knorr-Bremse's employees.

** Values from 2021 adjusted: 0.7 GWh was generated through an on-site PPA and corresponding certificates were sold by the operator to the electricity market.

*** The reduction is due to the higher electricity consumption of our M&A activities in Japan, for which no green electricity is currently being purchased.

**** The increase in energy consumption is due to new sites included in the reporting scope as a result of M&A activities and new buildings. Around 21% of the total energy consumption is attributable to these sites. The figures from 2021 were not retroactively adjusted.

2.05 DIRECT AND INDIRECT CARBON EMISSIONS*

in metric tons of CO ₂	2022	2021
Scope 1 direct carbon emissions	38	28
Scope 2 indirect market-based carbon emissions	12	7
Scope 2 indirect location-based carbon emissions	122	152
Total market-based carbon emissions	50	35
Total location-based carbon emissions	160	180
Carbon intensity in metric tons of CO₂/€ million	7.0	5.2

* The recording of carbon emissions is geared to the recognized requirements of the Corporate Accounting and Reporting Standard (Scopes 1 and 2) of the Greenhouse Gas Protocol. The increase in carbon emissions is due to new sites included in the reporting scope. Around 33% of the market-based carbon emissions are attributable to these sites in 2022. The figures from 2021 were not retroactively adjusted.

To increase carbon efficiency and energy efficiency, we identify potential and, as a result, projects for saving energy using internal and external analyses. These are realized within the framework of a climate strategy budget set by the Executive Board. During the reporting period, the heating, ventilation

⁸With the implementation of COP 26, Article 6.4 of the Paris Agreement, reduction measures are automatically counted toward the project host countries unless contracts provide otherwise.

⁹To avoid counting achieved reductions twice, Knorr-Bremse will not claim as offsets the carbon emission reductions resulting from climate protection projects.

¹⁰Due to acquisitions and divestitures, the CO₂ emissions of the base year 2018 were adjusted.

and air conditioning were modernized at the Acuña site in Mexico, and a heat pump was installed as a replacement for gas burners at the Budapest site in Hungary. With the measures realized through the climate budget since 2019, we expect energy savings of around 8,750 MWh/year. In 2022, new energy saving projects with potential savings of approximately 7,200 MWh/year were also approved.

We are improving our carbon footprint by generating our electricity from renewable energy at sites including Suzhou (RVS division), China, Faridabad (RVS division), India, Huntington (CVS division), USA, and Munich (headquarters), Germany. In 2022, we generated 1,400 MWh/year more renewable energy ourselves compared to 2021. In 2022, we put photovoltaic installations into service in Getafe, Spain; Florence, Italy; Acuña, Mexico; and Darra and Granville, both in Australia. The plan is that these should increase our capacity to generate our own renewable energy by approximately 3,600 MWh/year. In addition, photovoltaic installations in Dalian, China; Melksham, UK, Buccinasco, Italy; and Budapest, Hungary, have already been approved. They will generate around 4,100 MWh/year in the future.

The proportion of purchased renewable energy in total energy consumption remains at a high level. In 2022, approximately 94% (2021: 98%) of the electricity supplied to Knorr-Bremse came from renewable energy sources, obtained via green electricity contracts or green electricity certificates. Renewable electricity is purchased via a green electricity contract for our sites in Austria, Sweden and France and via a power purchase agreement (PPA) in Brazil. And we obtain green energy certificates for additional global Knorr-Bremse sites: In Europe, it is European proofs of origin with the exception of specific local proofs of origin in Poland and the United Kingdom. Renewable Energy Certificates (RECs) are used in the USA and Canada, and International Renewable Energy Certificates (I-RECs) are used in China, India, Thailand, Mexico, South Africa and Turkey.

Environmental Product Design

Knorr-Bremse can make a contribution to climate and environmental protection with systematically environmentally oriented product development while achieving a medium- and long-term competitive edge. Knorr-Bremse EcoDesign – environmental product design – enables us to develop products, processes and services with an improved environmental impact across the complete product life cycle. In this way, we want to ensure a future-proof product portfolio and, at the same time, pursue our corporate vision and HSE policy. With the EcoDesign approach, in addition to various internal requirements, the requirements of regulatory stipulations, standards and customer expectations also influence product development. The focus here is on sustainability aspects such as long service life, resource conservation and avoiding emissions.

Our rail services and truck services business is another driver of sustainable product design. Knorr-Bremse refurbishes products industrially, extending their useful life. That can increase environmental and economic sustainability for customers and in our Group. That is why we design our products for remanufacturing and the possibility of reconditioning – i.e., future refurbishment – right from the development and design stage. Revenue in the aftermarket with refurbished products, which includes labor and spare parts needs, represented around 10% of Group revenue in 2022 (2021: 10%).

EcoDesign is organizationally incorporated into both divisions in such a way that it supports strategic R & D planning and creates synergies and standardized processes between the Group divisions. The EcoDesign experts of the RVS and CVS divisions have one central function here. They are integrated in the development processes and help, for example, with the assessment of product development. They are supported in this by divisional analysis teams, which analyze Knorr-Bremse products and components in respect of compliance with internal, legal and customer requirements on contents. The EcoDesign experts also form the cross-divisional working group EcoDesign with representatives of the Sustainability department and, where required, the Remanufacturing department. In regular dialogue, they develop, among other things, standards for product development and processes for the product life cycle. In the year under review, the focus was, in particular, on recording the Scope 3 emissions in product use and identifying reduction potential.

Intensive training of engineers and developers in the past few years has given them a shared understanding of EcoDesign standards for evaluating product development. We continue to offer this training on an ongoing basis. In 2022, the focus was on specialized departmental training. For example, the RVS division's new EcoDesign analytics team was trained on the self-developed EcoApp. This can be used to transfer analysis results on content of components in a digital workflow into an internal database and customer formats.

Knorr-Bremse wants to proactively integrate EcoDesign aspects into product development and is working on systematically anchoring sustainability criteria in the processes – from strategic planning through innovation to product development. In the innovation process, we assess projects' and product ideas' potential for development and implementation, including on the basis of their alignment with strategically relevant megatrends. In the RVS division's innovation projects, EcoDesign is one of five different assessment criteria in the planning process. In the reporting period, around 80 projects were classified in respect of EcoDesign criteria. All innovation projects are assessed using a criteria catalog that includes the topic of sustainability. The resulting priority list for the projects is discussed and adjusted at management level. A higher priority generally means a higher

probability of project implementation. The size of a project budget is based on the responsible department's coordinated project and budget planning.

When developing new products and solutions, we want to incorporate and minimize their environmental impact from the start. This is why we assess them along the product life cycle in accordance with EcoDesign criteria and derive improvements from this. Both divisions have introduced a binding process that takes account of the following EcoDesign criteria:

- Material extraction and production phase: hazardous substances, weight (CVS division), choice of materials (incl. proportion of secondary material), origin of materials (conflict minerals)
- Use phase: weight (RVS division), energy efficiency, longevity, direct emissions
- End of product life: recyclability

In the RVS division, the EcoDesign assessment form is provided to the development teams for the mandatory assessment of innovation projects and complex customer projects. It defines requirements for product design and makes assessment tools available, such as supporting standards and methods for evaluating environmental impacts. For example, the recyclability analysis of the materials used helps us to identify and reduce their potential environmental impact. In 2022, a total of 21 projects in the RVS division were reviewed on the basis of a recyclability analysis in accordance with ISO 22628 and/or ISO 21106. Here, the rail vehicle business area's result is an average of more than 90% recyclability for Knorr-Bremse products. RVS also conducted four life cycle assessments (LCAs) in 2022. These assess the environmental impact of Knorr-Bremse products and systems, here particularly on climate change. The analyses deliver valuable insights on the use of materials and energy in production and impacts in the product use phase through to disposal. The LCAs were conducted in accordance with standards such as ISO 14040 resp. the UNIFE Product Category Rules, and their findings were presented to the leading trade fair InnoTrans in 2022.

The CVS division has defined concrete EcoDesign requirements and targets in the product development and commercialization (PDC) process for new products and products with material changes. These requirements and targets – for example, a minimum reduction in weight – need to be implemented in the phases of project planning through to the product and process development. In this process, specific guidelines and concrete tools and methods provide support. These include the IMDS system for identifying hazardous materials and materials requiring declaration, comparative analyses of material-specific environmental impacts and the EcoDesign assessment form.

Employee Matters

The mobility industry is dynamic and undergoing change. This transformation is strongly influenced by sustainability and digitalization objectives. As Knorr-Bremse, we are actively helping to shape the change through further developments in the product portfolio and in the Group's organization and thus also in human resources.

To ensure ongoing corporate success, we need to be an attractive employer so as to be able to attract and retain the best specialist staff and managers. We want to counter the skills shortage this way, as Knorr-Bremse, as a driver of innovation, depends on highly qualified employees, professionals and junior staff. Especially in industrialized countries, we also need to find answers to the demographic change with an aging society. It is therefore fundamentally important to offer all employees the best conditions for developing their personal capabilities in their professional environment. We are guided by the principles of the UN Global Compact, the UN Universal Declaration of Human Rights and the International Labour Organization (ILO) conventions relating to human rights. The standards we set ourselves are defined in the Knorr-Bremse Code of Conduct and in our Human Rights Policy. Within the Knorr-Bremse organization, these form the basis for daily interaction among employees. Compliance with these principles is a prerequisite for a safe and healthy working environment, respectful interaction with one another, fair working conditions and the promotion of equal opportunities and equal treatment of our employees around the world. Where they need information on our principles or in the event of breaches of these, employees can fall back on established processes. This includes using a global whistleblower system or turning to points of contact such as the HR department, works councils, their direct manager or the compliance organization.

The global HR Strategy 2025 guides us in our responsibility for employees. It is based on our corporate strategy and has the aim of continuously improving employment conditions, thus increasing employer attractiveness. As a learning organization that actively helps shape the change toward digitalization and new forms of work, we want to make continuous progress. The focus is on a future-oriented action plan for further developing and empowering staff and on increased process digitalization, among other things. The HR transformation project ONEHR contributes to these strategic targets through uniform processes and transparent information. On the basis of a new IT infrastructure and a globally standardized data set, the Group-wide recruitment portal was rolled out in the year under review. Different modules on talent management will gradually follow in the coming year.

The Group-wide Human Resources (HR) department plans, manages and monitors all overarching activities regarding our employees at Knorr-Bremse unless otherwise indicated in this non-financial statement. The Head of Human Resources bears the overall responsibility and regularly reports to the Executive Board member for Integrity, Legal and Human Resources. Regional HR officers are responsible for implementing the HR measures in the regions. Local HR officers are guided by the requirements of the central HR department and local circumstances.

Employment Conditions

We want satisfied employees who judge their employment conditions to be good and value an open and supportive corporate culture. It is Knorr-Bremse's aspiration to protect employees' rights and ensure fair and appropriate pay. Furthermore, Knorr-Bremse offers its employees support in individual life situations. In Germany, for example, this is provided by Knorr-Bremse's support association, which unbureaucratically provides employees in primarily crisis situations with financial aid.

One important indicator of good employment conditions is employee satisfaction. In order to analyze and manage this, we conducted the seventh Group-wide employee survey in 2022. 74%¹¹ of employees around the world took part in the confidential digital survey on a voluntary basis. One particularly important indicator of workplace attractiveness is the engagement score, which is composed of questions on satisfaction with the workplace and willingness to recommend Knorr-Bremse as an employer. The engagement score of 71 achieved in 2022 is close to the average score ascertained by the survey service provider (75). Employees affirm a high level of commitment to the Knorr-Bremse brand and the work set for them, and they also have positive expectations for the future of the Group. There are opportunities for improvement in terms of corporate culture and internal career opportunities. Follow-up workshops, follow-up measures and a short survey (pulse survey) on the changes are planned for 2023.

A good work-life balance is an important factor of employee satisfaction. We take this into account in our New Work concept, which encourages agile and collaborative working. The options for mobile working in Germany also contribute to a good work-life balance, as do flexible working hours and online training opportunities. This is supplemented by supportive family and health programs. All seven German sites are certified in accordance with the *berufundfamilie* audit, which assesses an HR policy that is conscious of both family and life stage.

Knorr-Bremse wants to be a fair employer that ensures its employees around the world receive rates of pay in line with the market. Salaries at Knorr-Bremse should only differ on the basis of employees' qualifications and performance. We adhere to local minimum wages, but they are not relevant for the majority of the workforce due to the high level of qualifications required. With the objectives of fair pay and international comparability of pay, we intend to assess all job profiles in accordance with a globally uniform system and compare them with reference values. This has currently been implemented for 73% of all employees (2021: 68%). In addition to pay, Knorr-Bremse offers its employees site-dependent, voluntary additional benefits, mostly in the form of financial benefits or benefits in kind. In September 2021, Knorr-Bremse launched the Heinz Hermann Thiele share program. It enables eligible Knorr-Bremse employees to purchase subsidized shares in Knorr-Bremse AG each year. The second wave of the global share program followed in September 2022. An additional 12 countries were able to participate in the program for the first time. Overall, around 25,600 employees from 23 countries who had been employed by the Group for at least six months were eligible. The participation rate among these eligible employees was 15%.

With regard to codetermination by employees and their representatives, Knorr-Bremse relies partly on direct feedback communication such as the employee survey. In addition, we are conscious of the importance of cooperation in a spirit of trust, which includes factual communication with bodies representing employees, such as the Group Works Council. We respect employees' right to freedom of association and assembly and to collective bargaining, wherever this is legally permitted and possible. The members of bodies representing employees and trade unions are treated equally in the Group and neither disadvantaged nor favored.

Knorr-Bremse strives for high employee satisfaction and to have that satisfaction reflected in a turnover rate that is as low as possible. However, the current labor market situation in various countries where we have sites as well as the macroeconomic climate were a negative influence on staff turnover in 2022, in terms of both general turnover as well as employee resignations. This effect can be seen in all regions and is particularly prevalent in North America (where it is deemed the "great resignation"). We wish to counteract this development by continuously refining the measures listed here for the improvement of employment conditions. In addition, we will further expand our recruitment processes and channels to hire new employees in a timely manner. Lay-offs due to the sale or restructuring of business operations have reduced to a minimum (1.5%). Age-based resignations are also at a low level (1.1%). [Table → 2.06](#)

¹¹ All Knorr-Bremse employees incl. agency workers were invited to take part.

2.06 STAFF TURNOVER RATE*

in %	2022	2021
Staff turnover worldwide	18.7	14.1
Staff turnover limited to employee resignations	10.4	8.7

* Definition: Number of employees leaving as a proportion of the average total workforce. Increase in proportion partly caused as a result of taking account of all ways in which employees leave and of employees with fixed-term employment contracts for the first time in 2022. The figure for 2022 has also been reported as headcount for the first time; it was previously reported as full-time equivalents.

Personnel Development

Qualified employees are a competitive advantage and a basis for corporate success. Strategic personnel development therefore aims to attract new employees and talent with appropriate measures (source) and encourage the development of employees and managers (develop). In terms of the content of the training measures, we are guided both by our corporate objectives and by market requirements such as new job profiles influenced by the digital transformation.

Personnel development offers qualification and training measures tailored to individual employee needs, including in the areas of social skills, project and quality management, technology and IT applications. In addition to in-person and virtual training, the self-learning tool LinkedIn Learning supplements training with around 17,000 courses on topics relevant to work. At around 7,000 users,¹² the use rate among eligible employees increased by 37% in 2022 compared with 2021. The users viewed 45,000 courses and spent more than 11,000 hours training in doing so.

The findings of the Staff Dialogue are relevant to the professional and personal development of employees. The annual employee appraisal results in an evaluation of performance and potential capabilities and individual written agreements on targets. We also see these as a good basis for developing training programs. [Table → 2.07](#)

2.07 STAFF DIALOGUE COVERAGE AND COMPLETION RATES

in %	2022	2021
Coverage rate*	76.3	78.2
Completion rate**	92.0	90.7

* Coverage rate: proportion of employees who participated in the Staff Dialogue. Fluctuation is predominantly caused by the purchase of new companies (delayed system rollout) and a high proportion of new recruits in the second half of the year, as the Staff Dialogue is not held during an employee's first year. The relevant categories of people are not part of the Staff Dialogue process, though they are included in the total number of employees.

** Completion rate: proportion of employees in the Staff Dialogue who fully completed the process. The delta between the rate and 100% primarily results from employees not having yet completed the Staff Dialogue as at May 31, 2022.

In personnel development, in addition to ongoing specialist training programs and promoting specialist skills, we also focus on developing managers because good leadership is essential when it comes to maximizing the Group's performance, creativity and long-term success. The Knorr-Bremse Leadership Principles set out what leadership should look like in practice. Vacant management positions are to be filled by internal candidates wherever possible. To promote leadership development and succession planning, Knorr-Bremse employs potential analysis procedures (Development Center) and Group-wide management development programs (Management Potential Groups).

Additional findings on managers' individual development needs are derived from the Leadership Feedback process, which has to be carried out within a period of two years. In this, managers responsible for three or more employees are given feedback on their leadership. Measures for improved cooperation can be developed on the basis of the results. The last Leadership Feedback in 2021 achieved a completion rate of 92%. The 2022 Leadership Feedback was postponed to the following year for procedural reasons in order to include findings from the 2022 employee survey in the evaluation.

Looking to the future, Knorr-Bremse is training people for careers in areas that are in demand in the Group. These include industrial mechanics, machining technology, electronics, mechatronics and IT. As at December 31, 2022, 261 young people (2021: 219)¹³ had completed an apprenticeship at Knorr-Bremse. In the area of academic training, especially in the dual approach, we work closely with German and international universities. To retain young talent and managers, Knorr-Bremse offers programs such as the Management Evolution Program (MEP) for trainees, or career development under the aegis of the International Management Potential Group (IMPG).

Diversity and Equal Opportunities

Knorr-Bremse sees the internationalism and diversity of its workforce as a corporate success factor and as a driver of creativity, innovation and cultural competence in business partnerships.

We have set out the requirements for diversity and equal opportunities in our Code of Conduct and our Human Rights Policy. A fundamental principle is the equal treatment of all our employees – irrespective of gender, age, country of origin, sexual identity, state of health, religion or beliefs. We confirmed this in 2020 by signing the Diversity Charter in Germany. Procedures for the possible detection of risks and

¹² The reduced number of available licenses compared with 2021 is as a result of the establishment of a separate local training program in China.

¹³ For 2022, the figure has also been reported as headcount for the first time; it was previously reported as full-time equivalents.

breaches of our requirement for diversity and equal opportunities are established in the Group (see the Compliance and Combating Corruption section).

We have made progress on the aim of gradually integrating diversity management into the HR and sustainability strategy. With the organizational structure established in 2022, we want to further develop the four focus issues of cultural diversity, gender equality, age and severe disability more intensively and in a targeted manner across the Group. The Knorr-Bremse Group's newly installed diversity officer reports to HR management on subject-specific matters and reports to the Executive Board member for Integrity, Legal and Human Resources in respect of functional management. The diversity officer is responsible for the Group-wide diversity strategy, for deriving initiatives and measures and for coordinating the new diversity champions network. The regional diversity champions implement measures taking into account the regional specifics and are contacts for the diversity officers at selected locations.

As a global group, cultural diversity is an important success factor for Knorr-Bremse. Around 82.5% of employees are employed at sites outside of Germany. At Knorr-Bremse's German sites, our non-German colleagues represent 10.6% of the workforce and come from 66 different countries. So as to take local and cultural circumstances into account, top management roles in the regions are mainly filled with local people (2022: 86.9%; 2021: 84.9%). We support international communication with intercultural training, language courses, cross-site projects and stays abroad.

Knorr-Bremse has set itself the aim of increasing the proportion of women in the workforce and management, supporting women's careers more strongly and attracting qualified women. Targets that apply globally were set for the Knorr-Bremse Group in 2022: 25% women in the workforce and 20% in management levels 1-4 by the end of the third quarter of 2027. Management levels 1-4 incorporate female managers as well as female employees who are experts or specialists (without their own leadership responsibility). The achievement of the targets is supported by a concept that was finalized in 2020 and calls for at least one female candidate in the final round of the selection procedure for applications at management levels 2-4 at German Knorr-Bremse companies. At least one-third of the participants in Knorr-Bremse development programs should be women. The trainee program MEP exceeds this target with

women currently already representing 38% of its participants (2021: 30%). [Table → 2.08](#), below, provides an overview of the global development of female representation in the workforce and in leadership positions. The latter includes female managers at management levels 1-4 as well as female leadership staff below management level 4.

2.08 GLOBAL PROPORTION OF WOMEN*

in %	2022	2021
Proportion of female employees	21.1	20.3
Proportion of female managers**	16.4	14.1

* Approximately 97% of the total workforce covered due to the latest M&A activities.

** Female employees with their own leadership responsibility have been included since the 2022 fiscal year. The basis used up until, and including, 2021 was (solely) the categorization as management levels 1-4. If made comparable to the previous year, the rate would be 15.2%.

We use campaigns and training courses to raise employee awareness on the topic and to motivate employees. These include relevant social media campaigns in the context of Diversity Day and World Women's Day 2022. Training measures advertised on the intranet, such as those for uncovering unconscious bias, are also offered as a LinkedIn Learning Path and as Knorr-Bremse training at the German sites. In the year under review, we began the awareness training in the divisions with a workshop for representatives of various sites and for local diversity officers. An important agenda item was sharing experience, taking account of regional diversity aspects. Held for the RVS division in 2022, the event is also going to be held for the CVS division in 2023.

We want to strengthen gender equality with development programs for female junior staff and professionals. The mentoring program, which was initially started in Munich in 2022, aims to increase the professional potential of female employees through knowledge transfer. These initiatives originate from the Women@Knorr-Bremse (Munich) network. Other newly founded women's networks in the Group include Women@Bendix (Avon, USA) and the Mexico chapter of Women@Bendix (Acuña, Monterrey, Mexico City). They offer our female employees platforms for communication and initiating projects.

To strengthen the proportion of female junior staff in technical professions, we are working together with various initiatives and universities. The cooperation with the Technical University of Munich in the mentorING program is directed at supporting female college students in scientific and technical degree programs. Through participation in the Cross-Mentoring Munich initiative, we want to support the next generation of female managers by means of cross-company mentoring tandems.

The average age in 2022 at Knorr-Bremse was 41.6 (2021: 41.3) and will further increase due to demographic change in industrialized nations [Table → 2.09](#). Our generation management is intended to offer employees of all ages the best working conditions. We are gradually creating the conditions for this, including with ergonomic workplaces, active health management and formats for cross-generational knowledge sharing.

2.09 AGE STRUCTURE IN THE GROUP*

in %	2022	2021
Up to 20	1.0	1.4
21-25	5.4	5.5
26-30	11.0	11.4
31-35	16.9	17.2
36-40	15.7	15.6
41-45	13.8	13.3
46-50	11.6	11.4
51-55	9.9	10.1
56-60	9.5	9.5
over 60	5.2	4.6

* Proportion of workforce included in the age data in 2022: around 97%.

We have implemented inclusion measures for the particular protection and special advancement of employees with severe disabilities and health limitations. The disabled persons' delegation helps people with disabilities to find the right workplace for them, equipped according to their needs, within the Group. The aggregate ratio of people with severe disabilities at the German sites was 4.6% in 2022 (2021: 4.4%).

Occupational Health and Safety

Our sustainability strategy's important objectives include providing a safe working environment and protecting and promoting employee health. We see this as a responsibility to the individual employee and as a prerequisite for long-term corporate success. Our measures and processes encourage preventive health management, medical care, ergonomic workplaces and the avoidance of accidents at work.

The Group-wide Health, Safety and Environment (HSE) Policy defines obligations and material guidelines in the areas of health and safety. The Executive Board has the overarching responsibility for these areas. The central HSE departments of the RVS and CVS divisions develop strategic guidelines and bundle all cross-site management and coordination tasks. At the sites, the HSE professionals bring together all the activities on health and safety and support the managers in implementing them. In particular, assessing injury and accident risks from production facilities, workplaces and work processes and initiating measures based on these are key tasks.

Knorr-Bremse is aware of the importance of functioning occupational health protection and offers measures for disease prevention and preventive health care at sites. For example, the "mein EAP" employee assistance program for crisis counseling has been further rolled out. Employees at the German locations and their family members can make use of the offer of psychosocial support in times of work- or health-related crisis. Various internal communication channels provide information on the offer, and their rates of use imply good acceptance. The concept for protection against Covid-19 infection, which was established in 2020 and has been continuously adapted since then, was maintained in 2022.

Occupational safety management is defined through the Group's own HSE processes and embedded in our structures. The processes and standards are geared to laws and international standards such as ISO 45001, ISO 14001 and ISO 9001. System and process audits, HSE safety audits, equipment acceptance audits and inspections at the sites encourage compliance with the processes. In the Rail Vehicle Systems division, 46 production and service sites around the world are certified on occupational health and safety in accordance with ISO 45001 (2021: 44).

The following regularly recurring measures also make a contribution to safety awareness in the workforce and thus to what we consider effective prevention of accidents at work and health risks: internal training, information campaigns and regular meetings on occupational safety and reporting together with follow-up. In addition, the safety@work program for assessing the safety culture was launched in the CVS division in 2022. Using employee surveys and on-site audits at European production sites, the areas of management, organization and processes were assessed in respect of their contribution to the safety culture. As a result, improvement potential was identified, and this will be translated into an action plan and implemented from 2023. [Table → 2.10](#)

2.10 SAFETY*

	2022	2021
Number of workplace accidents per 200,000 contractually agreed hours of work	0.7	0.8
Number of workplace accidents resulting in lost days per 200,000 contractually agreed hours of work	0.6	0.6

* The figure relates to all sites under operational control excluding sites with fewer than 50 employees other than production sites or service workshops. This covers around 97% of Knorr-Bremse's employees.

Social Matters

Knorr-Bremse makes its important contribution to safe, efficient and networked transportation by rail and commercial vehicles in particular with braking systems, but also with smart entry systems, HVAC systems, power supply systems, electronic control systems, driver assistance systems etc. Because of their relevance to safety, our products' high level of availability, reliability and quality are crucial reasons for customers to choose to buy from us. Both divisions implement integrated management systems. Their processes satisfy internally defined requirements and should also meet regulatory or customer requirements regarding quality assurance and environmental and health protection.

Product and System Safety

Knorr-Bremse continuously develops the high level of safety and quality of our business processes and product portfolio in both divisions. On this basis, we aim to contribute to improved traffic safety by supplying reliable, high-quality products, systems and services. The two divisions' product developments for higher traffic safety include our knowledge of braking systems that we have acquired over the course of decades and our in-depth expertise in driver assistance systems and forward-looking digital solutions. Our products and systems are subject to high safety requirements arising from customer requirements, legal requirements and standards, and we carefully monitor compliance with these. To this end, Knorr-Bremse makes use of extensive quality-planning, quality-assurance and testing procedures.

Knorr-Bremse acknowledges product safety and quality in its vision, corporate values and Code of Conduct. Moreover, there are separate safety and quality policies for the two divisions that the sites have to introduce. The permanent improvement of our product and system quality is a core topic here, along with the safe production and work processes that must be implemented by employees. The zero-defect philosophy and our product safety management system are intended to help us achieve our objectives with all our products and services: increasing efficiency, maximum flexibility and productivity throughout every stage from the vehicle's manufacture to when it is in service, maximum delivery reliability, accident prevention and better utilization of infrastructure. The new "Product Safety and Product Conformity Organizational Policy" lays down the organizational framework for implementing our requirements for product safety. It documents the responsibilities and tasks in the organizations. Overall responsibility for compliance with product safety and product conformity lies with the Executive Board of Knorr-Bremse AG, which transfers this to the companies of the RVS and CVS divisions. The Product Safety Committee has to ensure

that product safety and product conformity are implemented. For reportable processes, the Group Clearing committee assumes the investigation and technical clarification of the facts.

We describe and manage the product and system safety management processes using the management systems Rail Excellence (REX) and Truck Excellence (TEX). The process manuals and work instructions set out all the basic rules for the processes. We aim to ensure quality and safety at every stage of the value chain that we are in a position to influence by using various measures. That covers the development process, product validation, careful supplier selection, the Knorr-Bremse production process and the delivery of our products. In addition to failure mode and effects analyses (FMEA), this also includes production safety audits and product safety reviews, supplier monitoring, separate auditing of production lines, product safety training for employees, product and field testing and close monitoring of the relevant markets. Regular internal audits and assessments serve to verify and optimize the implementation of our process management system. In addition to worldwide monthly internal reporting on the quality organization and company management to monitor quality standards, Knorr-Bremse regularly conducts regional, global and product-specific quality reviews. The reviews and strict escalation processes ensure that potential safety-critical incidents are assessed and resolved at an early stage.

International standards form the basis of the Knorr-Bremse quality management systems. In the RVS division, these are the quality standards ISO 9001 and ISO/TS 22163 (formerly IRIS, International Railway Industry Standard). The rail-specific requirements included in ISO/TS 22163 are firmly anchored in the division's processes and manuals and the Knorr-Bremse production system. For the CVS division, the IATF (International Automotive Task Force) 16949 quality standard applies. In 2022, a total of 109 Knorr-Bremse sites around the world (2021: 101) had a certified quality management system (ISO 9001, ISO/TS 22163 or IATF 16949). To date, no Knorr-Bremse site has had a certificate revoked.

In order to meet supplier management quality standards, both divisions monitor and audit their supplier base. In addition to a process audit for suppliers, the RVS division uses prior information suppliers have provided about themselves, including on quality certificates such as ISO/TS 22163. The standard is a requirement for achieving preferred supplier status at Knorr-Bremse. In the CVS division, every supplier goes through the product safety audit and a Sourcing Board assessment.

Sustainability in the Supply Chain

Taking responsibility along the value chain is part of our self-image as a sustainable business. As a global group, we work with a large number of mainly local suppliers. We currently purchase products and services from approximately 35,000 suppliers from over 70 countries. These include roughly 7,000 manufacturing and production partners for parts, components and materials for our products, who alone represent 74% of procurement spending. We are aware that Knorr-Bremse’s selection of suppliers has a significant impact on the environment and society in production countries. That is why we require our suppliers to comply with our high sustainability standards in the supply chain. Breaches by suppliers could entail reputational and cost risks for Knorr-Bremse, its customers and its investors.

We have set out Knorr-Bremse’s commitment to sustainability in the supply chain in our Code of Conduct and our sustainability guidelines. We want to integrate sustainability aspects into our own processes to an even greater extent and improve sustainability performance in the supply chain. Accordingly, we require our suppliers to act in a manner that is in line with our values and takes account of international environmental and human-rights guidelines and standards. These include the principles of the UN Global Compact, the International Labour Organization (ILO) conventions and the UN Universal Declaration of Human Rights. These principles are specified and defined in our Code of Conduct for Suppliers, our Human Rights Policy, the Conflict Minerals Policy and in Knorr-Bremse’s Quality Guidelines.

Our Group-wide Code of Conduct for Suppliers is intended to promote and require the systematic inclusion of sustainability aspects in the production methods and conduct of our suppliers. The code sets out the standards our suppliers are required to meet with respect to working conditions, human rights, environmental protection, safety, business ethics and compliance. We expect our suppliers to comply with the code and implement it in their upstream supply chain. The Code of Conduct for Suppliers is an integral component of all supplier contracts and binding for all our suppliers. The Knorr-Bremse Human Rights Policy additionally describes our expectations regarding respect for human rights (see Respect for Human Rights section).

The Knorr-Bremse strategy for sustainable procurement is embedded in purchasing processes across the Group. The purchasing managers for direct and indirect materials are responsible for its implementation. Compliance with and optimization of sustainability standards in the supply chain are supported by experts at Group level. The Sustainable Procurement Committee discusses and decides on strategic and current sustainability topics several times a year and consists of the managers of Knorr-Bremse’s global purchasing units and the Sustainability

department. Preparatory measures for complying with the German Supply Chain Due Diligence Act were a focus topic in 2022. A comprehensive risk assessment of our supply chain and a review of our processes were carried out in preparation for this. Based on these, we are defining measures to integrate sustainability criteria into purchasing decisions to an even greater degree, to increase transparency in the supply chain and to improve our suppliers’ practices with regard to human rights and environmental matters.

We provide process descriptions and guidance to implement our sustainability standards in internal procurement processes. These give an overview of the sustainability criteria and management approaches to be incorporated in the global purchasing processes. Internal guidelines specify the extent to which sustainability aspects are to be taken into account in purchasing decisions for various categories, including renewable energy, business travel or energy-efficient products, equipment and services. In addition, raising the awareness of and training Knorr-Bremse employees is a key prerequisite for sustainable purchasing management. Around the world, they should develop the know-how to be able to assess, advise and audit suppliers. We therefore held webinars on the topic of “Sustainability in procurement” for purchasing specialists in 2022. We were also able to establish an e-learning program on our sustainable procurement processes and practices, which is recommended for all employees in global purchasing. The participation rate was 53% here and is to be further increased.

Knorr-Bremse uses various measures such as assessments, audits and training to implement and apply the sustainability standards at its suppliers.

Sustainability assessments at suppliers are continuously conducted by external service providers with experience in the industry. They survey and assess the implementation of suppliers’ sustainability management systems. We currently have a valid sustainability assessment for roughly 2,500 suppliers. The coverage rate is thus 69% of the global purchasing volume. We therefore met the target we set for 2022 of 65%, and we are aiming for a target rate of 75% in 2025. [Table → 2.11](#)

2.11 COVERAGE RATE OF SUPPLIER SUSTAINABILITY ASSESSMENT

	2022	2021
in % of purchasing volume	69	61

We take account of suppliers' sustainability assessments in our contract award process. To be able to reach the highest supplier status, Knorr-Bremse requires a valid supplier sustainability assessment or proof that such assessment is in progress. Moreover, the suppliers should be able to present a certified environmental management system that is in line with the international standard ISO 14001. Currently, a number of suppliers covering 62% of the direct production volume meets this requirement.

In addition, we use the findings from the sustainability assessments of both divisions to conduct a risk assessment of the suppliers. Based on the individual assessment results, we classify our suppliers into the categories A, B and C, where C represents the level with the potentially highest sustainability risks. We want to reduce the proportion of suppliers in the C category in the future. To this end, we draw up action plans for improving their sustainability performance with the suppliers in question. In the long term, Knorr-Bremse only sees two development paths for suppliers in category C: They measurably and demonstrably make progress on their sustainability performance or we gradually relocate the purchasing volume allocated there. In addition, a comprehensive human rights risk analysis was carried out in 2022. As a result, we were able to categorize potential high-risk suppliers in order to pursue risk mitigating measures for them (see Respect for Human Rights section).

We also audit and assess suppliers' sustainability performance in supplier visits and external audits. Firstly, we have integrated sustainability aspects into standard supplier visits. Knorr-Bremse employees in the area of supplier development use the supplier on-site sustainability risk checklist so that they can identify and assess sustainability risks on-site at suppliers. The results of the completed checklists are used as a decision-making criterion regarding additional sustainability audits on-site or other in-depth investigations. Secondly, independent experts conduct independent sustainability audits of suppliers and assess compliance with the applicable social and environmental standards. Thirty on-site audits were conducted this way in 2022 (2021: 18), of which 9 were follow-up audits (2021: 8). If an audit or a sustainability assessment reveals breaches or improvement potential, Knorr-Bremse develops and implements action plans for improvement with the suppliers and conducts follow-up audits.

In order to protect human rights in the area of conflict materials, we have introduced a due diligence process. Key instruments for managing and reporting conflict materials include the Group-wide binding Conflict Minerals Policy and supplier surveys. As recommended by the Responsible Minerals Initiative, we ensure transparency in the procurement process for minerals from conflict or high-risk areas, including tin, tantalum, tungsten and gold ("3TG"). In an annual survey, we ask direct suppliers with 3TG relevance for information on the origin of the minerals used using the Conflict Minerals Reporting Template (CMRT). Our last survey identified 24 (2021: 6) smelting plants classifiable as critical. As part of the Joint Smelter Outreach Initiative, Knorr-Bremse wants to convey to them the importance of independent audits so that their procurement process can be verified as conflict-free and responsible. This due diligence is conducted in partnership with other companies that have the same obligations as Knorr-Bremse. To ensure due diligence in the cobalt and mica supply chain, we have started to collect information with the aid of the Extended Minerals Reporting Template (EMRT). At the end of 2022, 2,301 suppliers were asked to answer the questionnaire by mid-2023. [Table → 2.12](#)

2.12 REPORTING OF CONFLICT MINERALS*

	2022	2021
Number of suppliers invited to take the CMRT survey	2,301	2,449
Response rate of the suppliers surveyed in %	37	45

* The figure relates to the percentage of suppliers who have provided us with information on the use and origin of conflict minerals in the June 2022–December 2022 reporting period. The current data collection process will end in April 2023.

As a leading and global actor in the industry, Knorr-Bremse actively participates in industrial sustainability initiatives. We are an engaged founding member of the Railsponsible initiative in the rail industry and an active member of the German Association of the Automotive Industry (VDA) in the automotive industry. This means we can improve sustainability standards in the supply chain together with customers, competitors and other stakeholders.

Respect for Human Rights

Knorr-Bremse wants to fulfill its human rights due diligence duty along its value chain: to its own employees, to contractors and employees in the supply chain and to customers and society. To respect and protect human rights, we are systematically expanding our processes in accordance with our internal obligations, external guidelines and legal requirements. Knorr-Bremse has signed the UN Global Compact, thus also committing itself to compliance with human rights. Moreover, we commit to respecting the respective national legal frameworks, the International Labour Organization (ILO) conventions relating to human rights and the UN Universal Declaration of Human Rights. We orient our processes on the UN Guiding Principles on Business and Human Rights and the German Supply Chain Due Diligence Act (SCDDA).

The Code of Conduct, which is binding for all Knorr-Bremse employees includes central principles and rules for respecting human rights. The Human Rights Policy rolled out globally in 2021 specifies the code's requirements and combines all human rights aspects from various internal policies, including the topics of child and forced labor and modern slavery. The Human Rights Policy was rewritten by the Executive Board in 2022 in the form of a policy statement and is available on Knorr-Bremse's website. The Human Rights Policy describes how we want to protect the human rights of everyone who directly or indirectly works for us by reducing any negative impact of our actions. The respect for human rights that the Human Rights Policy requires of suppliers and subcontractors supports and adds to corresponding requirements in the Knorr-Bremse Code of Conduct for Suppliers. Our Conflict Minerals Policy also influences the human rights due diligence duty.

In the Knorr-Bremse organization, the Executive Board and the senior management of the companies have responsibility for risk management with regard to human rights. In view of the German Supply Chain Due Diligence Act's entry into force, the Executive Board concretized the responsibilities for human rights risk management and delegated them to the competent departments in 2022. These include Purchasing, the HR department, the Health, Safety and Environment department and the Compliance department, which are responsible for the operational implementation and review of these activities. The compliance organization monitors compliance with the requirements of the German Supply Chain Due Diligence Act in the Group and reports regularly on this to the Executive Board.

We are working on integrating human rights due diligence even more strongly into our operating processes to minimize human rights risks and prevent negative effects from our business operations. To do this, we also use the results of the human rights risk analyses and associated information on potential human rights breaches.

During the reporting period, we continued our analysis of the human rights risks in our supply chain and in our own business divisions in accordance with legal requirements. For example, we used external sources to assess the potential risks of our direct suppliers and our own sites in respect of procurement categories, country risks, site sizes and number of blue-collar workers. By comparing this data with the sustainability assessments available to us at supplier level and with countermeasures such as ISO certifications, we have been able to determine supplier risk and location risk. When defining and following up on risk-reducing measures, we prioritize suppliers whose actions we can influence due to the level of our purchasing volume. In the future, we will conduct the risk analysis annually and whenever required.

In the supply chain, we identified around 600 suppliers who are being reviewed with very high or high priority regarding the need for further action due to their propensity to take risks and the level of our purchasing volume. This equates to 2% of suppliers. Risks were identified in our own business area, particularly in the field of occupational safety and also concerning ensuring respect for human rights at the Brazil, China, India and Mexico sites.

The human rights risk analysis is included as a criterion in the selection of internal auditors to conduct audits. Selected human rights are also audited on site within this regular audit and, in the event of complaints, remedial actions are determined.

Knorr-Bremse employees and external stakeholders can report information on suspected human rights breaches or complaints anonymously or choose to provide their contact details (see the Compliance and Combating Corruption section). In the 2022 fiscal year, no cases of child labor, forced labor or modern slavery were reported through the whistleblower system. In total, we received 90 reports (2021: 45) through our whistleblower system. 29 of these cases (2021: 10) concerned reports of discrimination and other topics relating to the workplace. In two of these cases, the information was confirmed. In five cases, the investigations are still ongoing. The remaining reports could not be confirmed.

Knorr-Bremse promotes awareness of human rights due diligence within the Group and along the supply chain. We engage in constant dialogue on the topic with the departments. The Chief Compliance Officer regularly provides information to company management on realized and planned Group-wide activities in close communication with the Head of Sustainability. The Supervisory Board is also informed about current developments on the protection of human rights and corresponding measures by Knorr-Bremse. Knorr-Bremse employees are informed about the obligation to respect human rights by the Code of Conduct and by the Human Rights Policy. The compliance management system provides support through mandatory training on the Code of Conduct. We maintain a dialogue with suppliers on a wide range of sustainability topics (see Sustainability in the Supply Chain section).

In addition, we contribute to the automotive industry dialogue on the National Action Plan (NAP) of the German Federal Ministry of Labor and Social Affairs. Together with other companies, politicians, civil society and NGOs, we want to develop solutions to be able to live up to the increasing requirements for protecting human rights.

We strive to continuously expand our reporting on human rights due diligence. Our annual sustainability report explains our activities in more detail. Furthermore, Knorr-Bremse publishes separate declarations on its website setting out our guidelines on and measures for preventing modern slavery and people trafficking in accordance with the requirements of the UK Modern Slavery Act and the Australian Modern Slavery Act.

Compliance and Combating Corruption

Compliance management is guided by our aspiration of always complying with laws, internal regulations and voluntary commitments. This is because only as a reliable business partner will we gain the trust of employees, customers and business partners needed for sustainable corporate growth and thus shareholder value. We therefore place great emphasis on dealing with our stakeholders with integrity and responsibility. Combating corruption and bribery is an important part of corporate responsibility and one of the key topics in compliance management at Knorr-Bremse. We do not tolerate any form of corruption or other unfair business practices and expect the same of our business partners (details on current official processes can be found in the Report on Risks and Opportunities and in the notes to the consolidated financial statements under H.9. Legal Disputes and Litigation). Conflicts of interest, including and especially in dealing with our business partners, must be avoided. We have established corresponding compliance policies.

Our compliance requirements across the entire supply chain are set out in a Group-wide Code of Conduct. On the basis of Knorr-Bremse's corporate values and the principles of the UN Global Compact, the code defines the principles for Group-wide responsible business conduct, including a prohibition of corruption in any form. These principles of action and rules are binding for all the Group's employees and are a component of the written employment contracts for new employees around the world. We have given concrete expression to these principles through six Group-wide compliance guidelines: dealing with gifts and invitations, donations and sponsoring, corruption prevention, conflicts of interest, screening of business partners, and fair competition. Our mandatory Group-wide Code of Conduct for Suppliers also includes the aspect of combating corruption.

Relevant compliance risks are compiled and assessed in the compliance management system (CMS). The CMS's key aim is to effectively anchor compliance in business processes. For example, we want to ensure that employees comply with the law and internal regulations, prevent systematic misconduct and detect and remedy breaches.

Corruption prevention, ensuring fair competition and avoiding conflicts of interest are defined as the focus issues for Knorr-Bremse's CMS. The basis of this decision is a compliance risk analysis, which was carried out with the involvement of selected business units and markets and was updated in 2022. As part of a worldwide compliance risk assessment, possible compliance risks were compiled and assessed on the basis of risk scenarios. The compliance processes were also reviewed and the manner of their implementation was recorded regionally. Around 50 Knorr-Bremse companies, which cover more than 80% of Knorr-Bremse AG's annual revenue, were assessed.

The Chief Compliance Officer (CCO) is responsible for implementing the CMS except in the area of antitrust and competition law, where the Legal department is responsible for the CMS. The CCO reports to the member of the Executive Board responsible for Integrity, Legal and Human Resources. Compliance topics are also a regular agenda item in Executive Board meetings. The Supervisory Board and the Audit Committee are also regularly informed about the status of the CMS. Along with the global heads of Knorr-Bremse's Controlling, Human Resources, Accounting, Legal and Internal Audit departments, the CCO is a member of the Compliance Committee. The Compliance Committee advises on initiatives and strategies for developing the CMS, on current compliance topics and on focuses of compliance activities. In the Knorr-Bremse regions, regional compliance officers take on the role of advising and training employees, processing compliance cases and identifying local risks.

In 2022, the compliance organization's headcount was increased. Business activities in China, India, South America and the USA are now supervised by full-time compliance officers. Almost all Knorr-Bremse companies are additionally assigned to local compliance officers, who are involved in the local implementation of the compliance management system.

The internal Group audit department supports the Executive Board in its monitoring function through independent and objective audit procedures. These are geared to improving business processes and uncovering any breaches of laws or internal rules or guidelines. The internal control system (ICS), to which we added further compliance-specific controls in 2022, additionally serves to verify compliance with compliance guidelines. Knorr-Bremse sites have to use spot checks to prove that they effectively implement the guideline requirements. In 2022, preparations were begun for auditing the compliance management system for adequacy and effectiveness in 2023.

Employees, business partners and external individuals can report information on any possible compliance breach to the compliance organization via email, directly through the compliance organization or online through an independent and anonymous whistleblower system. This globally accessible portal operated by an external service provider allows information on any compliance breaches to be reported in 31 different countries and in 20 languages. Information about the system is communicated internally and during training events and in the Group-wide intranet. In addition, the Incident Notification and Alarm Services (INAS) system is used for non-anonymous reporting of time- and safety-critical events from the areas of compliance, data protection, information security and Group security. Events classifiable as critical reach the responsible area of the Group directly via the system.

From 2023, the whistleblower system will be extended through the commissioning of an external ombudsman service, which

will serve as an additional point of contact for receiving information and complaints. The external ombudsman service will then pass the information and complaints on to us.

In 2022, the Executive Board also adopted new rules of procedure for dealing with whistleblower information and complaints. These govern the process, responsibilities and the rights of the whistleblower and the individuals concerned. Key principles include the protection of whistleblowers from disadvantages, the fairness and confidentiality of the process, the independence of investigations and the safeguarding of data privacy. We follow up on every suspicious activity report or forward it on to the competent departments for further investigation. Where the initial suspicion is substantiated, investigations are carried out. Any misconduct found is penalized.

In the year under review, 90 reports were recorded in our group-wide whistleblowing system across the Group (2021: 45). The number of reports thus doubled compared with the previous year. 29 of the reports (2021: 10) concerned information on discrimination or other labor-law topics (see Respect for Human Rights section). Nine reports (2021: 2) concerned information on corruption. In three cases, the information was not confirmed. In the remaining six cases, the investigations are still ongoing. There were no lawsuits, judgments or fines due to corruption offenses in the reference period. In one case reported internally before the reporting period, personnel measures were taken in 2022 and two employees were dismissed.

To prevent compliance breaches, Knorr-Bremse relies on transparent communication and employee training. During the reference period, the Executive Board confirmed its commitment towards integrity and communicated its expectations of managers and employees clear on the intranet and at various manager events and employee meetings.

A global e-learning module on our Code of Conduct is available in 13 languages and needs to be completed online every two years. In addition, another e-learning module on the topic of preventing corruption that is aimed at employees in purchasing or sales was rolled out in 2022. This training too must be repeated every two years. In December 2022, around 96% (2021: 97.5%) of the 17,270 employees with access to e-learning platforms (approximately 55% of the entire workforce) had a valid certificate for the training on the Code of Conduct. 3,770 employees were enrolled for the anti-corruption training, of which 95% had obtained a valid certificate by the end of December 2022.

In addition to e-learning, target-group-specific in-person events for employees are held on specific compliance content and our guidelines. In 2022, 64 compliance training courses were held globally (2021: 25).

EU Taxonomy

Under the EU Taxonomy Regulation 2020/852 of the European Parliament and of the Council of June 18, 2020 and pursuant to article 8 on the transparency of undertakings in non-financial statements, we are required to disclose our environmentally sustainable economic activities. In the 2021 reporting period, under the exemption granted by the EU, it was only necessary to disclose the proportions of Taxonomy-eligible and Taxonomy non-eligible economic activities in revenue, capital expenditure (CapEx) and operating expenditure (OpEx). Taxonomy-eligibility exists as soon as an economic activity is listed in the annexes to the Delegated Act with reference to the environmental objectives. For the 2022 reporting period, the extent to which the Taxonomy-eligible economic activities meet the technical screening criteria and minimum social safeguards must be disclosed to demonstrate Taxonomy alignment. Delegated Regulation 2021/2139 ("Climate Taxonomy") existed at the time of publication, and thus only the technical screening criteria for the two environmental objectives of "climate change mitigation" and "climate change adaptation." The analysis on Taxonomy alignment focuses on these objectives. The publication of the Delegated Regulation on the remaining four environmental objectives ("sustainable use and protection of water and marine resources," "transition to a circular economy," "pollution prevention and control" and "protection and restoration of biodiversity and ecosystems") is still outstanding, as a result of which these will not be taken into account for the current reporting period. The European Commission's draft FAQ of December 19th, 2022 confirmed that the disclosure obligation is not to be applied to the remaining environmental objectives for the current reporting period.

The EU Taxonomy refers both to economic activities that fall within Knorr-Bremse's core business, such as maintenance and modernization of electric vehicles and production of components for rail infrastructure, and to capital expenditure and operating expenditure that is not directly connected with the core business but, for example, concerns individual measures in the field of buildings.

Both the analysis of Taxonomy eligibility and the analysis of Taxonomy alignment are based on the descriptions of economic activities defined in Delegated Regulation 2021/2139 and the relevant technical screening criteria. The complementary Delegated Regulation 2022/1214 on the Climate Taxonomy stipulates particular disclosure obligations in connection with gas and nuclear energy activities. Because Knorr-Bremse does not have economic activities in these energy sectors, no changes result for Knorr-Bremse's reporting

or the corresponding revenue, CapEx and OpEx KPIs. The templates according to the supplementing Delegated Regulation are not reported.

Knorr-Bremse has acknowledged and taken account of the FAQ drafts on interpretation questions regarding the EU Taxonomy published by the European Commission on December 19th, 2022 (Climate Delegated Acts FAQ on the interpretation and implementation of certain legal provisions of the EU; Climate Delegated Acts FAQ on the interpretation and implementation of certain legal provisions of the Disclosures Delegated Act under Article 8) in connection with the preparation of the information on the EU Taxonomy for the 2022 fiscal year.

Analysis of Taxonomy-Eligibility

The Taxonomy-eligible economic activities covered in the Climate Taxonomy include the manufacture of rail vehicles and low-emission commercial vehicles. As a supplier of components for vehicle manufacturers (original equipment manufacturers/OEMs) and rail and fleet operators, Knorr-Bremse is not covered by the EU Taxonomy according to the current interpretation of Delegated Regulation 2021/2139. This includes Knorr-Bremse's original equipment business and the revenue generated with electric rail vehicles with operators through supplied components. The business activities of subsidiary and consortium partner Kiepe Electric as a manufacturer of electric vehicles are an exception. The maintenance and modernization of systems carried out on electric rail vehicles in the RVS division, which is performed in the aftermarket business, can also be reported as Taxonomy-eligible. Further, activities in the field of rail infrastructure are identified as Taxonomy-eligible. By contrast, there is no possibility for the CVS division to recognize a proportion of revenue, as Knorr-Bremse supplies parts and components to commercial vehicle manufacturers as a tier 1 supplier. The aftermarket business cannot be reported as Taxonomy-eligible either, as it is a series production business and the services are carried out without the vehicle concerned being known to Knorr-Bremse.

In the current draft FAQ of December 19th, 2022, it is pointed out that the manufacture of key components as an economic activity, for example for the transport sector, will be addressed in future revisions of the Delegated Regulation. The advancing dynamic developments relating to EU Taxonomy regulations may thus lead to adjustments of economic activities, and Knorr-Bremse will continue to monitor these carefully.

All Taxonomy-eligible economic activities are classified under the environmental objective of climate change mitigation (Annex I). The following table shows Knorr-Bremse's Taxonomy-eligible economic activities: [Table → 2.13](#)

2.13 OVERVIEW OF TAXONOMY-ELIGIBLE ECONOMIC ACTIVITIES

Taxonomy-eligible Activity	Description of the activity	Knorr-Bremse economic activity
3.3. Manufacture of low carbon technologies for transport	Manufacture, repair, maintenance, retrofitting, repurposing and upgrade of low carbon transport vehicles, rolling stock and vessels	<ul style="list-style-type: none"> • Manufacture of electric vehicles (core activities of the subsidiary Kiepe) • Modernization and maintenance of electric rail vehicles • Capital expenditure on and uncanceled costs of development projects on the durability of electric rail vehicles
6.5. Transport by motorbikes, passenger cars and light commercial vehicles	Purchase, financing, rental, leasing and operation of vehicles designated as category M1, N1 or L (2- and 3-wheel vehicles and quadricycles).	<ul style="list-style-type: none"> • Fleet
6.14. Infrastructure for rail transport	Construction, modernization, operation and maintenance of railways and subways as well as bridges and tunnels, stations, terminals, rail service facilities, safety and traffic management systems [...]	<ul style="list-style-type: none"> • Manufacture of signal systems and platform screen doors
7.2. Renovation of existing buildings	Construction and civil engineering works or preparation thereof.	<ul style="list-style-type: none"> • Building renovation measures
7.3. Installation, maintenance and repair of energy efficiency equipment	Individual renovation measures consisting in installation, maintenance or repair of energy efficiency equipment.	<ul style="list-style-type: none"> • Heating, ventilation and air conditioning, LED lighting, facade installation,
7.4. Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	<ul style="list-style-type: none"> • Charging stations for electric cars
7.5. Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	<ul style="list-style-type: none"> • Lighting control systems and energy management systems for building automation
7.6. Installation, maintenance and repair of renewable energy technologies	Installation, maintenance and repair of renewable energy technologies, on-site.	<ul style="list-style-type: none"> • Solar installations, heat pumps
7.7. Acquisition and ownership of buildings	Buying real estate and exercising ownership of that real estate.	<ul style="list-style-type: none"> • Leasing buildings
9.1. Close to market research, development and innovation	Research, applied research and experimental development of solutions, processes, technologies, business models and other products dedicated to the reduction, avoidance or removal of GHG emissions (RD&I) for which the ability to reduce, remove or avoid GHG emissions in the target economic activities has at least been demonstrated in a relevant environment, corresponding to at least Technology Readiness Level (TRL) 6.	<ul style="list-style-type: none"> • Projects in the research and development of products with substantial weight reduction and/or increased durability

In addition to capital expenditure in connection with the modernization and maintenance of electric rail vehicles, in-process development projects that can be allocated to economic activity 3.3 were also identified. These are classified as Taxonomy-eligible because they are connected with types of electric rail vehicle and primarily contribute to the durability or extension of maintenance intervals of components to be developed.

Analysis of Taxonomy-Alignment

Knorr-Bremse has analyzed the Taxonomy-eligible economic activities using the relevant technical screening criteria (substantial contribution, do no significant harm/DNSH) and critically reviewed implementation and compliance on a site-specific basis and with the departments. In addition, the criteria for the minimum safeguards that also need to be met for Taxonomy-alignment were reviewed.

The technical screening criteria for economic activity 6.5. Transport by motorbikes, passenger cars and light commercial vehicles, 7.2. Renovation of existing buildings and 9.1. Close to market research, development and innovation

cannot currently be fulfilled. For this reason, these cannot be reported as Taxonomy-aligned for the current fiscal year.

SUBSTANTIAL CONTRIBUTION TO THE ENVIRONMENTAL OBJECTIVE OF CLIMATE CHANGE MITIGATION

The following provides the interpretations of the substantial-contribution criteria for the activities that can be reported as Taxonomy-aligned:

Economic Activity 3.3 Manufacture of Low Carbon Technologies for Transport

The criteria for a substantial contribution to climate change mitigation for this activity include, that the manufacture, repair, maintenance, or retrofit is performed on trains, passenger coaches, wagons and urban, suburban or road passenger transport devices with zero direct CO₂ emissions. Because only the activities that relate to electric rail vehicle types were counted as Taxonomy-eligible for economic activity 3.3, all activities meet the substantial contribution criteria.

Economic Activity 6.14 Infrastructure for Rail Transport

Due to the different components of infrastructure for rail transport, which include the infrastructure itself, signaling subsystems, installations for transshipment and installations for the transfer of passengers, various substantial contribution criteria are defined. The manufacture of signaling systems involves the construction of systems for electrified trackside infrastructure and associated subsystems, thus meeting the criterion for a substantial contribution. Platform screen doors are installations needed for the transfer of passengers, which also meets the criterion. In both cases, the infrastructure is intended neither for the transportation nor the storage of fossil fuels.

Economic Activity 7.3 Installation, Maintenance and Repair of Energy Efficiency Equipment

The criteria for a substantial contribution differ depending on the individual measures to be taken into account. In the case of capital expenditure on energy efficiency equipment, a review was made of whether this meets the minimum national requirements set and whether, if applicable, it falls into the two highest classes of energy efficiency.

Economic Activity 7.7 Acquisition and Ownership of Buildings

The requirement that the Primary Energy Demand (PED) should be within the top 15% of the national building stock applies to buildings built before December 31, 2020. Knorr-Bremse's nearly zero-energy buildings (NZEBs) in Germany and Poland fall in the top 15% according to the EU Buildings Database. The buildings' efficient way of operating is ensured by systems for monitoring and assessing energy efficiency.

Remaining Economic Activities 7.4-7.6

For the remaining Taxonomy-eligible economic activities, the requirements regarding a substantial contribution are deemed to be met if these concern one of the technologies that fall under the respective section of economic activity. No further screening criteria are defined for economic activities 7.4-7.6.

DO NO SIGNIFICANT HARM/DNSH

Climate Change Adaptation

Climate change involves acute and chronic physical climate risks. In order to ensure that Knorr-Bremse does not compromise the environmental objective of "climate change adaptation," a climate-risk and vulnerability analysis needs to be conducted so that relevant climate risks can be countered in good time. Where substantial climate risks have been identified, an assessment of adaptation solutions also needs to be made.

Overall, the analysis incorporates Knorr-Bremse's production and administration sites connected with Taxonomy-eligible economic activities. The basis for the measurement included various recognized data sources such as the climate scenario IPCC RCP 8.5 (the "business as usual" scenario, which forecasts the rise in average annual temperature at the end of the century at approximately 4.2 °C) to take account of the most significant impacts of climate risks in accordance with the precautionary principle.

No significant physical climate risks have been identified for the production and administration sites, which is why there is no need to develop adaptation solutions. The requirements under Appendix A have been met through the performance of a climate risk and vulnerability analysis.

To ensure that economic activities 3.3 and 6.14 are not impacted by secondary or cascading impacts, a climate vulnerability assessment of the most material direct suppliers was carried out in accordance with the FAQs (dated December 19th, 2022) based on existing data. The level of detail of this analysis will be refined for the 2023 reporting period.

Sustainable Use and Protection of Water and Marine Resources

The sites of the entities connected to the Taxonomy-eligible economic activities 3.3 and 6.14 are evaluated according to the DNSH criteria for sustainable use and protection of water and marine resources. The most material sites are assessed in consultation with local HSE managers and based on the existence of an environmental impact assessment and effective mitigation and compensation measures. Alternatively, a Knorr-Bremse-specific risk assessment of the sites is carried out with regard to water quality and scarcity. Impacts on water quality and scarcity are judged based on environmental aspect analyses, which are performed as part of the sites' ISO 14001 certification, and local statutory specifications. If there is a risk, Knorr-Bremse sets up mitigation measures and monitors their implementation in cooperation with internal and external stakeholders, such as the local HSE managers.

Transition to a Circular Economy

Only economic activity 3.3 requires fulfillment of the DNSH criterion for a circular economy in relation to products. For activity 6.14, the circular-economy criterion is not applicable as it is aimed at construction and demolition waste, which is not generated by Knorr-Bremse when manufacturing technology for transport. The focus for activity 3.3 is on the screening of component reuse, secondary-material reuse, high durability, recyclability and easy disassembly, among other things. Since safety and quality have top priority at Knorr-Bremse, regular overhaul intervals should ensure the functionality and longevity of the equipment falling under activity 3.3.

As part of sustainable product design, we already engineer our products during the development and construction for remanufacturing and overhaul and assess, among other things, the recyclability of the materials used (see Environmental Matters).

Pollution Prevention and Control

This DNSH criterion demands that substances listed in a variety of EU chemicals regulations and directives are neither manufactured nor placed on the market or used. In accordance with these specifications, Knorr-Bremse analyzes and collects information on the used substances in internal databases based on the UNIFE Railway Industry Substance List, which contains all chemicals that are prohibited or declarable under European and international laws. Information on substances of very high concern (SVHCs) is documented internally and made available to the public. For externally sourced parts, this information comes from the suppliers. These suppliers are subject to a Europe-wide disclosure obligation. For items constructed in-house, Knorr-Bremse's developers specify the materials that are used. In addition, the areas of use of SVHCs are examined to determine whether their use is essential to society. Knorr-Bremse analyzes the reasons for the usage, the aspects related to safety and health, the specific application and the possibilities for substitution in the application. At this point in time, there are two SVHCs in selected Knorr-Bremse products at a concentration over 0.1% at the product level. Because there are no adequate alternatives in the areas of application in terms of safety, the circular economy and process reliability, the usage of these substances is, in Knorr-Bremse's view, of critical importance for the society in order to ensure the safety and physical integrity of vehicle occupants and/or the preservation of supply chains and public transit networks.

Protection and Restoration of Biodiversity and Ecosystems

The DNSH criteria for the protection and restoration of biodiversity and ecosystems must be fulfilled for economic activities 3.3 and 6.14. Analogously to Appendix B, the most material sites are assessed in consultation with local HSE managers and based on the existence of an environmental impact assessment and effective mitigation and compensation measures at Knorr-Bremse's sites. Alternatively, operating permits or local statutory specifications were used as a basis to assess if such screening is required. In addition, the ISO 14001 certification was used as a basis to assess if there exist potential adverse impacts and, in the case of risk and, if any remedial measures are implemented and monitored in case of a risk. As part of this, the proximity biodiversity-sensitive areas were analyzed using Natura 2000 Viewer for sites in Europe or the Key Biodiversity Area database for sites outside Europe.

MINIMUM SAFEGUARDS

The minimum safeguards require businesses to implement processes that safeguard compliance with the OECD Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights, the eight fundamental ILO conventions and the International Bill of Human Rights.

The core topics addressed by the minimum safeguards are: human rights, bribery and corruption, fair competition and taxation. Specific criteria are defined to assess Knorr-Bremse's alignment on each of these core topics. Using risk assessments as a basis, each core topic is analyzed to see if there are potential risks and if appropriate due-diligence processes are established within the company and value chain. Then, an assessment is made to see if there are material breaches or proceedings initiated in relation to the core topics.

Human Rights, Including Employee Rights

Policy statements and guidelines provide specifications for human rights in Knorr-Bremse's commercial context. These documents draw on the UN Guiding Principles on Business and Human Rights, the International Bill of Human Rights and the ILO conventions. On top of that, Knorr-Bremse issues annual reports on its implementation of the ten global principles of the United Nations Global Compact.

In view of the implementation of Germany's Supply Chain Due Diligence Act, Knorr-Bremse performed during the reporting period an analysis of the human rights risks in its supply chain and own business divisions in accordance with legal requirements. This analysis, along with the already established risk management processes and structures, contributes to the identification and analysis of potential and actual negative impacts. The results of the human rights risk analysis were included as a criterion in the selection of internal auditors to conduct audits. Additionally, the existing risk minimization and prevention measures include raising awareness around human rights due diligence within the company and across the supply chain, incorporating aspects of sustainability into purchasing decisions as well as supplier visits and audits, among other things. Moreover, the Executive Board carries responsibility for remedial measures in the event of human rights violations. The complaints mechanism at Knorr-Bremse consists of the IntegrityLine whistleblower system, through which employees and external stakeholders can make anonymous or personalized reports of suspected human rights violations. In the 2022 fiscal year, no cases of child labor, forced labor or modern slavery were reported through this system.

Continuous monitoring of the measures is part of the due-diligence process at Knorr-Bremse. Such monitoring includes audits and employee surveys, as well as reports on them. Knorr-Bremse provides public and transparent reporting on

its activities in connection with human rights, for example, in its non-financial statement and annual sustainability report (see Sustainability in the Supply Chain and Respect for Human Rights).

Bribery and Corruption

Combating corruption and bribery is an important part of corporate responsibility and one of the key topics in compliance management at Knorr-Bremse. Group-wide guidelines, such as the Group's Code of Conduct, lay out conduct requirements to prevent conflicts of interest and corruption. The Code of Conduct is based on the principles of the UN Global Compact and defines the principles for Group-wide, responsible business conduct across the entire value chain, including the prohibition of corruption in any form. These principles of action and rules are binding for all the Group's employees and are a part of the written employment contracts for new employees around the world. These principles are also given concrete expression through six Group-wide compliance guidelines.

A compliance management system has been implemented and regional as well as general responsibilities have been defined in order to detect potential risks at their beginnings. Employees are required to learn knowledge and the conduct for this topic through training sessions. A cross-functional Compliance Committee confers about topical compliance issues at Knorr-Bremse's sites, among other things. Full-time compliance officers are appointed at particularly risky or commercially significant sites in order to minimize the risk of bribery or corruption. The complaints mechanism functions analogously to that for human rights issues. The continuous monitoring of the measures entails external audits, an internal control system for checks against the compliance guidelines, and an internal Group audit department alongside the monitoring duties exercised by the Executive Board. Knorr-Bremse provides public and transparent reporting on its anticorruption and compliance activities in its non-financial statement and annual sustainability report.

Knorr-Bremse, including its management, has not been finally convicted of bribery during the reporting period, which is an important criterion for upholding the minimum safeguards on corruption and bribery (see Compliance and Combating Corruption).

Fair Competition

The principle of fair competition is part of Knorr-Bremse's due diligence for compliance. Accordingly, the due-diligence processes listed above for bribery and corruption apply to fair competition, too.

Knorr-Bremse was not subject to any fines or findings of misconduct for the 2022 reporting period.

Details about current official proceedings can be found in the Report on Risks and Opportunities and in chapter H.9. Legal Disputes and Litigation in the notes to the consolidated financial statements.

Taxation

To analyze the minimum safeguards in connection with taxes within its own operations, Knorr-Bremse checks its business processes' compliance with relevant tax regulations. To ensure responsible conduct in relation to taxes, Knorr-Bremse has made a commitment through its applicable Group Tax Policy to comply with the tax laws and regulations of the countries where Knorr-Bremse operates. The Group's responsible approach to compliance within the legal environment is defined in its Code of Conduct. Knorr-Bremse takes measures as required for the identification and analysis of potential and actual negative impacts in order to minimize tax risks. They include, among other things, the following risk management strategies and processes: ICS tax controls or incorporation of tax risks as part of risk reporting. Based on its Group Tax Policy, Knorr-Bremse has committed to avoiding aggressive tax planning and to exchanging information with tax authorities transparently. There is no known case of Knorr-Bremse being found guilty of tax violations in the 2022 reporting period.

Calculation of KPIs in Connection with Taxonomy-Eligible and Taxonomy-Aligned Economic Activities

Pursuant to section 315e (1) HGB, Knorr-Bremse's consolidated financial statements for the end of the 2022 fiscal year have been prepared in accordance with IFRS. The amounts used for calculating the revenue, CapEx and OpEx figures are thus based on the figures reported in the consolidated financial statements.

In principle, all fully consolidated Group companies are included in this analysis with respect to their revenue, capital expenditure and operating expenditure. The values presented here are therefore exclusively fully consolidated values. This ensures that data is only incorporated after consolidation of costs and intercompany eliminations. Simultaneously, this data was classified under precisely one economic activity within the KPIs, and offset in the numerator accordingly. This way, double counting is avoided when calculating the KPIs across multiple economic activities and within the KPI.

REVENUES

The revenue of € 7,149,740 thousand reported in the consolidated income statement is evaluated across all Group companies to determine whether it was attained with Taxonomy-aligned economic activities pursuant to Annexes I and II (climate change mitigation and adaptation) of Delegated Regulation 2021/2139. Revenue is allocated to the Taxonomy-aligned economic activities through a detailed analysis of the items included in the revenue. The sum of the revenue generated with Taxonomy-aligned economic activities for fiscal 2022 forms the numerator of the revenue KPI. The total revenue forms the denominator; it can be found in the consolidated statement of income (see chapter 3 Consolidated Financial Statements). [Table → 2.14](#)

CAPITAL EXPENDITURE (CAPEX)

The basis of the capital expenditure is the additions to property, plant and equipment and intangible assets during the fiscal year under review before depreciation, amortization and any remeasurements for the fiscal year in question and without changes to fair value (application of IAS 16, 38, 40, 41, IFRS 16). The total capital expenditure for the purposes of the EU Taxonomy Regulation is € 595,984 thousand and includes various additions to property, plant and equipment and intangible assets, which form the denominator. This figure comes from the statements of changes in fixed assets 3.37 and 3.40 in the 2022 notes to the consolidated financial statements.

The sum of the additions that reflect Taxonomy-aligned capital expenditure forms the numerator of the Taxonomy-aligned CapEx KPI. The Taxonomy-aligned proportions that

were calculated were those that are connected to a Taxonomy-aligned economic activity or relate to individual measures. To determine the capital expenditure associated with Economic Activity 3.3 Manufacture of Low Carbon Technologies for Transport, the calculation used an allocation formula that was derived from the taxonomy-aligned proportion of revenue at the level of each business area. The allocation formula ensures that the only assets and production processes that are included are those that are connected to Taxonomy-aligned economic activities. [Table → 2.15](#)

OPERATING EXPENDITURE (OPEX)

The OpEx KPI represents the proportion of operating expenditure within the meaning of the EU Taxonomy that is connected to Taxonomy-aligned economic activities or relates to individual measures. To calculate the Taxonomy-aligned OpEx proportion, any account that reflects the direct, uncanceled costs of research and development (R & D) expenditure, building renovation measures, short-term leases, maintenance and servicing expenditure were used to calculate the denominator. The numerator is calculated from an analysis of identified expenditure that was recorded in the above accounts and that is connected to Taxonomy-aligned economic activities. [Table → 2.16](#)

TAXONOMY KPIS

The following presents the templates according to Annex II of Delegated Regulation 2021/2178. The following summary data was calculated in relation to Knorr-Bremse's Taxonomy-eligible and Taxonomy-aligned activities for the 2022 reporting period:

2.14 REVENUE TEMPLATE – DISCLOSURE FOR 2022

Economic activities	Code(s)	Absolute revenue in € thousand	Revenue proportion %	Substantial contribution criteria					
				Climate change mitigation %	Climate change adaptation %	Water and marine resources %	Circular economy %	Pollution %	Biodiversity and ecosystems %
A. Taxonomy-eligible activities									
A.1. Environmentally sustainable activities (Taxonomy-aligned)									
Manufacture of low carbon technologies for transport	3	550,314	7.7%	100%	0%	0%	0%	0%	0%
Infrastructure for rail transport	6.14	19,382	0.3%	100%	0%	0%	0%	0%	0%
Revenue of environmentally sustainable activities (Taxonomy-aligned) (A.1)		569,696	8.0%	100%	0%	0%	0%	0%	0%
A.2 Taxonomy-eligible, but not environmentally sustainable activities (not Taxonomy-aligned activities)									
Manufacture of low carbon technologies for transport	3.3	51,384	0.7%						
Revenue of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		51,384	0.7%						
Total (A.1 + A.2)		621,080	8.7%						
B. Taxonomy-non-eligible activities									
Revenue of Taxonomy-non-eligible activities (B)		6,528,660	91.3%						
Total (A+B)		7,149,740	100.0%						

2.15 CAPEX TEMPLATE – DISCLOSURE FOR 2022

Economic activities	Code(s)	Substantial contribution criteria							
		Absolute CapEx	CapEx proportion	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity and ecosystems
		in € thousand	%	%	%	%	%	%	%
A. Taxonomy-eligible activities									
A.1. Environmentally sustainable activities (Taxonomy-aligned)									
Manufacture of low carbon technologies for transport	3.3	38,635	6.5%	100%	0%	0%	0%	0%	0%
Infrastructure for rail transport	6.14	818	0.1%	100%	0%	0%	0%	0%	0%
Installation of energy-efficient equipment	7.3	2,664	0.4%	100%	0%	0%	0%	0%	0%
Installation of charging stations for electric vehicles in buildings	7.4	87	0.0%	100%	0%	0%	0%	0%	0%
Installation of instruments and devices for measuring, regulating and controlling energy performance of buildings	7.5	166	0.0%	100%	0%	0%	0%	0%	0%
Installation of renewable energy technologies	7.6	3,403	0.6%	100%	0%	0%	0%	0%	0%
Acquisition and ownership of buildings	7.7	7,285	1.2%	100%	0%	0%	0%	0%	0%
CapEx of environmentally sustainable activities (Taxonomy-aligned) (A.1)		53,058	8.8%	100%	0%	0%	0%	0%	0%
A.2 Taxonomy-eligible, but not environmentally sustainable activities (not Taxonomy-aligned activities)									
Manufacture of low carbon technologies for transport	3.3	21	0.0%						
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	7,546	1.3%						
Renovation of existing buildings	7.2	1,040	0.2%						
Installation of energy-efficient equipment	7.3	203	0.0%						
Acquisition and ownership of buildings	7.7	58,939	9.9%						
Close to market research, development and innovation	9.1	54,652	9.2%						
CapEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		122,402	20.6%						
Total (A.1 + A.2)		175,460	29.4%						
B. Taxonomy-non-eligible activities									
CapEx of Taxonomy-non-eligible activities (B)		420,525	70.6%						
Total (A+B)		595,984	100.0%						

2.16 OPEX TEMPLATE – DISCLOSURE FOR 2022

Economic activities	Code(s)	Absolute OpEx in € thousand	OpEx proportion %	Substantial contribution criteria					
				Climate change mitigation %	Climate change adaptation %	Water and marine resources %	Circular economy %	Pollution %	Biodiversity and ecosystems %
A. Taxonomy-eligible activities									
A.1. Environmentally sustainable activities (Taxonomy-aligned)									
Manufacture of low carbon technologies for transport	3.3	4,537	1.0%	100%	0%	0%	0%	0%	0%
Infrastructure for rail transport	6.14	110	0.0%	100%	0%	0%	0%	0%	0%
Maintenance and repair of charging stations for electric vehicles in buildings	7.4	12	0.0%	100%	0%	0%	0%	0%	0%
Maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	7.5	21	0.0%	100%	0%	0%	0%	0%	0%
Maintenance and repair of renewable energy technologies	7.6	43	0.0%	100%	0%	0%	0%	0%	0%
OpEx of environmentally sustainable activities (Taxonomy-aligned) (A.1)		4,722	1.0%	100%	0%	0%	0%	0%	0%
A.2 Taxonomy-eligible, but not environmentally sustainable activities (not Taxonomy-aligned activities)									
Manufacture of low carbon technologies for transport	3.3	2	0.0%						
Renovation of existing buildings	7.2	12,555	2.7%						
Maintenance and repair of energy efficiency equipment	7.3	1,169	0.3%						
Maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	7.5	504	0.1%						
Close to market research, development and innovation	9.1	14,403	3.1%						
OpEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		28,634	6.2%						
Total (A.1 + A.2)		33,355	7.2%						
B. Taxonomy-non-eligible activities									
OpEx of Taxonomy-non-eligible activities (B)		424,060	92.8%						
Total (A+B)		457,415	100.0%						

Business Report

General Economic and Industry-Related Conditions

Economic Activity and Industry Environment

INFLATION AND OTHER UNCERTAINTY

The global economy found itself in a volatile state in 2022. An increasing number of national economies encountered slower growth or even experienced a contraction of their economic growth.

Inflation around the world climbed to heights not seen in decades, which led to monetary policies being tightened rapidly so that measures to contain the inflation could be initiated. The restrictive monetary policies resulted in additional burdens on government budgets through the nominal increase in reference interest rates.

Additionally, China's response to the Covid-19 pandemic and the associated restrictions on transportation under its zero-Covid strategy placed a further burden on the world's supply chains, which were already feeling strain. At the same time, however, the global impacts of the Covid-19 pandemic receded and government support initiatives to compensate for the pandemic, such as short-time working allowances, were wound back.

Russia's war in Ukraine was one of last year's key influencing factors and had exceptional impacts on energy and commodity markets. It caused immense human suffering in 2022, as well as enormous economic damage of a scale and duration that are still not possible to gauge fully. There was a noticeable cut in the supply of gas to Europe in connection with the sanctions imposed by European countries. The shortage of available gas provoked a steep rise in energy prices in the global commodity markets. Europe felt the presence of the war through the major economic fallout, which included for example higher production costs, weaker consumer confidence and decreasing momentum in manufacturing.

(Source: IMF).

As a result of the above market uncertainty, the development of GDP growth in 2022 was a consistent picture across different regions. Global GDP growth decreased from +5.9% in 2021 to +2.9% in 2022. Economic output in the same period decreased from +5.3% to +3.3% in the eurozone, from +5.9% to +1.9% in the USA and from +8.1% to +2.7% in China.

(Source: World Bank).

FINANCIAL MARKETS: SHRINKING RISK APPETITE

The global financial conditions also sharpened in 2022 because of the persistently high inflation and speedy response in the form of adjusted monetary policies. The risk appetite held by investors was influenced by slower economic growth and uncertainty in the markets. The returns on long-term government bonds in the USA and Germany rose at a rapid speed, reaching their current peak in October. The world's stock markets recorded corresponding significant declines. The DAX, for instance, saw a drop of 13.1% for the year as a whole, while the MDAX even fell by 29.2%. (Source: Refinitiv).

The US dollar gained considerable value in the course of the year, with the USD/EUR exchange rate quoted at between 0.87 and 1.04 and reaching a level of 0.93 at year-end. (Source: Refinitiv).

RAIL VEHICLE MARKET

Competitive Situation and Market Position

In a highly competitive market environment, Knorr-Bremse is one of the world's leading companies in the key markets for, among other things, braking, entrance and HVAC systems for rail vehicles. The main competitor in the relevant product segments is Wabtec Corporation, although its overlap with Knorr-Bremse as a vehicle manufacturer in the product segments has been limited since its merger with vehicle manufacturer GE Transportation. Knorr-Bremse is active in multiple regions, including Europe/Africa, North and South America; and Asia-Pacific. Our position as a leading supplier of components for rail vehicles in our traditional European markets represents a strong foundation for our future business development. Knorr-Bremse is also well positioned in both the passenger and freight markets in North America.

Following a Covid-induced decline in 2020 and an increase in 2021, the global rail vehicle market in 2022 increased in comparison to 2021 according to the estimates of market researchers in long-distance transportation and regional and local transit. However, the volume of passengers carried remained lower than in the pre-Covid era. In rail freight, the market research institution SCI Verkehr expected the transport volume had risen in 2022 and exceeded 2019 levels according to its most recent forecast.

Overall, the rail vehicle market differed by time and region in the course of 2022. The key influencing factors were the ongoing Covid-19 pandemic, with impacts on passenger volumes; supply bottlenecks, Russia's war in Ukraine and inflation.

The following market assessments are based on leading industry studies and internal market research.

Europe/Africa

The freight market volume in Western Europe exceeded pre-Covid levels in 2022, whereas freight transportation in Eastern Europe was still yet to reach the level it had before Covid-19. Several countries in Eastern Europe were also affected by the war in Ukraine to varying degrees.

Further recovery could be seen in passenger transportation, which almost reached pre-Covid levels. The differing developments from country to country are visible in the UK, for example, which in the third quarter was still 23% down on the comparable figure from 2019. Austria's long-distance transportation, on the other hand, was already up on pre-Covid levels in September.

The freight market volume in the Ukraine region saw a significant drop in 2022 due to the sanctions resulting from the Russian war in that country. In passenger transportation, the war and the sanctions led to another slump.

The freight market in Africa and the Middle East exhibited strong growth only in the smaller markets, with larger markets seeing just limited growth. Passenger transportation had not yet returned to pre-Covid levels in 2022.

North America/South America

The freight market in North America in 2022 had fully recovered from the Covid-19 decline, according to extrapolations by market researchers. Passenger transportation in North and South America in 2022 remained characterized by lower passenger numbers than in 2019.

Asia-Pacific

The recovery of passenger and freight transportation in the Asia-Pacific region also advanced. Among individual countries, pre-pandemic levels were mostly not reached yet due to the ongoing Covid-19 restrictions, especially in China. However, the relaxation of Covid restrictions should have positive effects as time goes by. China continues to be the largest rail vehicle market in the world, however it remained strongly affected by the restrictions under its zero-Covid policy through to the fourth quarter of 2022. New-vehicle procurement was higher than in 2021 after starting at a low level from the previous year, however it remained lower than before the pandemic. Lower passenger numbers in passenger transportation slowed the development of aftermarket business.

COMMERCIAL VEHICLE MARKET

Competitive Situation and Market Position

With the product portfolio offered by the Commercial Vehicle Systems division, Knorr-Bremse is one of the global leaders in this sector. Alongside smaller vendors, our principal competitor is Wabco Holdings, Inc., which was acquired by ZF Friedrichshafen in 2020. Wabco is in direct competition with Knorr-Bremse in the development of future trends such as driver assistance, automated driving and e-mobility. In our core regions, North America and Europe, Knorr-Bremse ranks as the market leader for air brake systems. The Company's leading position in highly regulated markets for disk brakes and driver assistance systems represents a strong platform with much potential for further growth in the Asia-Pacific region. These assessments are based on internal market analyses and estimates for fiscal year 2021.

The following market statistics relate to truck production rates in each region as published by various organizations (e.g., LMC Automotive Ltd.) as of January 2023 as well as the Company's estimates.

In 2022, the global commercial vehicle market fell by 21% year on year measured by the truck production rate. Knorr-Bremse profited from its global market position again in 2022 and was able to compensate for the decline of the Chinese market with revenue based on its strong market position in Europe and North and South America. This is because the very sharp reduction in China was contrasted by a general increase in production rates in almost all markets. Additionally, Knorr-Bremse profited from the overall increase in content per vehicle over the past fiscal year.

Europe/Africa

The catch-up effects of previous years helped vehicle production in Western Europe to rise by 8% to roughly 480 thousand units despite the Russian war in Ukraine. In Eastern Europe, on the other hand, production in the same period decreased by 15% to around 65 thousand units due to the war weakening the economy.

North America/South America

Commercial vehicle production in North America benefited from catch-up effects and increased by 10% to roughly 390 thousand units. Following a strong increase in commercial vehicle and bus production in 2021, the market in South America mellowed out and increased by a lower rate of 9%, to roughly 190 thousand units.

Asia-Pacific

Commercial vehicle production in China in 2022 slumped by 53% year over year, falling to roughly 690 thousand units due to the country's zero-Covid strategy. In India, on the other hand, the post-Covid recovery in production continued,

prompting a significant 31% increase to roughly 330 thousand units. Commercial vehicle production in Japan stagnated at the previous year's level at roughly 190 thousand units. Overall, commercial vehicle production in the Asia region fell by 37% to around 1,210 thousand units.

General Statement by the Executive Board and Achievement of Objectives

The Executive Board of Knorr-Bremse AG is satisfied with the business development in 2022, a year which was shaped by the Russian war in Ukraine, strong increases in inflation and

supply chain challenges. Knorr-Bremse proved its resilient and crisis-proof business model once again and realized an increase in revenues. While profitability was below the level forecast in February, it was supported by strict discipline in relation to costs and came within the revised range communicated in July. Free cash flow did not meet the forecast target range. The Group's incoming orders and order book reached new highs. Incoming orders and order books are taken from management reporting and are not audited. [\(Table → 2.17\)](#)

2.17 ACHIEVEMENT OF OBJECTIVES (TARGET-ACTUAL COMPARISON)

		2022 actual	July 2022 target	February 2022 target	2021 actual
Most significant performance indicators					
Revenues	in € million	7,150	6,900 - 7,200	6,800 - 7,200	6,706
Operating EBIT margin (as % of revenues)	%	11.1	10.5 - 12.0	12.5 - 14.0	13.5
Free cash flow	in € million	219	300 - 500	500 - 600	600
Other performance indicators					
ROCE	%	16.8	~20	≥25	24.9
Employees (as of Dec. 31)*		31,599	31,000 - 32,000	31,000 - 32,000	30,544

* The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

Revenues rose by 6.6% to € 7,149.7 million (previous year: € 6,705.6) and, as expected, developed very positively compared with the previous year. Knorr-Bremse thus achieved the forecast revenue of € 6,800 million to € 7,200 million which was communicated in February and the narrowed-down range of € 6,900 million to € 7,200 million which was communicated in our half-year report. The increase in revenues resulted from the Commercial Vehicle Systems division (+10.6%) as a consequence of appreciable growth in the OE and aftermarket businesses. The Rail Vehicle Systems segment was able to exceed the prior-year level by 2.6%. At Group level, the aftermarket share of total revenue rose year over year from 36.2% to 37.6% due to the significant increase in absolute aftermarket revenues.

The operating **EBIT margin** came to 11.1% of revenues, in line with the revised 10.5% to 12.0% margin forecast which was communicated in our half-year report. It was not possible to reach the 12.5% to 14.0% range that was forecast in February. This signaled a decline (13.5%) year over year. Operating EBIT was € 794.6 million and thus significantly below the prior-year level by 12.5% (previous year: € 908.1 million). Compared to the recognized EBIT of € 721.3 million, there is an adjustment for expenses in conjunction with the withdrawal from the Russian market due to the sanctions from Russia's war in Ukraine (€ 47.1 million) and on severance payments in both divisions as part of restructuring in China (€ 7.5 million) and North America (€ 18.7 million).

Free cash flow amounted to € 219.3 million and was therefore below the forecast of € 500 million to € 600 million issued in

February and below the revised forecast of € 300 million to € 500 million from July. It is significantly down on the previous year's level (€ 600.0 million). This drop results from significantly lower cash flow from operating activities, primarily due to the lower net income for the period as well as the significantly increased inventories and trade accounts receivable. The decline was able to be partially offset by the slight year-over-year reduction in disbursements for capital expenditure.

Corporate Management Indicators

The most relevant financial performance indicators at Knorr-Bremse in the 2022 fiscal year were revenue, (operating) EBIT, the (operating) EBIT margin and free cash flow, the last of which was a new addition. ROCE no longer serves as a significant financial performance indicator, but rather an additional key management indicator at Knorr-Bremse. We are using these changes to take account of the capital market's requirements and to place greater emphasis on the key performance indicators predominantly used in this context. [Table → 2.18, 2.19](#)

2.18 MANAGEMENT INDICATORS

	2022	2021
Revenues (€ million)	7,149.7	6,705.6
EBITDA (€ million)	1,045.6	1,206.5
EBITDA margin (as % of revenues)	14.6%	18.0%
Operating EBITDA margin (as % of revenues)	15.4%	17.9%
EBIT (€ million)	721.3	916.1
EBIT margin (as % of revenues)	10.1%	13.7%
Operating EBIT margin (as % of revenues)	11.1%	13.5%
ROCE (%)	16.8%	24.9%
Net working capital in days' sales	56.7	47.0
Employees (as of Dec. 31, incl. temp. staff)	31,599	30,544

2.19 DIVISIONAL REVENUES AND EBIT

	2022	2021
Rail Vehicle Systems		
Revenues	3,401.9	3,317.0
EBIT margin (as % of revenues)	13.3%	17.6%
Operating EBIT margin (as % of revenues)	14.9%	17.9%
Commercial Vehicle Systems		
Revenues	3,750.0	3,390.2
EBIT margin (as % of revenues)	8.5%	10.7%
Operating EBIT margin (as % of revenues)	9.0%	10.7%

We also regularly measure non-financial performance indicators. These help us with the management and long-term strategic positioning of the Company. The most significant non-financial performance indicator is the number of employees¹⁴. But non-financial performance indicators are not primarily used to control the Company. They are more useful as a means of gaining deeper insight into the situation within the Group and making decisions based on this information. A detailed analysis of non-financial factors and performance indicators can be found in the Sustainability and Non-Financial Statement chapter and in the Knorr-Bremse Group Sustainability Report (published separately).

To calculate operating EBITDA/EBIT margins, the impact of restructuring measures and transaction-related one-time effects are adjusted against reported revenue and earnings figures. In the 2022 fiscal year, these included expenditure on severance in both divisions in North America, expenditure on restructuring in China through the closure of the Guo Tong site in the Rail Vehicle Systems division and the reduction of activity with the joint venture Knorr-Bremse DETC Commercial Vehicle Braking Systems in the Commercial Vehicle Systems division, as well as the expenditure incurred on the

withdrawal from the Russian market due to the sanctions resulting from Russia's war in Ukraine. In 2021, the preceding year, the adjustments resulted from the Rail Vehicle Systems division's expenses for severance payments as part of restructuring in North America and in connection with the reduction of staff at Kiepe, and, in the opposite direction, also the book gain realized in connection with the sale of the Berlin representative offices.

ROCE shows whether we generate an appropriate return on capital employed, thus providing a benchmark for efficient capital allocation. Capital employed includes the total sum of intangible assets, net working capital and property, plant and equipment.

The ROCE of 16.8% reported for fiscal year 2022 was down on the previous year (24.9%). The decline was mainly the result of the year-over-year fall in EBIT.

The ROCE (in %) is calculated as follows:

$$(\text{EBIT}/\text{capital employed}) \times 100.$$

The net working capital in days' sales as at the end of the reporting period rose mainly as a result of increased inventories and trade accounts receivable and reached 56.7 days (previous year: 47.0 days' sales).

The number of employees as of December 31, 2022, was 31,599, which, as forecast in the 2021 annual financial report, is higher than the previous year's number (30,544).

The definitions for these figures in the current report have not changed since the previous year except for the way that the number of employees is presented, which in 2022 is a head count and no longer the full-time equivalent (FTE) like in the previous year.

Events of Material Importance to Business Performance

The following material events should be highlighted in the 2022 fiscal year:

COVID-19 PANDEMIC

In the past year, the Covid-19 pandemic also affected public life, overall economic development and the business development of the Knorr-Bremse Group. In particular, the zero-Covid policy in China, its reversal and the wave of infections in China that resulted from it all affected the macroeconomic environment in 2022.

As in previous years, Knorr-Bremse responded swiftly to the pandemic's developments with a corresponding action program to safeguard the Company's stability in this challenging environment and protect our employees to the best of our

¹⁴ The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

ability. This program includes, for example, remote working and the provision of personal protective equipment and rapid antigen tests.

RUSSIAN WAR IN UKRAINE

The Executive Board of Knorr-Bremse AG expressed its strongest possible condemnation of Russia's invasion of Ukraine very early on and made the decision to implement clear consequences for its own Russia-based business. These consequences were taken in accordance with the EU's sanctions. A task force was set up for this purpose at an early stage. It monitors the current developments and sanction specifications on a continuous basis to evaluate any further withdrawal from the Russian market. Knorr-Bremse's reaction to Russia's war in Ukraine include its exit from the KB KAMA joint venture, a decision not to take on any new (OE) business in Russia and the cessation of any supply of sanctioned productions and components. Furthermore, Knorr-Bremse decided to no longer deliver any products or systems for Russian locomotives for which it cannot be excluded that they could be used for military purposes. Simultaneously, Knorr-Bremse decided to provide tangible aid for the affected people in Ukraine and for refugees by holding an internal donations drive. Knorr-Bremse also joined the Job Aid for Ukrainian Refugees initiative and helps refugees with their integration in Germany and with job hunting, including through its own offerings.

SUPPLY CHAIN

The global supply chain in 2022 was particularly influenced by the impacts of the war in Ukraine, alongside the global Covid-19 pandemic. These factors led to shortages of materials and challenges in procuring them. The stock levels of raw materials were adjusted as a safeguard for delivery capabilities. Supply bottlenecks and price increases, especially in the area of logistics, but also in the areas of energy and packaging, have also made procurement activities more difficult for the two divisions. The strained supply of semiconductors, semifinished products and raw materials were a major challenge for the procurement departments in 2022. It was possible to largely ensure supply with cross-functional task forces set up in each of the two divisions, but alternative supply strategies and product designs are nevertheless being evaluated. In the two divisions, necessary escalations were initiated and pursued at global level during the entire reporting period.

INFLATION

Business performance in 2022 was also influenced by the massive increases in inflation. The development of commodity prices in particular put pressure on business development in 2022, while inflation in energy costs and wage rises represented additional challenges as the second half of last year progressed. To respond to the overall difficult market conditions, the Executive Board of

Knorr-Bremse launched an extensive Profit & Cash Protection Program (PCPP) right at the start of the year, with comprehensive price and cost control measures for the entire Group. It offsets the impacts from the inflation that is currently putting a significant burden on the cost base of both divisions, though there remain risks such as potential delays in passing on costs to our customers.

DEVELOPMENTS IN THE CHINESE MARKET

The Chinese market saw declining demand in the 2022 fiscal year. This decline in the last fiscal year is mainly attributable to the zero-Covid policy and concomitant weakness in economic development as well as the political strategy to strengthen local Chinese competitors. In response to these developments, Knorr-Bremse initiated restructuring measures and plans to close one of the twelve sites in its Rail Vehicle Systems division, namely in Guo Tong, and reduce activity with the joint venture Knorr-Bremse DETC Commercial Vehicle Braking Systems in its Commercial Vehicle Systems division.

CHANGES TO THE GROUP'S PORTFOLIO

Knorr-Bremse acquired 55% of the shares in Cojali S. L., based in Ciudad Real, Spain, 100% of shares in Cojali France S. a. r. l., based in Martillac, France, 52% of shares in Cojali Italia S. R. L., based in Milan, Italy and 51% of shares in Cojali USA Inc., based in Doral, USA through a purchase agreement dated June 7, 2022. The transaction closed on October 31, 2022. As of December 31, 2022, € 171.3 million of the total purchase price of € 230.5 million was already paid in cash. With its investment in Cojali, Knorr-Bremse is reinforcing its position as a partner for systems in the fast-growing, global market for digital, connected solutions. Knorr-Bremse is consequently expanding its existing aftermarket business with a vehicle-specific software solution that enables new fields of business in big data and in predictive maintenance based on it. What's more, Knorr-Bremse is also growing further in line with the megatrend of digitalization. The Cojali Group contributed revenues of € 16.5 million to consolidated revenues in fiscal year 2022.

Knorr-Bremse Systeme für Schienenfahrzeuge GmbH acquired 100% of shares in Selskabet af 3. juli 2021, based in Taastrup, Denmark (DSB Component Workshops) from Danske Statsbaner (DSB) through a purchase agreement dated July 7, 2021. The transaction closed on August 31, 2022. As of December 31, 2022, € 52.9 million of the total purchase price of € 55.8 million was already paid in cash. By purchasing DSB Component Workshops, Knorr-Bremse has the possibility of developing an extended service hub for Denmark and neighboring rail markets, leveraging growth potential in the region and enabling innovative services for rail transportation. The company contributed revenues of € 27.6 million and a loss before taxes of € 4.4 million to consolidated revenues in fiscal year 2022.

Knorr-Bremse Systeme für Schienenfahrzeuge GmbH acquired 33.4% of shares in Nexxiot AG, based in Zurich, Switzerland upon recording of the transaction in the commercial register on June

29, 2022. As of December 31, 2022, the total purchase price of €62.8 million was already paid in cash. Nexxiot AG is a leading supplier in the tradetech sector and is specialized in equipping train cars and containers with IoT technology, transforming them into connected assets. By purchasing this interest in Nexxiot AG, Knorr-Bremse is further expanding its position in safety-critical systems and in the operation of essential systems for rail vehicles.

CHANGES IN THE SUPERVISORY BOARD

Dr. Reinhard Ploss was elected to the Supervisory Board of Knorr-Bremse AG as a new member at Knorr-Bremse AG's Annual General Meeting on May 24, 2022. Directly after the Annual General Meeting, the Supervisory Board elected Dr. Ploss as its new Chairman at an extraordinary meeting. He therefore succeeds Prof. Dr. Klaus Mangold, who resigned from his position as planned and stepped down from the Supervisory Board. Dr. Sigrid Nikutta was also elected to the Supervisory Board at the Annual General Meeting, replacing Dr. Thomas Enders. The other members of the Supervisory Board were confirmed in office with effect as of May 24, 2022.

CHANGES IN THE EXECUTIVE BOARD

On March 11, 2022, the Supervisory Board resolved that the CEO of Knorr-Bremse AG, Dr. Jan Michael Mrosik, will leave the Company effective on April 30, 2022, and will resign from the Executive Board effective on March 12, 2022. Chief Financial Officer Frank Markus Weber additionally took on the role of Chief Executive Officer on an interim basis.

On March 11, 2022, the Supervisory Board decided to appoint Bernd Spies to the Executive Board as the member responsible for the Commercial Vehicle Systems division effective on March 12, 2022. The division was managed on an interim basis by the CEO Dr. Jan Michael Mrosik from January 1, 2022, to March 11, 2022.

On October 13, 2022, the Supervisory Board of Knorr-Bremse AG unanimously appointed Marc Llistosella as Chief Executive Officer of Knorr-Bremse AG with effect from January 1, 2023.

LEGAL DISPUTES AND LITIGATION

A detailed description of the material legal disputes and litigation and their development is available in the notes to the consolidated financial statements in Chapter H.9. Legal Disputes and Litigation.

Business Performance

As a rule, the charts and tables in this management report show IFRS figures. EBITDA is defined as income (loss) before interest, other financial result, income taxes, depreciation, amortization and impairment losses; EBIT refers to earnings before interest, other financial result and income taxes (see chapter titled Control System).

Financial Performance

At €8,114.1 million, the Group's **incoming orders** reached a new high and were thus significantly higher than the prior-year level of €7,286.7 million by 11.4%. This was attributable to strong demand in the global rail vehicle market. The **book-to-bill ratio**, representing the ratio of incoming orders to revenues, came to 1.13 in fiscal year 2022 (previous year: 1.09), representing a solid basis for 2023. The **order book** as at December 31, 2022, amounted to €6,907.5 million (previous year: €5,558.1 million) and also grew to a new record level due to the good order situation. This results in a forward order book¹⁵ of 11.7 months. Driven by higher volumes and price rises in order to pass on the higher procurement prices, **consolidated revenues** increased by 6.6% to €7,149.7 million in the reporting period compared to the previous year (€6,705.6 million), thereby meeting the forecast of €6,900 million to €7,200 million provided in our quarterly report for Q3 2022. Currency-adjusted to actual rates in 2021, revenues would have been 4.7% less. [Table → 2.20](#)

2.20 GROUP KEY INDICATORS

in € million	2022	2021
Incoming orders	8,114.1	7,286.7
Order book	6,907.5	5,558.1
Revenues	7,149.7	6,705.6
EBITDA	1,045.6	1,206.5
EBIT	721.3	916.1
EBT	688.8	880.8
Net income	506.3	647.4
Capital expenditure (before IFRS 16 and acquisitions)	352.1	375.5
Depreciation, amortization and impairment	324.4	290.4
R & D costs	466.1	431.4
Employees (as of Dec. 31, incl. temp. staff)	31,599	30,544

¹⁵ The order backlog (work in progress) is calculated in months by dividing the order book by annualized revenues multiplied by a factor of 12.

While revenues in the Asia-Pacific region were down year over year, all other regions were able to see their revenues increase. The Commercial Vehicle Systems division was

significantly up on the previous year by 10.6%. The Rail Vehicle Systems division was also up on the previous year by 2.6% in fiscal year 2022. [Table → 2.21](#)

2.21 DIVISIONAL KEY INDICATORS

in € million	Rail Vehicle Systems		Commercial Vehicle Systems	
	2022	2021	2022	2021
Revenues	3,401.9	3,317.0	3,750.0	3,390.2
EBITDA margin (as % of revenues)	17.3%	21.5%	12.8%	14.8%
Operating EBITDA margin (as % of revenues)	18.8%	21.9%	13.0%	14.8%
EBIT margin (as % of revenues)	13.3%	17.6%	8.5%	10.7%
Operating EBIT margin (as % of revenues)	14.9%	17.9%	9.0%	10.7%

At the Group level, the aftermarket share of total revenue rose from 36.2% to 37.6% (breakdown based on management reporting, unaudited) and thus grew disproportionately compared to OE revenues, which also increased.

In the **Europe/Africa** region, positive developments in both divisions helped revenues to increase by 6.1% to € 3,389.2 million (previous year: € 3,168.5 million), corresponding to a 47.4% share in the Group's revenues (previous year: 47.3%). The **North America region** contributed € 1,813.7 million (previous year: € 1,397.9 million) or 25.4% (previous year: 20.8%) to the Group's revenues. The significant increase in revenues (+29.7%) resulted from an appreciable increase in OE and aftermarket revenues in the Commercial Vehicle Systems division. In the **South America** region, revenues rose significantly by 31.6% to € 151.6 million (previous year: € 115.2 million), which is equivalent to 2.1% (previous year: 1.7%). In the **Asia-Pacific** region on the other hand, revenues dropped primarily as a result of the significant decline in Chinese OE revenues in both divisions, going down by 11.3% to € 1,795.3 million (previous year: € 2,024.0 million) to represent 25.1% of the Group's revenues (previous year: 30.2%). [Table → 2.22](#)

2.22 CONSOLIDATED REVENUES BY GROUP COMPANY LOCATION

in € million	2022	2021
Europe/Africa	3,389.2	3,168.5
North America	1,813.6	1,397.9
South America	151.6	115.2
Asia-Pacific	1,795.3	2,024.0
Total	7,149.7	6,705.6

The **cost of materials** amounted to € 3,764.3 million (previous year: € 3,376.7 million). It increased year on year by 11.5% and thus more sharply than revenues. The **cost of materials ratio** of 52.6% was higher than the previous year's level

(previous year: 50.4%). The reasons for this were mainly the increased procurement costs, for example as a result of the shortage of chips, and the overall rise in pricing levels due to inflation. The **personnel expenses ratio** increased year over year to 25.1% of revenues (previous year: 24.6%). This mainly resulted from the increased number of employees and the consequent rise in personnel expenses. Absolute **personnel expenses** rose by 9.1% to € 1,797.4 million (previous year: € 1,647.7 million). Total **other operating expenses and income** rose by € 80.5 million to € 677.4 million (previous year: € 596.9 million), with other operating expenses exceeding the income. This is mainly attributable to greater currency translation losses, increased maintenance expenses and higher personnel expenses.

Research and development (R & D) costs in 2022 were € 466.1 million and are thus 8.1% higher than the previous year's level (previous year: € 431.4 million), underscoring the Group's long-term innovation priorities. Relative to revenues, the R & D ratio of 6.5% remained at the same level as the previous year (6.4%).

Operating **EBIT** of € 794.6 million decreased significantly by € -113.5 million or 12.5% compared with the previous year. The operating EBIT margin reduced to 11.1% from the previous year (13.5%). This was adjusted for expenses for severance payments in both divisions in North America (€ 18.7 million) and expenses for restructuring in China through the closure of the Guo Tong site in the Rail Vehicle Systems division and the reduction of activity with the joint venture Knorr-Bremse DETC Commercial Vehicle Braking Systems in the Commercial Vehicle Systems division (€ 7.5 million). It was also adjusted for expenditure incurred on the withdrawal from the Russian market due to the sanctions imposed for Russia's invasion of Ukraine, for example by writing down inventories (€ 47.1 million). At 10.1%, the reported EBIT margin was also under the prior-year level of 13.7%.

The **Rail Vehicle Systems** segment contributed € 506.7 million to operating EBIT (previous year: € 594.7 million), which equates to an operating EBIT margin of 14.9% (previous year: 17.9%). The **Commercial Vehicle Systems** segment attained operating EBIT of € 338.7 million (previous year: € 361.1 million) and therefore an operating EBIT margin of 9.0% (previous year: 10.7%). Including consolidation adjustments, an operating EBIT figure of € -50.8 million is attributable to “Other” business (previous year: € -47.6 million).

Operating **EBITDA** was down 8.2% in the 2022 fiscal year and reached € 1,100.1 million (previous year: € 1,198.6 million). At 15.4% of revenue, the operating **EBITDA margin** was 2.6% below the prior-year level of 17.9%. Operating EBITDA was adjusted for the special expenses announced in the 2022 fiscal year in relation to the withdrawal from the Russian market (€ 45.1 million) and for the restructuring in China in both divisions (€ 6.1 million) and in North America (€ 3.3 million). Reported EBITDA amounted to € 1,045.6 million (previous year: € 1,206.5 million) with a reported EBITDA margin of 14.6% (previous year: 18.0%).

The **number of employees**¹⁶ (including temporary staff) rose by 1,055, from 30,544 on December 31, 2021, to 31,599 on December 31, 2022. On average, the Group employed 31,162 people in the 2022 fiscal year (previous year: 30,431). The main reason for this increase since December 31, 2021, was the acquisition of the Cojali Group.

The overall negative **financial result** improved slightly by € 2.8 million year over year in fiscal year 2022 to € 32.5 million (previous year: € 35.3 million). The rising interest income in 2022 mainly contrasted with greater expenditure on currency translation and deconsolidation of subsidiaries.

The Knorr-Bremse Group’s **income before taxes** developed negatively with a reduction of 21.8% to € 688.8 million in 2022 (previous year: € 880.8 million).

The **tax rate** in the 2022 fiscal year remained stable year over year at 26.5%. While operating expenditure rose year over year, this effect was offset by the change in deferred tax assets on loss carry-forwards.

This resulted in **earnings after taxes** of € 506.3 million or 7.1% of revenues in the 2022 fiscal year, compared with € 647.4 million or 9.7% of revenues in 2021. After deduction of non-controlling interests, earnings per share reached € 3.03 (previous year: € 3.85).

Our **proposed dividend** for the 2022 fiscal year comes to € 1.45 per share. The payout ratio of 46% of consolidated net

earnings after taxes (previous year: 46%) thus falls into the 40% to 50% range defined by our dividend policy. Knorr-Bremse AG’s remaining unappropriated retained earnings of € 255.8 million (previous year: € 348.5 million) will be carried forward.

SEGMENT REPORT FOR DIVISIONS

Rail Vehicle Systems Division

Incoming orders in the **Rail Vehicle Systems** division increased by a significant 19.9% year over year to € 4,161.9 million. Growth in all regions, especially in Europe, contributed to this. The **order book** of € 4,918.9 million as at December 31, 2022, was above the previous year’s level of € 3,875.1 million. [Table → 2.23](#)

2.23 RAIL VEHICLE SYSTEMS DIVISION KEY INDICATORS

in € million	2022	2021
Incoming orders	4,161.9	3,470.7
Order book (Dec. 31)	4,918.9	3,875.1
Revenues	3,401.9	3,317.0
EBITDA	589.5	714.2
EBITDA margin (as % of revenues)	17.3%	21.5%
Operating EBITDA margin (as % of revenues)	18.8%	21.9%
EBIT	453.8	583.5
EBIT margin (as % of revenues)	13.3%	17.6%
Operating EBIT margin (as % of revenues)	14.9%	17.9%
Capital expenditure (before IFRS 16 and acquisitions)	108.0	118.7
Depreciation, amortization and impairment	135.7	130.7
R & D costs	207.9	211.1
Employees (as of Dec. 31, incl. temporary staff)	16,571	16,308

The Rail Vehicle Systems division saw a slight year-on-year increase in **revenues** by 2.6% to € 3,401.9 million (previous year: € 3,317.0 million). Of this, OE business accounted for 52.1% of revenues (previous year: 54.2%) and aftermarket business accounted for 47.9% of revenues (previous year: 45.8%). The rise in revenues was attributable to increased aftermarket business in all regions except South America. In the Asia-Pacific region, and here especially in China, year-on-year decreases in revenues were seen in OE business. In the North America region, the division saw strong growth in the freight business, whereas light-rail vehicles, the regional and commuter business and the locomotive business shrank. In the Europe region, growth in freight business and light-rail vehicles compensated for revenues below the prior-year level in the high-speed train and metro businesses. The decline in Russia-based business operations resulted in an opposing

¹⁶The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

effect in this region. The acquisition of Selskabet af 3. juli 2021, based in Taastrup, Denmark, made during fiscal year 2022 contributed revenue of € 27.6 million in the Rail Vehicle Systems division.

In 2022, the Rail Vehicle Systems division's operating **EBIT** fell by 14.8% to € 506.7 million due to volume and mix factors (previous year: € 594.7 million). At 14.9% of revenue, the operating EBIT margin was significantly below the prior-year level of 17.9%. These figures were adjusted from the disclosed EBIT of € 453.8 million for the aforementioned restructuring expenses in North America (€ 3.3 million) and China (€ 2.5 million) and the expenses stemming from the withdrawal from the Russian market (€ 47.1 million). Some of the price increases caused by inflation have already been offset by charging higher prices to customers. The implementation of cost control measures made a positive contribution to the result.

Operating **EBITDA**, adjusted for the aforementioned restructuring expenses in the Rail Vehicle Systems division in North America (€ 3.3 million) and China (€ 1.1 million) and the effects of withdrawing from the Russian market (€ 45.1 million), fell by 11.9% due to volume and mix factors to € 639.0 million (previous year: € 725.4 million), leading to an operating EBIT margin from revenues of 18.8%, which was thus lower than the prior-year level of 21.9%.

The Rail Vehicle Systems division's **capital expenditure** of € 108.0 million in 2022 (previous year: € 118.7 million) went primarily toward projects for infrastructure, footprint and climate strategy as well as capacity expansion for high-growth product groups. At € 135.7 million, **depreciation and amortization** were slightly up on the previous year (previous year: € 130.7 million).

R & D costs in 2022 came to € 207.9 million, thus decreasing slightly by € 3.2 million or 1.5% year over year to remain mostly at the previous year's level (€ 211.1 million). The R & D-to-revenue ratio of 6.1% remained at a comparable level to the previous year (6.4%). Development activities continued to concentrate on solutions for increasing transportation capacity, eco-friendliness, availability, life-cycle management and digitalization.

As of December 31, 2022, the Rail Vehicle Systems division had 16,571 **employees**¹⁷, which was 263 more than the prior year level of 16,308 employees (including temporary staff). This is mainly attributable to the acquisition of Selskabet af 3. juli 2021, based in Taastrup, Denmark, and the opposing

effects in Russia as well as to companies in the entrance system business.

Commercial Vehicle Systems Division

The **Commercial Vehicle Systems** division reported slight growth in **incoming orders** by 3.6% to € 3,954.3 million in the 2022 fiscal year (previous year: € 3,818.0 million). This positive development was attributable to significantly increased incoming orders in the North America region, while all other regions developed negatively after a very strong previous year. The **order book**, which at December 31, 2022, had successfully grown by 17.3% to € 1,989.8 million since the previous year (€ 1,696.8 million), reached a new record level. [Table → 2.24](#)

2.24 COMMERCIAL VEHICLE SYSTEMS DIVISION KEY INDICATORS

in € million	2022	2021
Incoming orders	3,954.3	3,818.0
Order book (Dec. 31)	1,989.8	1,696.8
Revenues	3,750.0	3,390.2
EBITDA	481.0	500.6
EBITDA margin (as % of revenues)	12.8%	14.8%
Operating EBITDA margin (as % of revenues)	13.0%	14.8%
EBIT	318.2	361.1
EBIT margin (as % of revenues)	8.5%	10.7%
Operating EBIT margin (as % of revenues)	9.0%	10.7%
Capital expenditure (before IFRS 16 and acquisitions)	223.6	234.1
Depreciation, amortization and impairment	162.7	139.5
R & D costs	258.2	220.3
Employees (as of Dec. 31, incl. temporary staff)	14,188	13,459

Revenues increased significantly year over year by 10.6% to € 3,750.0 million (previous year: € 3,390.2 million) despite declining truck production globally. This increase results from positive exchange rate effects as well as increased truck production in North and South America, significant growth in the aftermarket and price rises to pass on inflation-related costs in all regions. The declining revenues in the Asia-Pacific region from the lower truck production rates in China was therefore more than able to be compensated for. OE customers' share of the division's total revenues increased by a significant 8.2% year over year. Despite this sharp growth in the OE business, the aftermarket share of total revenues developed disproportionately and increased year over year from 26.7% to 28.3%. The acquisition of the Cojali Group made

¹⁷ The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

during fiscal year 2022 contributed revenue of € 16.5 million in the Commercial Vehicle Systems division.

The Commercial Vehicle Systems division's operating **EBIT** declined by € 22.5 million or 6.2% to € 338.7 million in 2022 (previous year: € 361.1 million). The operating EBIT margin reduced year over year by 170 basis points to 9.0% (previous year: 10.7%). These figures were adjusted from the disclosed EBIT of € 318.2 million for the aforementioned restructuring expenses in North America (€ 15.4 million) and the expenses on the reduction of activity with the joint venture Knorr-Bremse DETC Commercial Vehicle Braking Systems in China (€ 5.0 million). Despite successful pricing negotiations, especially in the second half of the year, the inflation-related cost increases could not be passed on to customers in full. Moreover, the expenditure on developing new fields of technology rose as planned.

Operating **EBITDA** fell year over year by 2.9% to € 486.0 million. At 13.0% of revenue, the EBITDA margin achieved was thus significantly lower than the prior-year level of 14.8%. Compared to the reported EBITDA and EBITDA margin, these figures were adjusted for the expenses from reducing activity with the joint venture Knorr-Bremse DETC Commercial Vehicle Braking Systems in China (€ 5.0 million).

In 2022, the Commercial Vehicle Systems division's **capital expenditure** decreased by € 10.5 million year over year to € 223.6 million. As in the previous year, major investments were made in the global provision of supplier tools. Additionally, there was capital expenditure in connection with our GSBC product platform. **Depreciation, amortization and impairment** in the Commercial Vehicles Systems division was € 162.7 million and thus € 23.3 million above the previous year (€ 139.5 million).

The division's **R&D costs** rose to € 258.2 million in the 2022 fiscal year (previous year: € 220.3 million). The R & D-to-revenue ratio of 6.5% in the previous year was thus able to rise to 6.9% in 2022. Research and development activities focused on the megatrends of road safety, automated driving, emission reduction, e-mobility and connectivity.

The Commercial Vehicle Systems division had 14,188 **employees**¹⁸ as of December 31, 2022 (previous year: 13,459) and thus 729 people or 5.4% more than as of December 31, 2021. This mainly resulted from the acquisition of the Cojali Group and the buildup of R & D employees.

Financial Position (Financial Development)

FINANCIAL AND LIQUIDITY MANAGEMENT

Our centralized financial and liquidity management system aims to fulfill two key objectives: the optimization of earnings and costs, and the reduction of financial risks. In addition, it makes the Group's financing and liquidity requirements more transparent. In our liquidity management, we adhere to the principle of always maintaining sufficient liquid funds to be able to meet our payment obligations at all times, while also being in a position to act whenever M&A opportunities arise.

Our most important source of finance is cash flow from operating activities. As a rule, external funds are raised by Knorr-Bremse AG – or, where required by financial law, by our respective holding companies in Asia and North America – and made available to Group companies as required. Liquidity management is also the responsibility of Knorr-Bremse AG and our respective holding companies in Asia and North America. Among other things, the latter organize a cash pooling system that – as far as legally possible – manages all the Group's cash and cash equivalents. Companies in countries with legal restrictions on the movement of capital (such as China, India and Brazil) finance themselves largely from local resources.

The investment of excess liquidity is governed by a Financial Asset Management policy and is the responsibility of the Corporate Finance & Treasury department. Our partners are exclusively banks and financial service providers with an investment-grade rating. The cash and cash equivalents of € 1,342.6 million at year-end were 2.7% down on the previous year's value of € 1,380.2 million and therefore remained at a comparable level. A € 700 million bond was issued in 2022 and was mainly used to pay for company acquisitions in this year. Their share of total assets was thus 16.8% after comprising 19.2% at the end of the previous reporting period.

We strengthen our internal financing power and funds tied up in working capital by applying systematic net working capital management, including liquidity-optimizing instruments such as a Supplier Early Payment Program (SEPP) and factoring, which benefit our key figures. Information on our utilization of financial instruments can be found in the Risk Report, in the chapter titled "Currency, Interest Rate, Liquidity, Commodity Price and Credit Risks and Financial Instruments for Minimizing Risks."

¹⁸The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

KNORR-BREMSE GROUP'S FINANCING STRUCTURE

A € 750 million bond with an annual coupon of 1.125% and seven-year term was issued in June 2018. Rating agency Moody's has given this bond an A2 rating. The bond is being used to finance the Knorr-Bremse Group's growth while simultaneously optimizing our financing structure between equity and debt. The existing Debt Issuance Program (DIP) was updated as early as September 2020 and increased to € 3,000 million. The DIP increases our room to maneuver, allowing us to respond quickly to crises such as the Covid-19 pandemic. At the same time, we are proactively increasing the Group's flexibility in order to also take advantage of growth opportunities.

In January 2022, a € 750 million syndicated loan linked to a sustainability rating (an ESG-linked loan) was taken out to safeguard long-term financing. The syndicated line of credit has a term of five years and can be extended by one year up to two times. The first extension option was already exercised in 2022. The existing debt issuance program (DIP) was updated again in September 2022 and a € 700 million corporate bond linked to sustainability criteria was issued with a coupon of 3.25%. Its purpose was mainly the acquisition of Cojali S. L. and payment of the Bosch put option, and accordingly it is no longer shown in the liabilities from options for minority interests as at December 31, 2022. Rating agency S&P has given this bond an A rating. Furthermore, other financial liabilities increased by € 39.4 million, purchase price liabilities by € 75.5 million and liabilities toward credit institutions by € 79.3 million [Table → 2.25](#)

2.25 FINANCIAL LIABILITIES (DEC. 31)

in € thousand	12/31/2022	12/31/2021
Derivatives	(36,288)	(24,378)
Liabilities towards credit institutions	(205,893)	(126,634)
Bonds and debt instruments	(1,455,523)	(751,818)
Liabilities resulting from options on minority interests	-	(379,616)
Purchase price liabilities	(86,432)	(10,920)
Lease liabilities	(509,642)	(510,272)
Other financial liabilities	(384,279)	(344,872)
	(2,678,057)	(2,148,510)
thereof:		
Current	(655,896)	(852,379)
Non-current	(2,022,161)	(1,296,131)

CASH FLOW

Cash Flow from Operating Activities

The cash inflow from operating activities in 2022 decreased year over year by € 433.9 million to € 541.6 million. Compared with the previous year, the net income for the period fell by € 141.1 million to € 506.3 million as a result of the various challenges. Depreciation, amortization and impairment rose by € 33.9 million year over year to € 324.3 million. The € 54.4 million increase in inventory impairment is in particular attributable to the special sanction-related effects connected to business in Russia. The € -38.6 million change in interest income was caused mainly by the bookout, recognized in profit or loss, of an interest rate derivative obtained for the sustainability-linked bond. The income tax expense was down by € 50.9 million year over year with the decrease in pre-tax earnings throughout the Group. The income tax payments rose by € 21.3 million year over year as a result of tax payments for previous years. The net working capital climbed by € 250.7 million from € 875.8 million to € 1,126.5 million. Compared to the previous year, inventories and trade accounts receivable increased by € 139.8 million and € 113.0 million respectively. Trade accounts payable also rose during the reporting year by € 47.9 million to € 1,214.0 million, while contract assets declined by € 5.5 million to € 69.5 million and contract liabilities also declined by € 51.3 million, from € 265.6 million to € 214.3 million. [Table → 2.26](#)

2.26 ABBREVIATED CASH FLOW STATEMENT

in € thousand	2022	2021
Consolidated net income (including minority interests)	506,255	647,368
Adjustments for		
Depreciation, amortization and impairment losses on intangible assets and property, plant and equipment	324,350	290,438
Change of impairment on inventories	55,223	796
Change of impairment on trade accounts receivable and contract assets	9,997	19,963
(Gain)/loss on the sale of consolidated companies and other business units	9,157	(2,929)
(Gain)/loss on the disposal of fixed assets	(614)	(15,883)
Adding to, reversing and discounting provisions	83,240	85,554
Non-cash changes in the measurement of derivatives	4,993	19,115
Other non-cash expenses and income	55,658	(19,227)
Interest result	1,420	39,971
Investment result	13,803	2,339
Income tax expense	182,513	233,444
Income tax payments	(203,550)	(182,287)
Changes of		
inventories, trade accounts receivable and other assets that cannot be allocated to investing or financing activities	(493,713)	(115,111)
trade accounts payable as well as other liabilities that cannot be allocated to investing or financing activities	139,832	84,821
Provisions due to utilization	(147,010)	(112,884)
Cash flow from operating activities	541,554	975,489
Cash flow from investing activities	(504,998)	(534,374)
Cash flow from financing activities	(160,809)	(1,424,895)
Cash flow changes	(124,253)	(983,778)
Change in cash funds resulting from exchange rate and valuation-related movements	8,496	69,551
Change in cash funds	(115,757)	(914,227)
Free cash flow	219,315	599,993

Cash Flow from Investing Activities

The cash flow from investing activities in the 2022 fiscal year fell by € 29.4 million to € 505.0 million. The disbursements for the acquisition of consolidated companies for Cojali and DSB Component Workshops amounted to € 203.4 million and were thus € 115.6 million up on the previous year, whereas the disbursements for capital expenditure on property, plant and equipment and investment in intangible assets went down by € 34.5 million to € 227.4 million and by € 8.9 million to € 124.7 million respectively. The inflow from the sale of the representative offices in Berlin, which closed in late 2021, resulted in an increase in proceeds from the sale of property, plant and equipment to € 29.9 million. With investment in financial assets remaining almost unchanged, the proceeds from the sale of financial assets, based on sales through the special fund and on the disposal of the investment in Haldex AB, increased by € 71.9 million to € 83.1 million. The interest received rose from € 8.3 million to € 41.2 million primarily as a result of the bookout of an interest rate derivative.

Cash Flow from Financing Activities

Compared to the previous year, the cash outflow from financing activities of € 160.8 million in the 2022 fiscal year had decreased by € 1,264.1 million. The cash flow from financing activities in 2021 had mainly been influenced by the repayment of borrowings for the return of € 500.0 million of loans remaining from the Covid-19 action program and by the scheduled repayment of the corporate bond that we had issued in 2016, which was also € 500.0 million. Knorr-Bremse issued a € 700 million sustainability-linked bond on September 15, 2022. Additionally, the cash outflow from dividends paid to parent company shareholders increased by € 53.2 million to € 298.2 million during the 2022 fiscal year. The payments for acquisition of non-controlling interests rose from € 25.1 million in 2021 to € 366.7 million mainly because of a € 360.0 million payment to Robert Bosch GmbH for 20% of the shares in Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and Knorr-Bremse Commercial Vehicle Systems Japan Ltd. respectively.

Free Cash Flow

Free cash flow¹⁹ was €219.3 million and was thus €380.7 million lower than the previous year's level of €600.0 million. This drop results from significantly lower cash flow from operating activities, primarily due to the lower net income for the period as well as the significantly increased inventories and trade accounts receivable. The decline was able to be partially offset by the slight year-over-year reduction in disbursements for capital expenditure.

LIQUIDITY

The decrease in cash and cash equivalents to €1,210.7 million (previous year: €1,326.5 million) was the result of the negative balance of cash inflow from operating activities (€541.6 million), cash outflow from investing activities (€505.0 million) and cash outflow from financing activities (€160.8 million). Net liabilities²⁰ amounted to €726.7 million in 2022. During the previous year, there was a net balance of €108.5 million resulting mainly from a €700 million long-term sustainability-linked bond that was issued in 2022.

[Table → 2.27](#)

2.27 CASH FUNDS (DEC. 31)

in € million	2022	2021
Cash and cash equivalents (Jan. 1)	1,326.5	2,240.7
Cash flow from operating activities	541.6	975.5
Cash flow from investing activities	(505.0)	(534.4)
Cash flow from financing activities	(160.8)	(1,424.9)
Other	8.5	69.6
Cash funds (Dec. 31)	1,210.7	1,326.5

The ratio of the Group's net debt (previous year: net cash balance) to equity was 27% (previous year: 4.5%). The year-over-year development stemmed from an €835.3 million increase in net debt, with a €265.8 million rise in equity. The Group has access to approved credit facilities totaling €2,452.9 million, including a €750 million syndicated and ESG-linked credit line, of which around 70.6% remained undrawn as of the end of the fiscal year. Interest rates on liabilities conform with prevailing market terms, according to maturity.

At year-end 2022, the undiscounted maximum level of liability for loan guarantees/sureties and contract-performance guarantees/sureties for third-party services totaled €22.8 million (previous year: €22.0 million). Other financial obligations included rental and lease obligations (€44.1 million). They also include financial obligations for capital expenditure projects (€46.0 million), liabilities associated with major maintenance and repair

work (€16.4 million) and other liabilities (€189.1 million). The other liabilities item includes loan commitments and bank guarantees. For further details, see also chapters H.7 and H.8 of the notes to the consolidated financial statements.

With our ability to generate cash flows from operating activities, our cash and cash equivalents, undrawn credit facilities, and our existing credit ratings at year-end, we are confident that we have sufficient flexibility to cover our capital requirements for achieving sustainable organic growth and making strategic acquisitions.

Rating

Two external rating agencies, Standard & Poor's and Moody's, have been rating the Knorr-Bremse Group's financial standing since 2000. The ratings were investment grade from the outset and have steadily improved over the years. S&P reaffirmed the Knorr-Bremse Group's "A" rating in September 2022 and modified its outlook from "stable" to "negative." Moody's continued to rate the Group as "A2" but changed the outlook from "stable" to "negative." Both rating agencies acknowledge the Group's continuing stable liquidity and strengthened competitive position, notably through high levels of research and development spending.

ASSETS AND CAPITAL STRUCTURE

The Group's **total assets** increased by 11.3% to €8,011.9 in comparison to December 31, 2021 (€7,199.2 million). This is mainly attributable to the purchase of the Cojali Group and the associated intangible assets that were acquired, as presented under "Changes to the Group's Portfolio." Investments were also made and are described in the divisions' reporting. As of year-end 2022, committed assets represented 112.1% of revenues. [Table → 2.28](#)

2.28 BALANCE SHEET RATIOS

in € million	2022	2021
Net debt/(cash) (Dec. 31)	726.7	(108.5)
Net debt to EBITDA	0.7	0
Gearing (Dec. 31)*	0.3	0
Net working capital (NWC) (Dec. 31)	1,126.5	875.8
Net working capital in days' sales	56.7	47.0
Turnover rate – inventories**	6.3	6.7
Receivables/days' sales outstanding***	67.6	66.0
Equity ratio (Dec. 31)	33.6%	33.7%
Total assets (Dec. 31)	8,011.9	7,199.2

* Gearing: Indicates the ratio of net debt to equity.

** Turnover rate – inventories: The turnover rate of inventories indicates how often they are turned over. It is calculated by dividing annualized sales revenues by inventories.

***Receivables/days' sales outstanding refers to the average number of days that elapse between the invoicing date and the settlement date (receipt of payment).

¹⁹ Free cash flow is calculated by deducting disbursements for investments in property, plant and equipment and intangible assets from the cash flow from operating activities, and by adding proceeds from the sale of property, plant and equipment and intangible assets to the cash flow from operating activities

²⁰ This is the result of offsetting (netting) cash and cash equivalents against bank loans, bonds, notes and lease liabilities

Net working capital, defined as the sum of inventories, trade accounts receivable and contract assets less trade accounts payable and contract liabilities, stood at € 1,126.5 million at year-end (previous year: € 875.8 million). This year-over-year increase is primarily attributable to an increased value of inventories through price rises as well as the Cojali acquisition and increased volume. Measured in terms of days' sales, this corresponds to a commitment of 56.7 days (previous year: 47.0 days).

The Knorr-Bremse Group recognized an **equity ratio** of 33.6% as at December 31, 2022, which is roughly the same as the previous year's level (December 31, 2021: 33.7%).

[Table → 2.29](#)

2.29 EQUITY

in € million	2022	2021
Subscribed capital	161.2	161.2
Other equity	2,400.6	2,167.1
Equity attributable to the shareholders	2,561.8	2,328.3
Non-controlling interests	129.5	97.2
Total equity	2,691.3	2,425.5

For the **other balance sheet items**, the main factor to emphasize is the € 92.3 million decrease in pension provisions to € 219.8 million (previous year: € 312.1 million) due to interest rate developments. Furthermore, the other short-term provisions reduced by € 69.3 million to € 171.4 million (previous year: € 240.7 million) and the other long-term provisions decreased by € 33.6 million to € 194.2 million (previous year: € 227.8 million). Further disclosures regarding the provisions are provided in chapters F.11 and F.12 of the notes to the consolidated financial statements. Due to the planned sale of the Kiepe Group companies, assets of € 162.7 million and liabilities of € 155.1 million in connection with the assets held for sale were removed from the balance sheet line items. Further disclosures regarding the assets held for sale and corresponding liabilities are provided in chapter F.8 in the notes to the consolidated financial statements.

CAPITAL EXPENDITURE

The Knorr-Bremse Group's capital expenditure on property, plant and equipment and intangible assets reflected the Group's growth and innovation priorities. **Capital expenditure** reached € 352.1 million in the 2022 fiscal year, representing 4.9% of revenues (previous year: 5.6%). Major investments were made in forward-looking development projects as well as in intangible assets and property, plant and equipment. Investments were made in connection with, among other things, automated driving solutions, the further development of the steering systems business and electrification. Furthermore, capacity expansions were implemented for high-growth product groups and for automation projects.

[Table → 2.30](#)

2.30 CAPITAL EXPENDITURE, DEPRECIATION AND AMORTIZATION

in € million	2022	2021
Capital expenditure on property, plant and equipment	227.4	264.9
Investments in intangible assets	124.7	110.6
Depreciation, amortization and impairment	324.4	290.4

Supplementary Report

Details are available in the notes to the consolidated financial statements in chapter H.2. Events after the Reporting Date.

Report on risks, opportunities and expected developments

Report on Risks and Opportunities

Risk Management System

PRINCIPLES AND OBJECTIVES

As an international corporate group with a global presence, Knorr-Bremse encounters both risks and opportunities in the course of its entrepreneurial activities. The goal of risk management is to identify risks across the Group and minimize their potential consequences on the Group's anticipated financial performance and position. The system should likewise identify and leverage opportunities to boost stakeholder value in the long term. The focus is on early, systematic identification and analysis of potential risks and opportunities in order to provide sufficient scope for effective risk management, including the timely introduction of suitable countermeasures. The basis for this is a transparent, systematic risk reporting system that covers all business processes.

We always carefully evaluate opportunities and risks in all our business activities. For this reason, Knorr-Bremse encourages all employees to proactively report risks and requires them to deal with risks in a responsible manner. In addition to regular reporting periods, an internal ad-hoc reporting process enables risks of major significance to be identified at an early juncture and managed as rapidly as possible.

The risk management system established in the Group is subject to continuous further development, including adjustments to internal and external requirements.

ORGANIZATION AND PROCESS

Our risk management structures and procedures are aligned with our overall organizational structure and anchored in a corporate policy that includes clear definitions of responsibilities and reporting structures. Under the direction of Group Controlling & Risk Management, our analysis of potential risks is conducted quarterly in the form of a worldwide bottom-up risk inventory covering all Group companies. Sites report potential risks in quantified form to regional managers, who in turn pass on the aggregated data to divisional managers. An essential component of regular risk reporting is a summary Group risk report. This is discussed and adopted in the Risk Committee. The participants in the Risk Committee are the heads of finance with regional responsibility, the heads of other governance functions and the global quality managers. The Group risk report is then presented to the Knorr-Bremse

Group's Executive Board at quarterly intervals and explained and discussed at the relevant Executive Board meeting. The Supervisory Board conducts an in-depth review of the risk report at least once a year and also on an ad-hoc basis if necessary.

The identified risks are assigned to one of 14 specific risk categories that are aligned with the Company's value chain. In all, the risk management process comprises six stages, from identification through evaluation, mitigation and aggregation to reporting and monitoring. The identified risks are evaluated in terms of their impact on earnings and liquidity and probability of occurrence. The priority is to present the risk portfolio transparently, together with an appraisal of effective risk limitation measures. Those responsible for risk management provide quantitative and qualitative assessments of these measures in their reports. Possible measures include the avoidance, reduction, transfer or acceptance of the respective risk.

As part of this process, operational risk mitigation measures designed to reduce any potential losses are considered, which gives a net risk value before probability of occurrence and before risk provisions. Factoring in the probability of occurrence allows us to quantify the weighted net risk. For the purpose of recognizing risk provisions in the balance sheet, appropriate provisions and loss allowances must be recognized in the annual financial statements in compliance with accounting regulations. After deducting the risk provisions recognized in the balance sheet, an expected value for the remaining potential impact on earnings of each risk is obtained.

In the subsequent risk aggregation phase, the individual risks are aggregated based on identity of cause and allowing for possible interdependencies. Furthermore, in consultation with the divisions and those responsible for risk management, the Risk Management function performs a plausibility check on the net risk calculation and validates compliance with guidelines. This process of aggregation, the performance of a plausibility check and validation is also part of the Risk Committee's quarterly agenda.

The aggregated risks are classified in accordance with the risk's materiality to the Group as follows:

- Low (< € 10 million)
- Medium (€ 10 million to € 50 million)
- High (> € 50 million)

In addition to the quantified risks described above, risk management also assesses qualitative, abstract risks as well as opportunities.

RISK REPORTING

The Executive Board provides the Supervisory Board and the relevant committees with regular, timely and comprehensive updates on all risks and opportunities of relevance to the Group. Process-integrated monitoring is the Risk Committee's task. The examination and process-independent monitoring of the risk management process is the task of the Internal Audit function. The Knorr-Bremse Group thus has a reporting and control system in place that enables it to globally implement efficient and effective risk monitoring and management.

KEY FEATURES OF THE INTERNAL CONTROL SYSTEM (ICS):

The internal control system (ICS) is an element of internal governance for the purpose of process-integrated and organizational monitoring measures and controls that are intended to safeguard the accuracy of external financial and non-financial reporting. The Knorr-Bremse ICS sets out Group-wide specifications for the design of the internal control system for accounting processes and processes for non-financial operating areas.

The job of the financial ICS is to safeguard the propriety and reliability of accounting processes. The non-financial ICS focuses on the propriety and reliability of non-financial operating processes.

We use our internal control system (ICS) to ensure compliance with the relevant legal requirements and applicable Group guidelines. The ICS encompasses the principles, procedures and measures which senior management has implemented within the Company for the purpose of handling risks systematically and transparently.

The fundamental principles of the ICS are the cross-checking (dual-control) principle and the separation-of-functions principle. Group companies are responsible for complying with existing standardized Group-wide rules and country-specific regulations, and for documenting the internal controls they use to ensure reliable and appropriate financial and non-financial reporting. The risk control matrix with our most important controls has been introduced in all Group companies. These controls were tested in our Group companies in 2022 using the principle of materiality and in combination with a risk-based approach.

Group Controlling & Risk Management plays a supporting and coordinating role and centrally files the documentation of risks and controls and the regular control assessment. The Internal Audit function also verifies the existence and effectiveness of the documented processes during its independent audits. Group Controlling & Risk Management reports to the Executive Board on the effectiveness of the control system in relation to accounting controls and operating

controls. The Executive Board regularly provides the Supervisory Board with a detailed breakdown of ICS and Internal Audit results once a year as part of the Audit Committee meeting.

The most important instruments, control and hedging routines in the accounting process and operational processes are:

- Knorr-Bremse AG's accounting guideline defines the accounting process in the individual companies and within the Group. The guideline covers all relevant IFRS rules and is regularly updated by the Corporate Accounting function.
- Knorr-Bremse's Group guidelines lay out the Group-wide specifications for operational business processes in order to minimize or avoid risks within the processes.
- All accounting processes are subject to multi-level validation in the form of spot checks, plausibility checks and other controls by the operating companies, the divisions, and the Corporate Controlling, Corporate Accounting/Taxes and Internal Audit functions. The controls relate to various aspects, such as the reliability and adequacy of IT systems, the completeness and accuracy of financial reporting, and the completeness of provisions.
- The fundamental ICS principles – the dual-control principle and separation-of-functions principle – apply generally, but in particular to the commercial processes that trigger entries in the consolidation system. For example, depending on the amounts involved, orders or invoices may have to be signed off by divisional management, senior management or the Executive Board. The process from ordering through to payment is secured by separating the functions of employees in Purchasing and Accounting.
- Access authorizations control access to the consolidation system; this is reserved for a selected group of employees in Corporate Accounting. Data that is entered for Group companies is checked in a multi-level process. First, it is validated by the Group company itself, then by the relevant segment's Controlling function, and finally by Corporate Accounting.

To ensure that financial statements are prepared correctly, we carefully consider significant regulations pertaining to and new developments in accounting and reporting. Particular attention is paid to the accounting treatment of construction contracts based on the over-time method, the allocation of purchase prices during business combinations, impairment testing of goodwill; and the reliability of qualitative and predictive statements in the management report.

The breakdown in the table below shows the respective net risk (by probability and after risk provisions) to the Group per risk category. [Table → 2.31](#)

2.31 KNORR-BREMSE GROUP – RISK CATEGORIES

	Low (< € 10 million)	Medium (€ 10 million to € 50 million)	High (> € 50 million)
Strategy, M&A/PMI		■	
Legal & Regulatory	■		
Compliance			■
Research & Development	■		
Purchasing			■
Market & Customers Project Management			■
Logistics	■		
Production		■	
Quality & Product Liability	■		
HR	■		
Finance & Treasury		■	
IT Systems & IT Security		■	
Sustainability	■		
External/Other	■		

Material changes occurred in the risk portfolio compared with the previous year in the Compliance category. The Russian invasion of Ukraine and the political and economic fallout from it, including for example sanctions, come with risks that impact a variety of areas. The war can result in restrictions in Procurement, Production and Finance & Treasury, as well as Market & Customers Project Management in particular, which could lead to high risks in the net assets, financial position and results of operations. In particular, there remains an impairment risk for the assets in Russia in the amount of a medium two-digit-million figure. Furthermore, there may be revenue losses in the two-digit millions and corresponding margin losses. Furthermore, the Compliance category also includes potential compliance-related violations that have been reported through the Knorr-Bremse whistleblower system and require investigation.

The risk in the Purchasing category was already high in the previous year and increased further, which is a result of the global market price rises for energy and commodities and wage increases. Moreover, supply shortages and challenges arising from, among other things, the impacts of Covid-19 may lead to further risk within our supplier structure.

Potential energy supply shortages may also negatively impact the development of sales volumes and result in delays or lost revenue, which is reflected in the Market & Customers Project Management category. We seek to offset the burdens arising from higher prices with improved productivity, internal cost reduction programs and adjustments of our products' prices. These actions could produce a risk on the part of our customers in that they might not accept these pricing adjustments.

There remains risk in the Strategy category arising from the weakening of China's economic growth and the autonomy policy in China. If risks are taken into account from as early as the plans, budgets or consolidated financial statements (for example in the form of a provision), the financial impacts of the risks are incorporated into the business targets. The table only displays additional risks that may arise from the same issue and represent a deviation from the business targets.

The Knorr-Bremse Group's individual risk categories are explained in more detail below:

STRATEGIC RISKS, RISKS ASSOCIATED WITH MERGERS AND ACQUISITIONS (M&A) AND POST-MERGER INTEGRATION (PMI)

As a technology leader in the rail and commercial vehicle sectors, we are regularly exposed to the efforts of both established competitors and new market players to gain market share at our expense. Mergers and acquisitions among our competitors should be noted in this context. We counter such strategic risks with a sustainable innovation strategy and intensive cultivation of customer relationships so we can continue to respond optimally to customer needs in terms of the technology, quality and pricing of our products and services. As well as continuously developing our existing product portfolio, we focus in particular on averting the risks of unsuccessful or delayed entry into new, promising product areas. For this purpose, we take steps to ensure the timely identification, evaluation and efficient implementation of development projects aimed at opening up new product areas. This applies in particular to product ranges linked to the current megatrends of urbanization, sustainability, digitalization and mobility. As a systems supplier, we are determined to continue offering our customers the greatest possible benefits in all these fields. Another risk to be mentioned is that the Chinese government has for years been endeavoring to strengthen the local economy and thus the autonomy of the country by placing a stronger obligation on companies to use local Chinese companies in the supply chain. Knorr-Bremse is responding to this with adjustments in its presence and positioning in the country in order to meet the changed requirements. Risks may also arise from strategic decisions involving portfolio adjustments or changes. These may take the form of restructuring costs, value adjustments or similar risks – for example, in the event of relocations or closures.

Risks can arise from both strategic and operational perspectives during the M&A process itself and in the post-merger integration (PMI) phase. Among other things, from a financial perspective such risks include possible mispricing, which we seek to prevent by conducting extensive due diligence. Other risks include higher than expected integration and onboarding costs, or delays during the integration process and subsequent changes to the purchase price. Risk provisions are recognized for these in the balance sheet where necessary. To reduce these risks, we involve employees holding key positions in the integration process at an early stage. This makes it easier to ensure effective integration with our corporate culture, working conditions, systems and processes. In addition, risks may also arise from the sale of business units.

LEGAL AND REGULATORY RISKS

Its worldwide presence means that Knorr-Bremse operates in a wide variety of different legal systems. Current and potential future changes to these legal systems give rise, among other things, to risks associated with fiscal, competition, patent, environmental, labor and contract law. To avoid or minimize litigation and any potential financial exposure, strategic risks or reputational damage that might ensue, we rely on our Compliance Management function and Tax department, as well as the legal reviews and assessments carried out by our Legal department. For complex issues, we also seek the support of external specialist lawyers.

To counter the potential damage to our business resulting from imitations and product piracy, the Company relies on the Patent department's in-depth scrutiny of our markets, its rigorous defense of our interests, and close collaboration with government agencies when necessary. Details of current proceedings can be found in the Notes to the consolidated financial statements under H.9. Legal Disputes and Litigation in the notes to the consolidated financial statements.

In addition, risks may potentially arise from changes to legal regulations, such as breaches of the EU General Data Protection Regulation (GDPR) or the Chinese Cybersecurity Law.

COMPLIANCE-RELATED RISKS

Corruption, anti-competitive practices, conflicts of interest and fraud or embezzlement are identified by the compliance management system as potential compliance risks. The basis of this categorization is a compliance risk analysis, which was carried out with the involvement of selected business units and markets and is renewed every two years. Alleged irregularities in conjunction with the initiation of business in Asia some time ago were reported through the Knorr-Bremse whistleblowing system. Provisions for tax risks were recognized in the consolidated financial statements as at December 31, 2022, for issues that were identified as part of a completed internal investigation. An additional investigation was ordered into other reports received via the whistleblowing system, which was completed in February 2023. No further provisions were recognized in this context. Simultaneously, measures were taken to make the compliance management system even more robust. Should these issues become the subject of an investigation by the authorities, and should this investigation determine there had been violations of applicable law, this could lead to additional risks for the companies. This produces an increased level of risk. As a global company, we maintain business relationships with customers in countries that are subject to export control regulations, embargoes, economic sanctions and other forms of trade restrictions. New or broadened sanctions could lead to a limitation of our business activities in that country.

RISKS ASSOCIATED WITH RESEARCH AND DEVELOPMENT

Both product development and product optimization processes are generally associated with a range of risks, in particular time-to-market delays and deviations from product quality requirements – e.g., in respect of approval procedures. It is also important to safeguard against potential infringements of intellectual property (IP) rights. In addition, costs may overrun the original budget, especially in relatively long-term development projects. To meet these challenges, we have a global, highly qualified team of R&D specialists, cutting-edge R&D facilities and efficient and effective processes, all under tight project control. As well as the state-of-the-art Technology Center at our Munich head office, equipped with the latest measuring stations and test rigs, we should also mention our R&D Centers in Schwieberdingen (Germany), Budapest (Hungary), Pune (India), and in Elyria, Ohio (USA).

RISKS ASSOCIATED WITH PURCHASING

Potential risks in the procurement process include, along with the impacts of the Covid-19 pandemic, potential energy supply shortages and goods shortages, in particular late deliveries, quality defects and rising supplier prices, that cannot always be passed on in full to customers, or only after some time has elapsed. There is also a risk of supplier insolvencies, which we counter during the selection process by ensuring the high quality of our suppliers as part of our continuous monitoring program. Moreover, we have selected multiple suppliers for almost all strategically relevant product components in order to reduce our dependency on individual suppliers as far as possible. We conclude framework agreements with our suppliers in order to minimize supply risks. We also pool procurement volumes to obtain more advantageous purchasing terms. In this category, the global rises in market prices for energy and commodities and wage increases are currently worth highlighting.

MARKET RISKS AND RISKS IN CUSTOMER PROJECT MANAGEMENT

Even after drawing up a detailed sales budget that fully reflects market expectations for a given fiscal year, unexpected market developments or individual customer risks, in particular, can easily cause revenue targets and associated earnings targets to be missed. With respect to markets, the Commercial Vehicle Systems division's business is the main concern because it is generally more sensitive to cyclical fluctuations. Any decline in vehicle production has an impact on revenues from the division's original equipment (OE) business. Irrespective of order trends, customer pressure on prices may also have a negative impact on margins. In the Rail Vehicle Systems division, where project business plays a more important role, we focus not just on market movements, but also on possible strategic and operational project delays. In addition, price pressures can arise in both segments as a

result of customers merging. Thanks to the Group's broad global base, the effects of regional or segment-related market developments can often be offset, even across the divisions.

Customer-project-specific risks may arise in the Rail Vehicle Systems division in particular, owing to the division's reliance on project-related business. Such risks include, in particular, budget overruns, possibly including in the form of currency and inflation risks in the project environment, schedule overruns and divergences from agreed product specifications. For instance, failure to deliver on time or with the warranted product features may result in additional remediation costs or lead to contractual compensation payments or penalties. To avoid such risks, we rely on effective project management and controlling, fine-grained monitoring and intensive communication with our customers.

The current geopolitical tension and potential energy supply shortages may impact both divisions and result in project delays or in customers canceling projects altogether.

LOGISTICAL RISKS

Material risks affecting logistics include possible delays in the supply chain to Knorr-Bremse as well as in the Company's own supply chain through to its end customers. Such delays may result in production delays or downtime, which in turn may cause bottlenecks in deliveries to our customers. We counteract these risks by means of an integrated planning process that is closely coordinated with our production and delivery schedules. Optimized warehouse management also enables us to achieve a balance between availability on the one hand and capital-efficient inventories on the other. Even so, special freight (e.g., air freight) and other measures to eliminate delivery bottlenecks may be required, entailing higher logistics costs.

PRODUCTION-RELATED RISKS

The year-over-year increase in risk in the Production category results from challenges in the manufacturing process. Bottlenecks in production can result from a lack of manpower, particularly in view of the current coronavirus pandemic, or due to insufficient mechanical production capacity, or also because of machine downtimes. Risks may also arise in connection with the termination of supply contracts with major suppliers and risks posed by bottlenecks for electronic components. We counteract these risks firstly by means of coordinated production planning and contractual covenants, and secondly by relying on state-of-the-art production facilities and regular maintenance, investing in replacement equipment whenever required in order to avoid equipment obsolescence. Integrated quality controls enable us to identify and remedy quality defects at an early stage so we can avoid rejections, waste and reworking. Our globally standardized

manufacturing concept, the Knorr-Bremse Production System (KPS), ensures that all production sites meet our high quality standards. Comprehensive occupational safety and environmental protection standards have also been defined within the Group.

RISKS ASSOCIATED WITH QUALITY AND PRODUCT LIABILITY

The primary objective of quality management is to ensure that we reliably fulfill our customers' requirements. As a manufacturer of safety-relevant products, quality is an especially high priority and has been deeply embedded in our corporate values for many years. If, despite comprehensive quality assurance measures, we were on occasion to supply our customers with products that did not meet the expected quality standards, there is a risk of incurring additional costs for rectifying defects or settling customers' warranty claims. In such cases, we work closely with our customers to promptly find and implement solutions. Our overall exposure to quality and product liability risks is offset by, among other things, extensive provisions that cover these risks through our best estimates.

RISKS ASSOCIATED WITH HUMAN RESOURCES (HR)

By comparison with Western Europe, employee turnover in other regions is significantly higher, for reasons which include the impacts of the Covid-19 pandemic. To mitigate the risk of employee turnover, we offer attractive remuneration packages, working conditions and professional development opportunities. We are addressing the shortage of skilled workers with our own management development program aimed at recruiting young, talented, capable employees and retaining them in the Company over the long term. Nevertheless, the departure of highly qualified employees can result in a loss of expertise and resource bottlenecks. In addition to running in-house training courses, we also undertake targeted marketing in universities and offer dual vocational education and training (work-study programs). Rising pension obligations represent a further risk, as declining interest rates or longer life expectancies can drive up costs. However, these are relatively minor in relation to our total assets and have already been partially outsourced to external pension funds.

RISKS ASSOCIATED WITH FINANCE AND TREASURY

Currency, interest rate and liquidity risks are described in detail in chapter H.1 of the notes to the consolidated financial statements. Detailed information on this risk category can also be found below under "Risk Report on the Use of Financial Instruments". Where necessary, risk provisions are recognized for these in the balance sheet.

RISKS ASSOCIATED WITH IT SYSTEMS AND IT SECURITY

Insufficient system stability and inadequate data availability pose fundamental IT risks. Redundant data centers protect us against possible data loss and the failure of critical systems. Cyberattacks on our IT systems pose a serious threat. We protect ourselves through our Group-wide IT organization, an information security management system (ISMS), and IT security solutions that are kept up to date through a continuous improvement process. We train our employees on the topic of information security and regularly inform them about current threats and the appropriate practices regarding these. Further risks may also arise in connection with, among other things, software licenses.

RISKS ASSOCIATED WITH SUSTAINABILITY

The category of sustainability encompasses risks in connection with environmental and climate protection and the protection of human rights. The risks relating to environmental and climate protection concern, for example, rising energy and material costs as a result of increased environmental regulations and the increasing taxation of carbon emissions as part of the journey to a decarbonized economy. In the future, meeting ESG requirements will have an increasing influence on the financing of the Knorr-Bremse Group.

In addition, climate change may disrupt supply chains and impact material properties that are relevant to product quality. We deal with these risks at an early stage in order to be able to react to them adequately and with appropriate measures in all areas.

We respond to the risks that could arise from the implementation of the German Supply Chain Due Diligence Act by integrating human rights due diligence into our operating processes even more strongly, with an aim of minimizing human rights risks and preventing negative impacts on our business activities. Therefore, we also use the results of the human rights risk analyses and associated information on potential human rights breaches.

OTHER RISKS

The Other Risks category includes all risks that do not fall into one of the above-mentioned categories. These include, for example, potential reputational damage, or financial losses as a result of external activities, which we currently rate as low.

Risk Report on the Use of Financial Instruments

CURRENCY, INTEREST RATE, LIQUIDITY, COMMODITY PRICE AND CREDIT RISKS, AND FINANCIAL INSTRUMENTS FOR MINIMIZING RISKS

As a result of its international activities and the volatility of the world's financial markets, the Knorr-Bremse Group is exposed to various financial risks, especially market risks, liquidity risks and credit risks. The objective of the company policy is to limit risks through systematic financial management. The Group therefore utilizes a number of financial instruments, such as forward exchange transactions, currency swaps, currency options and interest rate swaps. Derivative financial instruments are used solely to hedge existing positions (hedged items) against interest rate and exchange rate exposure (in line with market risk).

HEDGING OF FOREIGN CURRENCY RISKS

Forward exchange transactions and currency options are used solely to hedge the currency risks on selected assets and anticipated cash flows within the Knorr-Bremse Group. Knorr-Bremse AG's hedging transactions are designed to reduce risks arising from exchange rate fluctuations. We always enter into a separate hedging transaction for each individual major project. All financial derivatives and their hedged items are regularly monitored and measured. The effectiveness of the hedging relationship is also monitored, and hedges are adjusted under certain circumstances.

The high level of local manufacturing and local supply within the respective currency zones established by the Group's geographical diversification in recent years has minimized our transactional exposure. Hedge Accounting has been used since fiscal year 2019 to record the hedging of fluctuating cash flows that result from exchange rate movements and are associated with transactions that are highly likely to occur.

HEDGING OF INTEREST RATE RISKS

We pursue a conservative interest rate and financing strategy with three core elements: long-term interest rate and financing security, matching maturities, and a ban on speculation.

Our financial liabilities are primarily the two bonds issued in 2018 and 2022 respectively and borrowings from bilateral credit facilities. Our corporate financing is exposed to limited interest rate risks. The risk of interest rate fluctuations arising from operational activities is also of no great significance to the Knorr-Bremse Group at present, as the Group's geographical diversification in recent years has established a high level of local manufacturing and local supply within the respective regions. Our interest rate risk management covers all interest-bearing and interest-sensitive balance sheet items. Regular interest rate analyses allow us to identify risks at an early stage. Corporate Treasury is responsible for debt financing, financial investment

and interest rate hedging; exceptions above a certain size must be approved by the Chief Financial Officer.

Our pension risks are manageable. At € 219.8 million, pension provisions at the end of the year were under the previous year's level (previous year: € 312.1 million), and thus 2.8% (previous year: 4.3%) of total assets.

HEDGING OF LIQUIDITY RISKS

Our liquidity requirements are largely covered by our operating cash flow. Cash and cash equivalents together with existing credit facilities allow us to meet our payment obligations at all times. By virtue of cash pooling in each of our respective currency zones, we can utilize individual companies' liquidity surpluses for other Group subsidiaries, to the extent permitted by national capital transfer regulations. This avoids recourse to external loans and interest expenses.

CREDIT RISKS

Credit risks arise from investments with banks, operating trade receivables from customers as well as contract assets. On the credit institution's side, the risk relates to counterparty default, while on the customer's side the risk relates to late, partial or no settlement of receivables without compensation and to default. The carrying amount of the financial assets reported in the consolidated financial statements represents the maximum default risk. Regular monitoring is carried out both on the bank side and on the customer side. Decisions on financial transactions are made on the basis of this monitoring. Contracts on financial derivatives and financial transactions are only concluded with financial institutions with high credit ratings in order to keep the counterparty default risk as low as possible. In principle, commercial transactions are exposed to the risk of a possible loss of value due to the defaulting of business partners, such as banks, suppliers, and customers.

There was no material concentration of a default risk with regard to a business partner or a clearly distinguishable group of business partners. As of the reporting date, there were no material agreements that limit the maximum default risk.

HEDGING OF COMMODITY PRICE RISKS

Commodity price risks arise from the fact that raw materials (especially metals) required in the production process can only be procured at higher costs due to fluctuating market prices, without a full price adjustment in sales transactions. The planned purchases of raw materials or components with raw material contents as well as the corresponding sales contracts are taken into account for the analysis of the commodity price risk. The resulting risk position, representing our exposure, is continuously monitored and hedged on a case-by-case basis using commodity swaps. Hedge accounting is not applied here.

FINANCING RISKS

Knorr-Bremse's financing situation is comfortable and reflects the Company's excellent credit standing and solid balance sheet structure. As of December 31, 2022, Knorr-Bremse had approved credit facilities of € 2,452.94 million in place, including a € 750 million syndicated and ESG-linked credit line, of which around 70.62% remained undrawn, plus two bonds for € 750 million and € 700 million respectively that will mature in June 2025 and 2027 respectively. Neither our credit facilities with banks nor the bonds we have issued include any financial covenants.

HEDGING OF INVESTMENT RISKS

Our investment guideline governs the handling of investment risks. Among other things, it defines approved asset classes and creditworthiness requirements. The special fund set up in November 2020 for investing strategic liquidity continues to exist and had a closing value of € 146 million at year-end 2022. The fund is split between two mandates with different asset managers and is equipped with a portfolio insurance concept (e.g., obligation to provide information if the value falls below a defined minimum threshold).

RATING

See Financial Position (Financial Development) in the Liquidity section.

More information on the management of financial risks can be found in chapter H.1. of the notes to the consolidated financial statements.

Opportunity Management System

Knorr-Bremse's opportunity management system is unchanged from the previous year and follows the same processes as the risk management system. Alongside regular management reviews, opportunities are also reported in the quarterly report on risks and opportunities. It should always be borne in mind, however, that even opportunities may be associated with risks that must be carefully weighed up in all circumstances.

As part of the rigorous implementation of Knorr-Bremse's growth strategy, we continuously monitor current and future markets in order to pinpoint and evaluate potential global opportunities at an early stage. To do this, we stay in close contact with our customers and suppliers so we can identify future trends and any resulting market demand. Furthermore, we conduct regular benchmark analyses both against our direct competitors and against peer groups of subcontractors in the rail and commercial vehicle sectors. As well as the Executive Board and the Corporate Development function, the divisions' central departments are also responsible for identifying potential opportunities to adapt existing products to meet future customer needs or add new product areas. In the opinion of management, Knorr-Bremse makes

above-average investments in new technologies in order to further extend the Company's innovation and market leadership, safeguard our existing sales markets and open up new markets. In addition to internal growth opportunities, we also exploit external opportunities by undertaking targeted acquisitions and setting up joint-venture companies.

Operational opportunities are discussed in regular reviews at divisional level, taking account of specific regional circumstances. Knorr-Bremse is constantly working to optimize cost management and streamline process efficiency to further enhance the competitiveness of the Company's products and services.

Synergies between Divisions

Strategic opportunities are also pursued at Group level. The Executive Board and senior management continually monitor long-term trends and any associated potential opportunities that are important for future corporate development and planning.

Our presence in the two related market segments of rail vehicles and commercial vehicles offers numerous synergies. As our product offerings across the two divisions are based on similar core technologies, joint development projects enable the transfer of know-how, intellectual property and experience. Moreover, some systems for rail vehicles and systems for commercial vehicles use similar components and materials. Such synergistic areas include materials science for friction materials, and disk brake technology. Future development work in both product areas will benefit from shared experience in, for example, the use of sensors in environment detection systems.

Megatrends

The following megatrends represent important strategic opportunities for Knorr-Bremse:

URBANIZATION

Growing population sizes and increasing urbanization are opening up opportunities for our rail and commercial vehicle systems business as the demand for faster, safer and more reliable modes of transportation continues to grow.

SUSTAINABILITY

Knorr-Bremse is benefiting from opportunities to expand rail transportation as cities, states and countries make growing efforts to combat climate change. Electrification and other energy-efficient and eco-friendly solutions are the result of a growing public awareness of the importance of energy efficiency, combined with intensified government energy initiatives such as stricter emission regulations. End-to-end EcoDesign is helping to reduce the carbon footprint of our products and make transportation more energy-efficient.

DIGITALIZATION

Digitalization is accelerating system and subsystem connectivity for rail and commercial vehicles, and this in turn is enabling real-time data analysis and predictive maintenance, thereby improving life cycle costs. Artificial intelligence is used to develop new generations of products and create tomorrow's customer solutions. Other digitalization solutions include automated train operation (ATO), condition-based maintenance of rail vehicles, and monitoring tools and telematics solutions for commercial vehicles.

MOBILITY

An increasingly mobile and interconnected global population is continuing to drive up the demand for safer and more efficient mobility and logistics solutions. Our product range across both divisions is making a decisive contribution to meeting this demand. New solutions are being developed in response to this growing trend, primarily in the form of automated driving features and driver assistance functions that aim to reduce accidents, transportation costs and emission levels.

The above mentioned megatrends generate possibilities for growth in both divisions.

General Statement on the Risks and Opportunities Situation

Analysis of the Group-wide risk profile has revealed no identifiable risks that could threaten the survival of the Group of companies. The opportunities presented above are intended to contribute to the achievement of our long-term growth targets. The analysis of the opportunities situation did not give rise to any material changes compared with the previous year.

The Group-wide risk and opportunities situation is evaluated at the quarterly Executive Board meetings and a general statement on the adequacy and effectiveness of our internal control system is made once per year. Based on this, the Executive Board does not see any indications that our risk management or internal control systems are inadequate or ineffective as a whole. (The statement regarding adequacy and effectiveness did not form part of the audit of the consolidated financial statements.)

We continuously make improvements to our risk management and internal control systems based on internal or external audit findings.

Report on Expected Developments**Global Economy: Recession Fears Return**

Just three years after the 2020 recession caused by the pandemic, global growth is once again slowing down rapidly and the global economy is on the brink of a recession.

High inflation caused central banks to react in a speedy and consistent way with a tightening of monetary policy across the world to keep inflation at bay. Though the measures may be useful for stabilizing prices again, they have a deleterious effect on global finances and economic activities. The total amounts invested therefore dropped significantly and the mood in the real estate market deteriorated swiftly in many countries. Russia's war in Ukraine also imposes a number of burdensome factors, especially in the energy sector and other commodity markets. The world's three largest high-growth areas – the USA, the eurozone and China – are experiencing periods of weakness with negative spillover effects for emerging and developing countries. The spot market prices for natural gas have since fallen from their all-time high in the course of 2022 to the level they were at before Russia's war in Ukraine. Commodity prices outside the energy sector, including metal prices in particular, went down due to the weakened demand.

Against this backdrop, the World Bank's analysts are forecasting that global GDP will grow by 1.7% globally in 2023. This growth rate would be the third-weakest in the last three decades, after the global recession in 2020 due to the pandemic and the global financial crisis in 2009. (Source: World Bank).

The eurozone's economic development exceeded expectations in the first half of 2022 before weakening significantly in the second half of the year. The development rests largely upon the consequences of Russia's war in Ukraine, the accompanying supply cuts in the natural gas sector and the ensuing rises in energy prices. With the help of a broad range of countermeasures taken by European governments, the eurozone was able to achieve 3.3% GDP growth despite inflation rising to record levels. Analysts are predicting continued uncertainty about the supply of energy and additional tightening of monetary policy for 2023. Accordingly, analysts are forecasting that growth will stagnate at 0.0%.

In the United States, inflation also reached its highest point in a decade as 2022 progressed before the price rises started to slow down again toward the end of the year. This resulted in the strongest tightening of monetary policy in the last 40 years. Growth in 2022 was only 1.9% due to the shrinking domestic demand. Analysts expect the monetary measures to continue in 2023 in order to counteract the inflationary pressure further. The analysts' forecasts also factored in further

interest rate increases by the US Federal Reserve and the impact of them. Analysts therefore assume that GDP growth will slow down to 0.5% in 2023, which would be the lowest growth in a non-recession year since 1970.

In China, economic development in 2022 was also on the decline and came to 2.7%. This represented the weakest GDP growth since the mid-1970s, apart from 2020. Covid-19

restrictions, a tense real estate sector and consumer restraint had a highly burdensome effect. The analysts are expecting economic growth of 4.3% in 2023 despite these negative influences, which will have impacts that will continue to be felt in 2023. The growth is mainly expected from the removal of pandemic restrictions, from catch-up effects and from the partial softening of the current consumer restraint. (Source: World Bank).

2.32 FULL-YEAR GUIDANCE FOR THE GROUP

Most significant performance indicators		2023 target	2022 actual
Revenues	€ million	7,300-7,700	7,150
Operating EBIT margin (as % of revenues)	%	10.5-12.0	11.1
Free cash flow	€ million	350-550	219

Global Rail and Commercial Vehicle Markets

GLOBAL RAIL VEHICLE PRODUCTION

Despite the uncertainty resulting from the geopolitical situation, and in particular Russia's war in Ukraine, ongoing supply shortages and inflation, the rail vehicle market remains a high-growth market which additionally receives support from various government investment programs. Both in the passenger business and in the freight market, sustainable growth is expected, particularly as a result of climate protection measures and the change in mobility within cities. The aftermarket counts as a continuous driver of growth, and the OE market – which recovered more slowly than originally expected, will also be a driving force in the future.

In Europe, several measures are aimed at promoting the Green Deal and shifting traffic from the road and air to rail. Increasing investments in vehicles and infrastructure are supporting market growth. The biggest growth markets include, in particular, Germany, Scandinavia, France and the Iberian Peninsula. Moreover, alternative drive systems, which are intended to replace diesel multiple units and diesel locomotives, are playing an increasing role. The sanctions imposed by governments on the supply of goods to Russia as a consequence of Russia's war in Ukraine have made the Russian market inaccessible for the indefinite future.

The long-term development of the North American market is shaped by political and economic trends. In particular, the infrastructure package adopted at the end of 2021 includes high levels of investment in the rail industry. Growth is mainly expected not only in freight transport but in the national passenger transportation segments and in urban transportation. New emission standards and safety regulations are expected to favor the industry.

In Asia and the Pacific region, increasing growth is expected in the markets of India and Southeast Asia. The Chinese market stagnated during the Covid-19 pandemic and levels are expected to have remained the same in 2023. This assumes that the Covid-19 situation does not have any strong negative impacts.

The market assessments are based on leading industry studies and internal market research.

GLOBAL COMMERCIAL VEHICLE PRODUCTION

Knorr-Bremse overall expects a +3% recovery in global production to roughly 2.4 million commercial vehicles for 2023. Declining vehicle production in Western Europe and South America contrasted with a recovery in the Chinese market.

Knorr-Bremse is therefore expecting commercial vehicle production in Western Europe to decline by 4% to roughly 460 thousand units in the current year due to the movements toward recession in Western European economies. In Eastern Europe, commercial vehicle production continues to suffer from the war in Ukraine and will likely fall by 8% to roughly 60 thousand units.

In North America, a slight increase in commercial vehicle production to 400 thousand vehicles is expected. In South America, by contrast, pull-forward effects in 2022 are expected to make production drop by 36% to roughly 100 thousand vehicles.

After the strong decline in Chinese commercial vehicle production in 2022, commercial vehicle production in the Asia region in 2023 is expected to increase by 12% to roughly 1,350 thousand units. Continuous growth in India and Japan is expected to be accompanied by a 17% increase in Chinese production, bringing it to 810 thousand vehicles.

The market statistics relate to the truck production rate in each region as published by various organizations, such as LMC.

Revenue, Profitability and Free Cash Flow

The outlook for 2023 is subject to largely stable exchange rates year-on-year, no significant setbacks from Russia's war in Ukraine and, in general, stable geopolitical and economic environments. We expect continued bottlenecks in the supply chains of both divisions. Possible effects from acquisitions or disposals are not taken into account.

From today's perspective, we therefore anticipate revenues of between € 7,300 million and € 7,700 million for fiscal year 2023. Based on this revenue forecast, we expect an operating EBIT margin of between 10.5% and 12.0%. Free cash flow should be in a range between € 350 million and € 550 million.

Other Performance Indicators

A head count slightly above the current annual number of 31,599 employees is expected for 2023.

The dividend proposal for 2022 (€ 1.45 per share) means a payout ratio of 46%. We are aiming for a payout ratio for dividends in a range between 40% and 50% of the Group's earnings after tax in the current fiscal year. This also reflects our longstanding strategy of retaining sufficient funds within the Company to be able to make important investments in the future.

Executive Board's Statement Summarizing Expected Developments

Taking current assumptions about the expected direction of the global economy into account and assuming there are largely stable exchange rates year over year and no new slumps as a result of Russia's war in Ukraine, in general we estimate that the Group's most important key performance indicators will evolve as follows in fiscal year 2023:

Revenues are expected to increase in 2023; the target range is € 7,300 million to € 7,700 million. The EBIT margin is expected to be in a target range from 10.5% to 12.0% and free cash flow is expected to be between € 350 million and € 550 million.

In addition to continuing to deal with the effects of supply chain bottlenecks, the Russia-Ukraine war and inflation developments, the most significant challenges ahead include maintaining our innovation leadership, rapidly responding to changing market circumstances and continually improving our cost position. With this in mind, we are continuing to develop our competencies, invest in the future and adapt our organization to enhance our efficiency and satisfy market demands. This will safeguard Knorr-Bremse's market leadership in both rail and commercial vehicle markets going forward. Coupled with our flexible utilization of liquidity measures, our robust business model gives us access to sufficient financial resources to continue to pursue a sustainable dividend policy and further expand the Group by means of acquisitions as well.

Knorr-Bremse AG (HGB)

The annual financial statements of Knorr-Bremse AG comply with the provisions of German GAAP (according to the German Commercial Code – HGB), whereas the consolidated financial statements have been prepared in compliance with IFRS. As the parent company of the Group, Knorr-Bremse AG performs the role of service provider and holding company, as well as operational management functions. The Company's commercial development depends primarily on the business performance of the operating Group companies. The economic environment in which Knorr-Bremse AG operates essentially corresponds to that of the Group as described in the Business Report under "General Economic and Industry-related Conditions."

Income (loss) from investments in affiliated companies is regarded as the most significant performance indicator. This includes income from participations, income from profit transfer agreements and expenses from loss transfers.

As of year-end 2022, Knorr-Bremse AG had 154 employees (previous year: 122).

Net Assets, Financial Position and Results of Operations

Along with interests in affiliated companies, Knorr-Bremse AG's balance sheet largely reflects receivables from and payables to Group companies. These are centrally administered, partly within the framework of the cash-pooling process managed by Knorr-Bremse AG.

Knorr-Bremse AG's net assets and financial position is impacted by the issuance of a bond in an amount of € 700.0 million and the increase of liabilities to banks in the amount of € 114.3 million to a total of € 120.8 million (previous year: € 6.5 million). Equity fell from € 825.1 million in 2021 to € 667.9 million in 2022, mainly as a result of the smaller investment result and because net income did not completely cover the profit distribution during the fiscal year. The total assets of Knorr-Bremse AG increased primarily as a result of the above-mentioned transactions and amounted to € 2,790.1 million as of December 31, 2022 (previous year: € 2,164.9 million).

In 2022, a lower investment result resulted in a decrease in earnings before taxes to € 173.4 million (previous year: € 362.7 million). The profit transfer from Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Munich, Germany was € 200.0 million less than the original planning. In deviation from the forecast, this led to a significant decrease in the investment result in 2022 to € 201.8 million (previous year:

€ 380.7 million). Taxes on income increased slightly year over year. Overall, Knorr-Bremse AG therefore saw lower earnings after taxes compared with the prior year.

Knorr-Bremse AG acts as an in-house bank for its subsidiaries around the world. This includes handling the central hedging of market price risks. The subsidiaries contract their hedging transactions with Knorr-Bremse AG, which in turn hedges part or all of the residual net risk for the Group with external banks. With the aid of the global process standardization and process transparency achieved through Knorr Excellence, Knorr-Bremse AG is able to efficiently manage its own business and that of its affiliated and related companies. The overall development of Knorr-Bremse AG is deemed to be positive.

Appropriation of Retained Net Earnings

Knorr-Bremse AG posted retained net profit of € 489.6 million in fiscal year 2022 (previous year: € 646.7 million). The Executive Board of Knorr-Bremse AG will suggest that the Annual General Meeting distribute a total dividend of € 233.7 million for the past fiscal year. This corresponds to a dividend per share with dividend rights of € 1.45 (161,200,000 shares), with the balance being carried forward.

Relationship with Affiliated Companies

In the view of the Executive Board, under section 312 of the German Stock Corporation Act (AktG), Knorr-Bremse AG constitutes a company directly dependent on KB Holding GmbH, Grünwald, Germany, which directly holds more than half of the share capital of Knorr-Bremse AG. The Executive Board understands that the shares in KB Holding are held by TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany, the majority of whose shares are in turn held by Stella Vermögensverwaltungs GmbH, Grünwald, Germany. The Company is therefore indirectly dependent on TIB and Stella pursuant to section 17 in conjunction with section 6 (4) AktG. Stella Vermögensverwaltungs-GmbH, Grünwald, Germany, TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany, and KB Holding GmbH, Grünwald, Germany, have informed the Company that they hold a majority interest in the Company, either directly or indirectly. Since the death of Mr. Heinz Hermann Thiele on February 23, 2021, the majority of shares in Stella have been held by his widow and heir, Ms. Nadia Thiele. The voting rights arising from these shares are controlled by Mr. Robin Brühmüller, in his capacity as the executor of the deceased's estate, for the duration of the executorship. Due to his control of the voting rights in Stella, Mr. Brühmüller is also attributed with the 58.99% indirect interest of KB Holding in Knorr-Bremse AG.

Pursuant to section 312 AktG, the Executive Board has drawn up a Report on Relations with Affiliated Companies that includes the following statement by the Executive Board:

"We declare that in the legal transactions and measures shown in the Report on Relations with Affiliated Companies, according to the circumstances known to us at the time at which the said legal transactions took place or measures were taken or refrained from, in each case Knorr-Bremse AG received appropriate consideration for the legal transactions and was not placed at a disadvantage as a result of measures taken or refrained from." The report was verified by the Auditor and received an unqualified opinion.

Risks and Opportunities

Knorr-Bremse AG participates in the risks and opportunities of its subsidiaries; the degree of participation depends on the respective shareholding. For more details, please refer to the "Report on Risks, Opportunities and Expected

Developments" section. Furthermore, the liability relationships existing between Knorr-Bremse AG and its subsidiaries may result in exposure to risks.

Expected Developments

Knorr-Bremse AG's future business growth is closely linked to the Group's ongoing operating performance. The Report on Risks, Opportunities and Expected Developments provides more details of our prospects and plans for our operating activities.

Knorr-Bremse AG anticipates a sharp rise in the investment result in 2023. Our future ability to pay dividends thus remains assured. Based on the assumptions made for the Group, Knorr-Bremse AG's net assets, financial position and results of operations can be expected to remain stable.

Munich, March 13, 2023
Knorr-Bremse AG

The Executive Board

MARC LLISTOSELLA

FRANK MARKUS WEBER

DR. CLAUDIA MAYFELD

BERND SPIES

DR. JÜRGEN WILDER

Independent limited assurance practitioner's report regarding the nonfinancial group statement

To the Supervisory Board of Knorr-Bremse AG, Munich

We have performed a limited assurance engagement on the non-financial group statement of Knorr-Bremse AG, Munich (hereinafter "company" or "Knorr-Bremse") for the period from January 1, 2022 to December 31, 2022 (hereinafter the "non-financial group statement").

Responsibilities of Management

Management of the company is responsible for the preparation of the non-financial group statement 2022 in accordance with Sections 315b, 315c in conjunction with 289c to 289e HGB ["Handelsgesetzbuch": German Commercial Code] and Article 8 of the REGULATION (EU) 2020/852 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 June, 2020 on establishing a framework to facilitate sustainable investment and amending Regulation (EU) 2019/2088 (hereinafter the "EU Taxonomy Regulation") and the Delegated Acts adopted thereunder, as well as for making their own interpretation of the wording and terms contained in the EU Taxonomy Regulation and the delegated acts adopted thereunder as set out in section "EU-Taxonomy" of the non-financial group statement.

This responsibility includes the selection and application of appropriate non-financial reporting methods and making assumptions and estimates about individual non-financial disclosures of the group that are reasonable in the circumstances. Furthermore, management is responsible for such internal control as they consider necessary to enable the preparation of a non-financial group statement that is free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

The EU Taxonomy Regulation and the Delegated Acts issued thereunder contain wording and terms that are still subject to considerable interpretation uncertainties and for which clarifications have not yet been published in every case. Therefore, management has disclosed their interpretation of the EU Taxonomy Regulation and the Delegated Acts adopted thereunder in section "EU-Taxonomy" of the non-financial group statement. They are responsible for the defensibility of this interpretation. Due to the immanent risk that indeterminate legal terms may be interpreted differently, the legal conformity of the interpretation is subject to uncertainties.

Independence and Quality Assurance of the Assurance Practitioner's firm

We have complied with the independence and quality assurance requirements set out in the national legal provisions and professional pronouncements, in particular the Professional Code for German Public Auditors and Chartered Accountants (in Germany) and the quality assurance standard of the Institute of Public Auditors in Germany (*Institut der Wirtschaftsprüfer in Deutschland, IDW*) regarding quality assurance requirements in audit practice (IDW QS 1).

Responsibility of the Assurance Practitioner

Our responsibility is to express a conclusion with limited assurance on the non-financial group statement based on our assurance engagement.

We conducted our assurance engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised): "Assurance Engagements other than Audits or Reviews of Historical Financial Information" issued by the IAASB. This standard requires that we plan and perform the assurance engagement to obtain limited assurance about whether any matters have come to our attention that cause us to believe that the company's non-financial group statement is not prepared, in all material respects, in accordance with Sections 315b, 315c in conjunction with 289c to 289e HGB and the EU Taxonomy Regulation and the Delegated Acts issued thereunder as well as the interpretation by management disclosed in section "EU-Taxonomy" of the non-financial group statement.

In a limited assurance engagement, the procedures performed are less extensive than in a reasonable assurance engagement, and accordingly, a substantially lower level of assurance is obtained. The selection of the assurance procedures is subject to the professional judgment of the assurance practitioner.

In the course of our assurance engagement we have, among other things, performed the following assurance procedures and other activities:

- Inquiries of group-level personnel who are responsible for the materiality analysis in order to understand the processes for determining material topics and respective reporting boundaries for Knorr-Bremse AG
- A risk analysis, including media research, to identify relevant information on Knorr-Bremse AG's sustainability performance in the reporting period
- Reviewing the suitability of internally developed Reporting Criteria
- Evaluation of the design and the implementation of systems and processes for the collection, processing and monitoring of disclosures, including data consolidation, on environmental, employee and social matters, respect for human rights and combating corruption and bribery
- Inquiries of group-level personnel who are responsible for determining disclosures on concepts, due diligence processes, results and risks, performing internal control functions and consolidating disclosures
- Inspection of selected internal and external documents
- Analytical procedures for the evaluation of data and of the trends of quantitative disclosures as reported at corporate level by all sites
- Evaluation of local data collection, validation and reporting processes as well as the reliability of reported data based on samples of the sites in Pamplona (Spain) and Aldersbach (Germany)
- Evaluation of the process for the identification of taxonomy-eligible as well as the taxonomy-aligned economic activities and the corresponding disclosures in the non-financial group statement
- Assessment of the overall presentation of the disclosures

In determining the disclosures in accordance with Article 8 of the EU Taxonomy Regulation, management is required to interpret undefined legal terms. Due to the immanent risk that undefined legal terms may be interpreted differently, the legal conformity of their interpretation and, accordingly, our assurance engagement thereon are subject to uncertainties.

Assurance Opinion

Based on the assurance procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the non-financial group statement of Knorr-Bremse AG, Munich for the period from January 1, 2022 to December 31, 2022 has not been prepared, in all material respects, in accordance with Sections 315b, 315c in conjunction with 289c to 289e HGB and the EU Taxonomy Regulation and the Delegated Acts issued thereunder as well as the interpretation by management as disclosed in section "EU-Taxonomy" of the non-financial group statement.

Restriction of Use/General Engagement Terms

This assurance report is solely addressed to the Supervisory Board of Knorr-Bremse AG, Munich.

Our assignment for Knorr-Bremse AG and professional liability is governed by the General Engagement Terms for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften (German Public Auditors and Public Audit Firms) (Allgemeine Auftragsbedingungen für Wirtschaftsprüfer und Wirtschaftsprüfungsgesellschaften) in the version dated January 1, 2017 (https://www.kpmg.de/bescheinigungen/lib/aab_english.pdf). By reading and using the information contained in this assurance report, each recipient confirms having taken note of provisions of the General Engagement Terms (including the limitation of our liability for negligence to EUR 4 million as stipulated in No. 9) and accepts the validity of the attached General Engagement Terms with respect to us.

Munich, 17. March 2023

KPMG AG
Wirtschaftsprüfungsgesellschaft
[Original German version signed by:]

Hanshen
Wirtschaftsprüfer
[German Public Auditor]

ppa. Baumann

03

Consolidated Financial Statements

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Consolidated statement of income

of Knorr-Bremse AG, for the Fiscal Year from January 1 to December 31, 2022

3.01 CONSOLIDATED STATEMENT OF INCOME

in € thousand	Notes	2022	2021
Revenues	E.1.	7,149,740	6,705,640
Change in inventory of unfinished/finished products	E.2.	29,953	39,074
Own work capitalized	E.2.	105,020	83,107
Total operating performance		7,284,713	6,827,821
Other operating income	E.3.	128,755	111,920
Cost of materials	E.4.	(3,764,327)	(3,376,685)
Personnel expenses	E.5.	(1,797,391)	(1,647,713)
Other operating expenses	E.6.	(806,138)	(708,838)
Earnings before interest, tax, depreciation and amortization (EBITDA)		1,045,612	1,206,505
Depreciation, amortization and impairment	E.7.	(324,350)	(290,438)
Earnings before interest and taxes (EBIT)		721,262	916,067
Interest income	E.8.	49,132	15,901
Interest expenses	E.8.	(50,552)	(55,872)
Other financial result	E.8.	(31,074)	4,717
Income before taxes		688,768	880,813
Taxes on income	E.9.	(182,513)	(233,445)
Net income		506,255	647,368
Thereof attributable to:			
Profit (loss) attributable to non-controlling interests		18,575	26,058
Profit (loss) attributable to the shareholders of Knorr-Bremse AG		487,680	621,310
		506,255	647,368
Earnings per share in €	E.10.		
undiluted		3.03	3.85
diluted		3.03	3.85

Consolidated statement of comprehensive income

of Knorr-Bremse AG, for the Fiscal Year from January 1 to December 31, 2022

3.02 CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

in € thousand	Notes	2022	2021
Net income		506,255	647,368
Actuarial gains and losses	F.11.	73,634	40,776
Equity instruments recognized directly in equity	F.15.3.	6,751	3,643
Deferred taxes	E.9.2.	(20,089)	(7,187)
Items that will not be reclassified to profit or loss		60,296	37,232
Currency translation		(7,494)	106,483
Hedging transactions reserve	F.15.4.	(22,500)	(15,591)
Reserve for costs of hedging	F.15.4.	2,661	(2,858)
Deferred taxes	E.9.2.	6,229	5,966
Items that may be reclassified to profit or loss		(21,104)	94,000
Other comprehensive income after taxes		39,192	131,232
Comprehensive income		545,447	778,600
Total comprehensive income attributable to non-controlling interests		14,910	35,370
Total comprehensive income attributable to the shareholders of Knorr-Bremse AG		530,537	743,230

Consolidated Balance Sheet

of Knorr-Bremse AG, as at December 31, 2022

3.03 ASSETS

in € thousand	Notes	2022	2021
Assets			
Intangible assets	F.1.	766,433	587,648
Goodwill	F.1./F.2.	573,719	418,179
Property, plant and equipment	F.3.	1,814,451	1,790,359
Investments accounted for using the equity method	C.6.	79,567	22,073
Other financial assets	F.4.	122,822	215,173
Other assets	F.5.	92,427	79,053
Income tax receivables	F.16.	282	1,012
Assets from employee benefits	F.11.	19,499	30,092
Deferred tax assets	E.9.	140,459	117,934
Non-current assets		3,609,659	3,261,523
Inventories	F.6.	1,141,940	1,002,178
Trade accounts receivable	F.5.	1,343,305	1,230,273
Other financial assets	F.4.	103,116	63,823
Other assets	F.5.	177,694	130,640
Contract assets	E.1.	69,491	74,985
Income tax receivables	F.16.	53,880	55,529
Cash and cash equivalents	F.7.	1,342,587	1,380,210
Assets held for sale and disposal groups	F.8.	170,245	–
Current assets		4,402,258	3,937,638
Total assets		8,011,917	7,199,161

3.04 LIABILITIES

in € thousand	Notes	2022	2021
Equity			
Subscribed capital	F.9.1.	161,200	161,200
Capital reserves	F.9.2.	13,884	13,884
Retained earnings	F.9.3.	10,320	13,300
Other components of equity		(123,910)	(196,173)
Profit carried forward		2,012,614	1,714,824
Profit attributable to the shareholders of Knorr-Bremse AG		487,680	621,310
Equity attributable to the shareholders of Knorr-Bremse AG		2,561,788	2,328,345
Equity attributable to non-controlling interests		129,533	97,183
thereof share of non-controlling interests in net income		18,575	26,058
Equity		2,691,321	2,425,528
Liabilities			
Provisions for pensions	F.11.	219,835	312,066
Provisions for other employee benefits	F.11.	21,536	21,664
Other provisions	F.12.	194,192	227,831
Financial liabilities	F.14.	2,022,161	1,296,131
Other liabilities	F.13.	2,867	3,945
Income tax liabilities	F.16.	5,782	79,787
Deferred tax liabilities	E.9.	188,737	134,861
Non-current liabilities		2,655,110	2,076,285
Provisions for other employee benefits	F.11.	10,486	7,886
Other provisions	F.12.	171,381	240,740
Trade accounts payable	F.13.	1,213,954	1,166,062
Financial liabilities	F.14.	655,896	852,379
Other liabilities	F.13.	106,440	101,992
Contract liabilities	E.1.	214,258	265,567
Income tax liabilities	F.16.	137,950	62,722
Liabilities directly associated with assets held for sale	F.8.	155,120	–
Current liabilities		2,665,485	2,697,348
Liabilities		5,320,595	4,773,633
Total equity and liabilities		8,011,916	7,199,161

Consolidated Statement of Cash Flows

of Knorr-Bremse AG, for the Fiscal Year from January 1 to December 31, 2022

3.05 CONSOLIDATED STATEMENT OF CASH FLOWS

in € thousand	Notes	2022	2021
Net income (including minority interests)		506,255	647,368
Adjustments for			
Depreciation, amortization and impairment losses on intangible assets and property, plant and equipment		324,350	290,438
Change of impairment on inventories		55,223	796
Change of impairment on trade accounts receivable and contract assets		9,997	19,963
(Gain)/loss on the sale of consolidated companies and other business units		9,157	(2,929)
(Gain)/loss on the disposal of fixed assets		(614)	(15,883)
Adding to, reversing and discounting provisions		83,240	85,554
Non-cash changes in the measurement of derivatives		4,993	19,115
Other non-cash expenses and income		55,658	(19,227)
Interest result		1,420	39,971
Investment result		13,803	2,339
Income tax expense		182,513	233,444
Income tax payments		(203,550)	(182,287)
Changes of			
inventories, trade accounts receivable and other assets that cannot be allocated to investing or financing activities		(493,713)	(115,111)
trade accounts payable as well as other liabilities that cannot be allocated to investing or financing activities		139,832	84,821
Provisions due to utilization		(147,010)	(112,884)
Cash flow from operating activities	G.1.	541,554	975,489
Proceeds from the sale of intangible assets		(0)	890
Disbursements for investments in intangible assets		(124,725)	(133,631)
Proceeds from the sale of property, plant and equipment		29,909	19,140
Disbursements for investments in property, plant and equipment		(227,423)	(261,895)
Proceeds from financial investments and from the sale of investments		83,117	11,250
Disbursements for investments in financial assets		(95,404)	(92,652)
Proceeds from/(disbursements for) the sale of consolidated companies and other business units		(4,475)	5,650
Disbursements for the acquisition of consolidated companies and other business units		(203,415)	(87,840)
Interest received		41,212	8,333
Disbursements for investments in plan assets (pensions)		(3,795)	(3,619)
Cash flow from investing activities	G.2.	(504,998)	(534,374)

in € thousand	Notes	2022	2021
Proceeds from borrowings		740,220	47,334
Disbursements from the repayment of borrowings		(45,640)	(1,044,505)
Disbursements for lease liabilities		(64,711)	(58,823)
Interest paid		(31,942)	(36,616)
Dividends paid to parent company shareholders		(298,220)	(245,024)
Dividends paid to non-controlling interests		(40,781)	(29,811)
Payments for acquisition of non-controlling interests		(366,697)	(25,113)
Proceeds from grants and subsidies		9,731	8,582
(Disbursements)/proceeds from settlement of derivatives		(62,769)	(40,919)
Cash flow from financing activities	G.3.	(160,809)	(1,424,895)
Cash flow changes		(124,253)	(983,778)
Change in cash funds resulting from exchange rate and valuation-related movements		8,496	69,551
Change in cash funds		(115,757)	(914,227)
Cash funds at the beginning of the period		1,326,497	2,240,725
Cash funds at the end of the period	G.4.	1,210,739	1,326,497
Cash and cash equivalents		1,342,587	1,380,210
Short-term securities available for sale		2	2
Reclassification as assets held for sale and disposal groups		5,183	0
Short-term liabilities to banks (less than 3 months)		(137,033)	(53,715)

Consolidated Statement of Changes in Equity

of Knorr-Bremse AG, as at December 31, 2022

3.06 CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

in € thousand	Notes	Subscribed capital	Capital reserve	Retained earnings	Group earnings
As of Jan. 1, 2022		161,200	13,884	13,300	2,336,134
Dividends		-	-	-	(298,220)
Net income		-	-	-	487,680
Other comprehensive income after taxes		-	-	-	(25,300)
Comprehensive income		-	-	-	462,380
Acquisition/disposal of non-controlling interests		-	-	(2,980)	-
Gains and losses on hedging transactions and costs of hedging reclassified to inventories		-	-	-	-
As of Dec. 31, 2022	F.8.	161,200	13,884	10,320	2,500,294
As of Jan. 1, 2021		161,200	13,884	13,300	1,959,848
Dividends		-	-	-	(245,024)
Net income		-	-	-	621,310
Other comprehensive income after taxes		-	-	-	-
Comprehensive income		-	-	-	621,310
Acquisition of non-controlling interests		-	-	-	-
Gains and losses on hedging transactions and costs of hedging reclassified to inventories		-	-	-	-
As of Dec. 31, 2021	F.8.	161,200	13,884	13,300	2,336,134

Other components of equity

	Currency translation	Reserve for costs of hedging	Hedging transactions reserve	Equity instruments recognized directly in equity	Revaluations from defined pension benefits (IAS 19)	Equity attributable to the shareholders of Knorr-Bremse AG	Equity attributable to non-controlling interests	Total equity
	(90,970)	(3,222)	(7,854)	(32,051)	(62,076)	2,328,345	97,183	2,425,528
	-	-	-	-	-	(298,220)	(40,781)	(339,001)
	-	-	-	-	-	487,680	18,575	506,255
	(3,853)	1,788	(15,399)	32,051	53,569	42,856	(3,664)	39,192
	(3,853)	1,788	(15,399)	32,051	53,569	530,536	14,911	545,447
	-	-	-	-	-	(2,980)	58,219	55,239
	-	487	3,619	-	-	4,106	-	4,106
	(94,822)	(947)	(19,634)	-	(8,507)	2,561,788	129,533	2,691,321
	(188,077)	(3,353)	5,276	(35,694)	(95,731)	1,830,653	91,008	1,921,660
	-	-	-	-	-	(245,024)	(29,195)	(274,219)
	-	-	-	-	-	621,310	26,058	647,368
	97,107	(1,136)	(11,349)	3,643	33,655	121,920	9,312	131,232
	97,107	(1,136)	(11,349)	3,643	33,655	743,230	35,370	778,600
	-	-	-	-	-	-	-	-
	-	1,267	(1,781)	-	-	(514)	-	(514)
	(90,970)	(3,222)	(7,854)	(32,051)	(62,076)	2,328,345	97,183	2,425,528

Notes to the Consolidated Financial Statements

of Knorr-Bremse AG, as at December 31, 2022

A. Basis of Preparation

A.1. About the Company

Knorr-Bremse AG (the "Company") is a joint stock company domiciled in Germany. The Company's registered office and headquarters are located in Moosacher Str. 80, 80809 Munich, Germany. The Company is registered in the City of Munich commercial register under HRB 42031. The consolidated financial statements include the Company and its subsidiaries (jointly referred to as the "Group" or "Knorr-Bremse"). The Group is the global market leader¹ for braking systems for rail and commercial vehicles and a leading supplier of other systems and transportation technologies. The product portfolio of the Rail Vehicle Systems division includes braking systems, entrance systems, HVAC systems, sanitary systems, coupling systems, a portfolio of digital solutions and smart services for optimizing rail transportation, power electrics and control technology, hardware and programming tools for train control and management systems (TCMS), electromechanical components and electrical traction equipment for light rail vehicles, signal systems, stationary and mobile testing equipment, wiper and wash systems and extensive aftermarket solutions (RailServices). The product portfolio of the Commercial Vehicles Systems division includes, among other things, pneumatic braking systems (i.e., brake control systems, disk brakes, drum brakes, brake cylinders, valves and pedal units) and steering systems, vehicle dynamics solutions (i.e., anti-lock braking systems and electronic stability programs),

driver assistance systems (e.g., emergency braking systems), automated driving and electronic leveling control, energy supply and distribution systems, including compressors and air treatment, products for boosting fuel efficiency such as engine components and transmission control systems (i.e., vibration dampers, engine air management, transmission control, and gear/clutch actuation) and trailer and aftermarket solutions.

A.2. Accounting Principles

The Company's consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS), as adopted by the European Union (EU), as well as the supplementary provisions of section 315e (1) of the German Commercial Code (HGB). All mandatory standards applicable on the reporting date were implemented. The consolidated statement of income is prepared based on the total cost method.

A.3. Measurement bases

The Group consistently applied the following accounting methods to all periods presented in these consolidated financial statements.

The consolidated financial statements were prepared according to historical purchase and production costs with the exception of the following balance sheet items with different measurement bases on the respective reporting dates. [Table → 3.07](#)

3.07 MEASUREMENT BASES

Asset	Method
Derivatives	Fair value
Non-derivative financial instruments, measured at fair value through profit or loss	Fair value
Non-derivative financial instruments, measured at fair value through OCI	Fair value
Contingent consideration in a business combination	Fair value
Net defined benefit liability (asset) from defined benefit plans	Present value of the defined benefit obligation less the fair value of the plan assets

¹ Unaudited

A.4. Functional and Presentation Currency

The consolidated financial statements are presented in euro, the Company's functional currency. All financial information presented in euros is rounded to thousands of euros (in € thousand), unless otherwise indicated. This may result in rounding differences.

A.5. Use of discretionary decisions and estimates

The preparation of the consolidated financial statements require a certain amount of discretionary decisions, estimates and assumptions by the Executive Board, which affect the application of the accounting methods and the stated amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Changes of estimates are reported prospectively.

Discretionary decisions in the application of accounting policies influence the amounts recognized in the consolidated financial statements primarily in relation to revenues recognized over time in the Rail Vehicle Systems segment. This concerns in particular the identification of individual performance obligations from customer contracts as well as the estimation of the expected total costs (Chapter E.1.). For more details on revenues, see Chapter D.1. In addition, material discretionary decisions apply in determining the term of leases (Chapter H.11), especially in establishing whether the exercise of extension options will materialize with an adequate degree of certainty.

Material effects on the consolidated financial statements as a result of assumptions and estimation uncertainty particularly occur in the measurement of defined benefit obligations (Chapters D.15. and F.11.) and impairment tests (Chapters D.18. and D.19.) resulting from key actuarial assumptions or assumptions for determining the recoverable amount. There are also assumptions and estimation uncertainty in the recognition as well as measurement of other provisions for litigation and warranties and contingent liabilities (Chapter D.16. and F.12. as well as H.8.). If revenue is recognized over time according to project progress, assumptions and estimation uncertainty occur in particular in relation to planned project costs (Chapter E.1). The measurement of the warranty provisions is based on estimates regarding expected warranty claims. An important factor affecting these estimates is the expected number and size of future warranty claims. In this regard, there is a significant estimation uncertainty resulting from the large range of numbers of potential warranty

claims. There is further significant estimation uncertainty in the determination of the fair values of the assets and liabilities identified in business acquisitions (Chapter C.3.) as well as in determining the borrowing cost for leases (Chapter H.11). In the 2022 fiscal year, essentially no material effects resulted from the adjustment of assumptions made in the past or from the resolution of previous uncertainties in relation to the aforementioned matters.

The consolidated financial statements were approved for publication by the Executive Board on March 13, 2023.

B. Financial reporting standards

B.1. Financial Reporting Standards issued by the IASB and applied for the first time

These consolidated financial statements are prepared by the Group in accordance with the IFRS regulations. All IFRS accounting standards mandatorily applicable in the European Union as of December 31, 2022 are applied. Early application options for new financial reporting standards before mandatory application are not used. No financial reporting standards of significance were applied for the first time in the Group in the fiscal year.

Other changes

The following new or amended standards have no or no material effects on the consolidated financial statements.

- Changes to IAS 16: Property, Plant and Equipment – Proceeds before Intended Use
- Changes to IAS 37: Onerous Contracts – Cost of Fulfilling a Contract
- Changes to IFRS 3: Reference to the Conceptual Framework
- Changes to IFRS 16: Covid-19-Related Rent Concessions after June 30, 2021
- Annual improvements 2018–2020 Changes to IFRS 1, IFRS 9, IFRS 16 and IAS 41

B.2. Standards Issued by the IASB That Have Not Yet Been Applied

In addition to the standards presented above, the IASB has also issued additional standards, interpretations and changes to standards or interpretations which are also not required to

be applied at present and which, in some cases, still require adoption in EU law (“endorsement”) to be applicable. [Table → 3.08](#) Currently, the Group does not assume that applying these standards, interpretations and changes will have a significant effect on the presentation of the financial statements.

3.08 ACCOUNTING STANDARDS ISSUED BY THE IASB

New or revised standards and interpretations	Contents of, or change to, standard or interpretation	Date of mandatory application in EU*
Changes to IAS 1:	Classification of liabilities as current or non-current	01/01/2024
Changes to IAS 1 and IFRS Practice Statement 2:	Disclosure of accounting policies	01/01/2023
Changes to IAS 8:	Definition of estimates	01/01/2023
Changes to IAS 12:	Deferred Tax related to Assets and Liabilities arising from a Single Transaction	01/01/2023
Changes to IFRS 16:	Lease Liability in a Sale and Leaseback Transaction	01/01/2024
Changes to IFRS 17:	IFRS 17 Insurance Contracts and changes to IFRS 17 Insurance Contracts	01/01/2023
Changes to IFRS 10 and IAS 28:	Sales or contributions of assets between an investor and its associate or joint venture	Postponed indefinitely

* Applicable to annual periods beginning on or after the date specified.

C. Consolidation

C.1. Principles of Consolidation

The consolidated financial statements include the financial statements of the Company and all material affiliated companies. Subsidiaries controlled by the Group are fully consolidated. The Group controls a company if it is exposed to fluctuating returns or is entitled to these returns and has the ability to influence these returns using its power of control over the company. The financial statements of subsidiaries are contained in the consolidated financial statements from the date on which the control starts and up to the date on which the control ends.

The Group recognizes business combinations based on the acquisition method. As part of the capital consolidation, the acquisition costs of the acquired shares are offset against the equity of the subsidiaries assigned to the Group. The acquired, identifiable net assets and the consideration transferred are generally recognized at fair value. A positive difference that arises between the acquisition costs of the acquired shares and the identifiable net assets upon initial consolidation is recognized as goodwill. All goodwill is reviewed annually for impairment. A negative difference is reported directly in profit and loss.

The consideration transferred does not contain any amounts associated with the fulfillment of previously existing relationships. Such amounts are fundamentally reported in profit and loss.

Any conditional obligation to provide consideration is reported at the fair value at the time of acquisition. If the contingent consideration is classified as equity, it is not remeasured and a settlement is recognized in equity. Otherwise, other contingent considerations are measured at fair value on each reporting date and subsequent changes to the fair value of the contingent considerations are reported in profit and loss.

Non-controlling interests are recognized with their corresponding share of the identifiable net assets of the acquired company at the date of acquisition.

Associated companies are companies in which the Group has significant influence, but no control or joint control in relation to financial and business policy. A joint venture is an agreement over which the Group exercises joint control, whereby the Group has rights to the net assets of the agreement rather than rights to its assets and obligations for its liabilities.

Shares in associated companies and joint ventures are reported based on the equity method. They are initially recognized at the acquisition costs, which also include transaction costs. After the initial recognition, the consolidated financial statements contain the Group’s share in the comprehensive income, less distributions received, of the investments reported based on the equity method and the change in value of the amortized difference up to the date on which the significant influence or joint control ends.

For interests in joint arrangements that are to be classified as a joint operation according to IFRS 11, the Group recognizes

its interest in any jointly controlled or created assets, liabilities, revenue or expenses. These are included in the financial statements under the respective item designations.

All intragroup receivables and payables, expenses and income are eliminated within the scope of the debt consolidation as well as the consolidation of expense and income.

C.2. Foreign Currency Translation

Foreign currency receivables and payables of the companies included in the consolidated financial statements are reported at the spot exchange rate on the date of the transaction. These items are translated at the closing rate on the reporting date.

Annual financial statements of consolidated Group companies prepared in a foreign currency are translated using the modified reporting date method. Accordingly, assets and

Unrealized gains from transactions with companies that are recognized based on the equity method are derecognized against the investment in the amount of the Group's interest in the associated company. Unrealized losses are eliminated in the same manner as unrealized gains, but only if there is no indication of an impairment.

liabilities from foreign Group companies are translated at the closing rate on the reporting date, while income and expenses from foreign Group companies are translated at the average rate for the respective fiscal year. The resulting currency translation differences are reported in other comprehensive income and recognized in the line item currency translation as long as the currency translation difference is not assigned to the non-controlling interests.

The exchange rates on which the foreign currency translation is based, which have a material effect on the consolidated financial statements are listed below: [Table → 3.09](#).

3.09 CURRENCY EXCHANGE RATES

EUR per foreign currency unit		12/31/2022		12/31/2021	
		Closing rate	Average rate	Closing rate	Average rate
USA	USD	0.93756	0.94949	0.88292	0.84311
China	CNY	0.13590	0.14125	0.13899	0.13058
Hungary	HUF	0.00249	0.00256	0.00271	0.00279
Czech Republic	CZK	0.04147	0.04071	0.04023	0.03891
United Kingdom	GBP	1.12748	1.17264	1.19008	1.16073
India	INR	0.01134	0.01209	0.01187	0.01142
Japan	JPY	0.00711	0.00725	0.00767	0.00771
Hong Kong	HKD	0.12025	0.12127	0.11321	0.10849
South Africa	ZAR	0.05525	0.05811	0.05536	0.05711
Brazil	BRL	0.17735	0.18383	0.15848	0.15609
Thailand	THB	0.02715	0.02713	0.02656	0.02653

C.3. Changes to the Group

Additions to the consolidated companies and business combinations

With regard to the accounting methods for business combinations, we refer to the information under Chapter C.1.

CHANGES IN THE SCOPE OF CONSOLIDATION AND ACQUISITION OF BUSINESSES

Knorr-Bremse Rail Transportation Equipment (Changchun) Co., Ltd, based in Changchun, China was established and included in the scope of consolidation for the first time in the 2022 fiscal year.

In December 2021, Knorr-Bremse concluded a purchase agreement for the remaining 51% of the shares in Guangdong

Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co., Ltd., Jiangmen, Guangdong, China. The necessary registration of the change in the ownership of Guangdong Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co., Ltd., based in Jiangmen, Guangdong, China with the relevant Chinese supervisory authority took place in the 2022 fiscal year, with ownership of the shares passing to Knorr-Bremse. Since Knorr-Bremse already controlled Guangdong Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co., Ltd., Jiangmen, Guangdong, China, in the past due to the enforceability of management decisions and control of operations, this company was already fully consolidated in previous years.

The following companies were liquidated in the 2022 fiscal year and deconsolidated:

- Albatros GmbH, Munich, Germany
- KB Gamma Beteiligungs GmbH, Munich, Germany
- KB Lambda Beteiligungs GmbH, Munich, Germany
- KB Omikron Beteiligungs GmbH, Munich, Germany
- KB Sigma Beteiligungs GmbH, Munich, Germany
- Knorr-Bremse Verwaltungsgesellschaft mbH, Munich, Germany
- Knorr-Bremse US Beteiligungs GmbH, Munich, Germany
- Knorr-Bremse US Investment GmbH, Munich, Germany
- Knorr-Bremse Pensionsgesellschaft mbH, Munich/Germany
- Knorr-Bremse Systeme für Nutzfahrzeuge Pensionsgesellschaft mbH, Munich/Germany

Against the background of the Russia–Ukraine war and the accompanying sanctions, Knorr-Bremse fully withdrew from Knorr-Bremse KAMA Systems for Commercial Vehicles OOO, based in Naberezhnye Chelny, Russia, its fully consolidated joint venture with Russian company Kamaz. Knorr-Bremse left all positions on the board of the joint venture and transferred the shares in the joint venture back to Knorr-Bremse Kama Systems for Commercial Vehicles OOO, based in Naberezhnye Chelny, Russia. The company was deconsolidated in fiscal 2022.

Additional changes in the scope of consolidation occurred as a result of the following mergers:

- KB Media GmbH Marketing und Werbung, Munich, Germany to Knorr-Bremse Services GmbH, Munich, Germany
- Knorr-Bremse Rail Systems OOO, Moscow, Russia to Knorr-Bremse Rail Systems CIS Holding OOO, Moscow, Russia

MATERIAL BUSINESS COMBINATIONS

ACQUISITION OF COJALI

Knorr-Bremse acquired 55% of shares in Cojali S.L., based in Ciudad Real, Spain through a purchase agreement dated June 7, 2022. The transaction closed on October 31, 2022.

With its investment in Cojali, Knorr-Bremse is reinforcing its position as a partner for systems in the fast-growing, global market for digital, connected solutions. Knorr-Bremse is consequently expanding its existing aftermarket business with a vehicle-specific software solution that enables new fields of business in big data and in predictive maintenance based on it. Moreover, Knorr-Bremse is also growing further in line with the megatrend of digitalization.

Cojali S.L., based in Ciudad Real, Spain, and its subsidiaries contributed revenues of € 16,470 thousand and profit before taxes of € 4,530 thousand to consolidated earnings in fiscal 2022.

a) Consideration transferred

The preliminary purchase price for Cojali is € 230,458 thousand. As of December 31, 2022, €171,250 thousand of the purchase price was paid in cash. The final purchase price

depends on the agreed closing accounts, which had not yet been conclusively agreed by the contracting parties by the time the consolidated financial statements were being prepared. Furthermore, the purchase agreement also provides for a staggered earnout arrangement in line with Cojali's cumulative EBIT for the 2022 to 2026 fiscal years, which was recognized with € 35,011 thousand. The expected, undiscounted additional purchase price payments based on the earnout are between € 39,000 thousand and € 41,000 thousand.

b) Costs associated with the business combination

The Group has so far incurred acquisition-related costs of € 1,154 thousand for due diligence as well as for legal and notary fees. These costs are recognized in other operating expenses.

c) Identifiable assets and liabilities acquired

The fair values of the assets and liabilities acquired at the date of acquisition are summarized below: [Table → 3.10](#)

3.10 FAIR VALUES OF THE ASSETS AND LIABILITIES ACQUIRED

in € thousand	
Customer relationships	31,240
Brands	19,768
Software, licenses and acquired rights	75,422
Intangible assets in development	654
Other intangible assets	489
Property, plant and equipment	10,722
Deferred tax assets	877
Other assets	1,087
Inventories	19,170
Trade accounts receivable	20,359
Cash and cash equivalents	20,680
Trade accounts payable	(8,043)
Financial liabilities	(13,854)
Deferred tax liabilities	(32,815)
Other liabilities	(4,431)
Total identifiable net assets acquired	141,323
of which minority interest at fair value	63,912
Proportional fair value of the identifiable net assets	77,411
Gross trade accounts receivable	20,452
Impairment losses and gains	(93)
Net trade accounts receivable	20,359

The minority interest in the acquired net assets is composed of 45% minorities in Cojali S.L., based in Ciudad Real, Spain; 48% minorities in Cojali Italia S.R.L., based in Cesano Boscone Milan, Italy.

Knorr-Bremse agreed to a call option for purchasing the 49% interests in Cojali USA Inc., based in Doral in the US. The Group plans to exercise the call option and for this reason accounts for the call option using the anticipated acquisition method. Accordingly, a liability is recognized at amortized cost of the call option and minority interests are presented as

if they were attributable to the Group. In the event of changes in estimates, the fair value is adjusted with an effect on income in the financial result.

d) Goodwill

The goodwill as a result of the acquisition was recognized as follows: [Table → 3.11](#)

3.11 DETERMINATION OF GOODWILL

in € thousand	
Consideration transferred	230,458
Proportional fair value of the identifiable net assets	(77,411)
Proportional goodwill	153,047

The goodwill primarily results from the future development potential of the existing technologies, the anticipated broadening of the product and customer base and the know-how of the staff. This is allocated to the Commercial Vehicle Systems segment. The recognized goodwill is not tax-deductible.

If the acquisition had occurred at the start of the fiscal year, consolidated revenue would have been increased by a further € 76,504 thousand to € 7,226,244 thousand and consolidated earnings before tax would have been increased by € 30,123 thousand to € 718,891 thousand. The calculation of these amounts is based on an assumption that the fair values from the purchase price allocation at the date of acquisition would also have been valid in the event of an acquisition on January 1, 2022.

ACQUISITION OF DSB COMPONENT WORKSHOPS

Knorr-Bremse Systeme für Schienenfahrzeuge GmbH acquired 100% of the shares in Selskabet af 3. juli 2021, based in Taastrup, Denmark (DSB Component Workshops), from Danske Statsbaner (DSB) through a purchase agreement dated July 7, 2021. The transaction closed on August 31, 2022.

By purchasing DSB Component Workshops, Knorr-Bremse has the possibility of developing an extended service hub for Denmark and neighboring rail markets, leveraging growth potential in the region and enabling innovative services for rail transportation.

DSB Component Workshops contributed revenues of € 27,556 thousand and a loss before taxes of € 4,431 thousand contributed to consolidated earnings in fiscal 2022.

a) Consideration transferred

The preliminary purchase price for DSB Component Workshops is € 55,780 thousand. The final purchase price depends on the agreed closing accounts, which had not yet been conclusively agreed by the contracting parties by the time the consolidated financial statements were being prepared. As of December 31, 2022, €52,850 thousand of the preliminary purchase price was paid in cash.

b) Costs associated with the business combination

The Group has so far incurred acquisition-related costs of € 1,282 thousand for due diligence as well as for legal and notary fees. These costs are recognized in other operating expenses.

c) Identifiable assets and liabilities acquired

The fair values of the assets and liabilities acquired at the date of acquisition are summarized below: [Table → 3.12](#)

3.12 FAIR VALUES OF THE ASSETS AND LIABILITIES ACQUIRED

in € thousand	
Customer relationships	10,538
Other intangible assets	63
Property, plant and equipment	23,915
Deferred tax assets	4,467
Other assets	7,315
Inventories	32,142
Cash and cash equivalents	5
Trade accounts payable	(5,308)
Financial liabilities	(16,119)
Deferred tax liabilities	(6,630)
Total identifiable net assets acquired	50,388

d) Goodwill

The goodwill resulting from the acquisition was recognized as follows: [Table → 3.13](#)

3.13 DETERMINATION OF GOODWILL

in € thousand	
Consideration transferred	55,780
Fair value of the identifiable net assets	(50,389)
Goodwill	5,391

The goodwill allocated to the Rail Vehicle Systems segment mainly results from the future development potential in the external, non-DSB business and from the workforce's know-how in overhauling and repairing parts and components for subsystems for trains, railcars and locomotives. The recognized goodwill is not tax-deductible.

Selskabet af 3. juli 2021 ApS only commenced full business operations after the carve-out of the service business from DSB Component Workshops. For this reason, there is no financial information that indicates what contribution DSB Component Workshops would have made to consolidated revenues and consolidated earnings before tax if the company had already been acquired at the start of the fiscal year.

C.4. Composition of the Group

For details on the group of consolidated companies, refer to [Table → 3.14](#) the list of shareholdings pursuant to section 313 (2) of the German Commercial Code (HGB) under H.12. [Table → 3.97](#).

3.14 COMPOSITION OF THE GROUP

	2022		2021	
	Domestic	International	Domestic	International
Number of fully-consolidated subsidiaries				
As of January 1	24	110	24	109
Additions	-	5	1	7
Disposals	(11)	(2)	(1)	(6)
Reclassifications	-	-	-	-
As of December 31	13	113	24	110
Number of proportionately consolidated companies				
As of January 1	-	1	-	1
Additions	-	-	-	-
Disposals	-	-	-	-
Reclassifications	-	-	-	-
As of December 31	-	1	-	1
Number of associated companies				
As of January 1	2	4	2	5
Additions	-	2	-	-
Disposals	-	-	-	(1)
Reclassifications	-	-	-	-
As of December 31	2	6	2	4
Non-consolidated subsidiaries				
As of January 1	1	8	2	10
Additions	-	1	-	-
Disposals	-	(1)	(1)	(2)
Reclassifications	-	-	-	-
As of December 31	1	8	1	8
Investments				
As of January 1	2	3	2	2
Additions	-	-	-	1
Disposals	-	(1)	-	-
Reclassifications	-	-	-	-
As of December 31	2	2	2	3

C.5. Significant Non-controlling Interests

[Table → 3.15](#)

3.15 NON-CONTROLLING INTERESTS

Name	Registered Office/Country of Foundation	Ownership shares constituting non-controlling interests	
		12/31/2022	12/31/2021
in %			
Cojali S.L.	Ciudad Real, Spain	45.0	–
Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing (Beijing) Co., Ltd.	Daxing, China	50.0	50.0

The Group has held 55% of the shares in Cojali S.L., based in Ciudad Real, Spain, since the transaction closed on October 31, 2022. Summarized financial information for Cojali S. L.

prepared in accordance with IFRS is presented in [Table → 3.16](#). This is information before eliminations made with other Group companies.

3.16 COJALI

in € thousand	2022*
Revenues	15,559
Profit	4,182
Profit attributable to non-controlling interests	1,882
Other comprehensive income	–
Comprehensive income	4,182
Total comprehensive income attributable to non-controlling interests	1,882
	12/31/2022
Current assets	54,136
Non-current assets	133,760
Current liabilities	(6,087)
Non-current liabilities	(41,267)
Net assets	140,542
Net assets attributable to non-controlling interests	63,244
	2022*
Cash flows from operating activities	1,378
Cash flows from investing activities	(611)
Cash flows from financing activities	687
Net increase in cash and cash equivalents	1,454
	2022*
Dividends paid during the year to non-controlling interests	–

* Values pertain to the period from November 1 through December 31, 2022

The Group holds a 50% interest in Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing (Beijing) Co., Ltd., Daxing, China (Knorr-Bremse CARS). Knorr-Bremse has a controlling interest in this company due to having the possibility to appoint a majority of members in the relevant bodies. This company is therefore fully consolidated in accordance with IFRS 10.

Summarized financial information for Knorr-Bremse CARS prepared in accordance with IFRS is presented in [Table → 3.17](#). This is information before eliminations made with other Group companies.

3.17 KNORR-BREMSE CARS

in € thousand	2022	2021
Revenues	122,180	139,737
Profit	26,347	28,433
Profit attributable to non-controlling interests	13,173	14,217
Other comprehensive income	(7,181)	9,317
Comprehensive income	19,166	37,750
Total comprehensive income attributable to non-controlling interests	9,583	18,875
	12/31/2022	12/31/2021
Current assets	74,018	94,422
Non-current assets	12,889	15,848
Current liabilities	(27,516)	(39,398)
Non-current liabilities	(20,210)	(25,313)
Net assets	39,181	45,559
Net assets attributable to non-controlling interests	19,591	22,779
	2022	2021
Cash flows from operating activities	24,916	28,394
Cash flows from investing activities	(120)	6
Cash flows from financing activities	(31,257)	(37,105)
Net increase in cash and cash equivalents	(6,462)	(8,704)
	2022	2021
Dividends paid during the year to non-controlling interests	15,294	18,281

The remaining non-controlling interests are not significant, individually or in total.

C.6. Investments in Associates

Knorr-Bremse acquired a 13.1% interest in Shanghai Bobang Automotive Technology Co. Ltd., based in China, for € 5,604 thousand during the 2022 fiscal year. Owing to its representation on the company's executive board, Knorr-Bremse exercises significant influence over Shanghai Bobang Automotive Technology Co. Ltd and therefore recognizes the interest at equity as an investment in associates.

Furthermore, the company acquired a 33.4% share in Nexxiot AG, based in Switzerland, for € 62,845 thousand during the 2022 fiscal year. The interest is recognized using the equity method.

As of December 31, 2022, none of the associates were individually material to Knorr-Bremse AG's net assets, financial position and results of operations. The aggregate carrying amount of investments in associates accounted for using the equity method was € 79,567 thousand. (2021: € 22,073 thousand). These companies had a cumulative pro rata loss from continuing operations/pro rata total comprehensive income of € 13,867 thousand (2021: € 2,625 thousand). This includes proportional net profits, catch-up on previous year's results and investment impairment.

D. NOTES TO THE ACCOUNTING AND MEASUREMENT METHODS

D.1. Revenues

Knorr-Bremse generates revenue from contracts with customers in the two divisions Rail Vehicle Systems and Commercial Vehicle Systems, which also represent the reportable segments of the consolidated financial statements. Revenue is recognized in accordance with IFRS 15 when the customer has obtained control over the goods and services which Knorr-Bremse is obligated to perform and provide. Control is either transferred at a point-in-time or over a period of time.

RAIL VEHICLE SYSTEMS DIVISION

In the Rail Vehicle Systems segment, the timing of revenue recognition is based on whether the contract represents a project or not. Most OE business is project business. Projects in the aftermarket segment, which take the form of, e.g., long-term service contracts, are an exception.

The majority of the project business relates to contracts for design, production and delivery of braking systems with a precisely defined function for a certain number of trains or locomotives. There are projects with similar structures for door systems and air conditioning systems. In projects, the entire scope of services represents one performance obligation. This is primarily because the engineering services form the framework for the systems of all trains or locomotives to be outfitted with hardware in the specific project. Therefore, there is a very high level of dependency between the engineering of the system and the hardware, as well as the production, delivery and commissioning of the system. Therefore, Knorr-Bremse performs a high percentage of integration services for each single train or each single locomotive for a project. In addition, this integration service applies to all systems to be outfitted in a specific project: all of them must meet exactly the same functionality.

When assessing revenue recognition over time, Knorr-Bremse applies the regulation of IFRS 15.35(c) for project agreements. There is no alternative use for Knorr-Bremse for systems installed in the trains or locomotives, since, simply for practical reasons, it is not possible to use customer- and vehicle-specific systems that have been installed and put into operation for some other use. Therefore, revenue from project business is recognized over time if Knorr-Bremse has a right to "compensation for services performed up to a certain time" over the entire term of the project. This assessment is based on an assessment of the respective contract with the customer. In particular, the question here is whether the customer has the right to terminate the contract without requiring any failure to perform on Knorr-Bremse's part. If there is

no such right of termination, Knorr-Bremse has a right to satisfy the contract. In this case, the requirement of "compensation for services performed up to a certain time" is fulfilled. If there are statutory termination rights without any failure by Knorr-Bremse, the assumption is that there is also a right to compensation including a margin share for services performed. If the contract grants a termination right to the customer without any failure by Knorr-Bremse, the question is whether Knorr-Bremse would have a right in such cases to compensation of costs incurred up until such a termination becomes effective, including a margin share. Only if such right is confirmed is the criterion of "compensation for services performed up to a certain time" met and revenue recognized over time. The percentage-of-completion method is used to recognize revenue over time. Progress is determined using the cost-to-cost method, since the output method, which could be used as an alternative, is unsuitable for presenting project progress as of the reporting date because of the existence of unfinished goods over which control has already transferred to the customer. The costs incurred are compared to the planned costs for each project. This determines the stage of progress and the revenue to be recognized up to a period end date. By applying this method, the engineering input and hardware delivery performed by Knorr-Bremse are reflected properly in revenue across the entire term of a project, since it is applied independent of invoicing or payment dates. Estimates are required in particular when determining planned costs and are dependent on the range of delivery and performance. The amount of revenue is determined based on the contractually agreed prices for the contractually stipulated quantity of systems. Generally, these are fixed prices, possibly supplemented by price escalation clauses. The effects of price escalation clauses are taken into consideration if it is possible to reliably assess requirements for such clauses to become effective. Price escalation clauses or other variable consideration is included in the transaction price, if it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur as soon as the uncertainty in connection with the variable consideration has been resolved. The amount of variable consideration is determined on the basis of the most probable amount.

Knorr-Bremse is generally entitled to invoice all hardware deliveries in projects. Customers make advance payments; however, these tend to be low due to the ongoing invoices for delivered hardware components. Therefore, there are generally no significant financing components. Engineering work required after the contract is concluded but before the start of hardware production and delivery and the production and delivery of hardware generally result in the recognition of contract assets. The partially agreed compensation payments for one-time engineering services, invoices for delivered hardware and customer advance payments have a counter effect. These payments and invoices result in contract liabilities depending on their amount and degree of progress.

In addition to the classic project business, the Rail Vehicle Systems segment has long-term service contracts. Under fully comprehensive service contracts, the customer is provided with a full range of replacement parts, maintenance and overhaul work at agreed intervals, as well as repairs and training over the life of the contract. They often cover the full 20-to-30-year service lives of the vehicles. If the goods and services included in the package are purchased separately by the customer and invoiced separately by Knorr-Bremse, the associated revenue is recognized as separate current performance obligations at the time of delivery. The amount of revenue is determined based on the contractually agreed prices.

Another contract model for long-term service contracts specifies consideration on the basis of contractually agreed fixed prices, which are paid by the customer either on a periodically recurring basis or on the basis of kilometers traveled by the rail vehicles. In return, the customer is entitled to call off the materials and services defined in the contract during the life of the contract. These goods and services are not invoiced separately. These cases represent a stand-ready obligation under IFRS 15.26(e), for which revenue is recognized over time in accordance with IFRS 15.35(a).

The revenue from other business in the segment is generally the result of short-term services and deliveries, and primarily for replacement part deliveries in the aftermarket segment. Each of these deliveries and services represents a separate performance obligation. Revenue for such services is recognized at the time of delivery. The amount of revenue is determined based on the contractually agreed prices.

In general, there is a warranty assuring freedom from defects and over the term determined by law. Customary longer terms may exist in the project business.

Practical expedients are used in relation to the disclosure of significant financing components (IFRS 15.63) and the costs of obtaining a contract with an amortization period of up to one year (IFRS 15.94).

COMMERCIAL VEHICLE SYSTEMS DIVISION

In the Commercial Vehicle Systems segment, revenue in OE and aftermarket business is generated from the series production of components for braking systems and other subsystems. Ordering is primarily based on electronic processes in which an ordered quantity only becomes binding at the start of the so-called frozen zone. The frozen zone is a certain number of days before the notified delivery deadline. Each delivery represents a separate performance obligation according to IFRS 15. Revenue is recognized upon transfer of risk. The amount of revenue is determined based on the prices set forth in framework agreements or individual contracts and the quantities delivered.

Payments of nomination fees from Knorr-Bremse to customers are capitalized and amortized against revenue over the term of series delivery. The development work required for the start of series production is generally based on framework agreements without binding order of quantities and may last up to several years. If future series delivery is at least highly likely to occur based on such framework agreements and costs are covered, these development costs are capitalized as costs to fulfill the anticipated series production and depreciated at the start of series production over the projected term. The depreciation is recognized in changes in inventory. Compensation payments by customers during the development phase are recognized as contract liabilities and amortized against revenue with the start of series production over the term of series production.

Frequently, there are agreements on volume bonuses for series delivery, which Knorr-Bremse must reimburse to the customer depending on the defined delivery quantities for one year. The delivery quantity for the completed period is used to allocate and measure the reimbursement obligations according to the contractually defined quantity corridors. These reimbursement obligations are recognized as a decrease in revenue and recorded as a liability in the balance sheet.

In general, there is a warranty assuring freedom from defects and over the term determined by law.

D.2. Government Grants

Government grants are recognized if adequate certainty exists that the conditions associated with the grant will be met and the grants will be provided.

These can be divided into grants for assets and performance-related grants.

IAS 20.24 provides for an accounting option.

Grants for assets must either be deducted from the carrying amount of the corresponding asset or reported as deferred income, which must be released to income over the useful life of the asset. The Company deducts grants for assets from the carrying amount of the asset.

Under IAS 20.29, there is a choice either to recognize performance-related grants in other operating income or to deduct the corresponding expense from the income from the grants. The Company exercises the first option.

Reimbursements by government as a result of short-time work (short-time working allowances) are disbursed to the employees. The social security contributions reimbursed are deducted from personnel expenses.

D.3. Earnings before Interest and Taxes (EBIT)

Earnings before interest and taxes are the net profit or loss from the Group's main activity as well as other income and expenses from business activities. The earnings before interest and taxes (EBIT) do not include interest income, interest expense, the other financial result or taxes on income.

D.4. EBITDA

EBITDA corresponds to earnings before interest, taxes depreciation and amortization and impairment as reported in the statement of income.

D.5. Net Working Capital

Net working capital corresponds to inventories, trade accounts receivable and contract assets less trade accounts payable and contract liabilities.

D.6. Financial Income and Financing Expenses

Interest income and expenses are recognized in profit or loss based on the effective interest method. Dividend income is recognized in profit or loss at the time at which the Group's legal entitlement to payment arises.

D.7. Borrowing Costs

Borrowing costs are capitalized if they are directly attributable to the acquisition or production of a qualifying asset for which a longer period of time is required to bring it to its intended usable or saleable condition. All other borrowing costs are expensed as incurred. The Group did not capitalize any borrowing costs in the reporting periods.

D.8. Income Taxes

Current taxes are the expected tax debt or tax claim in relation to the taxable income or tax loss for the fiscal year based on the tax rates that apply on the reporting date, or which will be in place shortly, as well as all adjustments to the tax debt in previous years. In addition, the current tax also includes adjustments for any tax payments or refunds due for any years not yet finally assessed (however without interest payments or refunds). In case amounts recognized in the tax returns probably cannot be realized (uncertain tax positions), provisions for taxes are recognized. The amount is calculated from the best possible estimate of the expected tax payment (expected value or most likely value of the tax uncertainty). Tax receivables from uncertain tax positions are then recognized if it is more likely than not and thus reasonably certain that

they can be realized. Current tax debts also include all tax debts that arise as a result of dividends.

Current tax claims and liabilities are only netted under certain conditions.

Deferred taxes are recognized with regard to temporary differences between the carrying amounts of the assets and liabilities for group accounting purposes and the amounts used for tax purposes. Deferred taxes are not recognized for:

- temporary differences in the event of the initial reporting of assets or debts for a transaction that does not relate to a business combination and that does not influence the accounting earnings before taxes or the taxable earnings
- temporary differences in connection with shares in subsidiaries, associates and jointly controlled entities, if the Group is able to control the timing of the reversal of the temporary differences and it is likely that they will not be reversed in the foreseeable future
- taxable temporary differences in the event of the initial reporting of goodwill.

A deferred tax claim is recognized for unused tax losses, unused tax credits and deductible temporary differences to the extent that it is likely that future taxable earnings will be available for which they can be used. Future taxable profits are determined on the basis of the individual business plans of the subsidiaries, taking into account the reversal of temporary differences. Unrecognized deferred tax claims are reassessed on every reporting date and recognized in the amount likely to be permitted by the realization of future taxable earnings.

Deferred tax liabilities are additionally recognized for temporary differences arising from future dividend distributions of a subsidiary (outside basis differences).

Deferred tax claims are reviewed on every reporting date and reduced to the extent to which it is no longer likely that the associated tax benefit will be realized; write-ups are reported if the probability of future taxable earnings improves.

Deferred taxes are measured based on the tax rates, which are expected to be applied to temporary differences, as soon as they reverse, namely, using tax rates that apply or have been announced on the reporting date.

The measurement of deferred taxes reflects the tax consequences that arise from the Group's expectation with regard to the manner of recognition of the carrying amounts of its assets and the settlement of its debts as of the reporting date.

Deferred tax claims and deferred tax debts are netted if certain conditions are met.

D.9. Intangible assets

Intangible assets with a determinable useful life that were not acquired as part of a business combination are recognized at the acquisition or production costs less cumulative amortization and cumulative impairment.

The goodwill resulting from a business combination is recognized with the acquisition costs, less any necessary impairment.

Expenditure for research activities is recognized in profit or loss in the period in which it arises.

Development projects are capitalized at acquisition or production costs, including development-related overheads, if the development costs can be reliably measured, the product or process is technically and commercially appropriate, a future commercial benefit is probable, and the Group intends and has adequate resources to complete the development and use or sell the asset.

Development projects are measured at the acquisition or production costs, less cumulative amortization and cumulative impairment expenses.

Intangible assets with a determinable useful life are subject to linear and amortization over their estimated useful lives. The amortization is fundamentally recognized in profit and loss. Goodwill as well as intangible assets without a determinable useful life are not subject to regular and amortization. Of the capitalized intangible assets, only goodwill has an indefinite useful life.

The estimated useful lives of the other capitalized intangible assets are:

· Licenses and acquired rights:	1-20 years
· Brands and customer relationships:	3-20 years
· Internally generated intangible assets:	3-10 years

Amortization methods, useful lives and residual values are reviewed on every reporting date and adjusted where necessary.

The goodwill and intangible assets in development are tested for impairment each year.

Please refer to Chapter D.19. for information on the fair value of non-financial assets.

D.10. Property, plant and equipment

Property, plant and equipment (PPE) are measured at acquisition or production costs, less cumulative depreciation and cumulative impairment expenses.

Depreciation is calculated on a scheduled, linear basis over the estimated useful life. Depreciation is fundamentally recognized in profit and loss.

If indications of impairment of individual property, plant and equipment assets exist and the recoverable amount is lower than the carrying amount, an impairment test is performed for this asset. The recoverable amount is the higher of the fair value less the costs of sale and the useful value. If the recoverable amount is below the carrying amount, the difference is recognized in profit and loss and the basis for the regular depreciation is reassessed. Please refer to Chapter D.19. for information on the fair value of non-financial assets.

Right-of-use assets held under leases for which there is no reasonable certainty that the Group will obtain ownership at the end of the lease are depreciated over the shorter of the term of the lease and the useful life.

Land is not subject to regular depreciation.

The estimated useful lives of significant property, plant and equipment assets for the current year and comparison years amount to:

· Buildings:	3-50 years
· Technical equipment and machinery:	3-25 years
· Other equipment, factory and office equipment:	1-25 years

Amortization methods, useful lives and residual values are reviewed on every reporting date and adjusted where necessary.

D.11. Leases

Leases are accounted for in accordance with IFRS 16. At inception of a contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

GROUP AS LESSEE

The Group recognizes and measures all leases (except for short-term leases and leases for which the underlying asset is of low value) in accordance with a single model. It recognizes liabilities for making lease payments and right-of-use assets for the right to use the underlying asset.

i) Right-of-use assets

The Group recognizes right-of-use assets as of the commencement date of the lease (i.e., as of the date on which the underlying leased asset is available for use). Right-of-use assets are measured at cost less any accumulated depreciation and any accumulated impairment losses and adjusted for any remeasurement of the lease liability. The costs of the right-of-use assets contain the lease liabilities recognized, the initial direct costs incurred and the lease payments made at or before the commencement date, less any lease incentives received and the estimate of costs for dismantling or removing the underlying asset or for restoring the underlying asset or the site on which it is located, less any lease incentives received.

Right-of-use assets are depreciated on a straight-line basis as follows over the shorter of the lease term and the expected useful life of the leased asset:

- Land and buildings: 1 to 78 years
- Equipment and machinery: 1 to 15 years
- Vehicles and other equipment: 1 to 9 years

If ownership of the leased asset transfers to the Group at the end of the lease term or the exercise of a purchase option is reflected in the costs, the depreciation will be calculated on the basis of the expected useful life of the leased asset.

The right-of-use assets will also be tested for impairment. Details on the accounting policies can be found in Chapter D.19.

The Group's right-of-use assets are included in "property, plant and equipment" (see Chapter H.11. Leases).

ii) Lease liabilities

On the commencement date, the Group recognizes the lease liabilities at the present value of the lease payments to be made over the lease term. In determining the lease term, extension and termination options are taken into account, if it is reasonably certain that they will be exercised or not exercised (see Chapter H.11.1 for details). The lease payments include fixed payments (including in-substance fixed payments), less any lease incentives receivable, variable lease payments that depend on an index or rate and amounts expected to be payable under residual value guarantees. The lease payments further include the exercise price of a purchase option if the Group is reasonably certain to exercise that option and payments of penalties for terminating the lease if the lease term reflects the Group exercising an option to terminate the lease.

Variable lease payments that do not depend on an index or a rate in the period in which the event or condition that triggers this payment occurs are recognized as an expense (unless the payments are incurred to produce inventories).

When calculating the present value of the lease payments, the Group normally uses its incremental borrowing rate at the commencement date because the interest rate implicit in the lease cannot be readily determined. Following the commencement date, the amount of the lease liability is increased to reflect interest and reduced to reflect the lease payments made. In addition, the carrying amount of the lease liability is revalued in the event of changes to the lease, changes to the lease term, changes to the lease payments (e.g., changes in future lease payments as a result of a change in an index or a rate used to determine those payments) or in the event of a change in the assessment of an option to purchase the underlying asset.

The Group's lease liabilities are included in "financial liabilities" (see Chapters F.14. and H.11.).

iii) Short-term leases and leases of low value assets

The Group applies the exemption for short-term leases (i.e., leases whose term from the commencement date is a maximum of twelve months and which do not include a purchase option) for short-term leases of machinery and technical equipment. It also applies the exemption for leases of low value assets to leases of items of office equipment classified as low value up to an amount of € 5 thousand. Lease payments for short-term leases and for leases of low value assets are recognized as an expense on a straight-line basis over the lease term.

D.12. Inventories

Inventories are essentially valued at the lower of the acquisition or production costs and the net realizable value. Unfinished and finished products include manufacturing costs that can be attributed directly to the production process as well as an adequate share of production overheads. Production-related administration costs are also capitalized.

The net realizable value is calculated based on the proceeds that can be realized on the market in the normal course of business, less the costs for manufacturing the product and sales costs.

D.13. Assets Held for Sale or Disposal Groups

Non-current assets or disposal groups are classified as "Assets held for sale and discontinued operations" if it is highly probable that the associated carrying amount will largely be realized by a sale transaction and not by continued utilization.

Non-current assets and also non-current and current assets included in disposal groups are recognized at the lower of the carrying amount and fair value less costs of disposal.

Intangible assets and property, plant and equipment are no longer subject to regular depreciation and amortization, and any associated company recognized using the equity method is no longer recognized using the equity method as soon as it is classified as held for sale.

D.14. Share-Based Payment Arrangements

The fair value of the amount of the share-based payment arrangements that is to be paid to employees with respect to share appreciation rights paid in cash is recognized as an expense with a corresponding increase in liabilities over the period in which the employees become unconditionally entitled to these payments. The liability is remeasured on the reporting date and at the date of settlement based on the fair value of the share appreciation rights. Any changes in the liability are recognized in profit and loss.

D.15. Employee benefits

In addition, the Group recognizes both defined-contribution and defined-benefit plans.

Obligations for contributions to defined contribution plans are reported as an expense once the associated work performance has been provided. From group perspective those obligations are of subordinated importance. Prepaid benefits are reported as an asset if a right to the reimbursement or reduction of future payments exists. Under the company pension scheme, pension commitments are provided with employees waiving their right to cash compensation.

The Group's net obligation with regard to defined benefit plans is calculated separately for every plan in that the future benefits, which the employees earned in the current period and earlier periods, are estimated. This amount is discounted and the fair value of any plan asset is deducted from this amount.

The calculation of defined benefit obligations is based on actuarial reports on the basis of the projected unit credit method.

Revaluations of the net defined-benefit liability are reported directly in other comprehensive income. The revaluation includes actuarial profits and losses, the income from plan assets (not including interest) and the impact of any asset cap (not including interest).

D.16. Other provisions

Provisions are recognized for legal or constructive obligations in relation to third parties, which are caused by events from the past, which are likely to lead to the outflow of

resources and their amount can be reliably estimated. The timing and/or amount of provisions are uncertain.

The amount of provisions is calculated based on the best estimate of the amount of the expected outflow of resources. If the provisions are expected to be utilized within the normal business cycle, they are classified as short-term. Long-term provisions with a term of more than one year are discounted on the reporting date using the corresponding interest rates.

WARRANTIES

Provisions for warranty obligations are established for the expected warranty obligations from the sale of products and services. The national law on sales contracts and individual agreements are taken into account. The provisions are based on the best estimates with regard to the fulfillment of the obligations taking account of actual values for claims from the past. They also include provisions for claims already raised by customers.

RESTRUCTURING MEASURES

An accrued liability for restructuring measures is reported as soon as the Group has approved a detailed and formal restructuring plan and the restructuring measures have either started or have been communicated to the affected parties. Future operating losses are not taken into account.

CONTRACTUAL PROVISIONS

Contractual provisions are recognized for existing contracts based on the imminent obligation excess of unavoidable costs over proceeds. The provision is valued at the present value of the expected excess obligation from the continuation of the contract. Before a provision is established for an onerous contract, the Group recognizes an impairment on the assets associated with this contract.

SUNDRY OTHER PROVISIONS

Sundry other provisions are valued at the amount necessary to meet the requirements of current commitments on the reporting date.

PROVISIONS FOR TAXES

The Group reports all risks and obligations arising from tax matters under tax liabilities.

D.17. Financial instruments

In accordance with IAS 32.11, all contracts that give rise to a financial asset of one entity and a financial liability or equity instrument of another entity are considered financial instruments. Financial instruments measured at amortized cost (AC) are initially recognized at fair value on the trading day, taking into account attributable transaction costs. Transaction costs must be recognized immediately in the income statement for financial instruments measured at fair value

through profit or loss (FVTPL). Furthermore, (current) trade accounts receivable are recognized on initial recognition not at fair value but at the transaction price.

Classification of financial instruments:

FINANCIAL ASSETS FROM DEBT INSTRUMENTS

Financial assets are classified in the following measurement categories: "at amortized cost," "at fair value through other comprehensive income" and "at fair value through profit and loss." A classification into the three categories takes place based on the Group's business model for managing the financial assets as well as the characteristics of the contractual payment flows of the assessed financial assets.

The "at amortized cost" category contains all financial assets whose business model is associated with the aim of collecting the contractually agreed payment flows (business model: "hold"). Likewise, the contractual terms and conditions of the financial asset must be such that cash flows occur at fixed dates that exclusively represent repayments and interest payments on the outstanding notional amount (SPPI – criterion "cash flow condition").

Measurement at fair value through other comprehensive income is to be applied to financial assets with the aim of realizing cash flows both through the receipt of contractual payments and through sale ("holding and selling" business model). At the same time, the contractual conditions of the financial asset must also be structured so that payment flows, which exclusively represent principal and interest payments on the outstanding nominal amount, are generated on defined dates (SPPI criterion: cash flow condition).

Financial assets measured at fair value through profit or loss are those that are either held for trading or managed on the basis of their fair value or whose cash flows are maximized through sales. If financial instruments are classified as at fair value through profit or loss, transaction costs are reported through profit or loss directly in the period in which they arise. This relates to a residual category which contains all financial assets that cannot be assigned to the "hold" or "hold and sell" business model (business model: "trade/other") as well as assets for which the SPPI criterion does not result in a positive decision. Financial assets for which the "fair value option" is exercised for the initial recognition are also classified as "at fair value through profit and loss."

Financial assets in the "at amortized cost" category particularly include trade accounts receivable (not including factoring), cash and cash equivalents and other receivables.

Cash equivalents are short-term, extremely liquid financial investments that can be converted to cash at any time and that are only subject to insignificant risks of changes in value.

Financial assets in the category "at fair value through other comprehensive income" exist in the Group in the form of trade accounts receivable for which factoring with derecognition is applied.

Financial assets in the category "at fair value through profit or loss" take the form of freestanding derivatives, equity investments and debt investments such as bonds and debt instruments. There are no financial assets that fall under the "fair value option."

Reclassifications between the measurement categories did not occur in 2022.

FINANCIAL LIABILITIES

Financial liabilities are classified in the "at amortized cost" category. The Knorr-Bremse Group only recognizes financial liabilities from derivatives with negative fair values and variable purchase price liabilities at fair value. If the fair value option is exercised for the initial recognition, they are classified as "at fair value through profit and loss." There are no financial liabilities which fall under "fair value option."

Financial liabilities in the category "at amortized cost" are mainly bonds issued, liabilities to banks and trade accounts payables.

Financial liabilities in the category "at fair value through profit or loss" in the Group are exclusively freestanding derivatives with a negative market value.

EQUITY INSTRUMENTS

Equity instruments under IFRS 9 are essentially classified at fair value through profit and loss. For the initial recognition of a financial investment in an equity instrument that is held as a long-term strategic investment rather than for trading purposes, IFRS 9 provides for an irrevocable option to report the changes to fair value in other comprehensive income ("FVOCI option"). In this case, the classification takes place in the "at fair value through other comprehensive income" category. In one case, an equity investment was classified as "at fair value through other comprehensive income" at initial recognition. Dividends are recognized in the statement of income. Furthermore, the fair value changes recognized in equity are not reclassified to the statement of income upon disposal of the equity instrument.

The fair value corresponds to the prices quoted on an active market, where applicable. If such a market does not exist, the fair value is calculated based on measurement models using current market parameters.

DERECOGNITIONS AND MODIFICATIONS

Financial assets are derecognized if the contractual rights to payments that arise from the instrument expire or,

alternatively, the financial assets are transferred with all material risks and opportunities. Financial liabilities are derecognized if the contractual obligations are settled, canceled, or expire. In the event of adjustments to loan conditions or extensions of terms, the Group validates whether this involves substantial modifications within the meaning of IFRS 9. The assessment as to whether a modification is substantial is made on basis of qualitative and quantitative criteria; the criteria used by the Group for financial assets correspond to the criteria for financial liabilities. If there is a substantial modification, the existing financial instrument is derecognized and the substantially modified financial instrument is rebooked. If there is a non-substantial modification, the carrying amount of the financial instrument is adjusted through profit or loss.

DERIVATIVES

Within the Group, financial derivatives must be recognized as financial assets or financial liabilities at fair value, irrespective of the purpose. The fair value of derivatives is calculated by discounting the future payment flows at the market interest rate and using other established actuarial methods, such as option price models. Derivatives are recognized on the trading day. The fair value of unconditional derivatives is zero at initial recognition under market conditions. Options are initially recognized at fair value (equal to the premium paid or received). Counterparty-specific credit risks are taken into account as part of the measurement of financial derivatives.

The Group uses financial derivatives in the form of forward exchange transactions and foreign exchange options, interest rate swaps, cross-currency interest rate swaps and commodity derivatives to hedge against currency, interest rate and commodity risks. While currency risks primarily arise due to sales in foreign currencies, interest rate risks are predominantly caused by variable-rate liabilities, while commodity price risks arise as a result of the procurement of metals in the production process.

IMPAIRMENT

IFRS 9 requires expected losses to be reported for all assets within the scope of the impairment provisions. The loss reported as well as the interest collected are calculated based on the assignment of the instrument to the categories listed below.

According to the general impairment model ("general approach"), the change in value is determined based on the following three levels:

Level 1: All relevant instruments are initially assigned to level 1. The present value of the expected losses from possible default events within the next twelve months ("12-month expected credit loss") after the reporting date must be reported and recognized as an expense. Interest is recognized on the basis of the gross carrying amount. Consequently, the

effective interest method is applied on the basis of the carrying amount before risk provisioning is taken into account.

Level 2: This includes all instruments which have undergone a significant increase in the default risk since their initial reporting. The monitoring for a significant increase in the default risk as of the reporting date is carried out in connection with a screening process of the relative changes in ratings or credit default swap spreads (CDS spreads) of the business partner. Generally, a significant increase in the default risk is assumed in the event that the financial instruments are more than 30 days overdue. If the business partner for the financial instruments has at least an investment-grade rating, no assessment of a significant increase in the credit risk is made. The impairment corresponds to the present value of the expected losses from possible default events over the remaining term of the instrument ("lifetime expected credit loss"). The interest is reported in the same way as for level 1.

Level 3: If, in addition to an increased risk of default, there is objective evidence of an impairment of an instrument, the impairment is also measured based on the present value of the expected losses from possible default events over the remaining term. The reporting of the interest in the following periods must be adjusted so that the interest income is calculated based on the net carrying amount and therefore based on the carrying amount after taking account of the loan loss provision.

At each balance sheet date, the Group tests whether there is objective evidence of impairment for financial instruments carried "at amortized cost" or "at fair value through other comprehensive income." Criteria for impairment include default or default of debtors, indications of imminent insolvency or the disappearance of an active market for a security due to financial difficulties.

A default event exists when it is considered probable that a debtor cannot or will not be able to meet its payment obligations or meet them in full. Where a default event exists, the gross carrying amounts of the financial assets (fully or partially) are derecognized so that the gross carrying amount after derecognition represents the expected recoverable amount. In addition, a default event is assumed in the event of significant payment delays. For financial instruments within the scope of the "general approach", a default event is assumed in connection with an amount overdue by more than 90 days.

For the Group, in particular cash and cash equivalents are subject to the impairment requirements in accordance with the general approach.

For trade accounts receivable and lease receivables, IFRS 9 provides for a simplified approach to impairment (“simplified approach”) under which an impairment in the amount of the expected losses must be reported over the remaining term for all instruments, irrespective of the credit quality. Consequently, no distinction is made for these financial instruments between allocations to level 1 or level 2 of the impairment model under IFRS 9. A transfer to level 3 takes place if there is objective evidence of impairment. With respect to trade accounts receivable, a default event is assumed in the case that there are delays in payment in excess of 12 months. A default also exists if it is considered probable that a debtor cannot meet or cannot entirely meet its payment obligations.

IFRS 9.5.5.4 requires in particular also the use of forward-looking information in determining expected credit losses. The company meets this requirement for the determination of impairment by using CDS spreads.

Trade accounts receivable and lease receivables of business partners are divided into four groups:

- Group 1: debtor-specific CDS spread can be determined
- Group 2: rating-equivalent benchmark CDS spread can be determined
- Group 3: the probability of default can be determined via a credit agency
- Group 4: the probability of default is determined on the basis of the average CDS spreads in the appropriate sectors: rail, truck and banks.

Rating and default probability data are updated quarterly.

Lease receivables as well as any financial guarantees or loan commitments which would fall under the impairment provisions did not exist for the Company.

HEDGE ACCOUNTING

Derivatives are measured at fair value. If a derivative is (or components of a derivative are) included in hedge accounting as a cash flow hedging instrument, the effective changes are recognized in other comprehensive income and cumulatively included in the hedging transactions reserve. Within the Group, non-designated portions of hedging instruments – the forward components – are treated as hedging costs. They are transferred to the reserve for the costs of hedging without effect on profit or loss.

If a hedged forecast transaction later leads to the recognition of a non-financial item, such as inventories, the cumulative amount from the reserve for hedging transactions and the

reserve for costs of hedging is included directly in the cost of the non-financial item when this is recognized.

In the case of all other hedged forecast transactions, the cumulative amount that is transferred to the hedging transaction reserve and the reserve for the costs of hedging is reclassified to profit or loss in the period or periods in which the hedged expected future cash flows affect profit or loss.

If the hedge no longer meets the criteria for the recognition of hedging relationships or the hedging instrument is sold, expires, is terminated or is exercised, the hedge accounting is discontinued prospectively.

If the occurrence of the hedged transaction can no longer be expected, the hedging transaction reserve and the reserve for costs of hedging are directly released to the income statement and thus recognized in profit and loss. If the occurrence of the hedged transaction continues to be expected but is no longer highly probable, the amount accumulated in the hedging transaction reserve is reclassified depending on the occurrence of the expected cash flows.

D.18. Fair Value – Financial Instruments (Financial Assets)

Measurement of fair value: In the Knorr-Bremse Group, financial instruments classified as “at fair value through profit or loss” (in particular, equities, bonds, and freestanding derivatives) and “at fair value through other comprehensive income” (equity instruments) are measured at fair value. In addition, the fair value of financial instruments that are not measured at fair value is disclosed in the notes to the consolidated financial statements.

The fair value is the price that would be received in an orderly transaction between market participants on the assessment date for the sale of an asset or that would be paid for the transfer of a liability. When measuring the fair value, it is assumed that the transaction is concluded on the principal market for the asset or liability, or on the most favorable market for the asset or liability, if no principal market is available.

The Group must have access to the principal market or to the most favorable market. The fair value of an asset or liability is measured based on the assumptions that the market participants would use as a basis for the pricing in their best commercial interest.

The Group uses measurement techniques that are appropriate under the circumstances and for which adequate data to measure the fair value is available. In this respect, the use of material input factors which can be observed must be as high

as possible, while the use of input factors that cannot be observed must be kept to a minimum.

All financial assets and liabilities measured at fair value or whose fair value is disclosed in the notes are classified in the fair value hierarchies described below based on the input parameter of the lowest level, which is material for the overall measurement at fair value.

Level 1:	(Unadjusted) prices listed in active markets
Level 2:	Assessment methods in which key market parameters for assessment can be observed directly or indirectly
Level 3:	Assessment methods in which significant parameters for valuation are not observable on the market

The assessment procedures and the input parameters used are reviewed regularly. The aim of the reviews is to use observable input factors in determining fair value as far as possible. Rearrangements in the hierarchy level are made at the end of the period in which the change occurred.

D.19. Fair Value – Non-Financial Assets

The carrying amounts of the Group's non-financial assets are reviewed on every reporting date in order to determine whether there is any indication of an impairment. If this is the case, the recoverable amount of the asset is estimated. Goodwill is reviewed annually for impairment.

To check whether impairment exists, assets are combined into the smallest group of assets that generate cash inflows from continued use that are largely independent of the cash inflows from other assets or cash-generating units (CGUs). Goodwill that was acquired as part of a business combination

is assigned to one or more groups of CGUs from which a benefit from the use of the synergies of the business combination is expected.

The recoverable amount of an asset or a CGU is the higher of the value in use and the fair value less costs to sell. When assessing the value in use, the estimated future cash flows are discounted to their present value, whereby a weighted average cost of capital (WACC) before tax is used which reflects the current market valuations of the interest effect and the specific risks of an asset or a CGU. The fair value is the price that would be received in an orderly transaction between market participants on the assessment date for the sale of an asset or that would be paid for the transfer of the liability. The fair value of non-financial assets is determined in an equivalent manner to the fair value of financial assets (Chapter D.18).

An impairment loss is reported if the carrying amount of an asset or a CGU exceeds its recoverable amount.

Impairment losses are recognized in profit and loss.

An impairment loss with regard to the goodwill would not be reversed. For other assets, an impairment loss is only reversed to the extent that the market value of the asset does not exceed the carrying amount that would have been calculated, less the depreciation or amortization, if no impairment loss had been reported.

E. NOTES TO THE CONSOLIDATED STATEMENT OF INCOME

E.1. Revenues

REVENUES BY SEGMENT

[Table → 3.18](#) shows revenues by segment. Revenues within the segment are presented on a pre-consolidated basis.

3.18 REVENUES BY SEGMENTS (IFRS)

in € thousand	Rail Vehicle Systems		Commercial Vehicle Systems		Other segments and consolidation		Total
	2022	2021	2022	2021	2022	2021	2021
Total	3,401,878	3,316,961	3,749,978	3,390,235	(2,116)	(1,555)	6,705,640

CLASSIFICATION OF REVENUES

[Table → 3.19](#) presents a breakdown, by region and point in time, of consolidated revenue that is generally within the scope of IFRS 15. The internal management reporting, which

was previously based on the HGB, was converted to IFRS in the first half of fiscal year 2022. A reconciliation of reportable segments with IFRS values is therefore unnecessary.

3.19 CLASSIFICATION OF REVENUE AND RECONCILIATION WITH SEGMENT REVENUES

in € thousand	IFRS revenue			Reconciliation to segment revenue			Revenue according to segment reporting		
	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total	Rail Vehicle Systems	Commercial Vehicle Systems	Total
	2022 fiscal year								
1. Disaggregation of segments									
a) Region (by registered offices of the Group companies)									
Europe/Africa	1,815,880	1,575,151	3,391,031	-	-	-	1,815,880	1,575,151	3,391,031
North America	367,221	1,446,532	1,813,753	-	-	-	367,221	1,446,532	1,813,753
South America	26,899	124,867	151,766	-	-	-	26,899	124,867	151,766
Asia-Pacific	1,191,878	603,428	1,795,306	-	-	-	1,191,878	603,428	1,795,306
	3,401,878	3,749,978	7,151,856	-	-	-	3,401,878	3,749,978	7,151,856
b) Type of time recording									
Recognition over time	1,025,726	-	1,025,726	-	-	-	1,025,726	-	1,025,726
Recognition at a point in time	2,376,152	3,749,978	6,126,131	-	-	-	2,376,152	3,749,978	6,126,131
	3,401,878	3,749,978	7,151,856	-	-	-	3,401,878	3,749,978	7,151,856
2. Other segments and consolidation	-	-	(2,116)	-	-	-	-	-	(2,116)
3. Total	3,401,878	3,749,978	7,149,740	-	-	-	3,401,878	3,749,978	7,149,740
	2021 fiscal year								
1. Disaggregation of segments									
a) Region (by registered offices of the Group companies)									
Europe/Africa	1,752,635	1,417,246	3,169,880	58,713	10,938	69,651	1,811,347	1,428,184	3,239,532
North America	294,994	1,102,998	1,397,993	1,400	7,618	9,018	296,394	1,110,616	1,407,010
South America	20,381	94,862	115,243	388	4,614	5,002	20,770	99,475	120,245
Asia-Pacific	1,248,951	775,129	2,024,079	(2,743)	2,407	(335)	1,246,208	777,536	2,023,744
	3,316,961	3,390,235	6,707,195	57,758	25,577	83,335	3,374,719	3,415,812	6,790,530
b) Type of time recording									
Recognition over time	1,122,600	-	1,122,600	(1,122,600)	-	(1,122,600)	-	-	-
Recognition at a point in time	2,194,361	3,390,235	5,584,595	1,180,358	25,577	1,205,935	3,374,719	3,415,812	6,790,530
	3,316,961	3,390,235	6,707,195	57,758	25,577	83,335	3,374,719	3,415,812	6,790,530
2. Other segments and consolidation	-	-	(1,555)	-	-	(43,323)	-	-	(44,878)
3. Total	3,316,961	3,390,235	6,705,640	57,758	25,577	40,012	3,374,719	3,415,812	6,745,652

In the Rail Vehicle Systems segment, the reconciliation effects of IFRS on revenues based on the previous year's segment

reporting are attributable to the elimination of the effect of the over-time-recognition of revenue at an amount of

€ 25,164 thousand and to the application of the German Accounting Directive Implementation Act (BilRuG) at an amount of € 32,594 thousand and other effects. In the Commercial Vehicle Systems segment, other segments and other consolidated entities, the reconciliation effects are fully attributable to the application of the BilRuG and other effects.

REVENUE OF THE REPORTING PERIOD FOR PERFORMANCE OBLIGATIONS SATISFIED IN PREVIOUS PERIODS

The revenue of the 2022 period includes € 0 thousand (2021: € 1,308 thousand) from performance obligations fulfilled in the prior years.

TRANSACTION PRICE ALLOCATED TO THE REMAINING PERFORMANCE OBLIGATIONS

The transaction price allocated to the remaining performance obligations amounts to € 2,815,281 thousand as of December 31, 2022 (2021: € 2,668,794 thousand). This relates to the project business for the Rail Vehicle Systems segment and includes only customer contracts with an original contractual term of over one year. The projects have an average term of 5 years. As of December 31, 2022, contracts from project business will last through the year 2063.

There are no customer contracts in the systems for Commercial Vehicle Systems segment with an original contractual term of over one year.

INFORMATION ON CONTRACT BALANCES IN CONNECTION WITH IFRS 15

a) Contract assets and contract liabilities

The contract assets and contract liabilities primarily relate to the presentation of project business in the Rail Vehicle -Systems segment according to the method of revenue recognition over a period of time.

According to this method, contract assets result from services performed, insofar as these are not settled through invoices. Advance payments from customers have a counter effect. Depending on the relationship between the percentage of completion in the specific project, invoices and advance payments, therefore, there may be either contract assets or contract liabilities.

The impairment under IFRS 9 on contract assets was € 92 thousand as of December 31, 2022. (2021: € 65 thousand).

For contracts with revenue not recognized over a period of time, advance payments are also recognized as contract liabilities if the relevant performance obligations have not yet been fulfilled. In addition, compensation payments for development costs before series production are recognized as contract liabilities. As in the previous year, the latter only refers to the Commercial Vehicle Systems segment as of December 31, 2022.

[Table → 3.20](#) shows the effects in the reconciliation from the final balance of contract assets and liabilities as at December 31, 2021, to December 31, 2022.

3.20 RECONCILIATION FROM THE CLOSING BALANCE OF CONTRACT ASSETS AND LIABILITIES

in € thousand	Contract assets	Contract liabilities
		2022 fiscal year
As of Dec. 31, 2021	74,985	265,567
Increase in contract liabilities from invoices and effects from changes in advance payments	-	146,733
Transfer of the opening balance for contract assets to trade receivables through invoices	(31,043)	-
Change as a result of the recognition of revenue	42,825	(118,875)
Change of impairment on contract assets	(39)	-
Reclassifications pursuant to IFRS 5	(17,575)	(80,313)
Other	338	1,147
Closing balance as of Dec. 31, 2022	69,491	214,258
		2021 fiscal year
As of Dec. 31, 2020	84,217	295,868
Increase in contract liabilities from invoices and effects from changes in advance payments	-	-
Transfer of the opening balance for contract assets to trade receivables through invoices	(73,594)	-
Change as a result of the recognition of revenue	59,351	(41,893)
Change of impairment on contract assets	1,568	-
Other	3,442	11,593
Closing balance as of Dec. 31, 2021	74,985	265,567

Revenue of the reporting period, which were included in the opening balance of contract liabilities as of January 1, 2022, amounted to € 118,875 thousand. (2021: € 149,088 thousand).

b) Other assets

The other assets include costs to fulfill a contract of € 40,016 thousand (non-current: € 40,016 thousand, current: € 0 thousand), so-called nomination fees, from the Commercial Vehicle Systems and Rail Vehicle Systems segments (2021: € 36,476 thousand, of which non-current: € 36,476 thousand, current: € 0 thousand). The capitalized amounts will be depreciated against revenue from the start of series production and over the term of series production. In 2022, depreciation recognized on these assets amounted to € 1,407 thousand (2021: € 1,079 thousand).

The other non-current assets include costs to fulfill a contract of € 35,505 thousand (2021: € 25,759 thousand). These relate to engineering costs in the Commercial Vehicle Systems segment before series production. These will be depreciated against changes in inventory as from the start of series production and over the term of series production. In 2022, the depreciation recognized on these assets amounted to € 2,984 thousand (2021: € 1,782 thousand).

The other non-current assets also include costs to obtain a contract in an amount of € 701 thousand (2021: € 1,017 thousand). These will be depreciated against changes in inventory as from the start of series production and over the term of series production. In 2022, depreciation recognized on these assets amounted to € 442 thousand (2021: € 1,026 thousand).

E.2. Change in Inventory and Own Work Capitalized

The change in inventory reflects the change in finished and unfinished products and the contract performance costs and contract initiation costs depreciated against the change in inventory [Table → 3.21](#). The development of finished and unfinished products is covered in Chapter F.6. Inventories.

3.21 CHANGE IN INVENTORY AND OWN WORK CAPITALIZED

in € thousand	2022	2021
Change in inventory of finished and unfinished products	29,953	39,074
Own work capitalized	105,020	83,107

Own work capitalized results from the capitalization of development projects.

E.3. Other Operating Income

[Table → 3.22](#)

3.22 OTHER OPERATING INCOME

in € thousand	2022	2021
Currency translation gains	73,274	48,103
Income from the disposal of land and buildings	3,397	22,027
Income from other services	8,064	9,412
Insurance compensation and compensation payments	12,313	8,666
Income from government grants	8,496	6,166
Rental income	5,807	2,073
Other income	17,405	15,473
	128,755	111,920

The increase in other operating income from € 111,920 thousand to € 128,755 thousand results in particular from the € 25,172 thousand year-over-year increase in realized and unrealized foreign exchange gains, which were partly offset by the decline in income from the disposal of land and buildings. In the previous year, the sale of the representative offices in Berlin was responsible for the greater income from the disposal of land and buildings. Other operating income primarily comprises income from other services, income from government grants as well as income from insurance compensations and compensation payments. Income from other services mainly relates to development and testing services to third parties. The remaining other operating income includes in particular income from the reversal of provisions, refunds of other taxes, customer payment of freight costs and supplier reimbursement of costs.

E.4. Cost of Materials [Table → 3.23](#)

3.23 COST OF MATERIALS

in € thousand	2022	2021
Expenses for raw materials, consumables and supplies and for purchased goods	(3,475,962)	(3,091,945)
Expenses for purchased services	(288,366)	(284,740)
	(3,764,327)	(3,376,685)

The cost of materials is comprised of the expenditure on raw materials, consumables, supplies, and purchased goods as well as on purchased services. With revenues rising by 6.6%, the cost of materials rose by 11.5%, which was due in particular to the changed product mix, the increased procurement costs in the context of the chip shortage and the higher prices generally as a result of inflation.

Inventories of € 3,475,962 thousand (2021: € 3,091,945 thousand) were recognized as an expense in 2022. The figure also includes increases in write-downs on inventories of € 59,986

thousand (2021: € 30,712 thousand). The increase in write-downs results mainly from impairment of inventory assets in conjunction with Russian business, which can no longer be used due to the sanctions and were written down by € 45,087 thousand to their fair value.

Please refer to Chapter F.6. for more information on the changes to inventories.

E.5. Personnel Expenses [Table → 3.24](#)

3.24 PERSONNEL EXPENSES

in € thousand	2022	2021
Wages and salaries	(1,406,276)	(1,267,289)
Social security contributions	(285,987)	(270,691)
Expenses for personnel leasing	(79,918)	(80,283)
Termination benefits	(18,003)	(20,638)
Expenses in connection with defined benefit plans	(7,207)	(8,812)
	(1,797,391)	(1,647,713)

The personnel expenses primarily include wages and salaries, as well as social security contributions.

The 11.0% increase in wages and salaries in 2022 (2021: increase of 6.1%) is primarily based on the overall increase in wage levels as well as the increase of 2.8% in the average number of employees excluding temporary personnel, from 27,393 in the previous year to 28,167² in 2022.

The expenses for personnel leasing, at € 79,918 thousand, remained at the same level as the previous year (€ 80,283 thousand).

For fiscal 2022, the amounts recognized as an expense for defined-contribution plans totaled € 55,408 thousand (2021: € 51,951 thousand) and also include the contributions for statutory pension insurance.

Personnel adjustment measures due to severance payments that did not result from restructuring measures affected personnel expenses in the 2022 fiscal year € 18,003 thousand, following € 9,538 thousand in 2021. Restructuring-related personnel expenses of € 8,000 occurred in the 2021 fiscal year at Kiepe Electric GmbH, based in Düsseldorf, Germany, and in the amount of € 3,100 thousand at North America.

E.6. Other Operating Expenses [Table → 3.25](#)

3.25 OTHER OPERATING EXPENSES

in € thousand	2022	2021
Order-related expenses	(92,937)	(102,729)
Legal, consulting and audit costs	(87,558)	(96,332)
Maintenance expenses	(111,201)	(90,775)
Other services	(101,701)	(84,237)
Personnel expenses	(94,506)	(61,767)
External research and development costs	(53,647)	(48,249)
Other taxes	(27,272)	(37,086)
Administrative expenses	(36,586)	(35,223)
Currency translation losses	(76,972)	(33,320)
License and patent fees	(37,184)	(32,238)
Impairment losses	(9,997)	(20,115)
Energy, insurance, and utility costs	(22,732)	(17,427)
Rents and leases	(19,298)	(11,502)
Losses from the disposal of land and buildings	(1,559)	(5,186)
Donations	(5,864)	(5,147)
Other expenses	(27,123)	(27,505)
	(806,138)	(708,838)

Other operating expenses increased in 2022 by 13.7%, from € 708,838 thousand to € 806,138 thousand. The reasons for this increase were mainly the greater losses on currency translation as well as personnel and maintenance expenses. In particular, the personnel expenses rose as a result of the increased travel activity after the sometimes significant travel restrictions in previous years in conjunction with the Covid-19 pandemic.

The decrease in order-related expenses is mainly due to larger reversals of provisions for warranty expenses. The allowances for customer receivables have reduced mainly as a result of the default risks in the Rail Vehicle Systems division, which increased in the previous year.

Other services include services such as logistics, security and building services and cleaning.

Other expenses mainly include bank fees and losses on the disposal of intangible and tangible assets and low value assets.

² The disclosures for 2021 are based on full-time-equivalent (FTE) units, while the disclosures for 2022 are based on the employee head count (the number of employees). The modified disclosure method does not result in any material differences.

E.7. Depreciation, Amortization and Impairment

Depreciation, amortization and impairment is comprised as follows: [Table → 3.26](#).

3.26 DEPRECIATION, AMORTIZATION AND IMPAIRMENT

in € thousand	2022	2021
Depreciation, amortization and impairment of intangible assets	(69,704)	(63,544)
thereof regular depreciation and amortization of intangible assets	(69,704)	(56,516)
thereof impairment of intangible assets	–	(7,028)
Depreciation of property, plant, and equipment	(254,646)	(226,894)
thereof depreciation of property, plant, and equipment	(234,974)	(225,511)
thereof impairment of property, plant and equipment	(19,672)	(1,383)
	(324,350)	(290,438)

Depreciation, amortization and impairment increased by 12%, or € 33,912 thousand, in 2022, from € 290,438 thousand to € 324,350 thousand.

The increase in the amortization of intangible assets mainly results from additional write-downs in connection with intangible assets identified with company additions and write-downs of the new Group-wide ERP software completed in 2022. The depreciation of leased assets, recognized at € 65,032 thousand (2021: € 58,797 thousand), led to an increase in the depreciation of property, plant, and equipment.

Impairment losses on intangible assets in the previous year resulted largely from discontinued R & D projects in the Rail Vehicle Systems division in the amount of € 6,025 thousand. The recoverable amount of the assets was € 0 and thus matched their value in use.

The € 19,672 thousand impairment of property, plant and equipment mainly pertains to a € 15,914 thousand write-down of production sites in the Commercial Vehicle Systems division, which are now recognized as assets held for sale. The reclassified amount of € 7,962 thousand on the balance sheet is equal to the recoverable amount and therefore its value in use. Assets amounting to € 2,000 thousand were written-off to the recoverable amount in Russian entities in the segment Rail Vehicle Systems.

E.8. Financial Result [Table → 3.27](#)

3.27 FINANCIAL RESULT

in € thousand	2022	2021
Interest income from financial instruments, thereof	42,466	12,472
a) Financial instruments (AC)	13,698	10,379
b) Financial instruments (FVTPL)	28,768	1,290
c) Financial instruments (FVOCI)	–	803
Interest income from defined benefit plans	4,900	3,731
Discounting of provisions	189	–
Other	1,576	(302)
Interest income	49,132	15,901
Interest expenses from financial instruments, thereof	(23,397)	(30,176)
a) Financial instruments (AC)	(22,572)	(29,585)
b) Financial instruments (FVTPL)	(753)	–
c) Financial instruments (FVOCI)	(72)	(591)
Interest expenses from defined benefit plans	(8,453)	(7,123)
Compounding of provisions	–	(2,006)
Lease interest expenses	(15,326)	(13,308)
Other	(3,375)	(3,259)
Interest expenses	(50,552)	(55,872)
Currency translation differences, thereof	–	3,806
a) Financial instruments (FVTPL)	–	3,806
Income from disposals of financial instruments	–	3,462
Income from the revaluation of financial instruments (FVTPL)	2,773	7,047
Other	20,570	554
Other financial income	23,344	14,869
Currency translation differences, thereof	(16,241)	(3,212)
a) Financial instruments (AC)	(386)	(3,122)
b) Financial instruments (FVOCI)	(252)	(90)
c) Financial instruments (FVTPL)	(15,602)	–
Expenses from the deconsolidation of subsidiaries	(12,676)	(74)
Expenses from the revaluation of financial instruments (FVTPL)	(11,349)	(3,893)
Share of profits and losses of companies accounted for using the equity method, after taxes	(13,867)	(2,345)
Dividends to non-controlling interests	(269)	(616)
Other	(15)	(11)
Other financial expenses	(54,418)	(10,152)
Other financial result from other financial income and other financial expenses	(31,074)	4,717
Financial result	(32,494)	(35,254)

The increase in interest income results in particular from € 26,114 thousand in income from interest rate derivatives in 2022. The other financial income rose year over year to € 20,570 thousand mainly due to the remeasurement of the option on the minority interest of Robert Bosch GmbH (see also chapter F.14.).

Foreign currency gains or losses on financial Instruments carried at amortized cost (AC) mainly result from the currency translation differences of cash and cash equivalents at the closing rate; these foreign currency gains or losses are netted. The currency gains or losses on financial instruments recognized at fair value through profit or loss (FVTPL) result from the realized gains or losses on currency derivatives and the measurement effects from existing currency derivatives and

changes in the fair value of the financial instruments included in the special fund.

In 2022, the share of profit and loss of companies accounted for using the equity method arises mainly from the share of profit or loss of RailVision Ltd., based in Raanana, Israel; and Nexxiot AG, based in Zurich, Switzerland. This also includes € 2,889 thousand impairment of the share of RailVision Ltd.

Dividends paid to non-controlling interests in the previous year exclusively comprise dividends paid to the minority shareholder Bosch of € 616 thousand, which only accompanied dividends of € 269 thousand in 2022.

Interest income and expenses from financial instruments measured at fair value (FVTPL) are attributable to the fair value measurement of interest rate swaps and to the financial instruments contained in the special fund. Interest income and expense from financial instruments (AC) carried at amortized cost represent the total interest expense and income of these assets and liabilities determined using the effective interest method.

Results from the special fund are included in the financial result at total income of € 7,508 thousand (2021: € 3,976 thousand). Of

this amount, € 306 thousand (2021: € 293 thousand) is recognized in interest expenses, € 286 thousand (2021: € 93 thousand) in interest income and € 7,487 thousand (2021: € 4,176 thousand) under other financial result. The items reported under other financial result particularly include amounts from the measurement of securities at fair value through profit or loss.

For further information on interest income and interest expenses from defined benefit plans, please refer to Chapter F.11.

E.9. Taxes on Income

E.9.1. Taxes reported in profit and loss [Table → 3.28](#)

3.28 TAXES REPORTED IN PROFIT AND LOSS

in € thousand	2022	2021
Current year	(182,944)	(197,500)
Previous years	(22,488)	(14,171)
Current tax expense	(205,432)	(211,671)
Recognition/reversal of temporary differences	(2,358)	(27,714)
Temporary differences from previous years	20,020	4,782
Tax losses/credits	5,257	1,159
Deferred tax income/expense	22,919	(21,773)
Tax expenses	(182,513)	(233,444)

The tax expenses include current and deferred taxes. Current and deferred taxes are reported in profit and loss, except for the extent to which they are associated with a business combination or with items reported directly in equity or in the other comprehensive income.

Tax losses/credit of € 3,693 thousand (2021: € 1,852 thousand) relate to the current year and € 1,563 thousand (2021: € -693 thousand) the previous year.

The change in deferred taxes was mainly caused by the decline in taxable temporary differences in the current year and the increase in deductible temporary differences from previous years.

E.9.2. Taxes reported in other comprehensive income

The breakdown of taxes reported in other comprehensive income is presented in [Table. → 3.29](#).

3.29 TAXES REPORTED IN OTHER COMPREHENSIVE INCOME

in € thousand	Before tax	Deferred tax assets (-)/ liabilities (+)	After tax
			12/31/2022
Revaluation of net debt from defined benefit plans	15,351	(6,845)	8,506
Currency translation differences	94,822	-	94,822
Revaluation of equity instruments	-	-	-
Hedge accounting	30,224	(9,643)	20,581
Total	140,397	(16,488)	123,909
			12/31/2021
Revaluation of net debt from defined benefit plans	89,010	(26,934)	62,076
Currency translation differences	90,970	-	90,970
Revaluation of equity instruments	32,051	-	32,051
Hedge accounting	16,369	(5,293)	11,076
Total	228,400	(32,227)	196,173

E.9.3. Taxes reported directly in equity

As in the previous year, no taxes were reported directly in equity in 2022.

E.9.4. Reconciliation of the effective tax rate

The difference between the effective and expected tax expenses in both fiscal years results mainly from lower local tax rates compared to the hypothetical tax rate at group level.

Material effects that increase the tax rate concern the adjusted deferred tax assets from temporary differences as well as non-creditable withholding tax on dividends, which were largely recognized under the line item "Other."

The increase in the line item "Change/Adjustment of Unrecognized Temporary Differences" is in particular attributable to the adjustment of assets at Russian companies.

The line item "Change/Write-Off of Deferred Tax Assets on Loss Carry-Forwards" includes € -13,471 thousand for the utilization of loss carry-forwards on which no deferred taxes were recognized and € 11,715 thousand for the adjustment of deferred tax assets. The line items "Tax from Previous Year" and "Change/Write-Off of Deferred Tax Assets on Loss Carry-Forwards" include impairment reversals of € -2,385 thousand for deferred tax assets. [Table → 3.30](#)

3.30 RECONCILIATION OF THE EFFECTIVE TAX RATE

		12/31/2022		12/31/2021
	%	in € thousand	%	in € thousand
Income before taxes		688,768		880,813
Expected taxes	31.9	219,717	32.3	284,502
Differences between the local and hypothetical tax rate at the top level	(9.4)	(65,031)	(10.0)	(87,912)
Changes to the tax rate	0.2	1,597	0.4	3,491
Effects from permanent differences due to different accounting under the IFRS and tax return	0.2	1,432	0.0	87
Increase in tax due to non-tax deductible expenses	3.3	22,955	2.1	18,217
Tax-exempt income	(0.5)	(3,549)	(0.6)	(4,853)
Change/write-off of deferred tax assets on loss carryforwards	(0.4)	(2,493)	0.7	6,073
Change/adjustment of unrecognized temporary differences	0.9	5,871	0.3	2,619
Tax from previous year	0.1	904	1.1	10,082
Other	0.2	1,110	0.1	1,137
Effective taxes	26.5	182,513	26.5	233,444

E.9.5. Change in deferred taxes

Like in the previous year, the allocation and development of deferred tax items shows a liability surplus that has increased mainly as a result of the initial consolidation of Cojali. The changes in other comprehensive income mainly relate to pension obligations and hedge accounting. Effects from first-time consolidations and deconsolidations, changes in tax rates and effects from the previous year are reported under "Other."

The planned sale of the Kiepe Group which is presented as IFRS 5 is mainly included under "Other." Please refer to the notes in chapter F.8. for more about this.

The deferred tax assets include deferred tax claims in Germany of an amount of € 4,312 thousand and in China of an amount of € 3,864 thousand, which were recognized based on sufficiently reliable future taxable income, supported by order books and non-recurring causes. [Table → 3.31](#)

3.31 CHANGE IN DEFERRED TAXES IN THE BALANCE SHEET DURING THE YEAR

in € thousand	Net as of January 1	In profit/loss	In other income	Other	Net currency translation differences	As of Dec. 31		
						Net	Deferred tax assets	Deferred tax liabilities
2022 fiscal year								
Intangible assets	(107,829)	(17,266)	–	(31,738)	1,457	(155,375)	20,422	(175,797)
Property, plant and equipment	(167,538)	5,643	–	(3,345)	(3,484)	(168,724)	4,532	(173,256)
Investments	(27,276)	21,095	8,340	(148)	341	2,353	31,107	(28,754)
Inventories	37,473	9,130	–	(695)	161	46,069	55,042	(8,973)
Other assets	(11,792)	13,766	(814)	(6,229)	(1,719)	(6,788)	29,165	(35,953)
Tax loss carry-forwards	12,538	5,257	–	–	(237)	17,559	17,559	–
Pension obligations	41,408	13,740	(28,978)	(763)	(142)	25,266	34,290	(9,024)
Other provisions	39,787	6,193	–	(2,661)	(806)	42,513	53,394	(10,880)
Liabilities	166,302	(34,641)	5,712	6,854	4,622	148,849	161,626	(12,777)
Tax assets (liabilities) before netting	(16,927)	22,919	(15,739)	(38,725)	194	(48,278)	407,136	(455,414)
Netting of taxes	–	–	–	–	–	–	(266,677)	266,677
Net tax assets (liabilities)	(16,927)	22,919	(15,739)	(38,725)	194	(48,278)	140,459	(188,737)
2021 fiscal year								
Intangible assets	(85,578)	(24,816)	–	3,120	(555)	(107,829)	14,191	(122,020)
Property, plant and equipment	(140,674)	(21,705)	–	266	(5,425)	(167,538)	4,151	(171,689)
Investments	(19,386)	(8,016)	1,027	(15)	(886)	(27,276)	2,334	(29,610)
Inventories	29,559	6,781	–	289	843	37,473	41,597	(4,124)
Other assets	(49,641)	40,769	170	(982)	(2,108)	(11,792)	1,118	(12,910)
Tax loss carry-forwards	11,231	1,159	–	–	148	12,538	12,538	–
Pension obligations	50,237	(320)	(8,200)	(657)	347	41,408	54,188	(12,780)
Other provisions	33,226	3,943	–	26	2,592	39,787	55,792	(16,005)
Liabilities	172,960	(19,568)	6,132	302	6,477	166,302	181,541	(15,239)
Tax assets (liabilities) before netting	1,934	(21,773)	(871)	2,350	1,433	(16,927)	367,451	(384,378)
Netting of taxes	–	–	–	–	–	–	(249,517)	249,517
Net tax assets (liabilities)	1,934	(21,773)	(871)	2,350	1,433	(16,927)	117,934	(134,861)

E.9.6. Unrecognized deferred tax assets

Deferred tax assets were not reported with regard to the following items, as it is not likely that taxable income, against

which the Company can settle deferred tax assets, will be available in the future. [Table → 3.32](#)

3.32 UNRECOGNIZED DEFERRED TAX ASSETS

in € thousand	12/31/2022		12/31/2021	
	Gross	Tax effect	Gross	Tax effect
from deductible temporary differences	40,671	7,403	27,846	5,937
from tax losses	128,126	36,289	154,469	44,632
	168,797	43,692	182,316	50,569

The non-capitalized tax loss carry-forwards expire as shown in [Table → 3.33](#).

3.33 NON-CAPITALIZED TAX LOSS CARRY-FORWARDS

in € thousand	12/31/2022		12/31/2021	
	Expiration date		Expiration date	
Expirable	120,318	1-10 years	89,090	1-10 years
Non-expirable	7,808		65,379	
	128,126		154,469	

E.9.7. Additional disclosures

The parent company recognized deferred tax liabilities of € 10,893 thousand as of December 31, 2022 (2021: € 8,089 thousand) for temporary differences arising from future dividend distributions and the planned disposal of the Kiepe Group and a Russian entity (outside basis differences). No other deferred tax liabilities in connection with temporary differences (outside basis differences) in the amount of € 367,599 thousand (2021: € 265,715 thousand) in connection with investments in subsidiaries, associated companies or jointly controlled companies were reported as of the reporting date.

The Group is of the opinion that the income tax liabilities formed are adequate for the years where the tax audit is not closed in consideration of all available information, including the interpretation of tax law and previous experience.

GLOBAL MINIMUM TAX

A range of agreements have been made at a global level to address concerns about the uneven distribution of profits and unequal amount of taxes paid by large multinationals. They include an agreement by more than 135 countries to introduce a global, minimum rate of tax of 15 %. The OECD published a draft framework for this in December 2021, followed by detailed guidelines in March 2022. Furthermore, the Council

of the European Union issued a directive on a global minimum level of taxation, which must be transposed into local legal and administrative regulations by the individual member states by December 31, 2023. The Group may be subject to the minimum tax rate once the tax rate amendments take effect in the countries where the Group operates. At the time the consolidated financial statements were approved for publication, the legislation in connection with the minimum tax was not effective in any of the countries where the Group operated and was not going to be effective in any of these countries before 2024.

The Group has subsidiaries in Hungary that are subject to Hungary's statutory 9 % tax rate. However, an initial analysis showed that the relevant effective tax rate for these companies will not be under the minimum 15 % tax rate. The Executive Board attentively monitors the progress of legislative processes in every country where the Group operates. The Group did not possess sufficient information as at December 31, 2022, to determine the potential quantitative impacts. In order to meet the additional compliance requirement within the Group in time, a project was set up for the purpose in 2022.

E.10. Earnings per Share

The Group's net income decreased in 2022 by 22 % or € 141,113 thousand, from € 647,368 thousand to € 506,255 thousand.

Undiluted earnings per share are calculated in accordance with IAS 33 from the earnings attributable to Knorr-Bremse Aktiengesellschaft shareholders and the weighted average number of shares outstanding during the year. [Table → 3.34](#)

3.34 EARNINGS PER SHARE

	2022	2021
Net income (in € thousand)	506,255	647,368
Earnings after taxes from continuing operations (attributable to Knorr-Bremse shareholders) (in € thousand)	487,680	621,310
Weighted average of shares outstanding (in thousands)	161,200	161,200
Earnings per share in EUR (undiluted)	3.03	3.85
Earnings per share in EUR (diluted)	3.03	3.85

The number of shares in circulation is unchanged at 161,200,000 for the whole of 2022 and is thus also the same as the weighted average. [Table → 3.35](#)

3.35 CHANGE IN NUMBER OF SHARES

	in pieces	Nominal amount in €	Subscribed capital in € thousand
Shares as of 1/1/2022	161,200	1.00	161,200
Shares as of 12/31/2022	161,200	1.00	161,200

Diluted earnings per share correspond to undiluted earnings per share.

For further information on the share split and capital increase, see Chapter F.9.1. Subscribed capital

F. NOTES TO THE CONSOLIDATED BALANCE SHEET

F.1. Intangible Assets [Table → 3.36](#)

3.36 INTANGIBLE ASSETS

in € thousand	Goodwill	Software, licenses and acquired rights	Brands and customer relationships	Internally generated intangible assets	Advance payments made on intangible assets and assets under construction	Other assets	Total
Acquisition and production cost							
As of Jan. 1, 2021	396,174	439,713	156,584	279,938	48,296	17,496	1,338,201
Currency translation differences	9,233	12,606	4,635	5,936	1,352	1,305	35,067
Additions	–	14,927	168	77,382	18,154	–	110,631
Disposals	–	(2,556)	(4,150)	(1,670)	(952)	(809)	(10,137)
Acquisitions resulting from business combinations	12,772	19,339	23,664	(159)	–	1,351	56,967
Disposal from the scope of consolidation	–	–	–	–	–	(1,421)	(1,421)
Reclassifications	–	3,415	4,720	–	(9,279)	1,144	–
As of Dec. 31, 2021	418,179	487,444	185,621	361,427	57,571	19,066	1,529,308
As of Jan. 1, 2022	418,179	487,444	185,621	361,426	57,571	19,066	1,529,307
Currency translation differences	(2,899)	5,800	(3,545)	4,956	(788)	713	4,237
Additions	–	18,259	394	99,917	5,066	1,089	124,725
Disposals	–	(7,301)	(8,868)	(14,154)	(1,361)	(95)	(31,779)
Acquisitions resulting from business combinations	158,439	75,430	61,136	1,135	–	63	296,203
Disposal from the scope of consolidation	–	(586)	–	–	–	–	(586)
Reclassifications pursuant to IFRS 5	–	(6,566)	(11,751)	(11,587)	–	(3,011)	(32,915)
Reclassifications	–	43,218	–	389	(45,680)	2,074	1
As of Dec. 31, 2022	573,719	615,698	222,987	442,082	14,808	19,899	1,889,193
Accumulated depreciation, amortization and impairment expenses							
As of Jan. 1, 2021	–	(310,506)	(68,450)	(55,205)	(10,288)	(5,983)	(450,432)
Currency translation differences	–	(13,466)	(3,397)	(1,379)	217	(648)	(18,673)
Additions	–	(29,770)	(10,792)	(12,372)	–	(3,582)	(56,516)
Disposals	–	1,728	4,150	1,037	–	832	7,747
Impairment	–	–	–	(7,028)	–	–	(7,028)
Disposal from the scope of consolidation	–	–	–	–	–	1,421	1,421
As of Dec. 31, 2021	–	(349,910)	(79,754)	(74,788)	(10,071)	(8,958)	(523,481)
As of Jan. 1, 2022	–	(349,910)	(79,754)	(74,788)	(10,071)	(8,958)	(523,481)
Currency translation differences	–	(7,078)	444	(1,099)	813	(489)	(7,409)
Additions	–	(34,194)	(11,859)	(19,292)	–	(4,358)	(69,703)
Disposals	–	7,283	8,868	14,478	–	95	30,724
Disposal from the scope of consolidation	–	361	–	–	–	–	361
Reclassifications pursuant to IFRS 5	–	6,001	9,836	1,848	–	2,782	20,467
Reclassifications	–	2,060	–	1	(23)	(2,038)	–
As of Dec. 31, 2022	–	(375,477)	(72,465)	(78,852)	(9,281)	(12,966)	(549,041)
Carrying amount as of Dec. 31, 2021	418,179	137,534	105,867	286,639	47,500	10,108	1,005,827
Carrying amount as of Dec. 31, 2022	573,719	240,221	150,522	363,230	5,527	6,933	1,340,152

The increase in goodwill in this fiscal year resulted primarily from the acquisitions of Cojali and DSB Component Workshops. For further details, please refer to Chapter C.3.1.

Additions to the Consolidated Companies and Business Combinations.

Additions to intangible assets increased by 13%, or € 14,094 thousand, in 2022, from € 110,631 thousand to € 124,725 thousand. This mainly results from an increase in the additions of internally generated intangible assets totaling € 104,708 thousand.

The additions from the acquisition of business combinations result from the acquisition of Cojali and DSB Component Workshops. See the explanations in Chapter C.3 for details.

The internally generated intangible assets item relates to the finished and unfinished capitalized costs of the Group's development activities. Development costs are capitalized if the requirements defined in IAS 38 are met. These are subject to straight-line depreciation over the respective useful life. Additions in the fiscal year were € 99,917 thousand (2021: € 77,382 thousand). Of which, € 29,119 thousand (2021: € 30,293 thousand) resulted from the Rail Vehicle Systems area and € 68,504 thousand from the Commercial Vehicle Systems area (2021: € 47,089).

As long as know-how is not ready for use, an impairment test is performed at least as of December 31 of the relevant fiscal year.

The Group uses the total cost method in determining period results. Hence, expenditures assigned to the function research and development which were recognized as expense cannot be directly determined. The research and development costs recognized in the statement of income as expense is € 361,092 thousand (2021: € 348,271 thousand).

F.2. Goodwill

According to IFRS, goodwill essentially has an unlimited useful life. Goodwill is divided between the Group's cash-generating units (CGU) and the value is assessed annually. The segments Rail Vehicle Systems and Commercial Vehicle Systems are defined as cash-generating units for the purpose of impairment testing. For the purpose of impairment testing, the following goodwill is allocated to the cash-generating units of the Group as follows: [Table → 3.37.](#)

3.37 GOODWILL

in € thousand	12/31/2022	12/31/2021
Rail Vehicle Systems	216,723	206,877
Commercial Vehicle Systems	356,996	211,302
	573,719	418,179

The year-on-year increase in goodwill is due to the acquisition of DSB Component Workshops in the Rail Vehicle Systems segment with an amount of € 5,392 thousand, the acquisition of Cojali in the Commercial Vehicle Systems segment with an amount of € 153,047 thousand and exchange rate fluctuation.

The determination of the recoverable amount for the respective cash-generating unit is based in each case on the fair value less the costs of sale, which was estimated by discounted future cash flows of the cash-generating units. The measurements at fair value were classified as fair values in level 3 based on the input factors of the valuation technique used.

The cash flow forecasts contained specific estimates for each cash-generating unit for two or three years, a subsequent rough planning period of three or two years and a sustainable growth rate for the period thereafter.

The discount rate used was the historical weighted average cost of capital (WACC) after corporate taxes calculated on the basis of a group of peer companies.

The key assumptions used in estimating the recoverable amount are set out below:

The sales growth rates forecast in the detailed planning stage are based on a consolidation of detailed bottom-up plans of the significant legal entities included in cash-generating units and take into account past order data as well as industry-specific market information from external sources. In the rough planning period, the sales growth rates are determined with a view to the longer-term growth rates obtained from external sources.

The EBIT margins forecast in the detailed planning stage take past experience and current data from the respective order backlogs into account. Average EBIT margins extrapolated from the past are used in the rough planning period.

Table → 3.38 represents the average sales growth rates utilized in the course of determining the amount of the payment-generating units, the average EBIT margins, discount rates and the growth rates for extrapolation of the cash flow forecasts.

3.38 CASH-GENERATING UNITS

in %	12/31/2022	12/31/2021
Rail Vehicle Systems		
average sales growth rates in the detailed planning phase	7.6	7.3
average EBIT margin in the detailed planning phase	14.1	18.6
Weighted average cost of capital (WACC) before tax	9.6	8.0
Weighted average cost of capital (WACC) after tax	9.3	7.8
Sustainable growth rate	1.0	1.0
Commercial Vehicle Systems		
average sales growth rates in the detailed planning phase	4.8	4.4
average EBIT margin in the detailed planning phase	10.5	12.2
Weighted average cost of capital (WACC) before tax	10.5	8.8
Weighted average cost of capital (WACC) after tax	10.1	8.6
Sustainable growth rate	1.0	1.0

The sustainable growth rate was calculated based on the estimate of long-term inflation expectations and is based on the assumptions that a market participant would make.

Knorr-Bremse reviews the carrying amount of goodwill at the end of each fiscal year for impairment.

The impairment tests did not indicate any need for impairment.

F.3. Property, Plant and Equipment [Table → 3.39](#)

3.39 PROPERTY, PLANT AND EQUIPMENT

in € thousand	Land, land rights and buildings, including buildings on land owned by others	Technical equipment and machinery	Other equipment, factory and office equipment	Advance payments and plant under construction	Total
Acquisition and production cost					
As of Jan. 1, 2021	932,712	1,043,552	797,705	226,164	3,000,133
Currency translation differences	32,236	38,437	29,021	9,041	108,735
Additions	188,546	42,711	61,832	156,339	449,428
Disposals	(44,540)	(14,288)	(69,937)	(5,026)	(133,791)
Acquisitions qualifying as business combinations	1,140	63	1,139	334	2,676
Disposal from the scope of consolidation	(5,579)	-	(187)	-	(5,766)
Reclassifications	23,050	78,420	37,645	(139,115)	-
As of Dec. 31, 2021	1,127,565	1,188,895	857,218	247,737	3,421,415
As of Jan. 1, 2022	1,127,565	1,188,896	857,217	247,736	3,421,414
Currency translation differences	12,343	2,673	9,870	5,739	30,625
Additions	71,472	47,067	52,452	127,908	298,899
Disposals	(34,539)	(51,137)	(20,008)	(315)	(105,999)
Acquisitions qualifying as business combinations	20,786	12,965	844	-	34,595
Disposal from the scope of consolidation	(2,690)	(9,148)	(2,036)	(189)	(14,063)
Reclassifications pursuant to IFRS 5	(42,323)	(28,889)	(29,602)	(1,673)	(102,487)
Reclassifications	21,117	117,036	7,500	(145,653)	-
As of Dec. 31, 2022	1,173,731	1,279,463	876,237	233,553	3,562,984
Accumulated depreciation, amortization and impairment expenses					
As of Jan. 1, 2021	(266,157)	(592,058)	(595,094)	(2,093)	(1,455,402)
Currency translation differences	(9,461)	(20,786)	(20,477)	(32)	(50,756)
Additions	(63,880)	(79,109)	(82,521)	-	(225,510)
Disposals	17,792	12,910	67,929	792	99,423
Impairment	-	(1,104)	-	(279)	(1,383)
Disposal from the scope of consolidation	2,435	-	137	-	2,572
Reclassifications	-	(1,058)	(334)	1,392	-
As of Dec. 31, 2021	(319,271)	(681,205)	(630,360)	(220)	(1,631,056)
As of Jan. 1, 2022	(319,271)	(681,205)	(630,360)	(220)	(1,631,056)
Currency translation differences	(894)	120	(8,487)	-	(9,261)
Additions	(73,202)	(86,658)	(75,113)	-	(234,973)
Disposals	11,255	30,677	29,693	-	71,625
Impairment	(3,245)	(16,427)	-	-	(19,672)
Disposal from the scope of consolidation	691	4,500	1,147	-	6,338
Reclassifications pursuant to IFRS 5	24,142	24,351	19,973	-	68,466
Reclassifications	(92)	(12,071)	12,141	22	-
As of Dec. 31, 2022	(360,616)	(736,713)	(651,006)	(198)	(1,748,533)
Carrying amount as of Dec. 31, 2021	808,294	507,690	226,858	247,517	1,790,359
Carrying amount as of Dec. 31, 2022	813,115	542,750	225,231	233,355	1,814,451

Additions to property, plant, and equipment decreased by 33%, or € 150,529 thousand, in 2022, from € 449,428 thousand to € 298,899 thousand.

Additions to land and buildings related primarily to the newly concluded or extended leases that are included in additions at € 61,730 thousand in accordance with IFRS 16 (2021: € 174,338 thousand), among which additions from newly leased spaces with long-term contracts at a site in Poland at

€ 14,859 thousand, in Mexico at € 7,101 thousand and in China at € 6,775 thousand.

Other right-of-use assets under IFRS 16 were capitalized in an amount of € 9,510 thousand (2021: € 9,939 thousand) under other equipment, factory and office equipment and in the amount of € 237 thousand (2021: € 258 thousand) under technical equipment.

Investments in technical equipment and machinery as well as other equipment, factory and office equipment in the Rail Vehicle Systems division continued to be focused on investments in capacity expansions, high-growth product groups, automation projects and also replacement and expansion projects. Analogously to the previous year, worldwide investments in supplier tools in Commercial Vehicle Systems were complemented by investments for the GSBC product platform and for the integration of R.H. Sheppard.

Further changes in property, plant and equipment arise from the acquisitions of Cojali and DSB Component Workshops. Please refer to Chapter C.3.

Property, plant and equipment is subject to annual scheduled depreciation and amortization. Impairment losses on property, plant, and equipment are reported separately (see Chapter E.7. Depreciation, Amortization and Impairment). [Table → 3.26](#)

As of December 31, 2022, as in the previous year, a parcel of land in the property leasing company Sancto is encumbered by a land charge. The registered land charge amounts to € 28,924 thousand (2021: € 28,924 thousand).

The carrying amounts of the land and buildings, as well as the assessed values of the land charges, have developed as shown in [Table → 3.40](#).

3.40 CARRYING AMOUNTS

in € thousand	2022		2021	
	Carrying amount	Value land charge	Carrying amount	Value land charge
Sancto	22,032	27,255	22,865	27,297
	22,032	27,255	22,865	27,297

F4. Other Financial Assets

[Table → 3.41](#)

3.41 OTHER FINANCIAL ASSETS

in € thousand	12/31/2022	12/31/2021
Derivative financial instruments	21,617	6,072
Equity instruments	23,675	69,850
Purchase price receivables from disposal of land	29,605	52,526
Securities	101,920	116,695
Other financial assets	49,121	33,853
	225,939	278,996
Current	103,116	63,823
Non-current	122,822	215,173

The equity instruments included € 22,554 thousand of equities and participation certificates in the special fund in the previous year, while these were disposed of entirely during the 2022 fiscal year. Furthermore, the company also disposed of its shares in Haldex AB which were recognized at € 23,242 thousand the previous year.

The € 22,922 thousand decline in purchase price receivables from disposal of land is mainly attributable to the payment of the purchase price for the sale of the representative offices in Berlin at an amount of € 22,000 thousand.

The securities recognized in other financial assets are attributable to the special fund's bonds and Pfandbriefe, of which an amount of € 23,248 thousand is current assets (2021: € 20,489 thousand).

The € 15,268 thousand increase in the remaining other financial assets results in particular from an increase in suppliers with debit balances from € 3,861 thousand to € 14,856 thousand.

F.5. Trade Accounts Receivable and Other Assets [Table → 3.42](#), [Table → 3.43](#)

3.42 TRADE ACCOUNTS RECEIVABLE

in € thousand	12/31/2022	12/31/2021
Accounts receivable due from associated and related companies and parties	26,596	30,226
Trade accounts receivable	1,316,709	1,200,047
Current	1,343,305	1,230,273
Non-current	–	–

Trade accounts receivable increased in the reporting period by 9.2% or € 113,032 thousand from € 1,230,273 thousand to € 1,343,305 thousand.

Due to a lower relative increase in revenues (6.6% from 2021 to 2022), the “days sales outstanding” indicator increased from an average of 66.0 days to 67.6 days. Changes in impairment under IFRS 9 and a breakdown of trade accounts receivable by industry can be found in Chapter F.15.2.

3.43 OTHER CURRENT AND NON-CURRENT ASSETS

in € thousand	12/31/2022	12/31/2021
Non-current		
Nomination costs	40,016	36,476
Costs to fulfill a contract	35,505	25,759
Prepaid expenses	8,307	7,514
Tax receivables	5,869	6,304
Other	2,730	3,000
Other non-current assets	92,427	79,053
Current		
Receivables from other taxes	123,523	76,298
Deferred assets	29,948	29,526
Advance payments	8,127	13,002
Advances on wages	115	893
Advance on travel expenses	106	325
Other	15,875	10,596
Other current assets	177,694	130,640
Other assets	270,121	209,693

F.6. Inventories [Table → 3.44](#)

3.44 INVENTORIES

in € thousand	Materials and supplies	Unfinished goods	Finished goods	Merchandise	Goods in transit	Advance payments	Total
Gross inventory as of Dec. 31, 2021	620,560	122,863	173,833	129,746	73,487	5,065	1,125,554
Write-down to net realizable value	(70,302)	(7,902)	(23,865)	(21,307)	–	–	(123,376)
As of Dec. 31, 2021	550,258	114,961	149,968	108,439	73,487	5,065	1,002,178
Gross inventory as of Dec. 31, 2022	752,067	145,132	177,779	165,312	75,546	9,467	1,325,302
Write-down to net realizable value	(116,199)	(7,653)	(32,806)	(26,705)	–	–	(183,362)
As of Dec. 31, 2022	635,868	137,479	144,973	138,607	75,546	9,467	1,141,940

Due to the increase in revenue compared to the previous year and in order to ensure constant production and delivery capabilities, inventories also increased by € 139,762 thousand, or 13.9%, from € 1,002,178 thousand as of the end of

€ 1,141,940 thousand as of December 31, 2022. The most significant increases were € 85,610 thousand for materials and supplies, € 30,168 thousand for goods in transit and € 22,518 thousand for unfinished goods.

F.7. Cash and Cash Equivalents [Table → 3.45](#)

3.45 CASH AND CASH EQUIVALENTS

in € thousand	12/31/2022	12/31/2021
Cash and cash equivalents	1,342,587	1,380,210

Cash and cash equivalents include cash and demand deposits at credit institutions as well as highly liquid assets in different currencies that can be converted to cash quickly and are only subject to insignificant risks of changes in value.

The cash and cash equivalents are measured at acquisition cost and adapted by an adjustment for the probability of default in relation to the banks ("expected credit loss") based on a public issuer rating for core and principal commercial banks. Further information on the rating is provided in Chapter H.1.4.

F.8. Assets Held for Sale and Corresponding Liabilities

Assets held for sale and corresponding liabilities include € 170,245 thousand of assets and € 155,120 thousand of liabilities.

In the Commercial Vehicle Systems division, the foundry and associated production buildings at R.H. Sheppard Co., Inc. are planned to be disposed of as part of a portfolio adjustment. Non-binding purchase bids were received during the search for a buyer in fiscal year 2022, and the company is assuming based on them that a sale will take place in the 2023 fiscal year. The foundry and associated production buildings will continue to be presented as part of the Commercial Vehicle Systems division until such a sale.

A fair value measurement based on the non-binding purchase bids received did indicate € 15,914 thousand of impairment of the carrying amounts for the assets and liabilities recognized as at December 31, 2022 which is presented under depreciation of property, plant, and equipment (see chapter E.7. Depreciation, Amortization and Impairment). The foundry and associated production buildings of R.H. Sheppard Co., Inc. were recognized only with property, plant and equipment of € 7,962 thousand under assets held for sale and disposal groups as at December 31, 2022.

The Kiepe Group companies allocated to the Rail Vehicle Systems division are planned to be sold as part of a portfolio adjustment. Non-binding purchase bids were received during the search for a buyer in fiscal 2022, and the company is assuming based on them that a sale will take place in the first half of 2023. The Kiepe Group will continue to be presented as part of the Rail Vehicle Systems division until such a sale.

The Kiepe Group comprises Kiepe Electric GmbH, based in Düsseldorf, Germany, and the subsidiaries Kiepe Electric Schweiz AG, based in Niederbuchsiten, Switzerland; Kiepe Electric S.r.l., based in Cernusco sul Naviglio, Italy; Kiepe Electric Corporation, based in Vancouver, Canada; Kiepe Electric India Pvt. Ltd., based in Faridabad, India; Heiterblick Projektgesellschaft mbH, based in Leipzig, Germany; and Kiepe Electric LLC., based in Alpharetta, USA.

A fair value measurement based on the non-binding purchase bids received did not indicate any impairment of the carrying amounts for the assets and liabilities recognized as at December 31, 2022. The Kiepe disposal group comprised the following assets and liabilities measured at fair value as at December 31, 2022:

3.46 OVERVIEW OF ASSETS HELD FOR SALE AND CORRESPONDING LIABILITIES

in € thousand	12/31/2022
Assets	
Intangible assets	12,447
Property, plant and equipment	25,958
Other financial assets	2,429
Deferred tax assets	4,725
Non-current assets	45,559
Inventories	46,506
Trade accounts receivable	42,306
Other financial assets	1,957
Other assets	2,982
Contract assets	17,790
Income tax receivables	0
Cash and cash equivalents	5,183
Current assets	116,724
Assets held for sale and disposal groups	162,283
Liabilities	
Provisions for pensions	3,562
Provisions for other employee benefits	935
Other provisions	12,718
Trade accounts payable	-
Financial liabilities	2,219
Other liabilities	-
Income tax liabilities	-
Deferred tax liabilities	-
Non-current liabilities	19,434
Other provisions	29,091
Trade accounts payable	17,725
Financial liabilities	5,820
Other liabilities	2,566
Contract liabilities	80,313
Income tax liabilities	173
Current liabilities	135,687
Liabilities directly associated with assets held for sale	155,120
Assets and liabilities held for sale	7,163

Earnings of € 1,945 thousand in connection with the Kiepe Group were recognized in other comprehensive income as at December 31, 2022.

F.9. Equity

F.9.1. Subscribed capital

Knorr-Bremse AG's capital stock is divided into 161,200,000 fully paid up no-par-value bearer shares with full voting rights, each representing a share of the capital stock of € 1.00. In total, the capital stock thus amounts to € 161,200,000. Each share guarantees the right to the dividend resolved by the shareholders' meeting.

The Executive Board is authorized, with the approval of the Supervisory Board, to increase the capital stock of the Company on one or more occasions in the period up to May 28, 2023, by up to € 40,300,000 by issuing up to 40,300,000 new bearer shares against cash and/or non-cash contributions (Authorized Capital 2018). The new shares are generally to be offered directly or indirectly to the shareholders for subscription. The Executive Board is, however, entitled, under certain conditions, to completely or partially exclude the subscription right with the consent of the Supervisory Board.

Furthermore, subject to the approval of the Supervisory Board, the Executive Board was authorized until May 28, 2023, to issue convertible bonds and/or bonds with warrants, profit participation rights and/or income bonds (or combinations of these instruments) possibly excluding the subscription right to create conditional capital (Conditional Capital 2018). To this end, the capital stock of Knorr-Bremse AG is conditionally increased by up to € 16,120,000 by issuing up to 16,120,000 new no-par-value bearer shares. The conditional capital increase is only to be implemented to the extent that conversion or option rights are exercised.

Stella Vermögensverwaltungs-GmbH, Grünwald, Germany, TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany, and KB Holding GmbH, Grünwald, Germany, have informed the Company that they hold a majority interest in the Company, either directly or indirectly. Since the death of Mr. Heinz Hermann Thiele on February 23, 2021, the majority of shares in Stella have been held by his widow and heir, Ms. Nadia Thiele. The voting rights arising from these shares are controlled by Mr. Robin Brühmüller, in his capacity as the executor of the deceased's estate, for the duration of the executorship. Due to his control of the voting rights in Stella, Mr. Brühmüller is also attributed with the 58.99% indirect interest of KB Holding in Knorr-Bremse AG.

F.9.2. Capital reserves

The Group's capital reserve remains unchanged at € 13,884 thousand as of December 31, 2022.

F.9.3. Retained earnings

In addition to the legal reserve of the parent company, retained earnings contain the parent company's other retained earnings and the effect of IFRS transitions. [Table → 3.47.](#)

3.47 RETAINED EARNINGS

in € thousand	12/31/2022	12/31/2021
Legal reserves	15,967	15,967
Other retained earnings	(5,647)	(2,667)
Total	10,320	13,300

F.9.4. Other equity components

Other equity components contain the changes in equity with no effect on profit or loss. This includes currency translation differences as a result of the translation of annual financial statements of foreign subsidiaries, changes in the measurement of financial assets whose changes in fair value are recognized (optionally in OCI), the actuarial gains and losses from the measurement of benefits to employees reported in the year under review, the effects of hedge accounting as well as taxes recognized directly in equity.

3.48 VOTING RIGHTS NOTIFICATION

Party obligated to disclose	Date of reaching, exceeding or falling below the thresholds	Threshold value reached	Disclosure obligations and/or additions pursuant to WpHG*	New share of voting rights	
				in %	absolute
Mrs. Nadia Thiele, Germany**	Feb. 23, 2021	50% exceeded	Section 34 WpHG	58.99	95,097,851
Mr. Robin Brühmüller, Germany***	05/17/2021	50% exceeded	Section 34 WpHG	58.99	95,097,851
The Capital Group Companies, Inc.	Apr. 21, 2021	fell below 3%	Section 34 WpHG	2.99	4,815,508
Massachusetts Financial Services Company	10/31/2022	3% exceeded	Section 34 WpHG	3.09	4,984,893
Massachusetts Financial Services Company	11/24/2022	fell below 3%	Section 34 WpHG	2.98	4,804,129

* The aforementioned provisions of the WpHG refer to the version applicable at the time of publication of the voting rights announcement

** Notification due to devolution of the inheritance to the heir owing to the passing of Heinz Hermann Thiele on February 23, 2021

*** Notification due to execution of Heinz Hermann Thiele's will

B) NOTIFICATIONS IN ACCORDANCE WITH THE GERMAN SECURITIES TRADING ACT:

Pursuant to section 160 (1) no. 8 of the German Stock Corporation Act (AktG), information must be provided on the existence of equity interests notified to Knorr-Bremse AG pursuant to section 20 (1) and (3) AktG or pursuant to section 33 (1) or (2) of the German Securities Trading Act (WpHG).

The German Securities Trading Act requires investors whose share of voting rights in listed companies reaches certain thresholds to make a disclosure. The following reportable

F.9.5. Takeover disclosures required by law pursuant to section 289a HGB and section 315a HGB

A) PARTICIPATION IN CAPITAL EXCEEDING 10% OF VOTING RIGHTS

On the basis of the voting rights notifications received by the Company in accordance with the provisions of the German Securities Trading Act (WpHG), there is a participation in the capital of the Company that exceeds 10% of the voting rights. Based on a voluntary disclosure made in 2020, KB Holding GmbH, Grünwald, Germany, currently holds 58.99% of the voting rights in Knorr-Bremse AG. Pursuant to section 34 (1) WpHG, these voting rights are attributable to TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany, and Stella Vermögensverwaltung GmbH, Grünwald, Germany, and were attributable to Mr. Heinz Hermann Thiele of Munich, Germany, as the majority shareholder of Stella Vermögensverwaltungs GmbH, until his death on February 23, 2021.

Due to the devolution of the inheritance to the heir, the voting rights in Knorr-Bremse AG attributed to Mr. Thiele transfer to Mrs. Nadia Thiele. Since May 17, 2021, the voting rights attributable to Nadia Thiele have been controlled by Mr. Robin Brühmüller in connection with the execution of the will.

[Table → 3.48](#)

investments were notified to Knorr-Bremse AG in writing in the 2021 and 2022 fiscal years as of the balance sheet date; the information relates in each case to the most recent notification made to Knorr-Bremse AG by a reportable entity. All disclosures made by Knorr-Bremse AG regarding equity investments in the year under review and beyond can be found on the company's website (<https://ir.knorr-bremse.com>). [Table → 3.48](#)

F.9.6. Dividends

In the fiscal years, Knorr-Bremse AG resolved to pay the dividends summarized in [Table → 3.49](#).

3.49 DIVIDENDS

in € thousand	2022	2021
EUR 1,85 per bearer share (2021: EUR 1,52)	298,220	245,024

The dividends relate in all cases to the prior year. In the 2022 fiscal year, a dividend of € 1.85 per bearer share was declared for the 2021 fiscal year and therefore paid in the total amount of € 298,220 thousand.

The Executive Board of Knorr-Bremse AG will suggest that the Annual General Meeting distribute a total dividend of € 233,740 thousand for the past fiscal year. This corresponds to a dividend per share of € 1.45.

F.9.7. Capital management

The Group's objective is to maintain a strong capital base and ensure the sustainable development of the Company.

To this end, the Group prepares short-term and long-term liquidity planning. Short-term liquidity planning covers a three-month planning horizon with precise expected cash flows including currency changes. Long-term liquidity planning is carried out twice a year with a planning horizon of three years.

To manage free cash flow³, the Group has established a net working capital management and investment process. Demand-oriented investments, which serve to maintain and further develop the Company, are made within the annual target of around 3% to 5% of annual sales. The goal of 40 to 50 days sales outstanding for net working capital is achieved by closely monitoring the divisions' working capital positions and liquidity management programs such as factoring and the Supplier Early Payment Program.

In addition, Knorr-Bremse makes targeted use of retained earnings to maintain a stable equity ratio. In future, the Group plans to distribute between 40% and 50% of consolidated net income as dividends and to retain the remaining profit. This serves to strengthen the equity ratio with a target figure of between 20% and 30%. The Group defines the equity ratio as the ratio of equity to total assets.

³ Free cash flow is calculated by deducting disbursements for investments in property, plant and equipment and intangible assets from cash flow from operating activities and adding deposits received from the sale of property, plant and equipment as well as intangible assets.

F.10. Share-Based Payment Arrangements

As of the end of the fiscal year, long-term bonus agreements (long-term incentives), which are structured as a share-based payment model, were in place with the Executive Board and selected members of the wider management team of the Group. These structures were approved for the first time in fiscal year 2020.

In the reporting period, the Group committed a total of 104,694 (2021: 92,602) share appreciation rights (SARs) to eligible individuals as of January 1, 2022. This commitment gives them the right to receive a cash payment after four years of service. The extent of the disbursement is the product of the number of committed share appreciation rights, the average share price of Knorr-Bremse AG within the last 60 days before the end of the four-year assessment period and the equally weighted development of EPS and relative total shareholder return. The disbursement is limited to a maximum of 180% (Executive Board Chair/CEO) or 200% (other Executive Board members) of the target amount. The average actual EPS value, in comparison with a defined target value, is assigned to a target corridor ranging from 0% to 200%. The relative total shareholder return is fixed in relation to three comparative groups in the assessment period. These comparative groups are the companies listed on the MDAX and two peer group companies defined by the Supervisory Board in the categories "Rail & Truck" and "High Quality Industrial Goods". This component is likewise assigned to a target achievement corridor ranging from 0% to 200%.

The following amounts are set aside for the long-term incentive. [Table → 3.50](#)

3.50 CARRYING AMOUNT OF THE LTI PROVISION

in € thousand	2022	2021
2020-2023 tranche	1,779	2,773
2021-2024 tranche	1,580	2,236
2022-2025 tranche	1,082	-
	4,441	5,008

The following amounts were recognized as expenses for the long-term incentive: [Table → 3.51](#)

3.51 ADDITION TO THE LTI PROVISION

in € thousand	2022	2021
2020-2023 tranche	(993)	(170)
2021-2024 tranche	(656)	2,236
2022-2025 tranche	1,082	
	(567)	2,066

The sub-target of EPS development was determined at a factor of 74.5% (as of the reporting date (2021: 50%) for the 2020-2023 tranche, at 66.3% (2021: 111.8%) for the 2021-2024 tranche and 51.3% for the 2022-2025 tranche. The valuation of the sub-target of total shareholder return in relation to peer groups was carried out in a Monte-Carlo simulation. In this case, the EPS sub-target was also considered as an input factor in order also to take account of the maximum total disbursement of the LTI. Service- and market-independent performance conditions associated with the transactions were not considered in determining the value.

The following inputs were used in determining fair values on the grant date and on the measurement date of the share appreciation rights. [Table → 3.52](#)

3.52 VALUATION PARAMETERS AS OF THE RESPECTIVE MEASUREMENT DATE

Tranche	2020 - 2023	2021 - 2024	2022 - 2025
Parameters as of the grant date			
Grant date	01/01/2020	01/01/2021	01/01/2022
Closing price of Knorr-Bremse share	90.75	111.68	86.90
Calculated dividend yield	2.00%	1.39%	1.75%
Knorr-Bremse volatility	28.00%	30.15%	30.97%
Risk-free interest rate	-0.54%	-0.76%	-0.55%
Remaining term in years until allocation	4.00	4.00	4.00
Parameters as of the December 31, 2022 grant date			
Closing price of Knorr-Bremse share	51.04	51.04	51.04
Calculated dividend yield	3.62%	3.62%	3.62%
Previous year's dividend paid by Knorr-Bremse	1.85	1.85	1.85
Knorr-Bremse volatility	44.10%	37.28%	38.53%
Risk-free interest rate	2.36%	2.56%	2.55%
Remaining term in years until allocation	1.00	2.00	3.00

Expected volatility is based on an assessment of the past volatility of the Company's share price, especially in the period that corresponds to the four-year term.

F.11. Employee Benefits

[Table → 3.53](#)

F.11.1. Employee benefits

3.53 EMPLOYEE BENEFITS

in € thousand	12/31/2022	12/31/2021
Assets from employee benefits	19,499	30,092
Provisions for pensions	(219,835)	(312,066)
Other personnel related provisions	(32,022)	(29,550)
Provisions for employee benefits	(251,857)	(341,616)
Non-current	(241,371)	(333,730)
Current	(10,486)	(7,886)

The provisions for employee benefits include provisions for pension commitments and other personnel provisions.

In various countries, Knorr-Bremse makes pension commitments to its employees based on defined benefit plans, the benefits of which depend either on the employee's pensionable remuneration or contain other guarantees. Pension commitments are measured based on actuarial principles using the projected unit credit method. The pension plan accruals reported in the balance sheet correspond to the present value of the defined benefit obligation in consideration of future salary and pension increases as of the reporting date, less the fair value of the plan assets. An excess of plan assets beyond the present value of the defined benefit obligation is limited to the present value of the benefit attributable to the Company, from the reimbursement of contributions or the reduction of future contribution payments.

The defined benefit plans in Germany and United Kingdom represent the majority of the gross obligation at approximately 77 %. Minor pension obligations from defined benefit pension schemes also exist in Austria, France, India, Italy, Japan, Mexico, Sweden, Switzerland, South Korea and the USA. In Germany, United Kingdom, Japan, South Korea, Austria (in some cases) and the USA, the benefits are granted on a voluntary basis, while, in the other countries, the benefits are based on statutory regulations.

GERMANY

Employees benefits are granted from pension schemes for which the benefits in old age, in the event of disability or death are calculated depending on the period of employment, the salary at the time of commencement of the annuity, and the relevant assessment ceiling in the statutory

pension insurance scheme (BBG), as well as a defined benchmark figure. The benefits are paid in the form of a pension. The plan was closed to new admissions with effect from January 1, 2003. Plan participants primarily include beneficiaries. Moreover, individual plans also exist, especially amongst managers, which were concluded on an individual contractual basis.

The obligations in Germany are largely completely unfunded, which means that no plan assets exist, which are solely intended to meet pension commitments – with the exception of one company for which a pledged reinsurance policy exists.

In Germany, the interest rate risk as well as the life expectancy of the plant participants play a major role as part of a risk consideration, as the benefits are primarily paid in the form of an annuity. However, the risk was reduced by closing the pension plan to new admissions.

UNITED KINGDOM

In the United Kingdom, the employees and managers benefit from defined benefit plans, which are closed to new admissions; in addition, existing plan participants are no longer entitled to any increase in entitlements, with the exception of a few special cases for which the benefits continue to increase together with the salary. At the time, the plan was introduced on a voluntary basis. The plan provides for benefits upon retirement and death. Until the closure of the plan in 2012, these benefits were dependent on salary and years of service. Payment essentially occurs in the form of an annuity, whereby part of the benefit can also be paid out as a one-off capital payment at the request of the plan participant.

In the United Kingdom, a board of trustees, which is comprised of Company and employee representatives, is responsible for asset management. The investment strategy targets long-term value additions with a low volatility.

The pension schemes in the United Kingdom are exposed to the interest rate risk, due to the payment as a lifelong pension, as well as the risk of a higher life expectancy than assumed so that the pensions will have to be paid out for longer than planned. However, the risks were limited by closing the pension plan. Moreover, an investment risk also exists, in that the plan assets may not develop as expected and that the plan assets may therefore only be able to partially offset changes to the scope of obligations.

Please refer to Section E.5. with regard to expenses in connection with defined benefit pension plans.

F.11.3. Change in net debt Table → 3.54

3.54 CHANGE IN NET DEBT

in € thousand	Defined benefit obligation		Fair value of plan asset		Net liabilities (net assets) from defined benefit plans	
	2022	2021	2022	2021	2022	2021
As of Jan. 1	(601,704)	(635,057)	319,730	301,165	(281,974)	(333,892)
Current service costs	(7,492)	(8,812)	–	–	(7,492)	(8,812)
Past service costs	285	–	–	–	285	–
Gains/losses from settlements	–	–	–	–	–	–
Interest income	–	–	4,900	3,731	4,900	3,731
Interest expense	(8,453)	(7,123)	–	–	(8,453)	(7,123)
Net cash flow	13,257	9,654	(13,757)	(10,152)	(500)	(498)
Remeasurements	165,585	39,727	(91,927)	1,049	73,658	40,776
a) Return on plan assets	–	–	(87,704)	1,049	(87,704)	1,049
b) Actuarial gains/losses (change in demographic assumptions)	(10)	12,721	–	–	(10)	12,721
c) Actuarial gains/losses (change in financial assumptions)	174,862	22,847	–	–	174,862	22,847
d) Effect of experience adjustments	(9,267)	4,159	–	–	(9,267)	4,159
e) Asset ceiling	–	–	(4,223)	–	(4,223)	–
Currency translation differences	6,661	(17,559)	(7,659)	19,236	(998)	1,677
Employer contributions	12,880	13,811	3,795	3,619	16,675	17,429
Participant contributions	(1,105)	(1,084)	1,105	1,084	–	–
Transfers	–	4,739	–	(1)	–	4,739
Reclassifications pursuant to IFRS 5	9,558	–	(5,996)	–	3,562	–
As of Dec. 31	(410,530)	(601,704)	210,193	319,730	(200,336)	(281,974)
thereof						
Germany	(182,720)	(253,891)	1,812	1,788	(180,908)	(252,103)
United Kingdom	(132,434)	(220,142)	151,765	248,821	19,331	28,679
Other countries	(95,376)	(127,671)	56,616	69,121	(38,760)	(58,550)

F.11.4. Plan assets

Some of pension obligations are secured by assets that correspond to the definition of plan assets in accordance with IAS 19. For these pension obligations, the net debt is reported from the defined benefit obligation and the fair value of the plan assets.

For plans with a positive excess of the fair value of plan assets over the present value of the related obligation, the resulting asset is tested for impairment and, if necessary, limited to the present value of the economic benefits that the Group can derive from refunds or reductions in future contributions.

The plan assets primarily contain debt securities, investment funds and insurance policies, which are largely held by long-term, external carriers (funds). Plan assets are mainly held in the United Kingdom and Switzerland.

In order to reduce asset and liability risks (Asset-Liability-Matching, ALM), Knorr-Bremse has developed a risk minimization program in cooperation with trustees. The investment strategy is transferred to a qualified actuary who implements the investment strategy in relation to the pension plans and carries out the investment strategy.

The assets controlled as part of this transfer are allocated to a “Growth” or “Liability Hedging” portfolio. The allocation ratio is agreed at regular intervals.

The “Growth” portfolio comprises a combination of equities, fixed-income securities and other available funds that are available in the manager’s portfolio. The fund manager determines the investment mix.

The “Liability Hedging” portfolio comprises LDI funds (Liability Driven Investment), fixed-income securities, index-linked funds and other available funds that are available in the manager’s portfolio. The fund manager determines the investment mix.

The objectives of the risk minimization strategy are to minimize the risk from the pension plans by increasing the allocation of assets to the liability hedging portfolio. Such reallocation must take place if agreed key figures are exceeded in order to make it possible to align assets with liabilities.

The pension obligations in Switzerland are largely covered by legally independent pension schemes. Any return of funds to

the employer is precluded. The contracts meet the requirements for qualifying insurance policies pursuant to IAS 19.8.

Adjustments of € 4,223 thousand were made due to asset ceilings for plan assets during the fiscal year. These adjustments are based on obligations of € 53,229 thousand.

The plan assets comprise the investments shown in [Table → 3.55](#).

3.55 PLAN ASSETS

in € thousand	12/31/2022	12/31/2021
Cash and cash equivalents	10,107	10,502
Equity instruments	2,315	3,146
Debt instruments	125,797	222,558
Real estate	129	453
Assets held by insurance companies	56,015	63,859
Investment funds	18,312	16,517
Other	1,741	2,695
Less asset ceiling	(4,223)	-
Fair value of plan assets	210,193	319,730
thereof		
United Kingdom	151,767	248,821
Other countries	58,426	70,908
Return on plan assets (including interest income)	(82,804)	4,779
thereof		
United Kingdom	(79,307)	(2,915)
Other countries	(3,497)	7,694

F.11.5. Actuarial assumptions

[Table → 3.56](#) lists the key actuarial assumptions (in the form of weighted averages in %) used on the reporting date.

3.56 ACTUARIAL ASSUMPTIONS

in %	12/31/2022	12/31/2021
Defined benefit obligation		
Discount rate	4.23	1.44
Salary increase	3.17	3.20
Pension increases	2.15	2.09

3.57 SENSITIVITY ANALYSIS

in € thousand	12/31/2022		12/31/2021	
	Increase	Decrease	Increase	Decrease
Present value of defined benefit obligation				
Change in discount rate 0.5%	(23,215)	25,421	(44,049)	49,620
Change in salary increase rate 0.5%	2,887	(2,698)	5,142	(4,847)
Change in future pension increases 0.5%	16,827	(13,538)	33,978	(30,726)

Although the analysis does not take account of the complete distribution of the expected cash flows according to the plan,

The most important defined benefit plans exist in Germany and the United Kingdom. The biometric basis for valuating these obligations in Germany is the generation-dependent guideline tables 2018 G from Prof. Klaus Heubeck, published by Heubeck Richttafeln GmbH on July 20, 2018. These tables are based on the newest statistics of the statutory pension insurance and the Federal Statistical Office and therefore reflect the most recent developments in probabilities of life expectancy, disability, marriage and fluctuation. Since the average life expectancy has continued to rise (albeit more slowly than in the past), the pension obligations for domestic companies increased slightly.

In the United Kingdom, the mortality tables with projection CMI 2017 are used as the biometric basis.

Age-dependent turnover tables are also taken into account.

F.11.6. Future cash flows

In the 2023 fiscal year, employer payments into the plan assets are expected to amount to € 3,984 thousand. As of December 31, 2022, average annual benefit payments from pension plans in the amount of € 25,560 thousand (2021: € 25,866 thousand) were expected for the upcoming ten fiscal years.

As of December 31, 2022, the weighted average term of the defined benefit obligation was 11.80 years (2021: 15.50 years).

F.11.7. Sensitivity analysis

The following sensitivity analysis presents the effects of reasonable changes of individual factors on the defined benefit obligation as of the reporting date. [Table → 3.57](#)

it provides an approximate value of the sensitivity of the -presented assumptions.

F.12. Other Provisions [Table → 3.58](#)

3.58 OTHER PROVISIONS

in € thousand	Warranty provisions	Contractual provisions	Other provisions	Total
As of Jan. 1, 2021	343,046	26,437	93,542	463,025
Currency translation differences	16,170	300	1,530	18,000
Additions	135,037	9,861	30,373	175,271
Additions to the scope of consolidation	1,342	272	25	1,639
Utilization	(95,867)	(5,960)	(16,297)	(118,124)
Reversals	(51,912)	(7,526)	(13,808)	(73,246)
Compounding	1,854	145	7	2,007
As of Dec. 31, 2021	349,670	23,530	95,372	468,571
thereof current	172,341	4,161	64,238	240,740
thereof non-current	177,329	19,368	31,134	227,831
As of Jan. 1, 2022	349,670	23,530	95,372	468,571
Currency translation differences	(3,347)	(115)	865	(2,598)
Additions	141,835	1,846	20,566	164,247
Additions to the scope of consolidation	5	-	0	5
Utilization	(98,168)	(2,128)	(33,625)	(133,922)
Reversals	(68,433)	(6,832)	(13,464)	(88,729)
Disposals from the scope of consolidation	(3)	-	-	(3)
Compounding	(199)	-	10	(189)
Reclassifications pursuant to IFRS 5	(14,770)	(3,257)	(23,782)	(41,809)
As of Dec. 31, 2022	306,590	13,043	45,941	365,574
thereof current	145,238	3,255	22,887	171,381
thereof non-current	161,350	9,788	23,054	194,192

The provisions for warranty obligations cover obligations from cases that have already occurred as well as future obligations that are based on empirical values. The latter are essentially directly related to the development and structure of revenue. The provisions are based on estimates from historical warranty data for similar products and services. For the long-term components, outflows are expected within the next two to five years.

Contractual provisions include provisions for onerous contracts amounting to € 13,043 thousand (2021: € 23,530 thousand). For the long-term components, outflows are expected within the next two to five years.

Other provisions related to individual identifiable risks and obligations, especially environmental protection obligations and process risks. For the long-term components, outflows are expected within the next two to five years.

The year-over-year increase in additions results in particular from new warranty claims in Asia and other regions.

Income from the compounding of provisions at an amount of € 189 thousand (2021: € 2,007 thousand in expenses) were recognized in the statement of income.

F.13. Trade Accounts Payable and Other Liabilities [Table → 3.59, 3.60](#)

3.59 TRADE ACCOUNT PAYABLES

in € thousand	12/31/2022	12/31/2021
Trade account payables	(1,213,954)	(1,166,062)
Current	(1,213,954)	(1,166,062)
Non-current	–	–

3.60 OTHER LIABILITIES

in € thousand	12/31/2022	12/31/2021
Deferred income	(1,042)	(2,105)
Other	(1,825)	(1,840)
Non-current	(2,867)	(3,945)
Liabilities from other taxes	(55,847)	(53,443)
Deferred income	(14,851)	(20,415)
Social security liabilities	(20,636)	(20,933)
Other	(15,016)	(7,202)
Current	(106,440)	(101,992)
Other liabilities	(109,307)	(105,937)

Trade accounts payable increased in the reporting period by € 47,892 thousand from € 1,166,062 thousand to € 1,213,954 thousand.

To support supplier financing, we offer important suppliers a sustainability-linked Supply Chain Finance Program (SSCF). The purpose of this program is to facilitate efficient payment processes and enable suppliers to sell their premature receivables from the Group to a bank (factoring). The Group did not derecognize the original trade accounts payable as there was neither a legal debt discharge nor a substantial change to the debt payable. From a Group perspective, the payment terms were not essentially modified due to the agreement. No additional interest and expenses are incurred by the Group for payment of debts to suppliers. The amounts of suppliers at the factoring stage therefore continue to be reported by the Group under trade accounts payable since the nature and function of these liabilities correspond to those of trade accounts payable.

The payments to the bank are included in the cash flow from operating activities because they remain part of the Group's normal operating cycle and their fundamental character remains operational, i.e., they represent payments for the purchase of goods and services. From the Group's perspective, payments by the bank to suppliers are non-cash transactions.

Other liabilities are valued as described in Chapter D.17.

F.14. Financial Liabilities [Table → 3.61](#)

3.61 FINANCIAL LIABILITIES

in € thousand	12/31/2022	12/31/2021
Derivatives	(36,288)	(24,378)
Liabilities towards credit institutions	(205,893)	(126,634)
Bonds and debt instruments	(1,455,523)	(751,818)
Liabilities resulting from options on minority interests	-	(379,616)
Purchase price liabilities	(86,432)	(10,920)
Lease liabilities	(509,642)	(510,272)
Other financial liabilities	(384,279)	(344,872)
	(2,678,057)	(2,148,510)
Current	(655,896)	(852,379)
Non-current	(2,022,161)	(1,296,131)

Financial liabilities increased by € 529,547 thousand, from € 2,148,510 thousand to € 2,678,057 thousand.

The bonds and debt instruments include two publicly traded corporate bonds, one from 2018 with an issued volume of € 750,000 thousand and the other from 2022 with a volume

of € 700,000 thousand. The 2018 bond has a coupon of 1.125% and matures in June 2025. The 2022 bond, which matures in September 2027, has a coupon of 3.25% which is linked to the fulfillment of a specific sustainability target (making it a “sustainability-linked bond”). If this target is not met, the interest rate for the bond’s remaining term to maturity would increase by 20 basis points.

The € 379,616 thousand of liabilities from options for minority interests which was recognized in the previous year was remeasured at a purchase price of € 360,000 thousand in April 2022 following an agreement with Robert Bosch GmbH. The € 19,616 thousand gain from the agreement was recognized under other financial result. The purchase price was paid in December 2022.

The purchase price liabilities increased by € 75,512 thousand due to the acquisition of equity interests in Cojali S.L. and DSB Component Workshops.

Under other financial liabilities, liabilities to employees and repayment obligations to customers increased in particular. [Table → 3.62](#)

3.62 RECONCILIATION OF MOVEMENTS OF LIABILITIES TO CASH FLOWS ARISING FROM FINANCING ACTIVITIES IN 2022

					Liabilities	Derivatives (assets) /liabilities
	Liabilities towards credit institutions	Bonds and debt instruments	Liabilities from options on minority interests	Other financial liabilities	Lease liabilities	Interest swap liabilities
in € thousand						
As of Jan. 1, 2022	126,634	751,818	379,616	344,872	510,272	2,949
Change in cash flow from financing activities						
Proceeds from borrowings	43,769	696,451	-	-	-	-
Disbursements from the repayment of borrowings	(45,640)	-	-	-	-	-
Disbursements for lease liabilities	-	-	-	-	(64,711)	-
Interest paid	(8,178)	(8,438)	-	-	(15,326)	-
Dividends paid to parent Company shareholders	-	-	-	-	-	-
Dividends paid to non-controlling interests	-	-	-	-	-	-
Proceeds from grants and subsidies	-	-	-	9,731	-	-
Payments for acquisition of non-controlling interests	-	-	(360,000)	(6,697)	-	-
Disbursements from the settlement of derivatives	(62,769)	-	-	-	-	-
Cash flow from financing activities	(72,818)	688,014	(360,000)	3,034	(80,037)	-
Changes arising from obtaining or losing control of subsidiaries or other businesses	-	-	-	10,504	17,385	-
Effects in foreign exchange rates	4	-	-	1,816	8,837	-
Other changes related to liabilities						
Other non-cash expenses and income	-	-	(19,616)	32,000	-	-
Interest income	-	-	-	-	-	-
Interest expenses	8,727	15,691	-	-	15,326	-
New leases	-	-	-	-	40,667	-
Other cash flow changes	143,664	-	-	(3,034)	-	-
Changes in fair value	-	-	-	-	-	(2,655)
Reclassifications pursuant to IFRS 5	(317)	-	-	(4,913)	(2,808)	-
Total other changes, related to liabilities	152,074	15,691	(19,616)	24,052	53,184	(2,655)
Total other changes, related to equity						
As of Dec. 31, 2022	205,893	1,455,523	-	384,279	509,642	294

						Equity
	Currency translation	Revaluations from defined pension benefits (IAS 19)	Capital reserves	Retained earnings	Non-controlling shares	Total
	(91,045)	(62,076)	13,885	13,301	97,183	2,087,409
	-	-	-	-	-	740,220
	-	-	-	-	-	(45,640)
	-	-	-	-	-	(64,711)
	-	-	-	-	-	(31,942)
	-	-	-	(298,220)	-	(298,220)
	-	-	-	-	(40,781)	(40,781)
	-	-	-	-	-	9,731
	-	-	-	-	-	(366,697)
	-	-	-	-	-	(62,769)
	-	-	-	(298,220)	(40,781)	(160,809)
	-	-	-	-	-	27,890
	-	-	-	-	-	10,657
	-	-	-	-	-	12,384
	-	-	-	-	-	-
	-	-	-	-	-	39,745
	-	-	-	-	-	40,667
	-	-	-	-	-	140,630
	-	-	-	-	-	(2,655)
	-	-	-	-	-	(8,039)
	-	-	-	-	-	222,731
	(3,778)	53,569	-	295,239	73,131	418,162
	(94,822)	(8,507)	13,885	10,320	129,533	2,606,040

3.63 RECONCILIATION OF MOVEMENTS OF LIABILITIES TO CASH FLOWS ARISING FROM FINANCING ACTIVITIES IN 2021

	Liabilities					Derivatives (assets) /liabilities
	Liabilities towards credit institutions	Bonds and debt instruments	Liabilities from options on minority interests	Other financial liabilities	Lease liabilities	Interest swap liabilities
in € thousand						
As of Jan. 1, 2021	604,567	1,250,526	379,616	283,346	387,221	5,538
Change in cash flow from financing activities						
Proceeds from borrowings	47,334	-	-	-	-	-
Disbursements from the repayment of borrowings	(544,505)	(500,000)	-	-	-	-
Disbursements for lease liabilities	-	-	-	-	(58,823)	-
Interest paid	(12,374)	(10,938)	-	-	(13,304)	-
Dividends paid to parent Company shareholders	-	-	-	-	-	-
Dividends paid to non-controlling interests	-	-	(616)	-	-	-
Proceeds from grants and subsidies	-	-	-	8,582	-	-
Payments for acquisition of non-controlling interests	-	-	-	(25,113)	-	-
Disbursements from the settlement of derivatives	(40,919)	-	-	-	-	-
Cash flow from financing activities	(550,464)	(510,938)	(616)	(16,531)	(72,127)	-
Changes arising from obtaining or losing control of subsidiaries or other businesses	-	-	-	36	1,107	-
Effects in foreign exchange rates	19,238	-	-	1,041	9,721	-
Other changes related to liabilities						
Other non-cash expenses and income	-	1,292	616	60,449	-	-
Interest income	-	-	-	-	-	-
Interest expenses	12,374	10,938	-	-	13,304	-
New leases	-	-	-	-	171,046	-
Other cash flow changes	40,919	-	-	16,531	-	-
Changes in fair value	-	-	-	-	-	(2,589)
Total other changes, related to liabilities	53,293	12,229	616	76,980	184,350	(2,589)
Total other changes, related to equity						
As of Dec. 31, 2021	126,634	751,818	379,616	344,872	510,272	2,949

					Equity	
	Currency translation	Revaluations from defined pen- sion benefits (IAS 19)	Capital reserves	Retained earn- ings	Non-controlling shares	Total
	(188,078)	(95,731)	13,884	13,300	91,008	2,745,197
	-	-	-	-	-	47,334
	-	-	-	-	-	(1,044,505)
	-	-	-	-	-	(58,823)
	-	-	-	-	-	(36,616)
	-	-	-	(245,024)	-	(245,024)
	-	-	-	-	(29,195)	(29,811)
	-	-	-	-	-	8,582
	-	-	-	-	-	(25,113)
	-	-	-	-	-	(40,919)
	-	-	-	(245,024)	(29,195)	(1,424,895)
	-	-	-	-	-	1,143
	-	-	-	-	-	30,000
	-	-	-	-	-	62,357
	-	-	-	-	-	-
	-	-	-	-	-	36,616
	-	-	-	-	-	171,046
	-	-	-	-	-	57,450
	-	-	-	-	-	(2,589)
	-	-	-	-	-	324,880
	97,033	33,655	0	245,024	35,370	411,083
	(91,045)	(62,076)	13,885	13,301	97,183	2,087,409

3.64 INFORMATION IN ACCORDANCE WITH IFRS 9

					12/31/2022
					Carrying amount
in € thousand					At amortized cost
Category	FVTPL	FVOCI	Other		Total
Financial assets	119,189	38,385	6,660	2,747,597	2,911,830
Derivatives to which hedge accounting is applied	-	-	6,660	-	6,660
Derivatives to which hedge accounting is not applied	14,957	-	-	-	14,957
Equity instruments	2,311	21,364	-	-	23,675
Securities and debt instruments	101,920	-	-	-	101,920
Trade accounts receivable*	-	17,021	-	1,326,284	1,343,305
Purchase price receivables from disposal of land*	-	-	-	29,605	29,605
Other financial liabilities*	-	-	-	49,121	49,121
Cash and cash equivalents*	-	-	-	1,342,587	1,342,587
Financial liabilities	(46,316)	-	(544,392)	(3,301,303)	(3,892,011)
Derivatives to which hedge accounting is applied	-	-	(34,750)	-	(34,750)
Derivatives to which hedge accounting is not applied	(1,537)	-	-	-	(1,537)
Liabilities towards credit institutions	-	-	-	(205,893)	(205,893)
Liabilities resulting from options on minority interests	-	-	-	-	-
Bonds and debt instruments	-	-	-	(1,455,523)	(1,455,523)
Lease liabilities	-	-	(509,642)	-	(509,642)
Purchase price liabilities*	(44,778)	-	-	(41,653)	(86,432)
Other financial liabilities*	-	-	-	(384,279)	(384,279)
Trade accounts payable*	-	-	-	(1,213,954)	(1,213,954)

					12/31/2021
					Carrying amount
in € thousand					At amortized cost
Category	FVTPL	FVOCI	Other		Total
Financial assets	144,484	61,762	3,525	2,679,705	2,889,477
Derivative financial instruments to which hedge accounting is applied	-	-	3,525	-	3,525
Derivative financial instruments to which hedge accounting is not applied	2,547	-	-	-	2,547
Equity instruments	25,243	44,607	-	-	69,850
Securities and debt instruments	116,695	-	-	-	116,695
Trade accounts receivable*	-	17,156	-	1,213,117	1,230,273
Purchase price receivables from disposal of land*	-	-	-	52,526	52,526
Other financial liabilities*	-	-	-	33,853	33,853
Cash and cash equivalents*	-	-	-	1,380,210	1,380,210
Financial liabilities	(4,408)	-	(530,242)	(2,779,922)	(3,314,572)
Derivative financial instruments to which hedge accounting is applied	-	-	(19,970)	-	(19,970)
Derivative financial instruments to which hedge accounting is not applied	(4,408)	-	-	-	(4,408)
Liabilities towards credit institutions	-	-	-	(126,634)	(126,634)
Liabilities resulting from options on minority interests	-	-	-	(379,616)	(379,616)
Bonds and debt instruments	-	-	-	(751,818)	(751,818)
Lease liabilities	-	-	(510,272)	-	(510,272)
Purchase price liabilities*	-	-	-	(10,920)	(10,920)
Other financial liabilities*	-	-	-	(344,872)	(344,872)
Trade accounts payable*	-	-	-	(1,166,062)	(1,166,062)

* Without information on fair value due to the fact that the carrying amount approximately equals fair value

			Fair value
			Total
	104,169	38,700	21,364
	–	6,660	–
	–	14,957	–
	2,249	62	21,364
	101,920	–	101,920
	–	17,021	–
	–	–	–
	–	–	–
	–	–	–
	–	–	–
	(1,396,471)	(242,119)	(44,778)
	–	(34,750)	–
	–	(1,537)	–
	–	(205,831)	–
	–	–	–
	(1,396,471)	–	(1,396,471)
	–	–	–
	–	–	–
	–	(44,778)	(44,778)
	–	–	–
	–	–	–
	–	–	–

			Fair value
			Total
	164,648	23,227	21,897
	–	3,525	–
	–	2,547	–
	47,952	(0)	21,897
	116,695	–	116,695
	–	17,156	–
	–	–	–
	–	–	–
	–	–	–
	–	–	–
	(774,308)	(150,737)	(379,616)
	–	(19,970)	–
	–	(4,408)	–
	–	(126,359)	–
	–	–	(379,616)
	(774,308)	–	(774,308)
	–	–	–
	–	–	–
	(0)	–	(0)
	–	–	–

F.15. Financial Instruments

F.15.1. Financial instruments

Table → 3.64 presents the non-netted carrying amounts and the fair values of the financial assets and liabilities as well as the categorization of the individual items. For the classification (hierarchy levels) of the fair value pursuant to IFRS 13, please refer to Chapter D.18.

The market value of financial derivatives is the price at which a party would take over the rights and/or obligations from another party. The market values are calculated based on the market information available on the reporting date using recognized measurement methods:

Forward exchange contracts and interest rate hedging contracts are valued on the basis of reference rates, taking forward premiums and discounts into account. Net present value calculations are performed using yield curves.

Commodity contracts are valued on the basis of quoted prices on active stock exchanges.

In addition, default risks are taken into account when measuring financial derivatives at fair value (“credit risk adjustments”). The calculation basis for the probabilities of default is the credit default spreads per counterparty and for the Company.

The Group measures long-term receivables/loans based on parameters such as interest rates, certain country-specific risk factors, creditworthiness of the individual customers, and the risk characteristics of the financed project.

The fair values of the Group’s interest-bearing loans are calculated using the discounted cash flow method. This is based on a discount rate, which reflects the issuer’s borrowing rate at the end of the reporting period. In line with Knorr-Bremse’s rating, the Company’s own default risk was classified as low over the entire period.

The financial liability from a put option on minority shares that was recognized in the previous year’s financial statements gave the minority shareholders in Robert Bosch GmbH the option of tendering their shares in Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and Knorr-Bremse Commercial Vehicle Systems Japan Ltd. to Knorr-Bremse if contractually defined conditions were met. In accordance with IFRS 9, this was accounted for at amortized cost.

The purchase price reflected in the agreement was defined using a formula. On account of the ruling of the court of arbitration in December 2020, a binding consensus on the purchase price had not yet been reached as at December 31, 2022. As a result, the fair value as of December 31, 2021, was

dependent upon non-observable input factors and is recognized under level 3 of the fair value hierarchy. The expected maturity of the liabilities depended on the time necessary until agreement and was classified as short-term in nature. Accordingly, it was assumed that the carrying amount of the liability was an appropriate estimate of fair value as at December 31, 2021.

Knorr-Bremse and Robert Bosch GmbH resolved the dispute over the purchase price for the shares in April 2022 and settled on a purchase price of € 360,000 thousand, which was paid in December 2022.

The purchase price liabilities accounted for at fair value through profit or loss in accordance with IFRS 9 recognize an earn-out liability from the purchase of Cojali S.L. as well as a call option on the minority interest in Cojali USA Inc. The call option gives Knorr-Bremse the option of acquiring the remaining minority shares on contractually defined terms. The company plans to exercise this call option. The liability and the contractually agreed purchase price for the minority interest are both recognized at level 3 of the fair value hierarchy and were discounted using standard market rates with matching maturities.

The material measurement parameters for the earn-out liability are the standard market discount rate with a matching maturity as well as the measurement-related earnings before interest and tax (EBIT). If the discount rate were to increase or decrease by 1 percentage point, the value of the recognized purchase price liability would decrease or increase by € 1,121 thousand or € 1,174 thousand respectively. The EBIT measurement parameter refers to annual EBIT up to and including 2026 as well as the cumulative EBIT generated in this period. The annual measurement-related EBIT is considered reached when agreed target EBIT has been exceeded. The purchase price increases for cumulative EBIT until it reaches a contractually defined maximum level, with results beyond the maximum level not being accounted for in the purchase price calculation.

If the annual EBIT up until 2026 were to increase by 10 percentage points per year, this would lead to the recognized purchase price liability increasing by € 1,166 thousand. If the annual EBIT up until 2026 were to decrease by 10 percentage points per year, this would lead to the recognized purchase price liability decreasing by € 1,588 thousand.

The material measurement parameter for the call option on the minority interest is the standard market discount rate with a matching maturity. If this discount rate were to increase or decrease by 1 percentage point, the liability arising from the call option would decrease or increase by € 135 thousand or € 139 thousand respectively.

The values recognized as at December 31, 2022, correspond to the liabilities recorded as part of the first-time measurement in the fiscal year. In previous year there were no liabilities at fair value on level 3 of the fair value hierarchy recorded.

OFFSETTING Table → 3.65 3.65 GLOBAL OFFSETTING

in € thousand	12/31/2022	12/31/2021
Financial assets (derivatives)		
Gross values in the balance sheet	21,617	6,072
Potential netting capability	13,447	5,122
Net value	8,170	950
Financial liabilities (derivatives)		
Gross values in the balance sheet	(36,288)	(24,378)
Potential netting capability	(13,447)	(5,122)
Net value	(22,841)	(19,256)

The table "Global Offsetting" shows the extent to which financial assets and financial liabilities were offset in the balance sheet as well as the possible effects from the offsetting of instruments that are subject to a legally enforceable global netting agreement or a similar agreement.

Derivative trading is subject to a global netting agreement. However, the German framework agreement and the ISDA agreements do not meet the criteria for an offsetting obligation in the Group balance sheet. The right to offset is only enforceable in the event of future events (e.g. the insolvency of one of the contracting parties).

FACTORING

The Group participates in receivables sales programs, in which trade accounts receivable are sold to a financial services provider. Through these measures, the Group pursues the goal of improving the liquidity situation and the possible risk of default, especially in relation to customers with extended payment terms. At Knorr-Bremse, a distinction was made between factoring with derecognition from the balance sheet and without derecognition from the balance sheet. The Group only practiced factoring with derecognition from the balance sheet in fiscal 2021 and 2022.

In the case of factoring with derecognition, essentially all opportunities and risks associated with ownership of the financial asset are transferred to the financial service providers. The intention is to hold the non-transferred receivables in a portfolio until final payment and to collect the contractual cash flows. The business model for these receivables is therefore classified as hold and sell and recognized at fair value with no effect on income. In fiscal 2022, receivables of € 349,873 thousand (2021: € 330,427 thousand) were transferred in this way.

Due to the short term, the fair value of the receivables sold roughly corresponds to the carrying amount of the receivables prior to the transfer.

The notes on the financial result (Chapter E.8) provide information on the net gains and net losses from financial instruments by measurement category.

F.15.2. Impairment Table → 3.66, 3.67

Table → 3.66 shows the impairment losses recognized in accordance with IFRS 9 due to credit risks for debt instruments that are measured at amortized cost and at fair value with no effect on income.

3.66 FINANCIAL INSTRUMENTS IN IMPAIRMENT SCOPE

in € thousand	Impairment 12/31/2021	Net change	Derecognition	Impairment 12/31/2022
2022 fiscal year				
Cash and cash equivalents	41	(1,354)	1,351	39
Trade accounts receivable (AC) and contract assets	16,040	12,868	2,783	31,691

3.67 BREAKDOWN OF TRADE ACCOUNTS RECEIVABLE AND CONTRACT ASSETS BY SEGMENT

in € thousand	Rail vehicle systems	Commercial vehicle systems	Other	Total
12/31/2021 Trade accounts receivable and contract assets	758,210	547,040	7	1,305,257
Contract assets	74,985	–	–	74,985
Trade accounts receivable	683,226	547,040	7	1,230,273
12/31/2022 Trade accounts receivable and contract assets	872,920	539,817	58	1,412,795
Contract assets	69,491	–	–	69,491
Trade accounts receivable	803,429	539,817	58	1,343,305

The customers were divided into various categories. The calculated probabilities of default of the respective customer groups estimate the creditworthiness and the ability to meet commitments from receivables within the next 12 months.

For the 1st group, the adjustment takes place according to the public rating (S&P/Moody's or the implied rating according to the Thomson Reuters valuation model) and the associated probability of default on the respective cut-off dates.

For the 2nd group, a rating-equivalent comparative determination of the estimate is made.

For the 3rd group, the probability of default is determined by a credit agency.

For the 4th group, an average probability of default is determined on the basis of a comparison group with similar risk parameters.

F.15.3. Equity instruments [Table → 3.68](#)

The Company holds various investments in third companies as well as non-consolidated investments in affiliated/associated companies. These equity participations are essentially reported at fair value.

Knorr-Bremse disposed of its investment in Haldex AB in the 2022 fiscal year as the investment no longer held strategic value. The fair value at the time of derecognition was € 28,618 thousand, with the cumulative gain on the sale being € 6,751 thousand.

The company acquired a 5.5% interest in Autobrains Technologies LTD, based in Tel Aviv, Israel, for € 21,364 thousand during the 2021 fiscal year. This investment is of a long-term, strategic nature. For this reason, the company exercises the accounting option and assigns the investment to the “at fair value in OCI” category.

A range of fair values were calculated for the measurement of the fair value of the investment in Autobrains Technologies LTD. There have been no significant changes in the assumptions made at the time of acquisition regarding the industry's economic development or in the business plan of Autobrains Technologies LTD. For this reason, the fair value as at December 31, 2022, is unchanged and remains within the range of possible fair values for the investment.

The purchase price at the time was confirmed on the basis of a discounted cash flow model. This involved discounting the expected future cash flows using a risk-adjusted discount rate. The expected revenues were the most important non-observable input factor in the DCF model for determining the fair value of the investment. If the expected revenues, as one of the material valuation parameters (other parameters used remain constant), should increase or decrease by 10%, the value of the investment would increase or decrease accordingly by € 2,136 thousand (2021: € 2,136 thousand).

Knorr-Bremse received no dividend from the investment in Autobrains in the reporting period (2021: € 0 thousand).

3.68 CHANGES IN EQUITY

	Fair value	
in € thousand	12/31/2022	12/31/2021
Investments at FVOCI		
AUTOBRAINS TECHNOLOGIES LTD	21,364	21,364
HALDEX AB	-	23,242
	21,364	44,607
		Income / expense
in € thousand	12/31/2022	12/31/2021
Adjustment*		
AUTOBRAINS TECHNOLOGIES LTD	-	-
HALDEX AB	6,751	3,643
	6,751	3,643

* Reported in the OCI with no effect on income.

F.15.4. Derivatives in hedge accounting

[Table → 3.69](#) presents the notional amounts, the non-netted carrying amounts, the average hedging rate and the calculation parameters for determining the ineffectiveness of hedging instruments concluded to hedge the risks of changes in value in the context of cash flow hedges.

MEASUREMENT OF INEFFECTIVENESS

The Group uses the hypothetical derivative method to assess whether the designated derivative in each hedging relationship will prospectively be or has retrospectively been effective in relation to offsetting changes in cash flows of the hedged item. The prospective effectiveness is measured using critical terms match, whereby the critical parameters of the hedged item and hedge transaction, such as currency, term and amount, match. Changes to the date of the hedged transactions and various effects of the counterparties' credit risk in the fair value of the hedged items and hedge transactions are possible causes of ineffectiveness.

For the hedging relationships in existence as of December 31, 2022, no material ineffectiveness has arisen.

RECLASSIFICATION

The hedging takes place in the revenues and purchase of intermediate products risk categories depending on the hedged item. [Table → 3.70](#) shows the status of hedging transaction reserves and reserves for costs of hedging in 2022 and presents reclassifications of hedge reserves and reserves for costs of hedging broken down by risk category.

3.69 HEDGING INSTRUMENTS IN HEDGE ACCOUNTING

Risk category - exchange rate risk	Notional amounts in €		Carrying amounts in € thousand	
	Notional amount of forward exchange contracts < 1 year	Notional amount of forward exchange contracts > 1 year	Receivables	Liabilities
2022 fiscal year				
Forward exchange contracts – revenues	161,550	85,364	6,660	11,159
Forward exchange contracts – purchases	173,870	97,402	–	23,592
2021 fiscal year				
Forward exchange contracts – revenues	143,649	75,775	2,574	5,952
Forward exchange contracts – purchases	186,829	163,046	951	14,018

Average hedging rate < 1 year	Average hedging rate > 1 year	Hedge transaction balance sheet item	Item in profit or loss affected by the reclassification	Change in value of hedged item	Change in value of hedging instrument	Hedge ineffectiveness that has been recognized in the income statement
2022 fiscal year						
EUR/CZK: 26.11 EUR/HUF: 393.50	EUR/CZK: 26.92 EUR/HUF: 428.08	Other financial assets and liabilities including derivatives	Revenues and cost of materials	(10,455)	10,455	There is no material ineffectiveness
EUR/USD: 1.19	EUR/USD: 1.16			(37,203)	37,203	
2021 fiscal year						
EUR/CZK: 26.53 EUR/HUF: 365.24	EUR/CZK: 26.67 EUR/HUF: 375.07	Other financial assets and liabilities including derivatives	Revenues and cost of materials	(7,459)	7,459	There is no material ineffectiveness
EUR/USD: 1.18	EUR/USD: 1.20			(1,189)	1,189	

3.70 RECLASSIFICATION OF THE CASH FLOW HEDGE RESERVES

in € thousand	2022		2021	
	Hedging transactions reserve	Reserve for costs of hedging	Hedging transactions reserve	Reserve for costs of hedging
As of Jan. 1	–	–	–	–
Forward exchange contracts – revenues	703	3,206	11,598	(2,561)
Forward exchange contracts – purchases	10,903	1,556	(18,214)	6,337
Cash flow hedge				
Changes in fair value				
Forward exchange contracts – revenues	9,751	(6,202)	(4,139)	3,567
Forward exchange contracts – purchases	26,299	3,031	19,403	1,120
Amount reclassified to profit or loss:				
Forward exchange contracts – revenues	(2,988)	1,689	(6,755)	2,199
Forward exchange contracts – purchases	(10,916)	(1,290)	7,083	(4,029)
Amount reclassified to cost of inventories				
Forward exchange contracts – revenues	–	–	–	–
Forward exchange contracts – purchases	(5,274)	(710)	2,632	(1,873)
As of Dec. 31				
Forward exchange contracts – revenues	7,467	(1,307)	703	3,206
Forward exchange contracts – purchases	21,012	2,587	10,903	1,556

F.16. Income Taxes [Table → 3.71](#)

3.71 INCOME TAXES

in € thousand	12/31/2022	12/31/2021
Income tax receivables	54,162	56,542
thereof non-current	282	1,012
thereof current	53,880	55,529
Income tax liabilities	143,732	142,510
thereof non-current	5,782	79,787
thereof current	137,950	62,722

The current income tax receivables of € 53,880 thousand relate to receivables from the current years 2020, 2021 and 2022. The increase in current income tax liabilities corresponds to the decline in non-current income tax liabilities and mainly results from the tax payments due as a result of the tax audit for the years 2017 to 2019, which will likely be completed in 2023, and as a result of the tax risks from future tax audits. Current income tax liabilities also relate to the current 2020 (to the extent not yet assessed), 2021 and 2022 tax calculations.

G. Notes to the Cash Flow Statement

The Group's statements of cash flows show the origin and use of cash flows and the net increase/decrease in cash and cash equivalents, and are prepared in compliance with IAS 7 (Statement of Cash Flows).

A distinction is made between cash flows from operating activities, from investing and financing activities. The cash flows from operating activities are derived indirectly based on the annual net profit. By contrast, the cash flows from investing and financing activities are determined based on payments.

G.1. Cash Flow from Operating Activities

The cash flow from operating activities is calculated by adjusting consolidated net income (including minority interests) for non-cash items, especially depreciation, amortization, and impairment losses and reversals of impairment losses on intangible assets and property, plant and equipment, write-downs on inventories, contract assets and trade accounts receivable, gains and losses on the disposal of assets and on the sale of consolidated companies, as well as the interest result and investment result. Moreover, other changes in current assets, liabilities not related to investment and financing activities, and provisions are adjusted. It also includes the cash inflows from proceeds due to the settlement of the receivables underlying non-recourse factoring, as these do not constitute investing or financing activities. The cash flow from operating activities is shown following a correction of tax expenses and income, non-cash changes in the measurement of derivatives and other non-cash expenses and income.

The cash inflow from operating activities decreased by € 433,935 thousand in 2022 compared with the previous year to € 541,554 thousand.

Based on a € 141,113 thousand decrease in consolidated net income to € 506,255 thousand, depreciation, amortization and impairment of € 324,350 thousand were recognized in 2022 (2021: € 290,438 thousand).

In particular, the special sanction-related effects associated with business in Russia caused the inventory impairment to increase by € 54,428 thousand, from € 796 thousand in 2021 to € 55,223 thousand.

The € 9,157 thousand loss on disposals of consolidated companies and other business units mainly results from the deconsolidation of Knorr-Bremse KAMA Systems for Commercial Vehicles OOO, based in Naberezhnye Chelny, Russia, which is the joint venture with Russian company Kamaz.

The other non-cash expenses and income changed by € 74,885 thousand, from € -19,227 thousand in the previous year to € 55,658 thousand. This change is mainly attributable to the special fund valuation losses in the 2022 fiscal year after valuation gains in 2021, alongside the increased losses from foreign currency valuation.

Interest income changed by € 38,551 thousand, from € 39,971 thousand in 2021 to € 1,420 thousand, which was in particular due to the income related release of an interest rate derivative obtained in connection with the sustainability-linked bond.

Tax expenses fell by € 50,931 thousand, from € 233,444 thousand in the previous year to € 182,513 thousand, due to the lower pre-tax income. Income tax payments increased by € 21,262 thousand to € 203,550 thousand as a result of tax payments for previous years.

The net working capital increased in the reporting period by € 250,717 thousand from € 875,806 thousand to € 1,126,522 thousand.

Inventory and trade accounts receivable also increased compared to the previous year by € 139,762 thousand and € 113,032 thousand respectively. Trade accounts payable also increased in the reporting period by € 47,892 thousand to € 1,213,954 thousand. While contract assets declined by € 5,494 thousand to € 69,491 thousand, contract liabilities also declined by € 51,309 thousand, from € 265,567 thousand to € 214,258 thousand.

To enhance transparency, non-cash changes in provisions are presented as a separate line item. This includes the effects of the reversal, addition and compounding of provisions totaling € 83,240 thousand (2021: € 85,554 thousand). Due to the utilization of provisions, cash changes in provisions in the fiscal year amounted to € 147,010 thousand (2021: € 112,884 thousand).

G.2. Cash Flow from Investing Activities

The cash outflow from investing activities results from the cash outflow for investments in intangible assets, property, plant and equipment, financial assets and for the acquisition of consolidated companies and the cash inflow from the disposal of intangible assets, property, plant and equipment and financial assets.

Interest received and cash outflows from investments in plan assets for pensions are also reported in investing activities.

In the event of changes to the group of consolidated companies by selling or buying companies, the purchase price paid (not including acquired debt) is reported as cash flow from investing activities.

In fiscal 2022, cash outflow from investing activities fell by a total of € 29,376 thousand

Investments in intangible assets decreased by € 8,906 thousand to € 124,725 thousand. In the previous year, these included the payment of the final purchase price installment of € 23,000 thousand for the acquisition of intangible assets from Federal Mogul.

Capital expenditure on property, plant and equipment was down by € 34,472 thousand year over year at € 227,423 thousand as a result of the Profit & Cash Protection Program (PCPP). Furthermore, there was a cash inflow from financial investments in the amount of € 83,117 thousand, which largely arises from disposals in connection with the special fund and from the sale of the interest in Haldex AB.

The proceeds from the sale of property, plant and equipment increased by € 10,769 thousand to € 29,909 thousand in the year under review. In addition to a large number of minor payments from disposals of assets, these mainly comprise the € 22,000 thousand cash inflow from the sale of the representative offices in Berlin, which was completed in late 2021.

The € 4,475 thousand cash outflow for disposals of consolidated companies and other business units and other business units results from the deconsolidation of the shares in the joint venture Knorr-Bremse Kama Systems for Commercial Vehicles OOO, based in Naberezhnye Chelny, Russia. The € 5,650 thousand cash inflow recognized in the previous year stemmed from the sale of Kiepe Electric Ges.m.b.H., based in Vienna, Austria.

Disbursements for investments in financial assets rose by € 2,752 thousand year over year, to € 95,404 thousand. This line item mainly includes disbursements for the purchase of investments in Nexxiot AG (33.4% for € 62,845 thousand) and Shanghai Bobang Automotive Technology Co., Ltd. (13.1% for € 5,652 thousand) and for a capital increase at Rail Vision Ltd. (€ 4,014 thousand). Moreover, € 22,904 thousand worth of equities, bonds and Pfandbriefe were acquired through the special fund.

In addition, cash outflows for the acquisition of consolidated companies increased from € 87,840 thousand to € 203,415 thousand. This cash outflow comprises, firstly, the cash outflow of € 171,250 thousand for the acquisition of Cojali S.L., less the cash of € 20,680 thousand received as part of the acquisition, and, secondly, € 52,850 thousand for the acquisition of DSB Component Workshops, less the cash of € 5 thousand received as part of the acquisition.

The increase in interest received, from € 8,333 thousand to € 41,212 thousand, results mainly from the release of an interest rate derivative in connection with the sustainability-linked bond.

G.3. Cash Flow from Financing Activities

The cash flow from financing activities is calculated by netting the shareholder dividends paid, bank debt and loans raised, and their repayment and interest payments. Other effects included here are disbursements for the repayment of lease liabilities and cash outflows to non-controlling interests. Furthermore, cash inflows and outflows are reported from the settlement of freestanding derivatives that were exercised during the fiscal year and are not part of hedge accounting. Moreover, the cash flow from financing activities includes proceeds from grants and subsidies.

The cash outflow from financing activities in the 2022 fiscal year reduced by € 1,264,086 thousand to € 160,809 thousand.

While borrowings of € 1,044,505 thousand were repaid in the 2021 fiscal year, Knorr-Bremse issued a € 700,000 thousand sustainability-linked bond in September 2022.

The € 36,616 thousand in interest paid decreased by € 4,674 thousand to € 31,942 thousand, of which € 8,178 thousand (2021: € 12,374 thousand) was paid to credit institutions, € 15,326 thousand (2021: € 13,304 thousand) was paid due to leases and € 8,438 thousand (2021: € 10,938 thousand) is attributable to interest for bonds and debt instruments.

Following disbursements of € 40,919 thousand in the previous year, the settlement of derivatives in the fiscal year led to cash outflows of € 62,769 thousand.

Moreover, the cash outflow from financing activities in 2022 results from the dividends paid to shareholders of the parent company amounting to € 298,220 thousand (2021: € 245,024 thousand) and from the dividends paid to non-controlling interests amounting to € 40,781 thousand (2021: € 29,811 thousand).

Payments for acquisition of non-controlling interests include disbursements mainly for the payment of € 360,000 thousand to Robert Bosch GmbH for 20% equity interests in Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and Knorr-Bremse Commercial Vehicle Systems Japan Ltd., alongside disbursements to increase the equity interests held in Guangdong Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co., Ltd. and in Hasse & Wrede CVS Dalian, China Ltd.

In the reporting year, repayments of lease liabilities in the amount of € 64,711 thousand (2021: € 58,823 thousand) and proceeds from grants and subsidies amounting to € 9,731 thousand (2021: € 8,582 thousand) were recognized in cash flow from financing activities.

As of December 31, 2022, the Group had access to approved credit facilities totaling € 2,452,902 thousand (2021: € 1,995,600 thousand), of which around 70.6 % (2021: 71.6 %) was undrawn.

G.4. Composition of Cash and Cash Equivalents [Table → 3.72](#)

3.72 FINANCIAL FUNDS AT END OF PERIOD

in € thousand	12/31/2022	12/31/2021
Cash and cash equivalents	1,342,587	1,380,210
Short-term securities available for sale	2	2
Reclassification as assets held for sale and disposal groups	5,183	-
Short-term bank debt (less than 3 months)	(137,033)	(53,715)
	1,210,739	1,326,497

In the reporting year, the development of the individual cash flows, after adjustment for effects caused by exchange rates of € 8,496 thousand, resulted in a decrease in funds by € 115,758 thousand to € 1,210,739 thousand. Included in this amount is € 23,914 thousand restricted cash due to the EU sanctions imposed on Russia.

The cash funds reported in the statement of cash flows include the cash and cash equivalents reported under F.7. as well as short-term marketable securities, the cash and cash equivalents that are presented under F.8. and were reclassified as assets held for sale and disposal groups; and bank debt from overdraft facilities with maturities of up to three months, which must be paid upon request at any time.

H. Other Information

H.1. Managing of Financial Risks

As a result of its global operating activities, the Group is exposed to various financial risks, especially market risks, credit risks, and liquidity risks. The Group-wide risk management is focused on the unpredictable nature of developments on the financial markets and aims to minimize the potential negative effects on the Group's financial situation. The objective of the company policy is to limit risks through systematic financial management. To do so, the Group specifically uses financial derivatives to hedge against market risks.

The central Group Finance Department is responsible for risk management in accordance with the guidelines adopted by the Executive Board. It identifies, assesses, and hedges financial risks in close cooperation with the Group's operating units. The Executive Board provides guidelines for risk management as well as fixed principles for certain risk areas.

H.1.1. Currency risks

Currency risks arise from future transactions involving both the purchase of intermediate products and the sale of end products. Receivables and liabilities recognized in the balance sheet as well as highly probable expected cash flows in foreign currencies are examined. Risk positions also arise in a minor role from financing in foreign currencies.

The objective of the Group's hedging transactions is to reduce the risks from exchange rate fluctuations. For this purpose, currency exposure is centralized and the aggregated position is hedged with external banks using forward exchange transactions and options. The terms are based on the terms of the underlying transactions, whereby the planning and hedging horizon generally extends over three years. Currency futures and option transactions are exclusively entered into to hedge existing and future foreign currency receivables and payables from the purchase and sale of goods, as well as to eliminate the currency risk for financing transactions. The operating exposures for the next 12 months are shown. Stable exposure is assumed for subsequent years. [Table → 3.73](#)

3.73 CURRENCY EXPOSURE

in € thousand	USD	HUF	CZK
12/31/2021			
Operating exposure	279,017	(176,547)	(88,513)
Derivatives	(193,723)	90,594	55,550
12/31/2022			
Operating exposure	254,146	(159,450)	(96,732)
Derivatives	(193,302)	95,580	69,785

Knorr-Bremse uses hedge accounting to record the hedging of fluctuating cash flows that result from exchange rate movements and are associated with transactions that are highly likely to occur. The prerequisite for hedge accounting is that the economic relationship between the hedging instrument and the hedged item is documented and its effectiveness is proven. At the inception of the designated hedging relationships, the Group documents the risk management objectives and strategies for undertaking the hedge.

The Company uses the value at risk as the primary risk measure to determine the risk potential for currency risks based on management reporting. It indicates the maximum loss that is not likely to be exceeded within a certain time period (12 months) with a certain probability (95%). Both the recognized and planned exposures and hedging transactions are included in the analysis. The value at risk is calculated for the core currencies of USD, HUF and CZK. [Table → 3.74](#)

3.74 VALUE AT RISK

in € thousand	2022	2021
USD	11,920	9,374
HUF	16,703	10,056
CZK	3,017	2,532

Exposures to other currencies exist, which, however, do not have a material effect on earnings.

H.1.2. Interest rate risks

Interest rate risks arise as a result of market-related fluctuations in the interest rates. They affect the level of the Group's interest expenses. These arise in the Knorr-Bremse Group from variable-interest financial obligations. Interest rate risks are aggregated at headquarters and hedges are made at individual case level, taking into account the hedging period and nominal volume of the risk position.

With one exception, the existing leases do not have interest rate risks. The exception is the variable components of obligations under a lease. To hedge these, the Group has two interest rate swaps with a nominal volume of € 28,947 thousand in its portfolio, to which hedge accounting is not applied.

3.76 EFFECT ON EARNINGS

in € thousand	12/31/2022		12/31/2021	
	+100 bp	-25 bp	+100 bp	-25 bp
Variable-interest financial debt	(2,003)	501	(1,193)	298
Interest rate derivatives	299	(75)	583	(146)
Total	(1,704)	426	(610)	152

H.1.3. Commodity price risks

Commodity price risks arise from the fact that raw materials (especially metals) required in the production process can only be procured at higher costs due to fluctuating market prices, without a full price adjustment in sales transactions. The planned purchases of raw materials or components with raw material contents as well as the corresponding sales contracts are taken into account for the analysis of the commodity price risk. The resulting risk position, representing our exposure, is continuously monitored and hedged on a case-by-case basis using commodity swaps. Hedge accounting is not applied here.

The volume of the underlying transactions is calculated from the highly probable need for commodities over a rolling 2-

3.78 EFFECT ON EARNINGS

in € thousand	12/31/2022		12/31/2021	
	+10%	-10%	+10%	-10%
Aluminum	(1,251)	1,251	(1,400)	1,400
	(1,251)	1,251	(1,400)	1,400

The interest rate risk position, which includes variable-interest credit balances and liabilities, is shown below on the respective reporting date: [Table → 3.75](#).

3.75 INTEREST RATE EXPOSURE

in € thousand	12/31/2022	12/31/2021
Fixed-interest financial debt	1,461,160	759,186
Variable-interest financial debt	200,256	119,266
Interest rate derivatives	28,195	28,947

[Table → 3.76](#) shows the sensitivity of the Group earnings to a change in interest rates (by a rise of 100 basis points and a fall of 25 basis points) on variable-rate loans and balances as well as on the present value of interest rate derivatives.

year planning period. [Table → 3.77](#) lists the quantities of commodity exposures on the purchasing side for hedging them. The remaining open position can essentially be passed on the sales side.

3.77 COMMODITY EXPOSURE

in metric tons	12/31/2022	12/31/2021
Aluminum	6,305	7,394

[Table → 3.78](#) shows the sensitivity of consolidated earnings to commodity prices (10% increase/decrease in the market price).

H.1.4. Credit risks

Credit risks arise from investments with banks, operating trade receivables from customers as well as contract assets. On the credit institutions' side, the risk relates to counterparty default. On the customer's side, the risk relates to late, partial or lacking payments of receivables without compensation and to non-payment.

The carrying amount of the financial assets reported in the consolidated financial statements represents the maximum default risk. Regular monitoring is carried out both on the bank side and on the customer side. Decisions on financial transactions are made on the basis of this monitoring. Contracts on financial derivatives and financial transactions are only concluded with financial institutions with high credit ratings in order to keep the counterparty default risk as low as possible.

In principle, commercial transactions are exposed to the risk of a possible loss of value due to the defaulting of business partners, such as banks, suppliers, and customers.

SCREENING PROCESS FOR BANKS

The monitoring of core banks, including their rating and CDS development, as well as the diversification of the Group's business activities and investments, takes place on a quarterly basis. Compliance with the regulations in the guideline on the management of banking relationships is also reviewed at the same time. This specifies that no more than 40% of total deposits may be held by an individual bank and that business relationships may essentially only be maintained with banks with an investment grade rating. Financial investments are fine-tuned and adjusted as required on this basis. As a result, the assumption of low credit risk is supported by the investment guidelines only for investment-grade rated banks through regular controls.

IMPAIRMENT OF DEPOSITS

All of the Company's deposits are held in the business accounts of a small number of selected banks, most of which belong to the group of core and principal commercial banks used by the Group. A public issuer rating is provided by established rating agencies for all core and principal commercial banks. For the Impairment of these cash holdings, the probability of default is calculated according to the rating scale. The rating indicators and probabilities of occurrence are updated quarterly. [Table → 3.79, 3.80](#)

The shift in the value of the creditworthiness structure for investments is based largely on the change in the core and principal commercial bank structure (addition of further principal commercial banks for which regular checks are carried out to the rating portfolio).

3.79 RATINGS

in € thousand	12/31/2022	12/31/2021
AAA to A-	834,626	935,846
A- to BBB-	207,737	137,954
Not allocated, but within the investment grade range	300,224	306,410
	1,342,587	1,380,210

3.80 RATINGS – EXPECTED CREDIT LOSS

in € thousand	12/31/2022	12/31/2021
AAA to A-	25	33
A- to BBB-	3	1
Not allocated, but within the investment grade range	11	7
	39	41

SCREENING PROCESS FOR CUSTOMERS AND SUPPLIERS

When establishing new business relationships, public sources, such as credit agencies, are used to obtain an economic business evaluation and credit opinion in advance. During the business relationship, a regular monitoring process occurs via the automated, system-based analyses of customer and supplier portfolios. This takes into account the probabilities of occurrence and sales volumes. While suppliers are monitored as a group, major customers are reviewed on an individual basis.

IMPAIRMENT OF RECEIVABLES

The credit rating structure of the Company's receivables portfolio is illustrated in [Table → 3.81, 3.82](#).

3.81 CREDIT STRUCTURE FOR TRADE ACCOUNTS RECEIVABLE AND CONTRACT ASSETS

in € thousand	12/31/2022	12/31/2021
Top customers AAA to A-	369,306	401,837
Top customers A- to BBB-	502,432	361,901
Top customers Worse than BBB-	33,818	18,999
Other receivables without a rating allocation on an individual basis	507,239	522,521
	1,412,795	1,305,257

3.82 CREDIT STRUCTURE FOR TRADE ACCOUNTS RECEIVABLE AND CONTRACT ASSETS – EXPECTED CREDIT LOSS

in € thousand		12/31/2022	12/31/2021
Top customers	AAA to A-	194	145
Top customers	A- to BBB-	563	198
Top customers	Worse than BBB-	905	265
Other receivables without a rating allocation on an individual basis		30,029	15,432
		31,691	16,040

As of the reporting date, there were no material agreements that limit the maximum default risk. No significant collateral was received in the period under review. The shift in the value of the creditworthiness structure is based on the one hand on the change in the key customer structure itself and on the other hand on a change in the number of key customers.

According to the sales analysis of the customer structure, the 30 largest customers per division together account for the majority of total sales. This group therefore also accounts for the largest amount of total receivables. Receivables from this customer group are measured and their default probabilities determined in detail on a one-by-one basis using either a debtor-specific CDS spread or a rating-equivalent benchmark CDS spread or on the basis of credit reports, if they are available from publicly accessible information platforms or credit agencies.

For other customers outside the group of major customers, the probability of default is assessed on the basis of the benchmark CDS spread determined.

The default probabilities are updated quarterly. The identification of the 30 largest customers per division is updated annually.

The probabilities of default calculated reflect the creditworthiness of the respective company. In the case of impairment, due dates of receivables play a subordinate role because the underlying average terms of the receivables in the Group are largely in the short-term range.

There was no material concentration of a default risk with regard to a business partner or a clearly distinguishable group of business partners. As of the reporting date, there were no material agreements that limit the maximum default risk.

H.1.5. Equity share price risks

Knorr-Bremse has invested cash and cash equivalents of € 150,000 thousand in a special fund. An equity share price risk arises for the Group from the equity shares, equity index funds and equity derivatives held in this fund.

The fund did not hold any equities, equity funds or equity derivatives as at December 31, 2022.

Equity share exposure totaling € 22,554 thousand was held in the fund on December 31, 2021. If the equity share price level on December 31, 2021 had been 10 % higher (lower), this would have resulted in additional income (losses) in the financial result of € 2,255 thousand.

H.1.6. Liquidity risks

Liquidity risks arise from the possibility that funds required to satisfy payment obligations cannot be procured on time.

Within the Knorr-Bremse Group, liquidity risks arise from payment obligations arising from operating transactions or financing obligations. The management of liquidity within the Group is intended to ensure that sufficient cash and cash equivalents are always available to meet payment obligations at maturity under both normal and tense conditions without incurring unacceptable losses or damaging the reputation of the Group. Liquidity requirements from business activities over the next three months are determined on a rolling weekly basis and differentiated by currency in short-term liquidity planning. This planning takes into account the more precise expected cash flows.

As part of the medium-term planning, which takes place once a year and has a planning horizon of three years, the liquidity requirement is determined on the basis of the forecasted cash flows. This process allows appropriate actions to be taken at an early stage in case of changes to the financing requirements.

The Group has sufficient cash and cash equivalents available to meet its payment obligations. In addition, there are credit, overdraft and guarantee lines totaling € 2,452,900 thousand (2021: € 1,731,800 thousand), of which € 1,839,437 thousand was undrawn. On June 14, 2018, the company issued a € 750,000 thousand bond maturing in 2025. On September 15, 2022, the company issued a € 700,000 thousand sustainability-linked bond maturing in 2027. The Supply Chain Finance Program (see chapter F.13) is handled via a credit institution. There is a risk in this connection that contractual terms and conditions may change in the future.

Table → 3.83 shows the remaining contractual maturities of the financial liabilities as of December 31, 2022, including the estimated interest payments. This relates to undiscounted gross amounts, including estimated interest payments.

3.83 MATURITIES

in € thousand	Carrying amount	Contractually agreed cash flows	Up to 1 year	1 to 5 years	Over 5 years
					2022 fiscal year
Derivatives	(36,288)	(36,288)	(25,706)	(10,582)	–
Liabilities towards credit institutions	(205,893)	(206,751)	(172,844)	(31,373)	(2,534)
Liabilities resulting from options on minority interests	–	–	–	–	–
Bonds and debt instruments	(1,455,523)	(1,589,062)	(31,187)	(1,557,875)	–
Purchase price liabilities	(86,432)	(81,813)	(25,748)	(56,065)	–
Lease liabilities	(509,642)	(600,506)	(77,505)	(224,634)	(298,368)
Other financial liabilities	(384,279)	(478,369)	(391,223)	(75,183)	(11,964)
Trade accounts payable	(1,213,954)	(1,218,807)	(1,218,807)	–	–
	(3,892,011)	(4,211,596)	(1,943,019)	(1,955,711)	(312,866)
					2021 fiscal year
Derivatives	(24,378)	(24,378)	(11,233)	(13,145)	–
Liabilities towards credit institutions	(126,634)	(127,138)	(90,367)	(33,842)	(2,929)
Liabilities resulting from options on minority interests	(379,616)	(379,616)	(379,616)	–	–
Bonds and debt instruments	(751,818)	(783,748)	(8,437)	(775,311)	–
Purchase price liabilities	(10,920)	(10,920)	–	(10,920)	–
Lease liabilities	(510,272)	(605,247)	(75,548)	(214,270)	(315,429)
Other financial liabilities	(344,872)	(356,323)	(307,176)	(48,529)	(618)
Trade accounts payable	(1,166,062)	(1,165,991)	(1,165,217)	(775)	–
	(3,314,573)	(3,453,362)	(2,037,593)	(1,096,792)	(318,976)

H.2. Events after the Reporting Date

CHANGE OF LEADERSHIP

Mr. Marc Llistosella commenced his role as the Knorr-Bremse AG Chief Executive Officer with effect from January 1, 2023.

H.3. Number of Employees [Table → 3.84](#)

3.84 AVERAGE NUMBER OF EMPLOYEES

	2022	2021
Number		
Wage earners	16,188	15,758
thereof leased personnel	2,798	2,811
Salaried employees	14,974	14,451
thereof leased personnel	197	226
Trainees	0	221
	31,162	30,431

In fiscal year 2022, average number of employees increased by 731 from 30,431 to 31,162. Unlike in the previous year, trainees are being categorized as wage earners starting in the 2022 fiscal year. The number of employees without leased personnel increased by 3 %, or 774 employees, from 27,393 to 28,167. Of this increase, a quantity of 135 employees resulted from a conversion of the reporting format (2021: full-time-equivalent [FTE] units; 2022: employee head count), organic growth and the increase in employee numbers through the acquisition of Cojali and DSB Component Workshops.

H.4. Auditor Fees

[Table → 3.85](#)

3.85 AUDITOR FEES

in € thousand	2022	2021
Audit services	3,849	6,785
Other assurance services	115	142
Tax advisory services	-	4
Other services	1,873	1,050
	5,837	7,981

The fee for auditing services of the annual financial statements provided by KPMG AG WPG referred above all to the audit of the consolidated financial statements and the company's annual financial statements along with the summarized consolidated management report of Knorr-Bremse Aktiengesellschaft and of the Group as well as various audits of the annual financial statements of its subsidiaries, including statutory mandate extensions and key focal points of the audit agreed with the Supervisory Board. Moreover, the audit included a review of the interim financial statements.

Other assurance services relate to legally prescribed or contractually agreed audits such as the EMIR audit pursuant to section 32 (1)3 WpHG, audits related to the use of public funding, audit services in connection with non-financial reporting under ISAE 3000, the issue of a comfort letter and other contractually agreed assurance services.

Other services predominantly concern additional quality assurance audit actions in connection with quarterly reporting, services in conjunction with the EU Taxonomy, due diligence services and other services for the Legal department.

H.5. Transactions with Related Parties

Related parties within the meaning of IAS 24 are natural persons or companies that can be influenced by Knorr-Bremse AG, that can exert an influence on Knorr-Bremse AG or that are under the influence of another related party of Knorr-Bremse AG. Transactions with related parties were conducted at arm's length.

H.5.1. Parent company and ultimate parent entity

The Group is directly controlled by KB Holding GmbH, Grünwald, Germany (hereinafter "KB Holding"), which holds 58.99 % of the shares of the Group.

The shares in KB Holding are held by TIB Vermögens- und Beteiligungsholding GmbH, Grünwald, Germany (hereinafter "TIB"), of which Stella Vermögensverwaltungs GmbH, Grünwald, Germany (hereinafter "Stella") in turn holds a majority interest. Stella is the ultimate parent company. Since the death of Mr. Heinz Hermann Thiele on February 23, 2021, who was the ultimate parent entity up until that time, the majority of shares in Stella have been held by his widow and heir, Ms. Nadia Thiele. The voting rights arising from these shares are controlled by Mr. Robin Brühmüller, in his capacity as the executor of the deceased's estate, for the duration of the executorship. Due to his control of the voting rights in Stella, Mr. Brühmüller is also attributed with the 58.99 % indirect interest of KB Holding in Knorr-Bremse AG. Mr. Brühmüller, as executor of the estate, is therefore the ultimate parent entity.

To the company's knowledge, the shares held in Stella by Nadia Thiele, the heir, will be contributed at a later point in time to a trust being set up under German law. This contribution had not yet taken place as of the date of the preparation of the consolidated financial statements.

H.5.2. Related parties

All related parties that can be controlled by the Group or over which the Group can exercise significant influence are listed in the Notes under H.12. List of shareholdings.

Balances and transactions between Knorr-Bremse AG and its subsidiaries included in the consolidated financial

statements that are related parties have been eliminated in the course of consolidation and are not explained in these notes.

In addition to the companies included in the consolidated financial statements, in the course of its normal business activities the Group also has relationships with other non-consolidated companies and associates and joint ventures that are considered to be related parties within the meaning of IAS 24.

H.5.3. Remuneration of key management personnel

Management in key positions consists of the Executive Board and the Supervisory Board. The remuneration of members of management in key positions (on an expense basis) includes:

[Table → 3.86](#)

3.86 REMUNERATION OF MANAGEMENT

in € thousand	2022	2021
Compensation of the Executive Board		
Short-term compensation	6,192	8,708
Post-employment benefits	1,083	1,300
Termination benefits	4,694	1,864
Other long-term benefits	-	173
Share-based payment	391	1,790
	12,360	13,835
Compensation for the Members of the Supervisory Board		
Short-term compensation	2,439	1,598
	2,439	1,598
Total	14,798	15,433

The remuneration of the members of the Executive Board includes salaries, benefits in kind and contributions to defined-benefit and defined-contribution plans for post-employment benefits. The post-employment benefits of € 1.083 thousand (2021: € 1,300 thousand) concerned expenses for defined-contribution plans for Executive Board members active in the fiscal year. The termination benefits in the reporting period concern the resignation of Dr. Mrosik.

In the previous year, other long-term benefits included expenses for the Executive Board LTI which was granted until 2019. The LTI for the 2018 and 2019 fiscal years was granted in the form of performance-related remuneration on the basis of a performance cash plan and is allocated in annual tranches, each with a term of 3 years. The payout is based on the Economic Value Added (EVA®) generated by the KB Group in the second year following the grant year compared to the EVA® of the fiscal year preceding the grant year.

Since the 2020 fiscal year, the LTI recognized under share-based payments has been awarded as a performance share plan based on virtual shares and paid out in annual tranches. The term of a tranche is four years (the "performance period"). This begins on January 1 of the respective grant year and ends on December 31 of the third year after the grant year. The LTI is paid out following approval of the consolidated financial statements for the last fiscal year of the relevant performance period. The amount of the LTI payout directly depends on the performance of Knorr-Bremse shares during the performance period. It also depends in equal parts on the Company's total shareholder return (TSR) over the performance period compared with the TSR of companies in three individually specified peer groups (relative TSR) over the same period and on the average increase in earnings per share (EPS) during this period relative to a target value set by the Supervisory Board at the start of the performance period. For further details, please refer to the information on LTI in the compensation report and in Chapter F.10.

TOTAL REMUNERATION OF THE SUPERVISORY BOARD AND THE EXECUTIVE BOARD IN ACCORDANCE WITH SECTION 314 (1) NO. 6 IN CONJUNCTION WITH SECTION 315E (1) HGB

The total remuneration of the members of the Supervisory Board granted in 2022 amounted to € 2,439 thousand (2021: € 1,598 thousand). In 2022, total remuneration granted to the Executive Board amounted to € 110,831 thousand (2021: € 14,948 thousand). Total remuneration granted includes share-based payment for the fiscal year with a fair value of € 3,556 thousand (2021: € 4,940 thousand) and 39,931 (2021: € 42,244) virtual performance shares.

Former members of the Executive Board and their surviving dependents were awarded total remuneration of € 9,316 thousand in the fiscal year (2021: € 4,985 thousand). Total compensation in 2022 includes, among other things, employment termination benefits of € 900 thousand for Dr. Mrosik and € 1,864 thousand in the previous year for Mr. Laier. Pension provisions for former members of the Executive Board and for their surviving dependents amounted to € 41,945 thousand as at December 31, 2022 (2021: € 62,990 thousand).

H.5.4. Sale of goods and services

Table → 3.87

3.87 SALE OF GOODS AND SERVICES

in € thousand	2022	2021
Sale of goods and services		
Associated companies	98,490	155,606
Ultimate parent entity	81	325
Other related companies and persons	2,399	4,297
	100,969	160,228

The sale of goods and services to related parties comprises legal transactions within and outside the scope of normal delivery and service relationships. Services to the ultimate parent entity in the amount of € 48 thousand (2021: € 267 thousand) related to reimbursed expenses.

H.5.5. Purchase of goods and services Table → 3.88

3.88 PURCHASE OF GOODS AND SERVICES

in € thousand	2022	2021
Purchase of goods and services		
Associated companies	21,505	22,702
Members of the Management in key positions	-	25
Ultimate parent entity (consulting services)	408	402
Ultimate parent entity (rents)	1,860	2,147
Other related companies and persons (rents)	17,172	15,559
Other related companies and persons (goods and services)	2,376	1,267
	43,322	42,101

The purchase of goods and services comprised legal transactions within the framework of and outside normal delivery and service relationships.

Goods and services (including rents) were purchased from related parties at arm's length conditions.

H.5.6. Miscellaneous business transactions [Table → 3.89](#)

3.89 MISCELLANEOUS BUSINESS TRANSACTIONS

in € thousand	2022	2021
Disposal of land and other assets to		
Related companies	-	6,576
	-	6,576
Donations to		
Related companies (Knorr-Bremse Global Care e. V.)	2,540	3,009
	2,540	3,009
Dividends to		
Parent Company (KB Holding)	175,931	144,549
	175,931	144,549
Distributions from		
Heiterblick Projektgesellschaft mbH, Leipzig	-	1,225
	-	1,225
Further business transactions		
Associated companies		
Capital increases at Rail Vision Ltd.	4,014	-
	4,014	-

In August 2021, Knorr-Bremse Fékrendszerek Kft., Kecskemét, Hungary, concluded a sale-and-leaseback transaction with OPES Real Estate Hungary Kft., Budapest, Hungary. The purchase price of € 6,300 thousand is based on an assessment by an independent expert. The newly concluded lease has a term of 12 years. The Company generated earnings before interest, tax and depreciation and amortization of € 2,206 thousand from the transaction. The annual net rent exclusive of heating charges is € 359 thousand. At the same time, Knorr-Bremse Fékrendszerek Kft., Kecskemét, Hungary, agreed on

the construction of a new, modern office and R & D building on the unused portion of the property by OPES Real Estate Hungary Kft., Budapest, Hungary, in accordance with the requirements of Knorr-Bremse. The new building will also be under a long-term lease once it has been completed.

The capital increase at Rail Vision Ltd. was effected as part of the company's IPO in 2022 by exercising an option to subscribe to further capital.

H.5.7. Balances with related parties and management Table → 3.90**3.90 BALANCES WITH RELATED PARTIES AND MANAGEMENT**

in € thousand	12/31/2022	12/31/2021
Right-of-use assets pursuant to IFRS 16		
Related companies	95,336	114,407
Ultimate parent entity	17,419	19,962
	112,755	134,368
Receivables to		
Associated companies	27,010	29,994
Related companies	17,318	17,645
Ultimate parent entity	83	80
Members of the Management in key positions	-	-
	44,410	47,720
Liabilities to		
Associated companies	2,727	6,107
Related companies	140,009	172,947
Ultimate parent entity	819	21,942
Members of the Management in key positions	-	73
	143,554	201,069

The IFRS 16 right-of-use assets are mainly attributable to buildings at the Munich site leased as part of a sale-and-lease-back transaction from the year 2019.

Receivables from related parties result from trade receivables and from the sale of land.

The receivables are unsecured and are settled in cash. No guarantees have been given or obtained. No impairment losses were recognized for unrecoverable or doubtful receivables from related parties in the current fiscal year or previous fiscal years.

The liabilities to associated companies result from deliveries and services. The liabilities to related parties largely concern liabilities from leases pursuant to IFRS 16.

No material transactions took place with entities under common control.

H.6. Executive Bodies

H.6.1. Executive Board of Knorr-Bremse AG

Marc Llistosella, Chief Executive Officer

(since January 1, 2023)

- Responsible in particular for HR, Strategy, Communication, Brand Management, IT, Corporate Security, Internal Audit and Digitalization

Dr. Claudia Mayfeld

- Responsible in particular for Integrity, Legal and Human Resources

Bernd Spiess (since March 12, 2022)

- Responsible for the Commercial Vehicle Systems Division, Munich
- Chairman of the Supervisory Board of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Munich

Frank Markus Weber

- Responsible in particular for Finance, Accounting, Controlling, Taxes, Treasury, M&A, Sustainability and Investor Relations

Dr. Jürgen Wilder

- Responsible for the Rail Vehicle Systems Division, Munich
- Chairman of the Supervisory Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Munich

Dr. Jan Michael Mrosik, Chief Executive Officer
(until March 11, 2022)

- Responsible in particular for HR, Strategy, Communication, IT, Corporate Security, Internal Audit and Digitalization

H.6.2. Supervisory Board of Knorr-Bremse AG

Dr. Reinhard Ploss, Munich (since May 24, 2022)

- Chairman of the Supervisory Board
- President of acatech – Deutsche Akademie der Technikwissenschaften (until November 2022)
- Ordinary member of the TUM University Council
- Member of the Board of Trustees of Foundation for Demoscopy Allensbach
- Member of the Quantum Computing Advisory Board of Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR)
- Chairman of Qutac (Quantum Technology & Application Consortium) Executive Committee
- Honorary member of Board of Trustees, Stifterverband für die Deutsche Wissenschaft

Franz-Josef Birkeneder*, Aldersbach

- Deputy Chairman of the Supervisory Board
- Plant manager at Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Aldersbach location (until March 2022)
- Support for global projects

Kathrin Dahnke, Bielefeld

- Independent management consultant
- Chairman of the Audit Committee
- Member of the Supervisory Board and Chairwoman of the Audit Committee of B. Braun SE, Melsungen
- Chief Financial Officer of Ottobock SE & Co. KGaA (until July 31, 2022)
- Member of the Supervisory Board and Chairwoman of the Audit Committee of Jungheinrich AG, Hamburg
- Member of the Supervisory Board of Aurubis AG, Hamburg

Michael Jell*, Munich

- Full-time member of the Works Council of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Knorr-Bremse AG, Knorr-Bremse Services GmbH
- Member of the Supervisory Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH

Dr. Sigrid Evelyn Nikutta, Berlin (since May 24, 2022)

- Member of the Executive Board (Goods Traffic) of Deutsche Bahn AG and Chairwoman of the Executive Board of DB Cargo AG
- Chairwoman of the Board of Trustees of Deutsches Institut für Wirtschaftsforschung (DIW)
- Member of the Supervisory Board and Deputy Chairwoman of the Senate of Deutsches Zentrum für Luft- und Raumfahrt e. V. (DLR)
- Member of the University Council of Bielefeld University

Werner Ratzisberger*, Aldersbach

- Full-time member of the Works Council of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Munich

Annemarie Sedlmair*, Munich

- IG Metall Bezirksleitung Bayern,
- Member of the Supervisory Board of Knorr-Bremse Systeme für Schienenfahrzeuge GmbH
- Member of the Supervisory Board of Bosch Sicherheitssysteme GmbH (until June 2022).
- Member of the Advisory Board of Fachakademie für Arbeitsrecht der Kritischen Akademie Inzell
- Member of the Supervisory Board of Bosch Rexroth AG

Dr. Stefan Sommer, Meersburg

- Chairman of the Strategy Committee
- Chairman of the Supervisory Board of Jost Werke AG (since May 2022)
- Member of the Presidential Council of DEKRA e.V.
- Chairman of the Advisory Board of In-Tech GmbH

Erich Starkl*, Passau

- 1st Authorized Representative of IG Metall trade union, Passau office

Julia Thiele-Schürhoff, Munich

- Chairwoman of the Management Board of Knorr-Bremse Global Care e.V.

Sylvia Walter*, Berlin

- Accounting employee/accountant
- Member of the Works Council of Hasse & Wrede GmbH

Dr. Theodor Weimer, Frankfurt am Main

- Deputy Chairman of the Supervisory Board
- Chairman of the Executive Board of Deutsche Börse AG
- Member of the Supervisory Board of Deutsche Bank AG

Dr. Thomas Enders, Tegernsee (until May 24, 2022)

- President of Deutsche Gesellschaft für Auswärtige Politik
- Member of the Supervisory Board of Lufthansa AG
- Member of the Board of Directors of Linde plc
- Member of the Supervisory Board of Liliium GmbH

Prof. Klaus Mangold, Stuttgart (until May 24, 2022)

- Chairman of the Supervisory Board (until May 24, 2022)
- Self-employed entrepreneur
- Chairman of Mangold Consulting GmbH, Stuttgart
- Member of the Administrative Board of Baiterek National Managing Holding JSC, Nur-Sultan, Kazakhstan
- Vice-Chairman Rothschild Europe, Paris
- Chairman of the Advisory Board, Eastsib Holding, London
- Member of the Board of Directors, ACRA Analytical Credit Rating Agency, Moscow (until October 2022)
- Chairman of the Foundation, Tiriac International Foundation, Vaduz

* elected by the employees

H.7. Other Financial Obligations [Tab. → 3.91](#)

3.91 OTHER FINANCIAL OBLIGATIONS

in € thousand	Up to 1 year	1 to 5 years	Over 5 years	Total
12/31/2022				
Rent and lease obligations	4,485	18,563	21,085	44,133
Investment projects	43,576	2,412	–	45,988
Major repairs/maintenance work	9,861	6,483	41	16,385
Other obligations	78,966	75,927	34,194	189,088
	136,889	103,385	55,320	295,594
12/31/2021				
Rent and lease obligations	5,169	5,899	18,800	29,868
Investment projects	25,384	272	–	25,656
Major repairs/maintenance work	8,294	2,030	81	10,405
Other obligations	66,208	61,538	44,957	172,704
	105,055	69,738	63,839	238,632

Future rent and lease obligations result firstly from contracts that have already been entered into but have not yet commenced and are accounted for in accordance with IFRS 16 from that point onward or include variable lease payments and, secondly, from low-value or short-term rental and lease agreements, which are exempted from recognition in the balance sheet in accordance with IFRS 16.5.

The obligations for capital expenditure projects mainly relate to ongoing construction projects as well as to upgrading and expansion expenditure on production plant and equipment.

Obligations for major repairs and maintenance work mostly comprise obligations in connection with maintenance at the Munich location.

In addition, the other liabilities item includes uncompleted orders as well as purchase obligations for building service charges, logistics service contracts and license obligations.

H.8. Contingent Liabilities [Tab. → 3.92](#)

3.92 CONTINGENT LIABILITIES

in € thousand	2022	2021
Guarantees	21,398	18,784
Warranties	189	389
Other	1,212	2,809
	22,799	21,982

Contingent liabilities lead to possible obligations that cannot be influenced due to the occurrence of potential future events. The amount of these obligations can also not be adequately calculated.

The company's contingent liabilities involve guarantees and warranties. Guarantees were issued for outstanding bank bonds, performance warranties were issued for banks and a rent guarantee was issued for commercial/factory buildings. The associated probability of occurrence was considered to be low in 2022 due to the ongoing stable business development of the borrower.

Alleged irregularities in conjunction with the initiation of business some time ago were reported through the Knorr-Bremse whistleblowing system. Provisions for tax risks were recognized in the

consolidated financial statements as at December 31, 2021, for issues that were identified as part of a completed internal investigation. An additional investigation was ordered into other reports received via the whistleblowing system, which was completed in February 2023. No further provisions were recognized in this context. Simultaneously, measures were taken to make the compliance management system even more robust. Should these issues become the subject of an investigation by the authorities, and should this investigation determine there had been violations of applicable law, this could lead to additional risks for the companies. At the time the consolidated financial statements were prepared, it was not possible to estimate the additional financial impact of this contingent liability. The Executive Board expects the risk to be higher than it was the previous year.

A provision of a low two-digit million amount was recognized as at the end of the reporting period for a warranty claim in the Rail division in Asia. This claim could result in further medium-range risks based on the risk report provided in the management report.

H.9. Legal Disputes and Litigation

BOSCH ARBITRATION PROCEDURE

In a letter dated June 21, 2018, Robert Bosch GmbH declared it was exercising its put option related to its minority share in Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and initiated arbitration proceedings with the aim of enforcing this put option. In December 2020, the court of arbitration issued a ruling confirming this put option. The parties then had to agree on the purchase price at which Knorr-Bremse AG will acquire the minority interest in Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and in Knorr-Bremse Commercial Vehicle Systems Japan Ltd. This was confirmed again in a decision made on March 9, 2021. The extension of the lawsuit by Robert Bosch GmbH involving a claim for damages due to refusal to consent to full distribution of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH's accumulated profit was rejected. The counterclaim brought by Knorr-Bremse AG, with which the company sought to determine that the prohibition of competition also covered products in the area of driver assistance systems/automated driving functions, was also dismissed. The parties had held discussions on agreeing the purchase price, but had not been able to come to any agreement. As a result, Robert Bosch GmbH submitted a request for arbitration, with which it pleaded for the payment of a purchase price of € 379.6 million plus interest, on July 21, 2021. Knorr-Bremse has recognized this amount as a liability since 2018. The parties have now come to an agreement and settled the litigation. Knorr-Bremse will buy the shares for a purchase price of € 360.0 million and become sole shareholder of Knorr-Bremse Systeme für Nutzfahrzeuge GmbH and Knorr-Bremse Commercial Vehicle Systems Japan Ltd. The competition authorities approved the share purchase in November 2022. The purchase price was paid and the shares transferred on December 7, 2022.

COMPLAINTS FILED BY HALDEX AB WITH THE EUROPEAN COMMISSION AND THE BRAZILIAN ANTITRUST AUTHORITIES

On February 13, 2020, Haldex AB filed complaints with the European Commission and the Administrative Council of Economic Defense (CADE) in Brazil. The complaints concern the allegation that, by acquiring and holding a minority interest in Haldex AB in September 2016, Knorr-Bremse AG breached the respective applicable antitrust and merger control laws.

The minority interest held by Knorr-Bremse in Haldex AB was sold in full in fiscal year 2022.

Dated February 10, 2022, the European Commission rejected the complaint and closed the proceedings.

The Brazilian CADE decided on June 23, 2020, to open formal proceedings for a potential breach of the suspensory obligation. The proceedings are still in the investigation phase. A decision on whether to discontinue or continue the proceedings before a separate body of CADE is also expected in the next few months.

As the investigations are still at an early stage, no reliable statement can be made at this time about the probability of success or the possible consequences of an adverse outcome of the administrative proceedings. The risk is currently assessed as fairly low.

ADMINISTRATIVE ACTION IN BRAZIL

On September 27, 2016, the Brazilian antitrust authorities initiated administrative proceedings against the Group company Knorr-Bremse Sistemas para Veiculos Comerciais Brasil Ltda., Itupeva, Brazil ("KBB"), and several of its competitors in Brazil. The allegations against KBB are limited to an allegedly unlawful exchange of information and do not involve antitrust behavior. As the investigations are still at an early stage, no reliable statement can be made at this time about the probability of success or the possible consequences of an adverse outcome of the administrative proceedings. Knorr-Bremse currently assesses the risk of any fine as rather low.

DISPUTE WITH MINORITY SHAREHOLDER OF KNORR-BREMSE GUO TONG RAILWAY VEHICLE SYSTEMS EQUIPMENT CO. LTD.

Together with the company Guangzhou Guo Tong, Knorr-Bremse Asia Pacific (Holding) Limited has an equity interest in the company Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co. Ltd, which is fully consolidated in Knorr-Bremse's consolidated financial statements. In December 2020, Guangzhou Guo Tong filed an action against various companies and a General Manager of the Knorr-Bremse Group. In the statement of claim, Guangzhou Gou Tong particularly refers to lost profit on account of an alleged production and project transfer to other Knorr-Bremse companies as well as to adjustments to the structure of transfer prices.

The parties have reached an out-of-court settlement agreement in the meantime. The agreement also stipulated that Knorr-Bremse Asia Pacific acquire the shares of GT in Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co. Ltd. The transfer of shares has now taken place. GT retracted the complaints in January 2022.

THREAT OF LITIGATION FROM RUHRBAHN GMBH

In a letter dated February 11, 2022, Ruhrbahn GmbH claimed damages in the amount of € 8,991 thousand in the Kiepe/Heiterblick consortium and notified its intention to take legal action if payment is not made. Ruhrbahn is basing its claim on the violation of duties of consideration associated with an appeal on an award procedure from 2020. After the

consortium rejected the claim, Ruhrbahn GmbH filed a claim for € 9,080 thousand against the consortium with Essen County Court on March 25, 2022. In the course of the proceedings the consortium is defending itself against the claim, which it considers unfounded.

H.10. Government Grants

Government grants include grants for structural support and business development as well as funding for research and development projects. In addition, it includes grants for the reimbursement of social security contributions in connection with the payment of short-time working allowances in the past fiscal year.

Grants for assets in the fiscal year 2022 amounted to € 1,620 thousand (2021: € 1,800 thousand).

Performance-related grants in 2022 amounted to € 8,496 thousand (2021: € 6,166 thousand) and were recognized in income. Performance-related grants are generally reported in other operating income.

Refunds of social security contributions for short-time working allowances in connection with the Covid-19 pandemic, of an amount of € 109 thousand (2021: € 406 thousand) were deducted from personnel expenses in fiscal 2022.

H.11. Leases

ACCOUNTING FOR LEASES

The Group has entered into leases for land, buildings, a variety of technical equipment, machinery, vehicles and operating and office equipment that it uses in its operations. The respective useful lives are specified in chapter D.11. The Group's commitments from its leases are collateralized by the lessor's ownership of the leased assets. Several leases, largely for land and buildings, include extension and termination options. The unrecognized residual value guarantees and the extension and termination options not taken into account amounted to € 11.831 thousand as of December 31, 2022. (2021: € 12,709 thousand).

The Group has also concluded leases for machinery that have a term of twelve months or less and for office equipment of low value. The Group applies the practical expedients that apply to short-term leases and leases of low value assets to these leases.

The following table presents carrying amounts of the right-of-use assets recognized: [Table → 3.93](#)

3.93 RIGHT-OF-USE ASSETS

in € thousand	12/31/2022	12/31/2021
Assets		
Non-current assets		
Right-of-use assets – land and buildings	456,677	453,821
Right-of-use assets – technical equipment and machinery	824	1,072
Right-of-use assets – other equipment, furniture and fixtures	16,576	16,989
Total	474,076	471,882

The following table lists the additions to right-of-use assets as shown in non-current assets: [Table → 3.94](#)

3.94 ADDITIONS TO RIGHT-OF-USE ASSETS

in € thousand	12/31/2022	12/31/2021
Assets		
Non-current assets		
Right-of-use assets – land and buildings	61,730	174,338
Right-of-use assets – technical equipment and machinery	237	258
Right-of-use assets – other equipment, furniture and fixtures	9,510	9,939
Total	71,476	184,534

The following table shows the carrying amounts of the lease liabilities (which are included in financial liabilities) and the changes during the reporting period: [Table → 3.95](#)

3.95 LEASE LIABILITIES

in € thousand	12/31/2022	12/31/2021
Liabilities		
Non-current financial liabilities		
Lease liabilities	446,581	450,330
Current financial liabilities		
Lease liabilities	63,061	59,942
Total	509,642	510,273

The maturity analysis of the lease liabilities is disclosed in chapter H.1.6.

The following amounts were recognized in profit or loss in the reporting period: [Table → 3.96](#)

3.96 AMOUNTS AFFECTING PROFIT OR LOSS

in € thousand	2022	2021
Operating expenses	19,227	12,206
Expenses from short-term leases	8,619	7,886
Expenses from leases of low value assets	3,588	3,858
Expenses from variable lease payments	1,474	925
Other expenses from leases (e.g. incidental expenses)	5,546	(463)
Depreciation, amortization and impairment	65,032	58,796
Depreciation of right-of-use assets – land and buildings	55,500	48,516
Depreciation of right-of-use assets – technical equipment and machinery	344	661
Depreciation of right-of-use assets – other	9,188	9,619
Wertminderungen auf Nutzungsrechte	–	–
Financial result	14,932	13,308
Interest expense on lease liabilities	15,326	13,308
Income from the currency translation of lease liabilities	(394)	–
Expenses from the currency translation of lease liabilities	–	–

The Group had cash outflows for leases of € 80,037 thousand in 2022 (2021: € 72,127 thousand). The future cash outflows for leases that have not yet commenced are disclosed in chapter H.7. Of these, € 35.687 thousand (2021: € 22.218 thousand) is attributable to leases that have been entered into but have not yet commenced, € 5.809 thousand (2021: € 6.428 thousand) is attributable to low-value and short-term leases and € 2.637 thousand (2021: € 1.221 thousand) is attributable to leases with variable payments.

JUDGMENTS

When applying the Group's accounting policies, the management made the following judgments that materially influence the amounts in the consolidated financial statements:

Determination of the Term of Leases with Extension and Termination Options – the Group as Lessee

The Group determines the lease terms based on the noncancelable period of the lease and taking into account periods covered by an option to extend the lease if the Group is

reasonably certain to exercise that option or periods covered by an option to terminate the lease if the Group is reasonably certain not to exercise that option. The Group has completed several leases that include extension and termination options. The Group makes judgments when assessing whether it is reasonably certain to exercise or not to exercise the lease's extension or termination option. This means it takes into account all relevant factors that represent an economic incentive for it to exercise the extension or the termination option. After the commencement date, the Group reassesses the lease term upon the occurrence of a significant event or a change in circumstances that is within its control and affects whether it is reasonably certain to exercise an option or not to exercise an option to extend or terminate the lease (e.g., conducting significant leasehold improvements or significant customization of the underlying asset).

ASSUMPTIONS AND ESTIMATES

When applying the Group's accounting policies, the management made the following assumptions and estimates that materially influence the amounts in the consolidated financial statements:

Leases – Estimate of the Incremental Borrowing Rate

The Group cannot readily determine the interest rate implicit in the lease. It therefore uses its incremental borrowing rates to measure lease liabilities. The incremental borrowing rate is the rate of interest that the Group would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment. The incremental borrowing rate thus reflects the interest that the Group would have to pay. If no observable interest rates are available (e.g., at subsidiaries that do not enter into financing transactions) or if the interest rate has to be adjusted in order to reproduce the terms of the lease (e.g., if the lease was not entered into in the subsidiary's functional currency), the incremental borrowing rate must be estimated. The Group estimates the incremental borrowing rate using observable inputs (e.g., market interest rates), if these are available, and must make certain company-specific estimates (e.g., standalone credit assessment of the subsidiary).

H.12. List of Shareholdings

Table → 3.97 shows the list of shareholdings in accordance with section 313 (2) HGB.

3.97 LIST OF SHAREHOLDINGS

1. Consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
Anchor Brake Shoe Company LLC, West Chicago, Illinois, USA	100.0	in € thousand	627	(3,197)	9,413
BCVS Canadian Holdings LLC, Avon, Ohio, USA	100.0	in € thousand	0	0	0
BCVS Mexican Holdings LLC, Avon, Ohio, USA	100.0	in € thousand	0	0	0
Bendix Commercial Vehicle Systems LLC, Avon, Ohio, USA	100.0	in € thousand	426,883	149,417	955,130
Bendix CVS Canada Inc., Anjou, Québec, Canada	100.0	in € thousand	4,089	1,063	15,220
Bendix CVS de Mexico S.A. de C.V., Cd Acuña, Coah, Mexico	100.0	in € thousand	24,547	3,102	45,145
Bendix Servicios de Mexico S.A. de C.V., Tapodaca Nuevo Leon, Mexico	100.0	in € thousand	7,096	163	10,542
Cojali France S.a.r.l., Martillac, France ³⁾	100.0	in € thousand	3,147	156	6,395
Cojali Italia S.R.L., Cesano Boscone Milan, Italy ³⁾	52.0	in € thousand	996	(202)	2,050
Cojali S.L., Ciudad Real, Spain ³⁾	55.0	in € thousand	140,542	4,182	187,896
Cojali USA Inc., Doral, USA ³⁾	51.0	in € thousand	10,012	(269)	19,290
Comet Fans S.r.l., Solaro, Milan, Italy	100.0	in € thousand	4,088	1,579	12,080
Distribuidora Bendix CVS (de) Mexico SA de CV, Cd Acuña, Coah, Mexico	100.0	in € thousand	2,540	420	9,268
Dr. techn. Josef Zelisko, Fabrik für Elektrotechnik und Maschinenbau Ges.m.b.H., Mödling, Austria ¹⁾	100.0	in € thousand	7,974	718	37,932
Dyno-Inno Test Center for Brake Equipment (Suzhou) Ltd., Suzhou, China	100.0	in € thousand	2,120	938	2,354
EVAC GmbH, Wedel/Germany	100.0	in € thousand	57,591	(3,608)	83,552
Freios Bre Coahuila, S.A. de C.V., Cd. Acuña, Coah, Mexico	100.0	in € thousand	6,968	(9)	6,969
G.T. Group Ltd., Peterlee, United Kingdom	100.0	in € thousand	5,599	109	5,599
GT Emissions Systems Ltd., Peterlee, United Kingdom	100.0	in € thousand	8,456	(1,715)	28,949
GT Project Engineering Ltd., Consett, United Kingdom	100.0	in € thousand	0	518	0
Guangdong Knorr-Bremse Guo Tong Railway Vehicle Systems Equipment Co., Ltd., Jiangmen, Guangdong, China ⁵⁾	100.0	in € thousand	8,485	1,514	22,056
Hasse & Wrede CVS Dalian, China Ltd., Dalian, China	80.0	in € thousand	11,028	6,503	23,090
Hasse & Wrede GmbH, Berlin, Germany	100.0	in € thousand	15,356	3,802	35,489
Heine Resistors GmbH, Dresden, Germany	100.0	in € thousand	4,515	1,510	9,268
IFE-CR a.s., Brunn, Czech Republic	100.0	in € thousand	20,498	5,346	81,328
IFE North America LLC, Westminster, Maryland, USA	100.0	in € thousand	2,901	240	8,846
IFE-VICTALL Railway Vehicle Door Systems (Qingdao) Co., Ltd., Qingdao, China	59.0	in € thousand	24,807	227	80,006
Kalmar Tågkompetens AB, Kalmar, Sweden	100.0	in € thousand	1,426	405	1,880
Kiepe Electric GmbH, Düsseldorf, Germany ¹⁾	100.0	in € thousand	50,278	5,491	215,755
Kiepe Electric India Pvt. Ltd., Faridabad, India	100.0	in € thousand	113	(7)	116
Kiepe Electric LLC., Alpharetta, USA	100.0	in € thousand	5,318	754	7,725
Kiepe Electric Schweiz AG, Niederbuchsiten, Switzerland	100.0	in € thousand	1,122	5	13,107
Knorr Brake Company LLC., Westminster, Maryland, USA	100.0	in € thousand	28,155	11,360	112,874
Knorr Brake Corporation Canada Holdings Ltd., Montreal, Québec, Canada	100.0	in € thousand	5,319	2,120	5,319
Knorr Brake Holding Corporation, Avon, Ohio, USA	100.0	in € thousand	137,167	49,624	551,849
Knorr Brake Ltd., Kingston, Ontario, Canada	100.0	in € thousand	1,993	95	2,111
Knorr Brake Rail Mexico, SA de CV, Acuña, Mexico	100.0	in € thousand	9,892	(13)	20,295
Knorr Brake Truck Systems Company, Avon, Ohio, USA	100.0	in € thousand	71,335	30,470	170,846
Knorr-Bremse 1520 OOO, Burashevskoe, Russia	100.0	in € thousand	20,266	(7,190)	36,221
Knorr-Bremse/Nankou Air Supply Unit (Beijing) Co., Ltd., Nankou, China	55.0	in € thousand	10,297	3,091	30,599

1. Consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
Knorr-Bremse Asia Pacific (Holding) Limited, Hong Kong, China	100.0	in € thousand	631,349	190,992	689,702
Knorr-Bremse Australia Pty. Ltd., Granville, Australia	100.0	in € thousand	23,529	6,905	125,811
Knorr-Bremse Benelux B.V.B.A., Heist-op-den-Berg, Belgium	100.0	in € thousand	477	236	1,505
Knorr-Bremse Beteiligungsgesellschaft mbH, Munich, Germany ¹⁾	100.0	in € thousand	26	0	757
Knorr-Bremse Braking Systems for Commercial Vehicles (Dalian) Co. Ltd., Dalian, China	100.0	in € thousand	85,298	19,271	137,489
Knorr-Bremse Brasil (Holding) Administração e Participação Ltda., Itupeva, Brazil	100.0	in € thousand	28,571	2,134	29,246
Knorr-Bremse CARS LD Vehicle Brake Disc Manufacturing (Beijing) Co., Ltd., Daxing, China	50.0	in € thousand	39,181	26,347	86,907
Knorr-Bremse Commercial Vehicle Systems Japan Ltd., Tokyo, Japan	100.0	in € thousand	43,187	7,915	127,748
Knorr-Bremse Commercial Vehicle Systems (Shanghai) Co., Ltd., Shanghai, China	100.0	in € thousand	17,049	3,067	40,716
Knorr-Bremse Commercial Vehicle Systems (Thailand) Ltd., Bangkok, Thailand	100.0	in € thousand	3,199	685	21,709
Knorr-Bremse DETC Commercial Vehicle Braking Technology Co., Ltd., Shiyian, China	51.0	in € thousand	24,496	(2,093)	79,557
Knorr-Bremse España, S.A., Getafe, Spain	100.0	in € thousand	38,202	7,337	152,369
Knorr-Bremse EVAC, LLC, Carson, California/USA	100.0	in € thousand	17,920	(3,470)	24,742
Knorr-Bremse Fékrendszerek Kft., Kecskemét, Hungary	100.0	in € thousand	44,594	11,415	111,698
Knorr-Bremse Ges.m.b.H., Mödling, Austria	100.0	in € thousand	88,543	39,572	239,719
Knorr-Bremse Ibérica S.L., San Fernando de Henares, Spain	100.0	in € thousand	3,314	1,241	10,436
Knorr-Bremse India Pvt. Ltd., Faridabad, India	100.0	in € thousand	148,287	39,902	224,465
Knorr-Bremse Investment GmbH, Munich, Germany ¹⁾	100.0	in € thousand	23,570	0	23,814
Knorr-Bremse Nordic Rail Services AB, Lund, Sweden	100.0	in € thousand	5,631	2,877	21,824
Knorr-Bremse Pamplona S.L., Pamplona, Spain	100.0	in € thousand	12,580	2,275	59,900
Knorr-Bremse Polska Sfn Sp. z o.o., Warsaw, Poland	100.0	in € thousand	1,410	955	1,970
Knorr-Bremse Rail Systems CIS Holding OOO, Moscow, Russia	100.0	in € thousand	0	3,698	0
Knorr-Bremse Rail Systems Denmark A/S, Taastrup, Denmark	100.0	in € thousand	46,928	(3,456)	96,326
Knorr-Bremse Rail Systems Italia S.r.l., Campi Bisenzio, Italy	100.0	in € thousand	36,664	14,446	89,145
Knorr-Bremse Rail Systems Japan Ltd., Tokyo, Japan	94.0	in € thousand	12,994	3,355	24,805
Knorr-Bremse Rail Systems Korea Ltd., Seoul, South Korea	100.0	in € thousand	10,991	1,418	16,877
Knorr-Bremse Rail Systems Schweiz AG, Niederhasli, Switzerland	100.0	in € thousand	9,371	2,554	21,292
Knorr-Bremse Rail Systems (UK) Ltd., Melksham, Wiltshire, United Kingdom	100.0	in € thousand	57,681	27,103	140,628
Knorr-Bremse Rail Transportation Equipment (Chengdu) Co., Ltd., Chengdu/ China ³⁾	100.0	in € thousand	1,201	(11)	2,335
Knorr-Bremse Rail Transportation Equipment (Chongqing) Co., Ltd., Chongqing, China	100.0	in € thousand	1,369	10	1,481
Knorr-Bremse Rail Transportation Equipment (Guangzhou) Co., Ltd., Guangzhou, China	100.0	in € thousand	131	(5)	131
Knorr-Bremse Railway Technologies (Shanghai) Co., Ltd., Shanghai, China	100.0	in € thousand	(13,306)	(592)	664
Knorr-Bremse Raylı Sistemler Sanayi ve Ticaret Limited Şirketi, Ankara, Turkey	100.0	in € thousand	1,399	507	2,392
Knorr-Bremse S.A. Holding Company (UK) Ltd., Melksham, Great Britain	100.0	in € thousand	6,278	0	6,278
Knorr-Bremse S.A. (Pty.) Ltd., Kempton Park, South Africa	75.0	in € thousand	7,749	2,724	23,265
Knorr-Bremse S.R.L., Bucharest, Romania	100.0	in € thousand	759	48	1,145
Knorr-Bremse Services Europe s.r.o., Stráž nad Nisou, Czech Republic	100.0	in € thousand	3,338	(21)	7,093
Knorr-Bremse Services GmbH, Munich, Germany ¹⁾	100.0	in € thousand	10,745	(576)	124,411
Knorr-Bremse Sistemas para Veículos Comerciais Brasil Ltda., Itupeva, Brazil	100.0	in € thousand	44,487	12,390	66,434
Knorr-Bremse Sistemas para Veículos Ferroviários Ltda., Itupeva, Brazil	100.0	in € thousand	14,688	3,245	28,973
Knorr-Bremse Sistemi per Autoveicoli Commerciali S.p.A., Arcore, Italy	100.0	in € thousand	8,751	3,264	28,602
Knorr-Bremse Steering Systems Japan Ltd., Saitama, Japan	100.0	in € thousand	42,744	(16,573)	127,055

1. Consolidated affiliated companies	Share of capital in %	Currency and unit	Equity	Income	Total assets
Knorr-Bremse SteeringSystems GmbH, Munich, Germany	100.0	in € thousand	56,101	(2,116)	133,365
Knorr-Bremse System för Tunga Fordon AB, Malmö, Sweden	100.0	in € thousand	453	412	752
Knorr-Bremse Systeme für Nutzfahrzeuge GmbH, Munich, Germany	100.0	in € thousand	586,561	84,234	1,122,865
Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Munich, Germany ¹⁾	100.0	in € thousand	171,602	31,364	1,300,021
Knorr-Bremse Systeme für Schienenfahrzeuge Ibero Holding GmbH, Munich, Germany ¹⁾	100.0	in € thousand	47,306	0	64,094
Knorr-Bremse Systemes Ferroviaires S.A., Tinqueux, France	100.0	in € thousand	10,073	4,271	30,969
Knorr-Bremse Systèmes pour Véhicules Utilitaires France S.A.S., Lisieux, France	100.0	in € thousand	39,959	16,523	101,790
Knorr-Bremse Systems for Commercial Vehicles India Pvt. Ltd., Pune, India	100.0	in € thousand	14,629	3,301	64,024
Knorr-Bremse Systems for Commercial Vehicles (Chongqing) Ltd., Chongqing, China	66.0	in € thousand	19,439	1,708	42,113
Knorr-Bremse Systems for Commercial Vehicles (Suzhou) Co., Ltd., Suzhou, China	100.0	in € thousand	1,054	(317)	8,474
Knorr-Bremse Systems for Commercial Vehicles OOO, Moscow, Russia	100.0	in € thousand	10,262	202	13,756
Knorr-Bremse Systems for Commercial Vehicles Ltd., Bristol, United Kingdom	100.0	in € thousand	26,774	3,065	47,331
Knorr-Bremse Systems for Rail Vehicles Enterprise Management (Beijing) Co., Ltd., Beijing, China	100.0	in € thousand	2,942	(679)	10,731
Knorr-Bremse Systems for Rail Vehicles Kazakhstan LLP, Nur-Sultan, Republic of Kazakhstan	100.0	in € thousand	339	163	1,811
Knorr-Bremse Systems for Rail Vehicles (Suzhou) Co., Ltd., Suzhou, China	100.0	in € thousand	251,718	137,496	503,990
Knorr-Bremse Systemy Kolejowe Polska Sp. z o.o., Krakow, Poland	100.0	in € thousand	10,405	1,669	23,362
Knorr-Bremse Systemy Pojazdów Szynowych Spółka z Organizacją Odpowiedzialnością, Krakow, Poland	100.0	in € thousand	2,343	(1,776)	20,548
Knorr-Bremse Systémy pro užitkovú vozidla ČR s.r.o., Stráž nad Nisou, Czech Republic	100.0	in € thousand	41,709	2,408	111,699
Knorr-Bremse Technology Center India Pvt. Ltd., Pune, India	100.0	in € thousand	10,233	4,736	24,921
Knorr-Bremse Ticari Arac Fren Sistemleri Limited Sirketi, Istanbul, Turkey	100.0	in € thousand	2,991	2,499	4,162
Knorr-Bremse Vasúti Jármű Rendszerek Hungária Kft., Budapest, Hungary	100.0	in € thousand	74,287	21,315	197,891
Merak Jinxin Air Conditioning Systems (Wuxi) Co., Ltd., Wuxi, China	51.0	in € thousand	12,651	1,978	76,214
Merak Knorr Climatización S.A., Buenos Aires, Argentina	100.0	in € thousand	(952)	(856)	18
Merak North America LLC, Westminster, Maryland, USA	100.0	in € thousand	(17,568)	(2,065)	25,930
Microelettrica Heine (Suzhou) Co., Ltd., Suzhou, China	100.0	in € thousand	7,615	1,753	13,519
Microelettrica Power (Pty.) Ltd., Johannesburg, South Africa	74.0	in € thousand	1,379	(119)	6,895
Microelettrica Scientifica (Pty.) Ltd., Johannesburg, South Africa	100.0	in € thousand	1,266	123	1,930
Microelettrica Scientifica S.p.A., Buccinasco, Italy	100.0	in € thousand	17,900	7,311	82,821
Microelettrica-USA LLC, Randolph, New Jersey, USA	100.0	in € thousand	3,254	776	12,565
M.S. Resistances (Microelettrica Scientifica) S.A.S., Saint Chamond, France	51.0	in € thousand	3,345	(110)	4,662
New York Air Brake LLC, Watertown, New York, USA	100.0	in € thousand	71,260	13,818	226,062
R.H. Sheppard Co., Inc., Hanover, Pennsylvania, USA	100.0	in € thousand	63,147	(47,858)	133,133
Sanctor Grundstücks-Vermietungsgesellschaft mbH & Co. Objekt Mahrzahn KG, Düsseldorf, Germany (general partner is ZIDES Grundstücks-Vermietungsgesellschaft mbH, Schönefeld, Germany, which also has the majority of voting rights. Knorr-Bremse AG, Munich, Germany is a limited partner)	99.0	in € thousand	(4,517)	(160)	23,835
Selectron Systems AG, Lyss, Switzerland	100.0	in € thousand	23,671	743	67,297
Selectron Systems Italia S.A.R., Venice, Italy	100.0	in € thousand	0	0	0
Selectron Systems (Beijing) Co., Ltd., Beijing, China ²⁾	100.0	in € thousand	5,175	1,017	7,136
Semiconductor Solutions (Pty.) Ltd., Pretoria, South Africa	100.0	in € thousand	2,769	1,426	3,875
Sentient Heavy Vehicles AB, Gothenburg, Sweden	100.0	in € thousand	204	(51)	206
Sheppard Asia Steering Systems Ltd., Hong Kong, China	100.0	in € thousand	598	3	598
Skach Ges.m.b.H., Mödling, Austria ¹⁾	100.0	in € thousand	122	(1)	949
Technologies Lanka Inc., La Pocatière, Québec, Canada	100.0	in € thousand	8,119	1,738	11,034

	Share of capital in %	Currency and unit	Equity	Income	Total assets
1. Consolidated affiliated companies					
Unicupler GmbH, Niederurnen, Switzerland	100.0	in € thousand	3,768	22	4,331
Universal Investment Universal-KBAM-Fonds, Frankfurt am Main, Germany ¹⁰⁾	100.0	in € thousand	147,615	(6,415)	148,074
Zelisko Elektrik Sanayi ve Ticaret Limited Şirketi, Istanbul, Turkey	100.0	in € thousand	1,164	496	2,158
2. Proportionately consolidated companies					
Sentient IP AB, Göteborg, Sweden	50.0	in € thousand	7	1	52
3. Associated companies valued using the equity method					
Alltrucks GmbH & Co. KG, Munich, Germany (general partner shareholder is Alltrucks Verwaltungs GmbH, Munich, Germany) ⁴⁾⁶⁾⁸⁾	33.3	in € thousand	1,649	240	2,806
Alltrucks Verwaltungs GmbH, Munich, Germany ⁴⁾⁶⁾⁸⁾	33.3	in € thousand	39	1	44
China Source Engineered Components Trading Corporation Ltd. Shanghai, China ⁶⁾	37.5	in € thousand	6,500	3,278	10,807
Knorr-Bremse DETC Commercial Vehicle Braking Systems (Shiyen) Co., Ltd., Shiyen, China ⁴⁾⁸⁾	49.0	in € thousand	2,673	(728)	33,372
Nexxiot AG, Zürich, Switzerland ⁴⁾⁶⁾⁸⁾	33.4	in € thousand	4,956	(10,376)	33,155
Railnova SA, Brussels/Belgium ⁴⁾⁸⁾	32.0	in € thousand	5,043	290	6,260
Rail Vision Ltd., Raanana, Israel ⁴⁾⁸⁾	33.0	in € thousand	(7,807)	(9,704)	4,136
Shanghai Bobang Automotive Technology Co., Ltd., Shanghai, China ⁴⁾⁸⁾¹¹⁾	13.1	in € thousand	14,976	630	27,527
4. Non-consolidated affiliated companies					
Di-Pro LLC., Avon, Ohio, USA ⁶⁾⁸⁾	100.0	in € thousand	0	0	0
EKA DOOEL, Skopje, North Macedonia ⁶⁾⁸⁾	100.0	in € thousand	648	75	853
Heiterblick Projektgesellschaft mbH, Leipzig, Germany ⁷⁾⁸⁾	49.0	in € thousand	25	1	668
Kiepe Electric Corporation, Vancouver, Canada ⁶⁾⁸⁾	100.0	in € thousand	3,060	551	3,383
Kiepe Electric S.r.l., Cernusco sul Navigilio, Italy ⁶⁾⁸⁾	100.0	in € thousand	423	114	1,079
Knorr-Bremse Guo Tong (Guangzhou) Railway Transportation Equipment Co., Ltd., Guangzhou/China ⁸⁾	100.0	in € thousand	(67)	(17)	1
Knorr-Bremse Investment UK Ltd., Chippenham, United Kingdom ⁶⁾⁸⁾	100.0	in € thousand	24,805	20,169	24,805
Knorr-Bremse Rail Transportation Equipment (Changchun) Co., Ltd., Changchun, China ⁹⁾	100.0	in € thousand	0	0	0
Sichuan Knorr-Bremse Guo Tong Railway Transportation Equipment Co., Ltd., Chengdu, China ⁸⁾	100.0	in € thousand	(2)	0	7
5. Associated companies and other investments not valued according to the equity method					
AutoBrains Technologies Ltd., Tel Aviv-Yafo, Israel ⁶⁾⁸⁾	5.5	in € thousand	100,069	(11,570)	107,375
IFB Institut für Bahntechnik GmbH, Berlin, Germany ⁶⁾⁸⁾	6.7	in € thousand	1,873	174	4,563
MORCAR Grundstücksgesellschaft mbH & Co. oHG, i.L., Munich, Germany (general partner is Knorr-Bremse Beteiligungsgesellschaft mbH, Munich, Germany ⁸⁾	5.0	in € thousand	734	(15)	862
Shenzhen SF-Trailernet Technology Co., Ltd., Shenzhen, China ⁸⁾	14.3	in € thousand	374	(133)	389

¹⁾ Profit and loss transfer agreement

²⁾ The companies are included in a Group division of Selectron Systems AG, Lyss, Switzerland

³⁾ The companies were consolidated for the first time in 2022. the statements of income were taken into consideration proportionally for the current year

⁴⁾ The company was consolidated at equity

⁵⁾ Control based on enforceability of management decisions and control of operations

⁶⁾ Values refer to the 2021 fiscal year

⁷⁾ Values refer to the 2020 fiscal year

⁸⁾ Values determined in accordance with national GAAP

⁹⁾ No annual financial statements according to local law available yet

¹⁰⁾ Included as a structured entity in accordance with IFRS 10 with an investment volume of € 150 million; see chapter C.3.1 for further details

Unless otherwise stated, the above amounts to equity, income and total assets are calculated in accordance with IFRS as they were determined for the purpose of preparing the consolidated financial statements of Knorr-Bremse AG.

I. SEGMENT INFORMATION

I.1. Basics of Segmentation

Tab. → 3.98, 3.99, 3.100

The internal management reporting, which was previously based on the HGB, was converted to IFRS in the first half of fiscal 2022. A reconciliation of reportable segments with IFRS values is therefore unnecessary.

3.98 INFORMATION ON REPORTABLE SEGMENTS

in € thousand	Reportable segments			Reconciliation to IFRS		Other segments and consolidation	Group
	Rail Vehicle Systems	Commercial Vehicle Systems	TOTAL	Rail Vehicle Systems	Commercial Vehicle Systems		
							12/31/2022
External revenues	3,401,093	3,748,577	7,149,670	–	–	70	7,149,740
Intersegment revenues	785	1,401	2,186	–	–	(2,186)	–
Segment revenues	3,401,878	3,749,978	7,151,856	–	–	(2,116)	7,149,740
EBITDA**)	589,526	480,969	1,070,495	–	–	(24,883)	1,045,612
Depreciation, amortization and impairment	(135,720)	(162,747)	(298,467)	–	–	(25,882)	(324,350)
thereof impairments	(3,756)	(15,916)	(19,672)	–	–	–	(19,672)
EBIT*)	453,806	318,222	772,028	–	–	(50,765)	721,263
Interest income	10,987	5,648	16,635	–	–	32,497	49,132
Interest expense	(31,718)	(18,553)	(50,271)	–	–	(280)	(50,552)
Other financial result	(14,533)	(12,617)	(27,151)	–	–	(3,923)	(31,074)
thereof: Share of profit or loss from companies accounted for using the equity method	(12,322)	1,344	(10,979)	–	–	(0)	(10,979)
EBT	418,541	292,699	711,241	–	–	(22,472)	688,768
Net Working Capital	729,100	397,736	1,126,837	–	–	(314)	1,126,522
							12/31/2021
External revenues	3,348,242	3,395,197	6,743,439	(32,050)	(5,959)	210	6,705,640
Intersegment revenues	26,477	20,614	47,091	(25,708)	(19,617)	(1,765)	–
Segment revenues	3,374,719	3,415,812	6,790,530	(57,758)	(25,577)	(1,555)	6,705,640
EBITDA**)	665,784	430,910	1,096,694	48,464	69,694	(8,347)	1,206,505
Depreciation, amortization and impairment	(94,240)	(131,508)	(225,748)	(36,507)	(7,972)	(20,211)	(290,438)
thereof impairments	–	(1,104)	(1,104)	(6,025)	(1,282)	–	(8,411)
EBIT*)	571,543	299,402	870,945	11,958	61,722	(28,558)	916,067
Interest income	5,697	4,385	10,082	2,180	2,065	1,573	15,901
Interest expense	(13,088)	(9,783)	(22,871)	(14,027)	(2,822)	(16,151)	(55,872)
Other financial result	(3,492)	(793)	(4,285)	2,184	890	5,928	4,717
thereof: Share of profit or loss from companies accounted for using the equity method	(2,353)	8	(2,345)	0	–	–	(2,345)
EBT	560,660	293,212	853,872	2,295	61,854	(37,208)	880,813
Net Working Capital	635,113	312,699	947,812	(106,879)	37,427	(2,555)	875,806

*) Not explicitly included in management reporting to CODM

**EBITDA is defined as the operating result (EBIT) before depreciation and write-downs

3.99 RECONCILIATION OF REVENUES PREVIOUS YEAR

	2021
Revenues of reportable segments (German GAAP)	6,790,530
Revenues of other segments (German GAAP)	182,346
Inter-segment consolidation	(227,224)
Adjustment over-time-recognition	(25,164)
Application of the German Accounting Directive Implementation Act (BilRuG) and other effects	(14,848)
Consolidated revenue	6,705,640

3.100 RECONCILIATION OF EARNINGS BEFORE TAX PREVIOUS YEAR

	2021
Earnings before tax pursuant to the German Commercial Code (HGB)	817,785
Adjustment due to amortization not recognized on goodwill	28,188
Adjustment of over-time recognition and other effects in accordance with IFRS 15	7,651
Adjustment due to capitalization and amortization of development projects	59,015
Adjustment due to valuation differences in pension liabilities	10,197
Inventory valuation adjustment	(12,975)
Adjustment provisions	(16,143)
Hedging (unrealized profits / losses)	6,845
Bosch dividend	(616)
Additional depreciation and amortization and other effects from PPA	(2,582)
Adjustment due to IFRS 16	(6,456)
Adjustment due to measurement of equity instruments directly in equity	(3,643)
Financial instruments	(4,329)
Other adjustments based on differences between German GAAP and IFRS	(2,124)
Earnings from continuing operations, consolidated and before taxes	880,813

The Group has two reportable segments, which are the Group's divisions, as described below. The divisions offer different products and services and are managed separately as they require different technology and marketing strategies.

In the Rail Vehicle Systems (RVS) segment, the company plays a key role in the development, production, sales and service of modern braking systems and related subsystems for rail vehicles. In addition, the product fields of platform screen doors, boarding systems, power supply systems, driver assistance systems, air conditioning systems, control technology, friction material, simulators and control components are served.

The Commercial Vehicle Systems (CVS) segment is also characterized by the development, production, sales and service of modern braking systems. In addition to the complete braking system including driver assistance systems, the product range of Commercial Vehicle Systems also includes steering systems, torsional vibration dampers, powertrain-related solutions and transmission controls for improving efficiency and saving fuel.

Other business areas mainly include leasing, holding and logistics activities as well as media and IT services.

For each segment, the Group's Executive Board reviews internal management reports on a monthly basis.

Transfer prices between the segments are determined on an arm's length basis.

I.2. Information on Reportable Segments

Information regarding the results of each reportable segment is given below. The profit (loss) of a segment before tax is used to measure profitability, as the Executive Board believes that this is the most relevant information for assessing the results of the individual segments in relation to other industry companies.

The reporting to the Executive Board as of December 31, 2022 was based on IFRS figures, whereas HGB figures were reported to the Executive Board as of December 31, 2021. Revenues within the segment are presented on a pre-consolidated basis. Internal reporting does not contain any segment-specific information on assets and liabilities with the exception of net working capital, which is defined in D.5.

I.3. Geographical Information

The following table shows the Group's sales revenues and non-current assets, broken down by country of domicile of the Group company. [Table → 3.101, 3.102](#)

3.101 REVENUES BY REGION

	2022	2021
Europe/Africa	3,389,173	3,168,467
thereof Germany	1,761,928	1,588,350
North America	1,813,691	1,397,934
thereof USA	1,735,346	1,335,237
South America	151,573	115,218
AsiaPacific	1,795,304	2,024,021
thereof China	1,007,435	1,292,794
	7,149,740	6,705,640

3.102 NON-CURRENT ASSETS BY REGION

	2022	2021
Europe/Africa	1,550,737	1,371,081
thereof Germany	858,369	843,958
North America	644,348	606,970
thereof USA	585,409	553,007
South America	27,393	23,577
AsiaPacific	358,406	376,379
thereof China	144,469	150,585
	2,580,884	2,378,007
Goodwill	573,719	418,179
thereof Rail Vehicle Systems (Global)	216,723	206,877
thereof Commercial Vehicle Systems (Global)	356,996	211,302
	3,154,603	2,796,186

Non-current assets consist of property, plant and equipment, goodwill and other intangible assets.

Neither division is significantly dependent on external third parties. Neither in the year under review nor in the previous years did the company generate more than 10% of its sales with one customer.

Goodwill is recognized globally at the level of the two segments. Please refer to chapter F.2. for details on goodwill.

J. GROUP ASSOCIATION AND DISCLOSURE

Knorr-Bremse AG is included in the consolidated financial statements of Stella Vermögensverwaltungs-GmbH, Grünwald, Germany, as of December 31, 2022 (largest and smallest range).

The consolidated financial statements of Knorr-Bremse AG are published in the Federal Gazette and the commercial register of the District Court of Munich, Germany. The subsidiaries Kiepe Electric GmbH, Düsseldorf, Germany, Knorr-Bremse Services GmbH, Munich, Germany, and Knorr-Bremse Systeme für Schienenfahrzeuge GmbH, Munich, Germany, are freed according to section 264 (3) HGB from the obligation to prepare explanatory notes, a management report and from the auditing obligation and obligation to disclosure under section 325 HGB.

K. COMPLIANCE DECLARATION TO THE GERMAN CORPORATE GOVERNANCE CODE

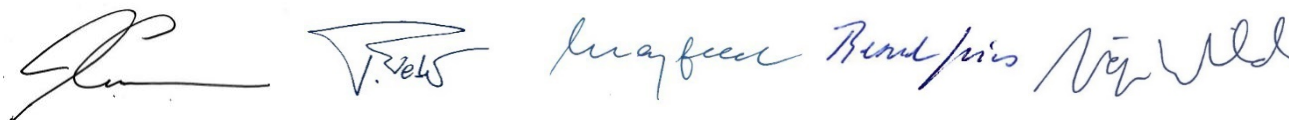
The German Corporate Governance Codex includes regulations and recommendations for responsible management and controlling of publicly traded companies. The executive board and supervisory board of publicly traded joint stock companies are obligated under section 161 AktG to declare once annually that the recommendations of the German Corporate Governance Codex governmental commission have been fulfilled and will be fulfilled, or which recommendations have not been or will not be applied. In the latter case, justifications must be provided for why the respective recommendation was not and will not be fulfilled.

The Executive Board and Supervisory Board of Knorr-Bremse AG submitted the declaration of compliance with the German Corporate Governance Code pursuant to section 161 AktG on December 8, 2022. The declaration is publicly accessible on our website: <https://ir.Knorr-Bremse.com/corporate-governance-en>.

Munich, March 13, 2023

Knorr-Bremse AG

Executive Board



MARC LLISTOSELLA

FRANK MARKUS WEBER

DR. CLAUDIA MAYFELD

BERND SPIES

DR. JÜRGEN WILDER

Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Group management report includes a fair view of the development and performance of the business and the position of the Group, together with a description of the material opportunities and risks associated with the expected development of the Group.

Munich, March 13, 2023

Knorr-Bremse AG

Executive Board



MARC LLISTOSELLA



FRANK MARKUS WEBER



DR. CLAUDIA MAYFELD



BERND SPIES



DR. JÜRGEN WILDER

Independent Auditor's Report

To Knorr-Bremse Aktiengesellschaft, Munich

Report on the Audit of the Consolidated Financial Statements and of the Group Management Report

Opinions

We have audited the consolidated financial statements of Knorr-Bremse Aktiengesellschaft, Munich, and its subsidiaries (the Group), which comprise the consolidated balance sheet as at 31 December 2022, and the consolidated statement of income, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the financial year from 1 January to 31 December 2022, and notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we have audited the management report on the Company and the Group (hereinafter the "group management report") of Knorr-Bremse Aktiengesellschaft for the financial year from 1 January to 31 December 2022.

In accordance with German legal requirements, we have not audited the content of those components of the group management report specified in the "Other Information" section of our auditor's report.

The group management report contains cross-references that are not required by law and which are marked as unaudited. In accordance with German legal requirements, we have not audited the cross-references and the information to which the cross-references refer.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU, and the additional requirements of German commercial law pursuant to Section 315e (1) HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at 31 December 2022, and of its financial performance for the financial year from 1 January to 31 December 2022, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our opinion on the group management report does not cover the content of those components of the group management report specified in the "Other Information" section of the auditor's re-

port. The group management report contains cross-references that are not required by law and which are marked as unaudited. Our audit opinion does not extend to the cross-references and the information to which the cross-references refer.

Pursuant to Section 322 (3) sentence 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with Section 317 HGB and the EU Audit Regulation No 537/2014 (referred to subsequently as "EU Audit Regulation") and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Our responsibilities under those requirements and principles are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2)(f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January to 31 December 2022. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, we do not provide a separate opinion on these matters.

Revenue recognition in project business in accordance with IFRS 15

Please refer to the disclosures in the notes to the consolidated financial statements, Sections "B, Financial reporting standards" and "D, Notes to the accounting and measurement methods (subsection D.1. Revenues)" for more information on the accounting policies applied.

Further explanatory notes can be found in Section "E.1. Revenues" in the notes to the consolidated financial statements.

The financial statement risk

The Group's revenue amounted to EUR 7,150 million in financial year 2022. Of this, EUR 3,317 million is reported under the Rail Vehicle Systems segment.

A significant part of revenue from the Rail Vehicles Systems segment in the amount of EUR 1,026 million is recognised over time according to IFRS 15 and relates to the project business in the OE business of the segment. In this business, agreements on the design, production and supply of braking systems with a precisely defined functionality for a specific number of trains or locomotives are considered as an inseparable performance obligation. This is because the development services cannot be separated from other services, meaning that they form one unit. Comparable structures are found in projects with door systems and air conditioning systems.

As these orders from the project business involve customer-specific orders, an asset arises from the Group's performance that does not result in an alternative use for the Group. The Group has an enforceable right to payment for services already rendered, including an appropriate margin. Due to the criteria under IFRS 15, revenue is recognised over time based on the stage of completion. The Group has described the criteria for revenue recognition in a group-wide accounting policy and implemented specific processes for correct recognition and cut-off. The stage of completion is determined based on the costs incurred as at the reporting date as a proportion of the expected total costs of the respective project.

Determining the expected total costs is subject to judgement, while there is also judgement in evaluating the criteria for the recognition of revenue over time. There is the risk for the financial statements that the stage of completion is incorrectly assessed and thus the revenue and earnings arising from this performance are allocated to the wrong financial year.

Our audit approach

In order to assess whether revenue is recognised on an accrual basis, we assessed the design and setup of the internal controls relating to revenue recognition, the calculation of costs already incurred and the expected total costs relating to the determination of the stage of completion.

Owing to the complexity of IFRS 15, a focus for our audit was defined as the evaluation of management's interpretation of the criteria for the recognition of revenue over time. To this end, we assessed the instructions of the group-wide accounting policy. Using a risk-based selection of contracts, we assessed the proper implementation of the accounting policy. We verified the methodology for calculating costs already incurred in respect of the types of costs included. We examined the process for properly recognising costs incurred on an accrual basis.

We examined the process for calculating the expected total costs in respect of the costs included and the event-driven review of the planning of expected total costs based on a risk-oriented selection of projects. In this regard, we discussed the estimate of total costs for selected projects with the respective project managers. We compared the planned total revenue with the relevant contract documentation.

Further, we computationally verified the stage of completion determined according to the ratio of costs actually incurred to the expected total costs.

Our observations

The approach taken by the Knorr-Bremse Group for revenue recognition cut-off in terms of properly estimating the stage of completion in the Rail Vehicles Systems segment for revenue recognised over time according to IFRS 15 is appropriate. The assumptions underlying revenue recognition are reasonable.

Other Information

Management and/or the Supervisory Board are/is responsible for the other information. The other information comprises the following components of the group management report, whose content was not audited:

- the Group's non-financial statement that is contained in the "Sustainability and non-financial statement" section in the management report; and
- the combined corporate governance statement for the Company and the Group referred to in the group management report, and
- information extraneous to management reports and marked as unaudited.

The other information also includes the remaining parts of the annual report. The other information does not include the consolidated financial statements, the group management report information audited for content and our auditor's report thereon.

Our opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the aforementioned other information and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report information audited for content or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we 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.

In accordance with our engagement letter, we conducted a separate limited assurance engagement of the non-financial statement. Please refer to our assurance report dated 17 March 2023 for information on the nature, scope and findings of this limited assurance engagement.

Responsibilities of Management and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

Management is responsible for the preparation of consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, management is responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, management is responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, management is responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The Supervisory Board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) will always detect a material misstatement. 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 consolidated financial statements and this group management report.

We exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinions. The risk of not detecting a material misstatement resulting from fraud is higher than the risk of not detecting a material misstatement resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by management and the reasonableness of estimates made by management and related disclosures.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to Section 315e (1) HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with [German] law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by management in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by management as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, the actions taken or safeguards applied to eliminate independence threats.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

Other Legal and Regulatory Requirements

Report on the Assurance on the Electronic Rendering of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes in Accordance with Section 317 (3a) HGB

We have performed assurance work in accordance with Section 317 (3a) HGB to obtain reasonable assurance about whether the rendering of the consolidated financial statements and the group management report (hereinafter the "ESEF documents") contained in the electronic file "kb-2022-12-31-de.zip" (SHA256-Hashwert: 862213672279631de5c7c90358d11e851dcd-89c603101e5ecd1b7d7bcb597858) made available and prepared for publication purposes complies in all material respects with the requirements of Section 328 (1) HGB for the electronic reporting format ("ESEF format"). In accordance with German legal requirements, this assurance work extends only to the conversion of the information contained in the consolidated financial statements and the group management report into the ESEF format and therefore relates neither to the information contained in these renderings nor to any other information contained in the file identified above.

In our opinion, the rendering of the consolidated financial statements and the group management report contained in the electronic file made available, identified above and prepared for publication purposes complies in all material respects with the requirements of Section 328 (1) HGB for the electronic reporting format. Beyond this assurance opinion and our audit opinion on the accompanying consolidated financial statements and the accompanying group management report for the financial year from 1 January to 31 December 2022 contained in the "Report on the Audit of the Consolidated Financial Statements and the Group Management Report" above, we do not express any assurance opinion on the information contained within these renderings or on the other information contained in the file identified above.

We conducted our assurance work on the rendering of the consolidated financial statements and the group management report contained in the file made available and identified above in accordance with Section 317 (3a) HGB and the IDW Assurance Standard: Assurance Work on

the Electronic Rendering of Financial Statements and Management Reports Prepared for Publication Purposes in Accordance with Section 317 (3a) HGB (IDW AsS 410 (06.2022)). Our responsibility in accordance therewith is further described below. Our audit firm applies the IDW Standard on Quality Management 1: Requirements for Quality Management in Audit Firms (IDW QS 1).

The Company's management is responsible for the preparation of the ESEF documents including the electronic rendering of the consolidated financial statements and the group management report in accordance with Section 328 (1) sentence 4 item 1 HGB and for the tagging of the consolidated financial statements in accordance with Section 328 (1) sentence 4 item 2 HGB.

In addition, the Company's management is responsible for such internal control that they have considered necessary to enable the preparation of ESEF documents that are free from material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB for the electronic reporting format.

The Supervisory Board is responsible for overseeing the process of preparing the ESEF documents as part of the financial reporting process.

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB. We exercise professional judgement and maintain professional scepticism throughout the assurance work. We also:

- Identify and assess the risks of material intentional or unintentional non-compliance with the requirements of Section 328 (1) HGB, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our assurance opinion.
- Obtain an understanding of internal control relevant to the assurance on the ESEF documents in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance opinion on the effectiveness of these controls.
- Evaluate the technical validity of the ESEF documents, i.e. whether the file made available containing the ESEF documents meets the requirements of Commission Delegated Regulation (EU) 2019/815, as amended as at the reporting date, on the technical specification for this electronic file.
- Evaluate whether the ESEF documents provide an XHTML rendering with content equivalent to the audited consolidated financial statements and the audited group management report.
- Evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) in accordance with the requirements of Articles 4 and 6 of the Delegated Regulation (EU) 2019/815, as amended as at the reporting date, enables an appropriate and complete machine-readable XBRL copy of the XHTML rendering.

Further information pursuant to Article 10 of the EU Audit Regulation

We were elected as group auditor at the annual general meeting on 24 May 2022. We were engaged by the Audit Committee on 8 December 2022. We have been the group auditor of Knorr-Bremse without interruption since financial year 2018.

We declare that the opinions expressed in this auditor's report are consistent with the additional report to the Audit Committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

Other Matter – Use of the Auditor's Report

Our auditor's report must always be read together with the audited consolidated financial statements and the audited group management report as well as the examined ESEF documents. The consolidated financial statements and group management report converted to the ESEF format – including the versions to be entered into the company register – are merely electronic renderings of the audited consolidated financial statements and the audited group management report and do not take their place. In particular, the ESEF report and our assurance opinion contained therein are to be used solely together with the examined ESEF documents made available in electronic form.

German Public Auditor Responsible for the Engagement

The German Public Auditor responsible for the engagement is Johannes Hanshen.

Munich, 17 March 2023

KPMG AG
Wirtschaftsprüfungsgesellschaft

[signature] Becker
Wirtschaftsprüfer
[German Public Auditor]

[signature] Hanshen
Wirtschaftsprüfer
[German Public Auditor]

04

Compensation Report

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Compensation Report

Introduction

This compensation report explains the principles of the remuneration systems for the Executive Board and Supervisory Board of Knorr-Bremse AG and the compensation granted and owed within the meaning of section 162 (1) sentence 1 AktG to the current and former members of the Executive Board and Supervisory Board, in each case relating to the 2022 fiscal year (January 1, 2022, to December 31, 2022).

This compensation report takes into account the feedback regarding the 2021 compensation report that the company received from investors in conjunction with its approval at the 2022 Annual General Meeting as well as independently of the 2022 Annual General Meeting. The 2021 compensation report was approved with a majority of 69.85% of the valid votes cast, which, in the management's view, represents a critical assessment by investors. The company continuously makes efforts to take on board critical remarks to an adequate extent. As part of these efforts, a revised structure for this compensation report is intended to improve legibility and, by extension, transparency. The compensation granted and owed in accordance with section 162 (1) sentence 2 no. 1 AktG for the fiscal year in which the underlying work (one or more years) has been completed in full is also disclosed consistently. For the variable compensation components, the compensation subtargets and the calculation of the actual target achievement are presented and described in more detail.

This compensation report was jointly prepared by the Executive Board and the Supervisory Board. It was reviewed with regard to form and content by KPMG AG Wirtschaftsprüfungsgesellschaft above and beyond the requirements of section 162 (3) AktG. The auditor's report is included in the 2022 compensation report.

This compensation report is planned to be presented for approval at the Annual General Meeting on May 5, 2023.

Overview of the Fiscal Year

Business

Business development in 2022 should be deemed as positive in light of the international difficulties, including the strict zero-Covid policy in China, the associated limitations on supply chains, the impact of the inflation resulting from the Covid-19 pandemic and the war in Ukraine.

The revenue guidance issued at the start of the year was confirmed during the 2022 fiscal year, which meant that Knorr-Bremse was able to increase its revenues once again thanks to the growing aftermarket business and continuously high customer demand in Europe and North America. Consolidated revenues as at year-end 2022 came to € 7,150 million (2021: € 6,706 million). Despite the remaining high level of difficulty in the global situation, Knorr-Bremse attained operating EBIT of € 795 million (2021: € 908 million). Furthermore, the Group's free cash flow amounted to € 219 million, compared to € 600 million in the previous year's period.

The Rail Vehicle Systems (RVS) division continued to develop positively, however it was confronted with strongly varying market situations around the world. Its revenues of € 3,402 million were at a stable level compared to the previous year (2021: € 3,317 million). The revenues of the Commercial Vehicle Systems (CVS) division successfully rose by 11% to € 3,750 million. This increase results in particular from the high demand stemming from catch-up effects from previous years in Europe and North America as well as the aftermarket business, which is strong overall.

The Executive Board

The previous Chief Executive Officer of Knorr-Bremse AG, Dr. Jan Michael Mrosik, left the company's Executive Board on March 11, 2022. He left the company at the close of April 30, 2022.

Frank Markus Weber took on the additional role of Executive Board Spokesman alongside his current responsibilities as Chief Financial Officer until the new Chief Executive Officer commenced his position. The Supervisory Board passed a resolution for a one-time, temporary increase the compensation of Frank Markus Weber by what it saw as an appropriate and customary amount, taking into consideration the compensation system, in view of his assumption of this role and the considerably broader adoption of responsibilities for a significant period of time; this compensation increase lasted for the duration of his additional assumption of Spokesman duties and is presented and explained in more detail in the section "Executive Board Compensation – Target Compensation and Compensation Structure."

Bernd Spies, as a newly appointed member of the Executive Board, took on responsibility for the Commercial Vehicle Systems division with effect from March 12, 2022. It had previously been headed by Dr. Jan Michael Mrosik on an interim basis.

The Supervisory Board announced on October 13, 2022, the appointment of Marc Llistosella to the Executive Board of Knorr-Bremse AG and as Chief Executive Officer with effect from January 1, 2023.

The Supervisory Board

With the end of the 2022 Annual General Meeting, the previous Supervisory Board Chairman, Prof. Dr. Klaus Mangold, stepped down from the company's Supervisory Board as planned on May 24, 2022. Dr. Reinhard Ploss succeeded him. Dr. Thomas Enders also left the Supervisory Board with effect from the end of the 2022 Annual General Meeting and was succeeded by Dr. Sigrid Nikutta.

Executive Board Compensation

Description of the Compensation System

From January 1, 2022, the remuneration system for the Executive Board, which was presented in the Annual General Meeting of May 20, 2021 and approved with 96.37% of the votes validly cast, applies to all active members of the Executive Board. The system of compensation for Executive Board members should be clear and understandable. It meets the requirements of the AktG as amended by the German Act on the Implementation of the Second Shareholders' Rights Directive (ARUG II) of December 12, 2019 (Federal Gazette Part I 2019, no. 50 of December 19, 2019) and with the exception of recommendation G.11 it follows the recommendations of the German Corporate Governance Code ("**GCGC**") as adopted by the Government Commission German Corporate Governance Code on April 28, 2022, and announced on June 27, 2022.

The compensation of Executive Board members is made up of fixed and variable components. The fixed components of Executive Board compensation are the fixed annual salary, fringe benefits and pension contribution. The variable components are the short-term variable compensation (Short-Term Incentive, **STI**) and the long-term variable compensation (Long-Term Incentive, **LTI**). The compensation system also includes share ownership guidelines (**SOG**) for the Executive Board members. An overview of the compensation system is shown in the table below: **Fig. 1**

FIG. 1 OVERVIEW OF THE COMPENSATION SYSTEM

Compensation components	Assessment base / parameters	
Non-performance-Related Components		
Fixed annual salary	<ul style="list-style-type: none"> – Fixed contractually agreed compensation paid in twelve monthly installments 	
Fringe benefits	<ul style="list-style-type: none"> – Essentially the private use of a company car, insurance (accident insurance, D&O insurance), reimbursement of the employer's contribution to health and nursing insurance 	
Pension contribution	<ul style="list-style-type: none"> – Annual amount for retirement benefit purposes – Aside from this, no occupational pension plan is provided. 	
Performance-Related Components		
Short-term Variable Compensation (STI)	Plan type	– Target bonus
	Cap	<ul style="list-style-type: none"> – 180% of target amount (CEO) – 200% of target amount (other Executive Board member; OEBM)
	Performance criteria	<ul style="list-style-type: none"> – EBIT (30%) – Revenues (20 %) – Free cash flow (20%) – ESG (20%) – Quality (10%) – Modifier (0.8–1.2) to reflect the individual and collective performance of the Executive Board, in addition to stakeholder targets
	Payment	– In the month following approval of the consolidated financial statements for the fiscal year
	Plan type	– Performance Share Plan
Long-term Variable Compensation (LTI)	Cap	<ul style="list-style-type: none"> – 180% of target amount (CEO) – 200% of target amount (other Executive Board member; OEBM)
	Performance criteria	<ul style="list-style-type: none"> – Earnings per share – EPS (50%) – Relative Total Shareholder Return – TSR (50%) – Comparison with MDAX, selected companies in the “Rail and Truck” sector and “High Quality European Industrial Goods”
	Payment	– In the month following approval of the consolidated financial statements for the last fiscal year of the 4-year performance period
	Other	
Share ownership obligation	<ul style="list-style-type: none"> – Obligation to purchase shares in Knorr-Bremse AG for one fixed annual salary within 4 years and to hold them for the duration of the appointment to the Executive Board 	
Signing benefits	<ul style="list-style-type: none"> – If applicable, compensation payments on the occasion of taking up office – If applicable, relocation benefits – If applicable, guaranteed minimum compensation in the first 12 months 	

Target Compensation and Compensation Structure

On the basis of the compensation system the Supervisory Board defines a specific target total compensation for each Executive Board member, which should be in appropriate relation to the tasks and performance of the Executive Board member and the company's situation and should not exceed standard compensation without justification. The Supervisory Board regularly reviews the Executive Board compensation to ensure it is appropriate and in line with the market. The regular review of compensation takes place as a comparison with companies in the DAX, MDAX and sector-specific companies in the automotive sector (horizontal comparison). A vertical comparison is also carried out, which considers the Executive Board compensation in relation to the employees at other levels of the Knorr-Bremse Group in Germany. Based on the results of the regular reviews of Executive Board compensation the Supervisory Board considers that the compensation is in line with the market and appropriate.

The Supervisory Board also regularly reviews the compensation structure of the Executive Board members in order to incentivize the company's long-term performance. The target total remuneration comprises the sum of all remuneration components relevant for total remuneration. In the case of the STI and LTI, the target amount is in each case based on 100% target achievement. Long-term variable compensation accounts for a larger proportion of the total target compensation than the short-term variable compensation. The relative proportions of fixed and variable compensation are shown below on the basis of the total target compensation. **Fig. 2**

FIG. 2 STRUCTURE OF COMPENSATION ELEMENTS

CEO: 25% – 35% OEBM: 40% – 50%	CEO: 25% – 35% OEBM: 20% – 30%	CEO: 35% – 45% OEBM: 30% – 40%
Non-performance-related components / Fixed compensation	Performance-related components / Variable compensation	
Fixed annual salary including fringe benefits and pension contribution	Short-term Incentive (STI)	Long-term Incentive (LTI)
Annual payment		Payment after 4 years

In view of the fact that Frank Markus Weber temporarily took on the position of spokesperson of the Executive Board, the Supervisory Board decided to increase his compensation on a one-off, temporary basis while taking the compensation system into account. The one-off increase for the period in which he was spokesperson of the Executive Board (March to December 2022) was € 300 thousand in total, of which € 200 thousand was paid as a fixed amount in December 2022 and € 20 thousand were awarded as an increase in the STI target amount 2022 and € 80 thousand as an increase in the LTI target amount for the 2022 – 2025 tranche. The one-off increase was consistent with the principles of the compensation system.

The target compensation of the Executive Board members active in 2022 is shown in the following table: [Table → 4.01](#)

4.01 TARGET COMPENSATION OF EXECUTIVE BOARD MEMBERS

	Frank Markus Weber Spokesperson of the Executive Board & CFO (since July 1, 2020) ¹⁾			Dr. Claudia Mayfeld Executive Board Member for Integrity and Legal Affairs (since May 1, 2021) ²⁾			Bernd Spies Commercial Vehicle Systems Division (since March 12, 2022) ²⁾		
in € thousand	2022	in %	2021	2022	in %	2021	2022	in %	2021
Base remuneration	1,100	38%	850	867	35%	533	641	32%	-
Fringe benefits	21	1%	36	15	1%	19	10	1%	-
Pension contribution	300	10%	300	183	7%	100	241	12%	-
One-year variable compensation (STI)									
STI 2022	620	21%	-	600	24%	-	482	24%	-
STI 2021	-	-	600	-	-	400	-	-	-
Multi-year variable compensation (LTI)									
LTI 2022 – 2025	880	30%	-	800	32%	-	643	32%	-
LTI 2021 – 2024	-	-	800	-	-	533	-	-	-
Total target compensation	2,921	100%	2,586	2,465	100%	1,585	2,017	100%	-

	Dr. Jürgen Wilder Rail Vehicle Systems Division (since September 1, 2018)			Dr. Jan Michael Mrosik CEO (until April 30, 2022) ²⁾		
in € thousand	2022	in %	2021	2022	in %	2021
Base remuneration	900	34%	900	333	24%	1,000
Fringe benefits	18	1%	22	4	0%	43
Pension contribution	300	11%	300	100	7%	300
One-year variable compensation (STI)						
STI 2022	600	23%	-	433	32%	-
STI 2021	-	-	600	-	-	1,300
Multi-year variable compensation (LTI)						
LTI 2022 – 2025	800	31%	-	500	36%	-
LTI 2021 – 2024	-	-	800	-	-	1,500
Total target compensation	2,618	100%	2,622	1,371	100%	4,143

1) In view of the fact that Frank Markus Weber temporarily took on the position of spokesperson of the Executive Board, the Supervisory Board decided to increase his compensation on a one-off, temporary basis while taking the compensation system into account. The one-off increase for the period in which he was spokesperson of the Executive Board (March to December 2022) was € 300 thousand in total, of which € 200 thousand was paid as a fixed amount in December 2022 and € 20 thousand were awarded as an increase in the STI target amount 2022 and € 80 thousand as an increase in the LTI target amount for the 2022 – 2025 tranche. The one-off increase was consistent with the principles of the compensation system.

As of July 1, 2021 the basic compensation had been increased to € 900 thousand (harmonization of compensation with Dr. Jürgen Wilder).

2) Target compensation for the corresponding fiscal year is shown pro rata temporis due to appointment or departure in the course of the year.

Fixed Compensation Components

The compensation system for the Executive Board comprises the following fixed compensation components.

Annual salary

Executive Board members receive a fixed, non-performance-related annual salary, which is paid in 12 equal installments as a monthly salary.

Fringe Benefits

In addition, Executive Board members receive fringe benefits. For each member of the Executive Board, the company particularly bears the costs of accident insurance for death or disability, the employer's contribution to private health and long-term care insurance, and a company car that can also be

used privately. Furthermore, Executive Board members are covered by a D&O liability insurance policy.

Pension contribution

For the purposes of an old-age pension, the Executive Board members receive an annual pension contribution, payable at the end of the fiscal year in question. Knorr-Bremse AG does not have any pension commitments to current members of the Executive Board.

Under his service agreement in force until December 31, 2018, the company committed to funding defined benefits for Dr. Peter Laier. This commitment was made non-contributory as of December 31, 2018. Under this defined-benefit commitment, Dr. Peter Laier has a vested pension entitlement upon reaching retirement at the age of 65 in the

amount of 2% of his respective base annual salary per year of service. This entitlement has accrued per year of service from January 1, 2016 through to December 31, 2018. The defined-benefit obligations (IFRS) in respect of Dr. Laier came to € 719 thousand in 2022 (2021: € 1,260 thousand). Accordingly, the annual pension for Dr. Laier amounts to € 48 thousand as of December 31, 2022.

Other

The Supervisory Board may, on a case-by-case basis, grant a payment on the occasion of a new Executive Board member taking up office in the first or second year of the new member's appointment. This payment can be used to compensate, for example, losses of variable compensation that an Executive Board member faces from a former employer as a result of moving to Knorr-Bremse AG. No such payments were made in fiscal year 2022, also not in connection with the appointment of Marc Llistosella as CEO and Executive Board member as of January 1, 2023.

Variable Compensation Components

The variable performance-related compensation component consists of two elements: a short-term incentive (STI) and a long-term incentive (LTI).

STI

The STI (Fig. 3) is a performance-related bonus with a performance period of one year.

The STI ensures the variable compensation's strategic alignment by directly linking it to the financial performance criteria. Furthermore, the short-term incentive is linked to non-financial performance criteria. This supports the strategic development of the Group, which also includes social and environmental aspects and takes account of sustainable corporate development.

The STI depends initially on financial performance criteria and the achievement of ESG targets. In a second stage the Supervisory Board uses a factor known as a modifier to reflect the individual performance of the Executive Board member, the collective performance of the entire Executive Board and the achievement of stakeholder targets.

The four financial performance criteria for calculating the STI payment are EBIT, which accounts for 30%, revenues and free cash flow, which each account for 20%, and quality, which accounts for 10%. In addition, target achievement depends on internal and external ESG targets, which account for 20%.

EBIT refers to the earnings after depreciation and amortization recognized in the company's audited and approved consolidated financial statements. EBIT reflects the company's

profitability and its value promise to continue delivering a first-class margin.

Revenues are the revenues presented in the company's audited and approved consolidated financial statements. They are a core element of the profitable growth strategy, and of Knorr-Bremse AG's value promise to growth faster than the market.

Free cash flow is calculated by deducting payments for investments in property, plant and equipment and intangible assets from the cash flow from operating activities, and by adding proceeds from the sale of property, plant and equipment and intangible assets to the cash flow from operating activities.

The performance criteria "quality" focuses on operating activities in the divisions, such as the "cost of poor quality".

ESG targets are also included as a performance criterion. They consist of 50% internal ESG subtarget (**ESG internal subtarget**) and 50% external ESG subtargets (**ESG external subtarget**). The ESG internal subtarget reflects the own contribution to carbon neutrality (50%) and the change in the number of accidents per 200,000 working hours (50%). The ESG external subtarget tracks the company's positioning in the ESG ratings by the agencies ISS (ESG rating in the Machinery peer group), SAM (Corporate Sustainability Assessment in the Machinery and Electrical Equipment peer group) and Sustainalytics (CSA rating in the Machinery peer group). The achievement is measured as the average percentile placing, which is the arithmetic mean of the three individual ratings.

The financial performance criteria were weighted in 2022 depending on the responsibilities of each Executive Board member. This was either exclusively for the entire Group (Frank Markus Weber, Dr. Claudia Mayfeld and Dr. Jan Michael Mrosik) or 50% for the entire Group and 50% for the segment for which the Executive Board member is responsible (Dr. Jürgen Wilder for Rail Vehicle Systems and Bernd Spies for Commercial Vehicle Systems).

Before the beginning of each fiscal year, the Supervisory Board defines the targets for the individual performance criteria EBIT, revenues and free cash flow, which are derived from the budget planning. For the performance criterion quality the Supervisory Board defines for each year a value for each subtarget that corresponds to a target achievement of 100%. For the performance criterion ESG the Supervisory Board defines for each year values for each internal and external subtarget that correspond to a target achievement of 100%.

At the end of the fiscal year the total target achievement is measured on the basis of the target achievement for the individual performance criteria. To measure the target achievement for the four performance criteria the Supervisory Board compares for each performance criterion the actual figure

with the target (budget figure or defined value) for the respective fiscal year. The ratio of the actual figure to the budget figure or target value defined by the Supervisory Board (in per cent) indicates the extent to which the targets have been met, and for the financial performance criteria EBIT, revenues, free cash flow and quality results in the following target achievement, whereby target achievement between 0% for achieving 80% of the target and 200% for achieving 120% of the target is interpolated on a straight-line basis.

Total target achievement is calculated using the following formula:

$$\begin{aligned}
 &\text{Total target achievement} = \\
 &\quad \text{Target achievement EBIT} \times 30\% \\
 + &\quad \text{Target achievement Revenues} \times 20\% \\
 + &\quad \text{Target achievement Free cash flow} \times 20\% \\
 + &\quad \text{Target achievement ESG targets} \times 20\% \\
 + &\quad \text{Target achievement Quality} \times 10\%
 \end{aligned}$$

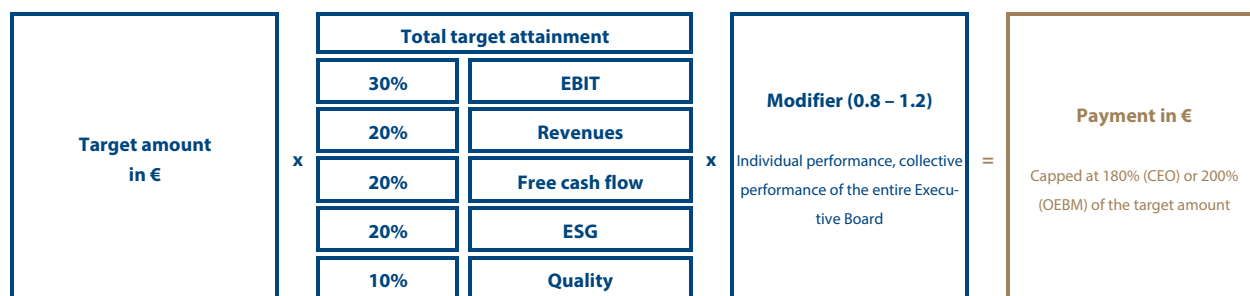
At the beginning of the year, in addition to the performance criteria, the Supervisory Board defines other non-financial performance criteria and their weightings, in order to assess the individual performance of the Executive Board member and the performance of the entire Executive Board and the achievement of stakeholder targets. The individual perfor-

mance criteria are taken into account by means of a modifier. This is set by the Supervisory Board at its professional discretion depending on the extent to which the non-financial performance criteria are met.

The total target achievement, measured on the basis of the financial performance criteria and the ESG targets, is multiplied by the modifier (0.8 to 1.2) and the defined target amount in euros to produce the payment amount. The annual STI payment is capped at 180% of the target amount for the CEO and at 200% of the target amount for the ordinary Executive Board members. The payout amount is due for payment in the month after the approval of Knorr-Bremse AG's consolidated financial statements for the fiscal year relevant for the STI.

In accordance with the option included in the compensation system of eliminating non-operating effects beyond the company's control, the Supervisory Board decided to adjust the STI for non-budgeted positive and negative one-off influences when determining the target achievement for the performance criteria. These include exchange rate and inflation effects that had a positive impact on revenues and EBIT in the reporting year, as well as the effects of discontinuing the Russia business due to sanctions, and the effects of lockdowns in China resulting from the country's zero-covid policy.

FIG. 3 HOW THE STI WORKS



The following performance criteria, target values, actual and adjusted achievement figures were therefore used in 2022

[Table → 4.02](#), [Table → 4.03](#).

4.02 TARGET ACHIEVEMENT STI 2022 – EBIT, REVENUES, FREE CASH FLOW

Performance criterion	Weighting for Executive Board member	Floor	Target level	Maximum value	Actual value	Adjusted actual value	Target achievement
Group	Dr. Jan Michael Mrosik: 100%						
EBIT (in € million)	Frank Markus Weber: 100%	789	986	1,183	721	925	69%
Revenues (in € million)	Dr. Claudia Mayfeld: 100%	5,735	7,169	8,603	7,150	7,279	108%
Free cash flow (in EUR million)	Bernd Spies: 50% Jürgen Wilder: 50%	426	532	638	219	447	20%
Commercial Vehicle Systems							
EBIT (in € million)		330	413	496	318	379	59%
Revenues (in € million)	Bernd Spies: 50%	2,883	3,604	4,325	3,750	3,827	131%
Free cash flow (in EUR million)		212	265	318	175	191	0%
Rail Vehicle Systems							
EBIT (in € million)		512	640	768	454	592	63%
Revenues (in € million)	Dr. Jürgen Wilder: 50%	2,852	3,565	4,278	3,402	3,454	84%
Free cash flow (in EUR million)		197	246	295	159	193	0%

4.03 TARGET ACHIEVEMENT STI 2022 – QUALITY AND ESG TARGETS

Performance criterion	Floor	Target level	Maximum value	Actual value	Target achievement
Quality Commercial Vehicle Systems					
Cost of Poor Quality (in %)		1.3%		1.0%	
Ready for Assembly (in ppm)		300		212	
Raw Material (in ppm)		3,200		2,088	
Functional Test Failures (in ppm)		5,900		4,272	196%
Intercompany Rejects (in ppm)		50		18	
Zero Mileage (in ppm)		22		10	
Quality Rail Vehicle Systems					
Cost of Poor Quality (in %)		1.3%		1.0%	
Supplied Delivery Quality (in ppm)		1,000		765	189%
Delivery Quality (in ppm of external delivery quantity)		1,200		1,780	
ESG Group					
Own contribution to carbon neutrality (in GWh) (internal)	2.0	5.0	8.0	6.7	
Accidents per 200,000 contractual working hours (internal)	1.30	1.00	0.70	0.70	139%
Relative placing in ESG ranking (external)	50%	12% – 15%	5%	13%	
ESG Commercial Vehicle Systems					
Own contribution to carbon neutrality (in GWh) (internal)	1.3	3.3	5.3	4.0	
Accidents per 200,000 contractual working hours (internal)	0.98	0.75	0.53	0.53	134%
Relative placing in ESG ranking (external)	50%	12% – 15%	5%	13%	
ESG Rail Vehicle Systems					
Own contribution to carbon neutrality (in GWh) (internal)	0.7	1.7	2.7	2.7	
Accidents per 200,000 contractual working hours (internal)	1.69	1.30	0.91	0.86	150%
Relative placing in ESG ranking (external)	50%	12% – 15%	5%	13%	

The Supervisory Board has assessed the individual performance of the Executive Board members and the performance of the entire Executive Board and the achievement of stakeholder targets. For 2022 the Supervisory Board has defined both overarching targets for the Executive Board and strategic or project-related individual targets for the divisions, and determined their weighting. The individual targets that the Supervisory Board adopted in coordination with the Executive Board include, for example, the operational implementation of the ESG strategy, the further shortening of the reporting timelines, the integration of a global diversity concept into the HR target operating model, the further development of the e-mobility and steering strategy in CVS and the revision

of the strategy for Chinese RVS business. On this basis, the Supervisory Board defined the individual modifier in accordance with its due discretion as 1.1 for Mr. Weber – including in light of him taking on the role of interim Executive Board Spokesman – and as 1.0 for all other Executive Board members holding positions on December 31, 2022. When he left the company, the Supervisory Board agreed on an individual modifier of 1.1 for the prorated 2022 STI (January to April) in the severance agreement with Dr. Jan Michael Mrosik.

This results in the following (total) target achievement [Table → 4.04](#) for the individual Executive Board members.

4.04 INDIVIDUAL TARGET ACHIEVEMENT STI 2022

Executive Board member	Target achievement EBIT, revenues, free cash flow	Target achievement Quality	Target achievement ESG targets	Modifier	Total Target Achievement
	70% weighting	10% weighting	20% weighting		
Frank Markus Weber	66%	193%	139%	1.1	93%
Dr. Claudia Mayfeld	66%	193%	139%	1.0	93%
Bernd Spies	64%	196%	137%	1.0	92%
Dr. Jürgen Wilder	59%	189%	145%	1.0	89%
Dr. Jan Michael Mrosik	66%	193%	139%	1.1*	93%

* Definition in accordance with the severance agreement dated March 11, 2022.

LTI (Description and Award of the 2022-2025 Tranche)

The LTI (Fig. 2) is a performance share plan in which virtual shares in Knorr-Bremse AG are awarded in annual tranches.

In order to link compensation to the company's long-term development, the long-term variable compensation makes up most of the variable compensation and thus a significant proportion of total compensation. With a performance period of four years and an annual award, it is intended to incentivize the beneficiaries to work for the company's positive long-term performance over a multi-year cycle. A combination of internal and external performance criteria take the stakeholder and shareholder approach into account.

Each tranche of the Performance Share Plan has a performance period of four years. Each performance period starts on January 1 of the first fiscal year in the performance period ("**award year**") and ends on December 31 of the third year following the award year.

At the beginning of the award year the Executive Board members are awarded a provisional number of virtual shares (performance share units), calculated using the ratio of the individual target amount agreement in the service contract and the average XETRA closing price of the Knorr-Bremse AG share in the sixty exchange trading days before the first day of the award year.

At the end of the performance period the target achievement for the LTI is measured and the payment amount defined for each Executive Board member depending on the target achievement.

The relevant performance criteria for the Performance Share Plan are the total shareholder return (**TSR**) for Knorr-Bremse AG compared with the TSR for companies from three peer groups (**relative TSR**) and the performance of earnings per share (**EPS**). The combination of an internal financial performance criterion (EPS) with an external, capital market-based

criterion (TSR) ensures that the LTI depends on the company's long-term performance in terms of both internal and external factors.

EPS are the undiluted pre-tax earnings from continuing activities per share presented in the audited and approved consolidated financial statements of Knorr-Bremse AG.

Target achievement for the EPS performance criterion is measured by comparing the average actual EPS and the strategic target EPS set by the Supervisory Board during the performance period. The ratio of average actual EPS to strategic target EPS (in per cent) reflects the EPS target achievement, which is interpolated on a straight-line basis between 0% for achieving 80% of the target and 200% for achieving 140% of the target.

The TSR refers to the share price performance, on the fictitious assumption that dividends are reinvested, and taking all capital measures into account. It indicates the increase in enterprise value from the perspective of the shareholders. The TSR of Knorr-Bremse AG is compared with that of peer group companies to incentivise the strategy of sustainable, above-market growth and take the competitive position of Knorr-Bremse AG into account. The following companies and peer groups are used:

- All companies in the MDAX during an entire performance period (not Knorr-Bremse AG).
- Selected companies in the Rail and Truck sector (currently: Alstom S.A., Cummins, Inc., Jost AG, Navistar, Inc., Paccar, Inc., SAF-Holland S.A., Stadler Rail AG, Vossloh AG, TRATON SE).
- Selected companies in the High Quality European Industrial Goods sector (currently: Alfa Laval A.B., Atlas Copco A.B., Kone Corporation, Legrand S.A., MTU Aero Engines AG, NORMA Group SE, Rotork plc., Safran S.A., Schindler Holding AG, Stabilus S.A.).

To measure target achievement in terms of relative TSR for Knorr-Bremse AG in relation to peer group companies, the TSR ranking achieved by Knorr-Bremse AG within the respective peer group is determined and on this basis the average ranking across all three peer groups. The average relative ranking gives the target achievement, which is interpolated on a straight-line basis between 0% for the 25th percentile and 200% for the 75th percentile.

Total target achievement is calculated using the following formula:

$$\begin{aligned} \text{Total target achievement} = & \\ & \text{Target achievement EPS} \times 50\% \\ + & \text{Target achievement relative TSR} \times 50\% \end{aligned}$$

The final number of virtual shares is calculated by multiplying the number of virtual shares awarded by the total target achievement at the end of the performance period:

$$\begin{aligned} \text{Final number of virtual shares} = & \\ & \text{number of virtual shares awarded} \\ & \times \text{total target achievement} \end{aligned}$$

The payment amount is then obtained by multiplying the final number of virtual shares by the average XETRA closing price for the company share in the last sixty exchange trading days before the end of the respective performance period.

For the LTI Tranche 2022 – 2025 the figures shown in [Table → 4.05](#) represent the floor, target and cap for EPS and relative TSR.

In addition, [Table → 4.06](#) shows the number of virtual shares awarded to Executive Board members for the LTI Tranche 2022 – 2025.

As with the STI, the presentation of compensation granted and owed for Executive Board members in office in the reporting year is based on the vested amount: the compensation report for the fiscal year shows the tranche for which the underlying work (one or more years) has been completed in full in the reporting year. As of 2020 a newly awarded LTI tranche has therefore been shown at fair value in the compensation report for the award year as compensation granted and owed as of the end of the award year, because according to the service contract it has already vested in the first year of the performance period [Table → 4.08](#). This does not affect the loss of vested rights for bad leavers. The compensation report for the last year of the relevant performance period then also shows the difference between the originally recognized fair value and the actual payment amount ([Fig. 4](#)). This will be relevant for the first time in the compensation report for 2024.

4.05 TARGET LTI 2022-2025

Performance criterion	Weighting	Floor	Target level	Maximum value
Relative TSR	50%	25th percentile	50th percentile	75th percentile
EPS	50%	€3.62	€4.52	€6.33

4.06 AWARD LTI 2022-2025

Executive Board member	Target amount (in € thousand)	Award price (in €)	Number of Performance Share Units Awarded	Maximum possible number of perfor- mance share units (cap: 200%)	Fair value as of December 31, 2022	LTI Measured as of December 31, 2022
Frank Markus Weber	880	90.74	9,699	19,398	38.97%	343
Dr. Claudia Mayfeld	800		8,817	17,634	38.97%	312
Bernd Spies	643		7,087	14,174	38.97%	251
Dr. Jürgen Wilder	800		8,817	17,634	38.97%	312
Dr. Jan Michael Mrosik	500		5,511	11,022	38.47%	192

Share ownership guidelines (SOG)

In addition to the LTI as an share-based compensation element, the share ownership guidelines for the Executive Board constitute a further key component of the compensation system with the objective of promoting the long-term and sustainable development of the company.

The members of the Executive Board are required to acquire and retain ownership of a minimum holding of shares in Knorr-Bremse AG amounting to 100% of their fixed gross annual salary for the duration of their service agreement (the “**SOG target**”). A member of the Executive Board is obliged

to acquire shares in Knorr-Bremse AG equal to at least 25% of the SOG target in each fiscal year until the SOG target is achieved. In individual cases, the Supervisory Board can use its reasonable discretion to depart from the SOG provisions, taking into account the circumstances of the case (e.g., on account of restrictions on the acquisition of shares as a result of contractual, internal or legal provisions).

As of December 31, 2022, the members of the Executive Board in office held shares in Knorr-Bremse AG in accordance with the share ownership guidelines as shown in [Table → 4.07](#).

4.07 OVERVIEW OF THE SHARE OWNERSHIP PROGRAM

Executive Board member	End of the buildup phase	Number of shares held	Total Acquisition Costs of the Shares Held (in €)	Proportion of the Respective Fixed Gross Annual Salary
Frank Markus Weber	Jun. 30, 2024	7,592	601,675	55%
Dr. Claudia Mayfeld	Apr. 30, 2025	4,580	395,941	46%
Bernd Spies	Mar. 11, 2026	2,198	128,696	20%
Dr. Jürgen Wilder	Oct. 11, 2022	10,770	901,681	100%

Withholding/Clawback

The compensation system for the Executive Board does not currently have a withholding or clawback clause. The Supervisory Board is of the opinion that the company does not require provisions for retaining or clawing back variable remuneration components to encourage its Executive Board members to act with due care and in a sustainable manner consistent with the long-term interests of the company. This is adequately ensured by the long-term incentive and the share ownership guidelines. Moreover, in the event of exceptional developments and incidents, the Supervisory Board already has discretionary powers to adjust the terms of the short-term and long-term variable remuneration plans. Ultimately, the Supervisory Board may also assert claims for damages in accordance with section 93 AktG in the event of a culpable breach of duty. There was no reason to do so in 2022.

Maximum Compensation

The total compensation to be granted to the Executive Board members for a fiscal year (sum of all the remuneration amounts spent for the fiscal year in question, including fixed annual salary, variable compensation components, pension contribution and fringe benefits or any compensation payments made when new members are appointed) – irrespective of whether they are paid out in this fiscal year or at a later date – has a maximum absolute limit (“**maximum compensation**”). The maximum remuneration is € 7,490,000 for the Executive Board Chair/CEO and € 4,030,000 for the ordinary Executive Board members. The service contract with Dr. Jan Michael Mrosik, who was CEO until March 11, 2022, provided for maximum compensation of € 6,370,000.

Regardless of the maximum compensation, the amount of individual variable compensation components paid is also capped at 180% of the target amount for the CEO and 200% for the ordinary Executive Board members.

None of the cash payments made to the Executive Board members during the reporting period exceeded the applicable maximum limit for the total compensation to be granted (sum of all the compensation amounts spent for the fiscal year in question, including fixed annual salary, variable compensation components, pension contribution and fringe benefits or any compensation in conjunction with new appointees commencing their role; altogether termed maximum compensation). Because the expense for the LTI 2022-2025 will only occur in the third year after the conclusion of the reporting year due to the four-year performance period, it will only be possible to report conclusively on compliance with the maximum compensation for fiscal year 2022 in the compensation report for fiscal year 2025. If the amount for the LTI 2022 – 2025 results in the maximum compensation being exceeded, then the payment will be reduced. If the limit for a fiscal year is exceeded and reducing the payout

amount for the LTI for the relevant award year still does not bring the compensation back beneath the limit, the STI is then reduced. If necessary, the Supervisory Board can exercise its professional discretion to reduce other remuneration components or demand that granted remuneration be paid back.

Compensation-Related Transactions

Benefits Promised or Granted by a Third Party

In the reporting year, no member of the Executive Board was promised or granted benefits by a third party in respect of their work as an Executive Board member.

Commitments in the Event of Termination of Service Agreements

The Supervisory Board may sign non-competition agreements with Executive Board members for a period of up to two years after they leave the company. Currently, all active Executive Board members are subject to a non-competition agreement for 12 months after they leave the company. During this period, the Executive Board members are entitled to non-compete compensation amounting to a twelfth of the fixed annual salary per month. The non-compete compensation is set off against any benefits otherwise owed by Knorr-Bremse AG for the period after the termination of the service agreement. Any income received for activities not covered by the non-competition agreement is offset against the non-competition compensation.

The current service agreements provide that in the event of termination of the appointment by mutual agreement, members of the Executive Board receive a compensation payment. The compensation payment is composed of the fixed annual salary and the STI for remaining term of the planned appointment, which for Dr. Mayfeld, Mr. Spies and Dr. Mrosik is no longer than 12 months while for Dr. Wilder and Mr. Weber no longer than 24 months. The compensation payment thus does not exceed the value of two years' remuneration but remains below it and also does not remunerate more than the remaining term of the contract. The compensation payment is set off against any non-compete compensation paid by Knorr-Bremse AG.

If an appointment is prematurely revoked by the Supervisory Board, the respective service agreement ends upon expiration of a notice period pursuant to section 622 (2) of the German Civil Code (BGB). This notice period is extended to a maximum of 24 months to the end of the month (at most until the contract's regular termination date) if the respective Executive Board member is blamelessly dismissed by the Annual General Meeting due to their incapacity to conduct business properly or due to a vote of no confidence, or if they resign prematurely, unilaterally and effectively from their position on the Executive Board for good cause. During the notice

period, the members of the Executive Board receive their fixed annual salary. The claims to STI and LTI are based on the rules on leaving the Executive Board prematurely described above.

The previous CEO of Knorr-Bremse AG, Dr. Jan Michael Mrosik, left the company's Executive Board on March 11, 2022. He left the company at the close of April 30, 2022. His fixed compensation, pension contribution, STI for 2022 and the LTI with the performance period 2022-2025 were paid pro rata temporis until April 30, 2022 (date on which he left the Company), i.e. reduced to 4/12 of the annual compensation or target amount. For the STI for fiscal 2022, Dr. Mrosik receives an STI pro rata temporis of € 443 thousand, which will be paid in April 2023. The LTI entitlements for performance periods 2021-2024 and 2022-2025 will be paid out on the relevant due dates, that is, in 2025 and 2026. The Supervisory has signed a non-competition agreement with Dr. Mrosik for one year after he left the company. In addition, Dr. Mrosik received compensation of € 4,333 thousand which was paid to him in 2022 and was offset against the non-compete compensation owed under the non-competition agreement. It was calculated on the basis of the compensation system described above. The severance payment settles any claims to non-compete compensation.

Change of Control

There is no right of special termination in the event of a change of control or any commitment to make payments based on the premature termination of Executive Board membership as a result of a change of control.

Compensation Granted and Owed

Presentation of Compensation Granted and Owed in Accordance with Section 162 AktG

The granted compensation that is disclosed for the Executive Board members holding positions during the reporting period is the compensation for the fiscal year for which the underlying work (one or more years) has been completed in full in the reporting period. The amount shown is therefore independent of whether the compensation has been paid during the fiscal year or not. For the variable compensation (STI and LTI) this means that depending on the plan's vesting schedule, the amount shown is either that which results from the target achievement of performance periods ending in the reporting period, or the fair value at the time the entitlement is vested in full.

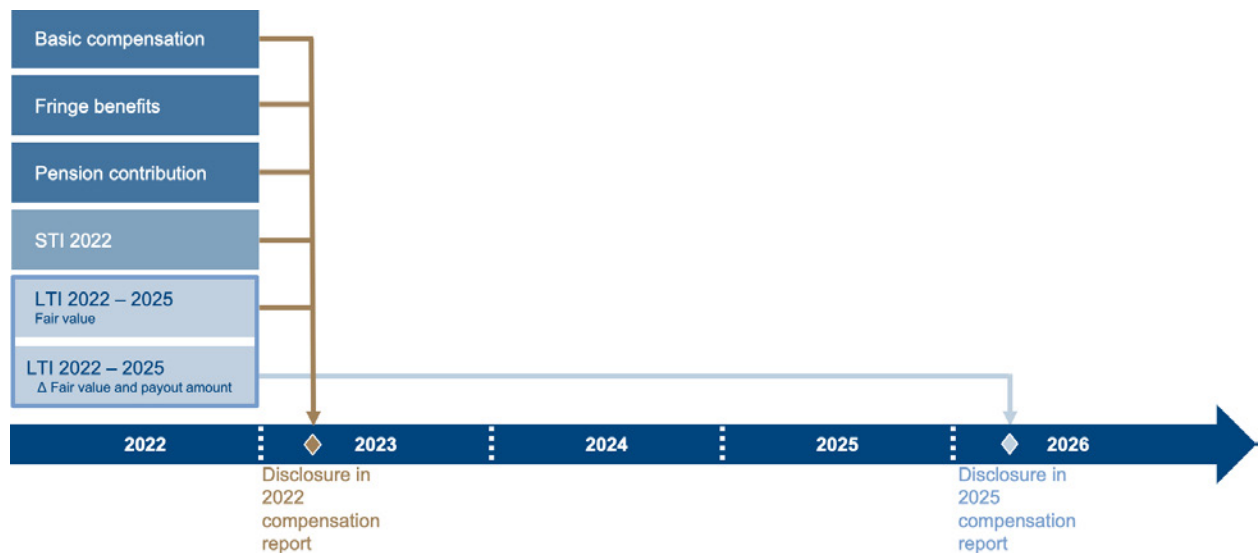
Basic compensation, pension contribution and fringe benefits also relate to the work done in the respective fiscal year, regardless of whether they were paid during the fiscal year or not. The diagram in **Fig. 4** shows the presentation of compensation granted and owed in fiscal year 2022.

The LTI 2022 – 2025 was fully vested in 2022 in line with the contract. The presentation therefore shows the fair value, which is obtained by multiplying the number of provisionally awarded virtual shares (performance share units) by the fair value as of December 31, 2022. The LTI 2022 – 2025 was not paid out and neither was or is there any entitlement to a payment before the end of the performance period at fiscal year-end 2025. The complete loss of all entitlement is also still possible.

Similarly, the LTI 2021 – 2024 was fully vested in 2021 in line with the contract. The fair value as of December 31, 2021, calculated as for the LTI 2022 – 2025, is therefore shown as the previous year's figure.

The LTI 2019 – 2021, which in contrast to the above tranches was only vested at the end of the performance period on December 31, 2021, is also presented with the actual payment amount as the previous year's figure.

FIG. 4. PRESENTATION OF 2022 COMPENSATION ELEMENTS AS COMPENSATION GRANTED AND OWED



Active Executive Board members

The following table [Table → 4.08](#) shows the individual compensation granted and owed, on a cash flow basis, in accordance with section 162 (1) sentence 2 number 1 AktG for the

Executive Board members active in fiscal year 2022, along with the corresponding figures for the previous year 2021.

4.08 COMPENSATION GRANTED AND OWED TO EXECUTIVE BOARD MEMBERS

in € thousand	Frank Markus Weber Spokesperson of the Executive Board & CFO (since July 1, 2020) ¹⁾			Dr. Claudia Mayfeld Executive Board Member for Integrity and Legal Affairs (since May 1, 2021)			Bernd Spies Commercial Vehicle Systems Division (since March 12, 2022)		
	2022	in %	2021	2022	in %	2021	2022	in %	2021
Base remuneration	1,100	46%	850	867	45%	533	641	40%	–
Fringe benefits	21	1%	36	15	1%	19	10	1%	–
Pension contribution	300	13%	300	183	9%	100	241	15%	–
One-year variable compensation (STI)									
STI 2022	634	26%	–	558	29%	–	444	28%	–
STI 2021	–	–	864	–	–	480	–	–	–
Multi-year variable compensation (LTI) ²⁾									
LTI 2022 – 2025	343	14%	–	312	16%	–	250	16%	–
LTI 2021 – 2024	–	–	652	–	–	434	–	–	–
LTI 2019 – 2021	–	–	–	–	–	–	–	–	–
Total compensation pursuant to section 162 AktG	2,398	100%	2,702	1,935	100%	1,566	1,586	100%	–

in € thousand	Dr. Jürgen Wilder Rail Vehicle Systems Division (since September 1, 2018)			Dr. Jan Michael Mrosik CEO (until April 30, 2022)		
	2022	in %	2021	2022	in %	2021
Base remuneration	900	44%	900	333	31%	1,000
Fringe benefits	18	1%	22	4	0%	43
Pension contribution	300	15%	300	100	9%	300
One-year variable compensation (STI)						
STI 2022	534	26%	–	443	41%	–
STI 2021	–	–	686	–	–	1,560
Multi-year variable compensation (LTI) ²⁾						
LTI 2022 – 2025	312	15%	–	192	18%	–
LTI 2021 – 2024	–	–	652	–	–	1,193
LTI 2019 – 2021	–	–	480	–	–	–
Total compensation pursuant to section 162 AktG	2,064	100%	3,040	1,072	100%	4,096

1) In view of the fact that Frank Markus Weber took on the position of spokesperson of the Executive Board and a significantly wider range of responsibilities for a substantial period of time, the Supervisory Board decided to increase his compensation on a one-off, temporary basis while taking the compensation system into account. The one-off increase was € 300 thousand in total, of which € 200 thousand was paid as a temporary increase in basic compensation and € 20 thousand as temporary increase in the STI target amount and € 80 thousand as temporary increase in the LTI target amount.

2) The LTI 2021 – 2024 and the LTI 2022 – 2025 were fully vested at the close of the respective award year and are shown at fair value as of the end of the respective award year. The performance period for the LTI 2019 – 2021 ended at the close of 2021 and the payment amount is therefore shown as the previous year's figure.

Former Executive Board members

The following table [Table → 4.09](#) shows the compensation individually granted and owed pursuant to section 162 (1) sentence 2 number 1 AktG under commitments to former members of the Executive Board. The values presented in the table

for the one-year and multi-year variable remuneration show the remuneration that was granted in conjunction with the termination and was paid in 2022.

4.09 COMPENSATION GRANTED AND OWED TO FORMER EXECUTIVE BOARD MEMBERS

	Dr. Jan Michael Mrosik (until April 30, 2022)		Dr. Peter Laier (until December 31, 2021)		Bernd Eulitz (until August 31, 2020)		Ralph Heuwing (until April 30, 2020)		Klaus Deller (until April 30, 2019)		Dr. Dieter Wilhelm (until June 30, 2016)		Executive Board members leaving before December 31, 2012	
	2022	in %	2022	in %	2022	in %	2022	in %	2022	in %	2022	in %	2022	in %
in € thousand														
Fringe benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-compete compensation	-	-	900	100%	-	-	-	-	-	-	-	-	-	-
One-year variable compensation (STI)	-	-	-	-	1,560	100%	720	56%	87	100%	-	-	-	-
Multi-year variable compensation (LTI)	-	-	-	-	-	-	560	44%	-	-	-	-	-	-
Compensation payment	4,333	100%	-	-	-	-	-	-	-	-	-	-	-	-
Retirement pension	-	-	-	-	-	-	-	-	-	-	230	100%	298	100%
Total compensation pursuant to section 162 AktG	4,333	100%	900	100%	1,560	100%	1,280	100%	87	100%	230	100%	298	100%

Supervisory Board Compensation

Description of the Compensation System

The compensation system for members of Knorr-Bremse Ag's Supervisory Board (Fig. 5) was revised with effect from fiscal year 2022 and approved at the Annual General Meeting on May 24, 2022 with 97.00% of the validly cast votes. It provides solely for fixed compensation in line with recommendation G.18 GCGC.

The main components of the revised compensation system for Supervisory Board members are an attendance fee and an adjustment to the amount of basic compensation and compensation for membership of the existing committees to bring them into line with market standards. Following a thorough review the Executive Board and Supervisory Board also came to the conclusion that additional compensation should also be paid for the work of the Strategy Committee set up in May 2022, which advises the Executive Board and Supervisory Board on key aspects of corporate strategy, including the Group's commercial policy and entrepreneurial direction, and holds at least four meetings a year.

The Supervisory Board compensation is intended to contribute to attracting suitable candidates for the position of a Supervisory Board member. This is intended to ensure that the Supervisory Board as a whole is able to competently fulfill its duties to supervise and advise the Executive Board professionally and competently and thus to promote Knorr-Bremse AG's business strategy and long-term development.

The annual remuneration is payable after the end of the general meeting that receives the annual financial statements for the past fiscal year or decides on their approval, in the present case for fiscal 2022 after the Annual General Meeting on May 05, 2023. Supervisory Board members who have not belonged to the Supervisory Board or a committee for a full fiscal year or have not held the role of chair or deputy chair for a full fiscal year receive the corresponding remuneration pro rata temporis, rounding up to a full month.

In addition, the Supervisory Board members receive an attendance fee of € 1 thousand each time they attend a meeting of the Supervisory Board or its committees. Attendance at a meeting includes attendance by phone, video conference or using similar common means of communication. If several meetings are held on the same day the attendance fee is only paid once.

In accordance with Article 18 (6) of the company's Articles of Association, the company reimburses the Supervisory Board members for reasonable expenditure incurred as part of their fulfillment of their roles. Value-added tax is reimbursed by the company where Supervisory Board members are entitled to invoice the company separately for value-added tax and choose to exercise this right. Supervisory Board members are included in the company's D&O insurance policy without a deductible.

There are no pension commitments to members of the Supervisory Board, with the exception of pension commitments associated with employee activities.

FIG. 5 SUPERVISORY BOARD COMPENSATION

Compensation element	Compensation of the Supervisory Board		
	Chairman	Deputy	Member
Basic compensation	€ 300,000	€ 150,000	€ 100,000
Committee compensation	Audit Committee: € 120,000 Strategy Committee: € 120,000 Executive Committee: € 90,000	Audit Committee: € 40,000 Strategy Committee: € 40,000 Executive Committee: € 30,000	
Attendance fee	€ 1,000 per meeting ¹⁾		

¹⁾ Attendance at a meeting is also deemed to include attendance via telephone, videoconference or other similar, customary means of communication. The attendance fee is only paid once if multiple meetings take place on the one day.

Compensation Granted and Owed

The following table [Table → 4.10](#) shows the committee memberships and attendance of the individual Supervisory Board members in 2022 on which their overall compensation is based. Here too, the compensation shown for the reporting year is that for which the underlying work has been completed in full in the reporting year. The amount shown is therefore independent of whether the compensation has been paid during the fiscal year or not.

On the basis of the compensation system described above and the individual committee memberships and attendance, the following [Table → 4.11](#) shows the compensation granted and owed for fiscal year 2022. This is payable after the 2023 Annual General Meeting. Supervisory Board members did not receive any loans from the company in either fiscal year 2022 or fiscal year 2021.

4.10 MEMBERSHIP OF SUPERVISORY BOARD COMMITTEES AND ATTENDANCE AT MEETINGS

	Executive Committee (Attendance/all meetings)	Audit Committee (Attendance/all meetings)	Strategy Committee (Attendance/all meetings)	Nomination Committee (Attendance/all meetings)
Dr. Reinhard Ploss (Supervisory Board Chair) (since May 24, 2022)	4/4 (C)	3/3 (M)	2/2 (M)	1/1 (C)
Franz-Josef Birkeneder ¹⁾ (Deputy Chair of the Supervisory Board)	11/11 (M)	7/7 (M)	4/4 (M)	
Dr. Theodor Weimer (Deputy Chair of the Supervisory Board)	11/11 (M)			
Kathrin Dahnke		7/7 (C)		2/2 (M)
Michael Jell ¹⁾	11/11 (M)			
Dr. Sigrid Evelyn Nikutta (since May 24, 2022)				
Werner Ratzisberger ¹⁾				
Annemarie Sedlmair ¹⁾				
Dr. Stefan Sommer			4/4 (C)	
Erich Starkl ¹⁾				
Julia Thiele-Schürhoff			2/2 (M)	2/2 (M)
Sylvia Walter ¹⁾				
Prof. Klaus Mangold Chair of the Supervisory Board (until May 24, 2022)	7/7 (C)	4/4 (M)	2/2 (M)	1/1 (M)
Dr. Thomas Enders (until May 24, 2022)			0/2 (M)	

¹⁾ elected by the employees.
M = Member, C = Chair

4.11 COMPENSATION GRANTED AND OWED

in € thousand	2022							2021				
	Basic compensa- tion	in %	Committee compensa- tion	in %	Attendance fee	in %	Total compensa- tion	Basic compensa- tion	in %	Committee compensa- tion	in %	Total compensa- tion
Dr. Reinhard Ploss (Supervisory Board Chair) (since May 24, 2022)	200	62%	113	35%	12	4%	325	-	-	-	-	-
Franz-Josef Birkeneder ²⁾ (Deputy Chair of the Supervisory Board)	150	53%	110	39%	25	9%	285	120	64%	67	36%	187
Dr. Theodor Weimer (Deputy Chair of the Supervisory Board)	150	77%	30	15%	14	7%	194	110	88%	15	12%	125
Kathrin Dahnke	100	42%	120	50%	18	8%	238	80	57%	60	43%	140
Michael Jell ^{2) 3)}	100	70%	30	21%	13	9%	143	80	80%	20	20%	100
Dr. Sigrid Evelyn Nikutta (since May 24, 2022)	67	94%	-	-	4	6%	71	-	-	-	-	-
Werner Ratzisberger ²⁾	100	65%	40	26%	14	9%	154	80	80%	20	20%	100
Annemarie Sedlmair ^{2) 3)}	100	92%	-	-	9	8%	109	80	100%	-	-	80
Dr. Stefan Sommer	100	43%	120	52%	13	6%	233	53	40%	80	60%	133
Erich Starkl ²⁾	100	93%	-	-	7	7%	107	80	100%	-	-	80
Julia Thiele-Schürhoff	100	71%	27	19%	13	9%	140	80	100%	-	-	80
Sylvia Walter ²⁾	100	93%	-	-	7	7%	107	53	100%	-	-	53
Prof. Klaus Mangold Chair of the Supervisory Board (until May 24, 2022)	125	60%	71	34%	14	7%	210	250	70%	107	30%	357
Dr. Thomas Enders (until May 24, 2022)	41	67%	17	28%	3	5%	61	80	75%	27	25%	107

1) The annual attendance fee is capped at 9.9% of the total compensation for the Supervisory Board member in the respective year.

2) elected by the employees.

3) In addition, Mr. Jell and Ms. Sedlmair received compensation of € 38 thousand and € 25 thousand respectively from subsidiaries of Knorr-Bremse in the reporting year.

Multi-year Overview

The following overview [Table → 4.12](#) shows in accordance with section 162 (1) sentence 2 no. 2 AktG the relative change in the compensation of Executive Board and Supervisory Board members compared with the average compensation of employees and with selected earnings indicators for Knorr-Bremse AG and Knorr-Bremse Group.

The compensation shown for Executive Board members and Supervisory Board members represents the compensation granted and owed in accordance with section 162 (1) sentence 2 no. 1 AktG for the fiscal year in which the underlying work (one or more years) has been completed in full. By contrast, the average compensation shown for employees represents the amount received by them in the reporting year.

The key figures for which Knorr-Bremse AG has issued guidance in the past fiscal year and the key figures that form the basis of the short- and long-term remuneration of the Executive Board, specifically the Knorr-Bremse Group's revenues, EBIT, free cash flow and earnings per share (EPS) as well as the HGB-format annual financial statements of Knorr-Bremse AG, are used for the presentation of the results of operations.

The Knorr-Bremse Group's total workforce in Germany (excluding trainees, university students in student-specific positions and interns) is taken into account for the presentation of the average total compensation of employees on a full-time equivalent basis. The total compensation comprises all fixed and variable compensation components that were paid in the reporting period.

4.12 MULTI-YEAR COMPARISON¹⁾

	2022		2021	
	in € thousand	Change 2022/2021 in %	in € thousand	Change 2021/2020 in %
Executive Board members				
Frank Markus Weber	2,398	-11%	2,702	12%
Dr. Claudia Mayfeld	1,935	24%	1,566	-
Bernd Spies	1,586	-	-	-
Dr. Jürgen Wilder	2,064	-32%	3,040	5%
Dr. Jan Michael Mrosik ²⁾	5,405	32%	4,096	-
Former Executive Board members				
Klaus Deller	87	-	-	-
Bernd Eulitz	1,560	50%	1,040	-68%
Ralph Heuwing	1,280	167%	480	-83%
Dr. Peter Laier	900	-75%	3,574	92%
Dr. Dieter Wilhelm	230	0%	230	0%
Executive Board members who left prior to December 31, 2012	298	1%	295	2%
Supervisory Board members				
Dr. Reinhard Ploss ³⁾	325	-	-	-
Franz-Josef Birkeneder ⁴⁾	285	52%	187	17%
Dr. Theodor Weimer	194	55%	125	213%
Kathrin Dahnke	238	70%	140	-18%
Michael Jell ⁴⁾	143	43%	100	0%
Dr. Sigrid Evelyn Nikutta ³⁾	71	-	-	-
Werner Ratzisberger ⁴⁾	154	54%	100	0%
Annemarie Sedlmair ⁴⁾	109	36%	80	0%
Dr. Stefan Sommer	233	75%	133	-
Erich Starkl ⁴⁾	107	34%	80	0%
Julia Thiele-Schürhoff	140	75%	80	0%
Sylvia Walter ⁴⁾	107	102%	53	-
Prof. Dr. Klaus Mangold ³⁾	210	-41%	357	8%
Dr. Thomas Enders ³⁾	61	-43%	107	168%
Earnings indicators				
<i>Knorr-Bremse Group</i>				
Revenues (in € million)	7,150	7%	6,706	9%
EBIT (in € million)	721	-21%	916	13%
Free cash flow (in € million)	219	-63%	600	-13%
Earnings per share – undiluted (in €)	3.03	-21%	3.85	25%
<i>Knorr-Bremse AG</i>				
Net income per HGB (in € million)	141	-58%	335	-13%
Workforce remuneration				
Workforce of the Knorr-Bremse Group in Germany	86	2%	84	2%

1) The compensation shown for Executive Board members and Supervisory Board members represents the compensation granted and owed in accordance with section 162 (1) sentence 2 no. 1 AktG for the fiscal year in which the underlying work has been completed in full. By contrast, the average compensation shown for employees represents the amount received by them in the reporting year.

2) Dr. Jan Michael Mrosik was Chair of the Executive Board until March 11, 2022.

3) Prof. Dr. Klaus Mangold and Dr. Thomas Enders were the Chair and a member of the Supervisory Board respectively until May 24, 2022.

Dr. Reinhard Ploss and Dr. Sigrid Evelyn Nikutta have been the Chair and a member of the Supervisory Board respectively since May 24, 2022.

4) elected by the employees.

This compensation report was jointly prepared by the Executive Board and the Supervisory Board. The Executive Board and Supervisory Board passed resolutions to approve this compensation report on March 13, 2023.

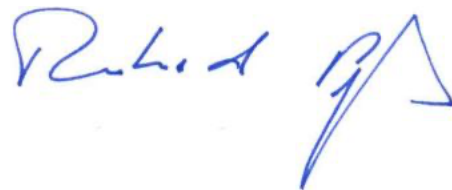
Munich, March 13, 2023



MARC LLISTOSELLA
CEO
Knorr-Bremse AG



DR. CLAUDIA MAYFELD
Executive Board member for Integrity, Legal and HR
Knorr-Bremse AG



DR. REINHARD PLOSS
Chairman of the Supervisory Board
Knorr-Bremse AG

Report on the audit of the remuneration report

We have audited the attached remuneration report of Knorr-Bremse AG, Munich, for the financial year from January 1 to December 31, 2022, including the related disclosures, prepared to meet the requirements of Section 162 AktG [Aktiengesetz: German Stock Corporation Act].

Responsibilities of Management and the Supervisory Board

The management and the Supervisory Board of Knorr-Bremse AG are responsible for the preparation of the remuneration report, including the related disclosures, in accordance with the requirements of Section 162 AktG. The management and the Supervisory Board are also responsible for such internal control as they have determined necessary to enable the preparation of the remuneration report that is free from material misstatement, whether due to fraud or error.

Auditor's responsibilities

Our responsibility is to express an opinion on this remuneration report, including the related disclosures, based on our audit. We conducted our audit in accordance with the German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the remuneration report, including the related disclosures, is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts, including the related disclosures, in the remuneration report. The procedures selected depend on the auditor's professional judgement. This includes an assessment of the risks of material misstatement, whether due to fraud or error, in the remuneration report, including the related disclosures. In assessing these risks, the auditor considers the internal control system relevant for the preparation of the remuneration report, including the related disclosures. The objective is to plan and perform audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management and the Supervisory Board, as well as evaluating the overall presentation of the remuneration report, including the related disclosures.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Opinion

In our opinion, on the basis of the knowledge obtained in the audit, the remuneration report for the financial year from January 1 to December 31, 2022, including the related disclosures, complies in all material respects with the financial reporting requirements of Section 162 AktG.

Other matter – formal examination of the remuneration report

The substantive audit of the remuneration report described in this independent auditor's report includes the formal examination of the remuneration report required by Section 162 (3) AktG, including issuing an assurance report on this examination. As we have issued an unqualified opinion on the substantive audit of the remuneration report, this opinion includes the conclusion that the disclosures pursuant to Section 162 (1) and (2) AktG have been made, in all material respects, in the remuneration report.

Limitation of liability

The terms governing this engagement, which we fulfilled by rendering the aforesaid services to Knorr-Bremse AG, are set out in the General Engagement Terms for Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften [German Public Auditors and Public Audit Firms] as amended on 1 January 2017. By taking note of and using the information as contained in this auditor's report, each recipient confirms to have taken note of the terms and conditions laid down therein (including the limitation of liability of EUR 4 million for negligence under Clause 9 of the General Engagement Terms) and acknowledges their validity in relation to us.

Munich, March 17, 2023

KPMG AG
Wirtschaftsprüfungsgesellschaft
[Original German version signed by:]

Becker
Wirtschaftsprüfer
[German Public Auditor]

Hanshen
Wirtschaftsprüfer
[German Public Auditor]

Financial calendar *

May 5, 2023	Annual Shareholder's Meeting
May 11, 2023	Q1 / Interim Statement 3 months 2023
August 10, 2023	Q2 / Half Year Report 2023
October 31, 2023	Q3 / Interim Statement 9 months 2023

* The latest information on the dates can be found on our website www.knorr-bremse.com

Imprint

Please feel free to contact us for further information.

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Weitere Hinweise zum Geschäftsbericht

Due to rounding, numbers presented throughout this report may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures. The Annual Report of Knorr-Bremse Group was published on March 23, 2023 in German and English. The German version is legally binding. The report is also available online www.knorr-bremse.com

