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2 — COMBINED MANAGEMENT REPORT



OVERVIEW OF THE BMW GROUP

ORGANISATION AND BUSINESS MODEL

The BMW Group develops and manufactures innovative premium automobiles and motorcycles on a worldwide basis. It is committed to individual mobility and occupies a leading market position in the premium automobiles and motorcycles segment, as well as in the financial services segment. BMW, MINI, Rolls-Royce and BMW Motorrad are among the best-known brands in the world. At 31 December 2022, the BMW Group employed a workforce of 149,475 people worldwide.

The BMW Group is shaping the transformation of the automotive industry from its leading position – efficiently, sustainably and digitally. This requires versatility, resilience and a holistic approach. The BMW Group and its brands are undergoing a rapid technological and structural transformation. The objective is achievement of individual mobility that is sustainable and climate-neutral.

Bayerische Motoren Werke Aktiengesellschaft (BMW AG), based in Munich, Germany, is the parent company of the BMW Group, which comprises BMW AG itself and all subsidiaries over which BMW AG has either direct or indirect control. [↗ List of Investments](#)

The structure of the BMW Group changed significantly at the beginning of the reporting year due to the BMW Group's majority acquisition of the joint venture BMW Brilliance Automotive Ltd., Shenyang (BMW Brilliance). Further information on the consolidation of BMW Brilliance is provided in [↗ Note \[3\]](#) to the Group Financial Statements. The BMW Group is subdivided into the [↗ Automotive, Motorcycles and Financial Services](#) segments and the Other Entities segment. [↗ Presentation of segments](#) BMW AG assumes central responsibility for management of the Automotive, Motorcycles and Financial Services operating segments.



SEGMENTS

Automotive segment

The BMW, MINI and Rolls-Royce brands cater to a wide variety of customer requirements. The range of models offered under the BMW brand includes automobiles ranging from the premium compact class to the luxury class. In addition to all-electric models, various drive systems including modern plug-in hybrids and highly efficient combustion engines are available. The BMW M rounds off the range of models offered with innovative high-performance automobiles in the high-performance class.

The MINI brand promises driving pleasure in the premium compact segment, while it also offers the entire range of modern drive technologies. The all-electric MINI Cooper SE* was the best-selling model in the MINI family in the year under report. The MINI Concept Aceman concept vehicle, introduced in 2022, shows how MINI is reinventing itself and what the brand stands

for: an all-electric future and digital features that create an experience with a focus on a minimal environmental footprint. The MINI brand is expected to be completely converted to all-electric drives by 2031.

With a history stretching back well over a century, Rolls-Royce is the ultimate marque in the ultra-luxury class. Rolls-Royce Motor Cars specialises in providing bespoke customer specifications and offers the utmost in terms of service. From 2023, the luxury brand will offer an all-electric model – Spectre* – for the first time in its history, with its entire product range set to be all-electric by 2030. The Spectre* model is therefore an integral element of the brand's sustainable transformation process.

The global sales network of the BMW Group's automobile business currently comprises more than 3,600 BMW, 1,600 MINI and 150 Rolls-Royce dealerships. [↗ Automotive segment](#)

Motorcycles segment

The BMW Group's motorcycle business also focuses on the premium segment. This also includes a consistent electrification strategy and its model range of motorcycles and scooters in the Sport, Tour, Roadster, Heritage, Adventure and Urban Mobility categories. Currently, BMW motorcycles are sold by more than 1,200 dealerships and importers in over 90 countries worldwide.

[↗ Motorcycles segment](#)

Financial Services segment

The BMW Group is a leading provider of financial services in the automotive sector. It offers these services in more than 50 countries worldwide via subsidiaries and cooperation arrangements with local financial service providers and importers. The Financial Services segment's main line of business comprises credit financing and the leasing of BMW Group brand automobiles and motorcycles to retail customers.

Operating under the brand name Alphabet, the BMW Group is a partner in the international multi-brand fleet business. Its services consist mostly of vehicle fleet financing for large customers and comprehensive management services for corporate car fleets, including support of customers' sustainable and environmentally friendly fleet management. [↗ Financial Services segment](#)

LOCATIONS

Global overview

The BMW Group operates on a worldwide basis. The BMW Group's largest automobile and motorcycle markets are located in Europe, particularly in Germany and the United Kingdom (UK), as well as in the USA and China.



* [↗ Consumption and Carbon Disclosures.](#)



LOCATIONS WORLDWIDE

● Sales subsidiaries and Financial Services

- 1 Headquarters
- 2 Canada
- 3 USA
- 4 Mexico
- 5 United Arab Emirates
- 6 Brazil

- 7 Argentina *
- 8 South Africa
- 9 Russia
- 10 India
- 11 China
- 12 South Korea
- 13 Japan
- 14 Thailand
- 15 Malaysia
- 16 Singapore
- 17 Indonesia *
- 18 Australia
- 19 New Zealand

* Sales locations only



■ Production outside Europe

- BMW Group plant Araquari, Brazil
- BMW Group plant Chennai, India
- BMW Group plant Manaus, Brazil
- BMW Group plant Rayong, Thailand
- BMW Group plant Rosslyn, South Africa
- BMW Group plant San Luis Potosi, Mexico
- BMW Group plant Spartanburg, USA
- BMW Brilliance Automotive, China (3 plants)

□ Partner plants outside Europe

- Partner plant, Chongqing, China
- Partner plant, Chu Lai, Vietnam
- Partner plant, Hosur, India
- Partner plant, Jakarta, Indonesia
- Partner plant, Cairo, Egypt
- Partner plant, Kulim, Malaysia

▲ Research and Development outside Europe

- BMW Group Designworks, Newbury Park, USA
- BMW Group Technology Office USA, Mountain View, USA
- BMW Group Engineering and Emission Test Center, Oxnard, USA
- BMW Group Design, Technology and ConnectedDrive Lab China, Shanghai, China
- BMW Group Development China, Beijing, China
- BMW Group Development and Technology Office, Tokyo, Japan
- BMW Group Development USA, Woodcliff Lake, USA
- BMW Group IT Technology Office, Greenville, USA
- BMW Group IT Technology Office, Nanjing, China
- BMW Group IT Technology Office, Singapore
- BMW Group IT DevOps Hub, Chennai, India
- BMW Group IT DevOps Hub, Rosslyn, South Africa
- BMW do Brasil Development, Araquari, Brazil
- BMW Group Technology Office Tel Aviv, Tel Aviv, Israel
- BMW Group R&D Center Seoul, Seoul, South Korea
- BMW Group Prototype Testing, Rosslyn, South Africa
- BMW Brilliance Automotive Ltd., Shenyang

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Sales subsidiaries and Financial Services locations worldwide

31

Production and assembly plants

17

Countries with research and development locations



LOCATIONS IN EUROPE

- Sales subsidiaries and Financial Services

- 1 Germany
- 2 Norway
- 3 Denmark
- 4 Sweden
- 5 Finland
- 6 The Netherlands
- 7 UK
- 8 Ireland
- 9 Belgium / Luxembourg
- 10 France
- 11 Switzerland
- 12 Italy
- 13 Slovenia *
- 14 Spain
- 15 Portugal

- 16 Czech Republic
 - 17 Poland
 - 18 Austria
 - 19 Slovakia
 - 20 Hungary *
 - 21 Romania *
 - 22 Bulgaria *
 - 23 Greece
- * Sales locations only

- Production in Europe

- BMW Group plant Berlin
- BMW Group plant Dingolfing
- BMW Group plant Eisenach
- BMW Group plant Landshut
- BMW Group plant Leipzig
- BMW Group plant Munich
- BMW Group plant Regensburg
- BMW Group plant Wackersdorf
- BMW Group plant Steyr, Austria
- BMW Group plant Hams Hall, UK
- BMW Group plant Oxford, UK
- BMW Group plant Swindon, UK
- Rolls-Royce Manufacturing Plant, Goodwood, UK

- Partner plants in Europe

- Partner plant, Born, the Netherlands (contract manufacturing)
- Partner plant, Graz, Austria

- ▲ Research and Development in Europe

- BMW Group Research and Innovation Centre (FIZ), Munich, Germany
- BMW Car IT, Munich, Germany
- BMW Group Autonomous Driving Campus, Unterschleißheim, Germany
- BMW Group Designworks, Munich, Germany
- BMW Group Lightweight Construction and Technology Center, Landshut, Germany
- BMW Group Diesel Competence Centre, Steyr, Austria
- Critical TechWorks S.A., Porto/Lisbon, Portugal
- BMW France, S. A. S., Miramas, France
- Rolls-Royce Motor Cars Ltd., Goodwood, UK
- BMW Group Vehicle Testing, Arjeplog, Sweden
- BMW Group Vehicle Testing, Granada, Spain
- BMW Group Vehicle Testing, Sokolov, Czech Republic





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BMW GROUP INTEGRATED STRATEGY

The BMW Group operates at the area of tension with challenging, increasingly complex and differentiated influencing factors around the world. Along with macroeconomic factors such as inflation and the level of interest rates, this also includes the increasing uncertainty and volatility of the general situation:

- Geopolitical challenges that affect business activities and global supply chains
- Increased competitive dynamics
- Megatrends such as electrification and connectivity
- A capital market focused on profitability and growth
- Sustainability and circularity
- Societal expectations in the face of climate change
- Demographic change

We constantly refine our corporate strategy and align our strategic targets with these influencing factors and their dynamic rate of change as important input parameters.

The BMW Group's integrated strategy is based on fundamental values and elements such as the integrity of our actions and takes account of the increasing pace of change in an ongoing process. ↗ [Compliance and Human Rights](#) Its starting point is the analysis of the global megatrends that are of crucial importance for the transformation of the automotive industry. Its core components are the integrated, continuous strategy process, the target system and ↗ [Performance Management](#).

ENVIRONMENTAL ANALYSIS AND MEGATRENDS

A company's success depends to a large extent on its ability to recognise changes in its environment early on, plan for different scenarios, effectively manage risks and take advantage of opportunities that may arise from such changes ↗ [Risks and Opportunities](#). To this end, we continuously monitor the business environment in our key regions, using available data to analyse the trends and developments that could affect our business in the future. Regular ↗ [Dialogue with Stakeholders](#) within the scope of the BMW Group XChange formats completes the picture from the analysis of external and environmental factors.

The most important megatrends with long-term implications for the BMW Group's business model are currently mobility patterns in society, climate change as well as the reduction of carbon dioxide (CO₂) emissions and resource consumption, electromobility, digitalisation and connectivity – including automated and autonomous driving.



Mobility patterns

Individual mobility remains a fundamental human need, though vehicle ownership depends to a large extent on income, household size and location. On-demand mobility (ODM) services remain relevant, especially in urban areas, but are mainly used as a supplementary option.

Climate change and CO₂ reduction

We see the consequences of climate change as a major challenge for the future. As governments around the world work to transpose the goals of the Paris Climate Agreement into national laws, investors are increasingly evaluating companies and their business models according to ESG criteria. ↗ [BMW Group and capital market](#) Within the EU, the adopted ↗ [EU Taxonomy](#) aims to classify a company's business activities according to sustainability criteria.

Electromobility and drive technologies

In the transport sector, a swift transition to electromobility is an important prerequisite on the road to climate neutrality. By 2030, a complete array electric vehicles in terms of both product diversity and range will be offered. Growing demand is additionally strengthened by the benefits of lower running costs and framework conditions such as government subsidies. ↗ [Electromobility](#)

Digitalisation and connectivity

The modern vehicle is already one of the most complex digital items owned by consumers. The implementation of software increasingly makes vehicles products which are expected to have corresponding digital functions. These are expected to provide reliable help and support in everyday life, offer additional options and fit seamlessly into a customer's personal environment. Accordingly, customer expectations are advancing worldwide and are an important factor in purchasing decisions.

↗ [Innovation, Digitalisation and Customer Orientation](#)

Beyond vehicle digitalisation, connectivity offers further potential along the value chain. To this end, the BMW Group founded the virtual platform Catena-X Automotive Network, together with other manufacturers, system suppliers and technology partners. Catena-X connects global players to entire value chains with the aim of exchanging data securely on a standardised basis. ↗ [Production and Supplier Network](#)

Automated/autonomous driving

Alongside digitalisation, development of automated/autonomous driving remains a key expectation for the future of mobility. Due to the importance of this topic for the automotive industry and the complexity of the technologies and required expertise, extensive funding is being channelled into development in this area worldwide.

Concrete requirements and regulations for autonomous driving are likely to be in place in some individual countries and regions by 2025. The aim of all regulators is presumably to authorise autonomous driving systems in the medium term. ↗ [Products](#)

STRATEGY PROCESS

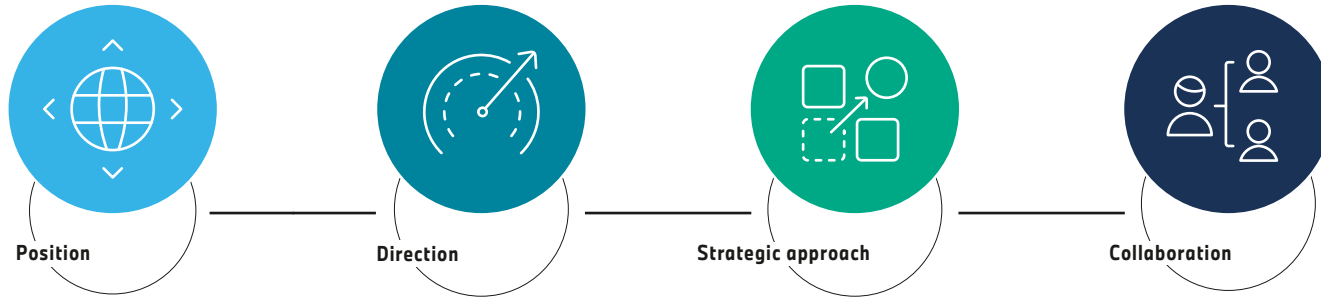
The BMW Group regards the strategy process as a continuous task. The Board of Management therefore regularly addresses strategic issues. The assumptions underpinning our strategy are regularly reviewed based on our environmental analysis. The BMW Group's corporate strategy, including its product strategy and its strategic goals, are the starting point for business departments to define concrete approaches and the corresponding measures. This process takes place via a closed-loop planning and management system. The strategy is integrated into longer-range corporate planning that is revised annually. Its implementation is monitored by a target system that is comprised of the aspects of finance, customers, processes, learning and development. ↗ [Performance Indicators and Performance Management](#). The strategy process allows plans to be drawn up for different scenarios to account for increasingly volatile and challenging environmental conditions, thereby ensuring flexibility and responsiveness.

Corporate strategy

The BMW Group's strategy is oriented to its corporate purpose. It is the driving force, the guiding principle and the orientation for our employees, and our commitment to our active role in society: "The BMW Group exists to move body, heart and mind."

With this in mind, the BMW Group's corporate strategy, referred to as the "BMW Group strategy", defines the strategic framework and lays the foundation for the Company to maintain a consistent and market-oriented focus on profitability, growth and sustainability, even in an increasingly dynamic environment. The BMW Group strategy outlines targets in four areas: position, direction, strategic approach and collaboration.

BMW Group Strategy



Position – What does the BMW Group stand for?

The BMW Group is committed to first-class individual mobility and contributes to sustainable development. It aims to find the right balance between business, the environment and society, and combines pleasure and responsibility without compromise. The BMW Group is committed to the Paris Climate Agreement and to providing a verifiable track record of continuous improvement. To achieve this, the BMW Group promotes the reduction of CO₂ emissions throughout the whole life cycle of its products as well as the principles of the circular economy – from the supply chain to production, the use phase and the recycling of its products. For this reason, the BMW Group has laid out measurable, science-based targets to be reached by 2030; these are firmly established across the Company (base year 2019). CO₂ emissions are to be reduced as follows:

1. An average of 80 % carbon reduction at our own production sites and locations (Scope 1 and 2) per vehicle produced ([↗ Reduce carbon emissions at the locations](#))
2. Carbon reduction during the vehicle's use phase (Scope 3 downstream) by an average of at least 50 % per kilometre driven. Increased efficiency in our electrified models and

the new generation of combustion engine technology will make this possible. An additional driving force for this is the dynamic growth in demand for our electrified vehicles ([↗ Electromobility](#), [↗ Automotive segment](#))

3. An average of at least 20 %* carbon reduction in the supply chain (Scope 3 upstream) per vehicle produced ([↗ Carbon emissions in the supply chain](#))

We have joined the Science-Based Targets Initiative (SBTi) for this purpose. This will enable us to guarantee transparency and comparability in the validation and measurement of our targets and, at the same time, ensure they are in line with the latest scientific findings. ([↗ Carbon emissions](#))

[↗ Control parameters](#) such as [↗ carbon emissions](#) over the entire product life cycle are important [↗ Performance indicators](#) during the development phase of our vehicle projects. The Board of Management receives and discusses a status report on sustainability every quarter and derives appropriate measures as required.

The BMW Group is actively working on numerous projects and initiatives to improve the framework conditions for electromobility, including the expansion of charging infrastructure on a broad basis. The ambitious goals of the Paris Climate Agreement are

designed to tackle climate change in the transport sector, requiring a combination of modern drive technologies that are closely aligned with customer needs and different mobility requirements around the world. In addition to all-electric models, plug-in hybrids and modern combustion engine technologies also make an important contribution to the reduction of global CO₂ emissions. The BMW Group is also continuously forging ahead with its work with hydrogen. ([↗ Products](#))

ESG criteria are built into individual market strategies across our global organisation. Best practices in the fields of environmental protection, social sustainability, corporate citizenship and governance are also shared within an international sustainability network.



Direction – What drives the BMW Group?

The BMW Group offers exciting products for current and future generations and secures its independence as a company by maintaining a high level of profitability. The BMW Group is shaping the future of sustainable mobility with its passion and strong capacity for innovation. Thanks to its exciting products, the BMW Group is able to achieve maximum customer satisfaction and brand strength, and thus grow its market share.

Economic performance is a very important aspect of our corporate management system. To underline the importance of the BMW Group's profitability, our ambitious financial targets are tied to the following strategic key performance indicators: EBIT margin in the Automotive segment (between 8 and 10 %), RoCE in the Automotive segment (at least 18 %) and Group EBT margin (more than 10 %). ([↗ Performance Indicators and Performance Management](#))

* For the sake of simplicity, this figure has been rounded. The target validated under SBTi is 22 %.

As part of our focus on efficiency, we regularly assess ways to utilise synergies and efficiencies across the Company. In this way, we reduce the complexities that arise from increasingly strict and heterogeneous regulatory requirements. Faster, digitalised processes in lean structures are fundamental to systematically leveraging efficiencies.



Strategic approach – Where is the BMW Group heading?

The BMW Group is focused on its customers worldwide and on meeting their different requirements. It does so by understanding the needs of its current and future customers and exceeding their expectations. It combines groundbreaking technologies, emotional products and individual customer care to create a unique overall experience. The topics of electrification, digitalisation and circularity are of particular importance.

We recognised the importance of electromobility early on and have been working resolutely to implement this transformation in the Company. The BMW Group invests in both the renovation of existing plants and the development of employee skills, with the view that continuous training guarantees jobs worldwide. [↗ Employees and Society](#) The restructuring of our main plant in Munich, set to be completed by 2026, demonstrates how the BMW Group is successfully shaping the transformation of an entire plant – including engine production – during ongoing production, from combustion engine technology to 100 % electromobility. In this context, the BMW Group is making considerable investments to also drive this continuous transformation in all aspects of sustainability (ESG criteria). [↗ Production and Supplier Network](#), [↗ Employees and Society](#)

The BMW Group is making customer experience the focus of all its marketing and sales activities. The aim is to offer the industry's best premium customer experience. In an increasingly digital environment with changing customer needs, the Company relies on a future-oriented sales structure with a focus on the digitalisation of the customer interface and direct customer access. In this context, the My BMW App and MINI App play a significant role with almost ten million users at present. More than two million customers access the apps every day. Using their smartphones, they interact with their BMW or MINI vehicles, the BMW Group itself and the BMW and MINI dealerships and also receive personalised offers. The relationship with the customer thus becomes even closer.

In the future, direct sales with agents as sales representatives in Europe and China will become a further essential element of the realigned sales structure. MINI will be the first Group brand to implement the new sales model in Europe and China, and the BMW brand will follow suit in Europe in 2026. This is how the BMW Group is decisively driving forward with its online sale of vehicles.

Customers are free to choose whether they would like to order their vehicle from agents or online. They also have the option to seamlessly switch between both worlds. At the same time, we aim to achieve consistent prices across all sales channels, providing a beneficial transparency for our customers. The trading partners will be closely involved in the implementation. The new sales structure offers an attractive and sustainable business model for these partners, and they will continue to be the face for customers in the future, where they can focus on providing the best advice and support. In turn, the BMW Group is improving customer access through direct sales, a basic requirement when aiming to offer the best customer experience in the industry. In the

Financial Services segment, we are also continually expanding our services to include digital and modular services. The aim is for our products to be accessible to all customer groups across all channels within our strategic orientation in the Financial Services segment. [↗ Financial Services segment](#)



Collaboration – How does the BMW Group achieve this?

The BMW Group constantly strives for the best results, supporting its employees with the discovery and development of their potential so they are able to remain productive. We support and challenge strong teams with complementary strengths who work together to achieve the best solutions in a complex environment. We see diversity as an important element of our competitiveness. [↗ Employees and Society](#) The diversity metric defines the share of women in management positions as a key performance indicator and a strategic target variable. The aim is to increase the share of women in management positions at the BMW Group to 22 % by 2025. [↗ Performance Indicators and Performance Management](#)

BMW Group employees not only work closely together within the Company, but also with external partners. The stable relationships that have grown in our partner networks over time are based on the same values as those at the BMW Group. They allow us to maximise our effectiveness and work together to lead the Company to success. This has proven effective in the crisis years, most recently in 2022: our [↗ Supply Chains](#) held up and our dealer network remained strong, despite challenging conditions including the shortage of semiconductor components, pandemic-related lockdowns in China and additional supply bottlenecks resulting from the war in Ukraine.

Catena-X

As a co-founder and member of Catena-X, the BMW Group is part of a collaborative, open data ecosystem that connects suppliers, automobile manufacturers and recycling companies digitally. Catena-X aims to facilitate a cohesive digital flow of information across the entire value chain. Catena-X users are connected using a data-driven approach based on European values and principles (GAIA-X and IDSA) and common standards, enabling different applications along the entire automotive value chain for the first time. The sovereign exchange of data allows each company to retain control of its own data.

Catena-X is currently focused on the circular economy, resilience, profitability and customer experience. A database is being created to ensure the transparency of sustainability and regulatory requirements such as the carbon footprint. Uniform standards and processes will make it possible to gradually take on additional partners for cross-company collaborations, regardless of their size. Membership in the Catena-X network could play a larger role in the supplier nomination process in the future in order to ensure consistency in the supply chain. The Catena-X network currently has 133 members (status: 1 January 2023).

Together with our cooperation partners, we realise potential by accessing more expertise and improving our profitability and technology footprint. We continuously expand our collaborations to unlock additional potential for value creation in the Group. [➤ Innovation, Digitalisation and Customer Orientation](#)

Product strategy and the electric future with the NEUE KLASSE

The BMW Group is consistently implementing the transformation towards all-electric, connected mobility. As early as 2013, the Company pioneered e-mobility by developing the technology for "project i" and putting it into series production in the BMW i3 and BMW i8.

The all-electric vehicle model initiative was launched in 2020, and by the end of 2022, seven models had been launched: the BMW iX3¹, the BMW iX1, the BMW i4¹, the BMW i7¹, the BMW iX11, the long-wheelbase version of the BMW 3 Series for the Chinese market and the MINI Cooper SE¹. With 215,752² fully electrified vehicles, the number of deliveries more than doubled in reporting year 2022 (2021: 103,854² vehicles/+107.7%). BMW M is also working on various forms of electrification. In 2021, the brand launched a performance automobile with an all-electric drive system, the BMW i4 M50¹, followed by the BMW iX M60¹ in 2022.

The BMW i5 sedan and the long-wheelbase version of the BMW iX1 for the Chinese market will be available for sale in 2023. Rolls-Royce, the world's leading brand in the luxury class, will launch its first all-electric vehicle, the Spectre¹. [➤ Automotive segment](#) This means the BMW Group will have at least one all-electric model in nearly all major model series on the roads in 2023. The share of electrified vehicles in total deliveries is expected to exceed 30 % by as early as 2025. Intelligent vehicle architecture and the highly flexible [➤ Production Network](#) are the basis of this initiative.

BMW Motorrad continued to pursue its electrification strategy with the successful launch of the BMW CE 04 electric scooter in March 2022. Furthermore, the all-electric BMW CE 02 concept vehicle provides an outlook on additional offerings in urban mobility. [➤ Motorcycles segment](#)

In addition to delivering product substance, we also offer customers a 360° approach with an appropriate charging ecosystem. Customers can charge their vehicles at home, at work and in public places, and can also use our BMW Charging and MINI Charging stations. [➤ Electromobility](#)

Beginning in 2025, we will take the next step in our transformation process with the NEUE KLASSE, which is expected to set standards in electrification, digitalisation and circularity.

The NEUE KLASSE is distinguished by its new cluster architecture (NCAR), which is entirely focused on BEVs (battery electric vehicles). The sixth generation of our electric drivetrain features a completely new high-voltage storage concept, optimised cell design and improved cell chemistry. These developments result in a roughly 30 % longer range, an up to 30 % shorter charging time, and about 50 % lower manufacturing costs. The new generation of drives will consist of highly scalable modules that can cover the entire range of our products. The BEV-focused vehicle architecture and the new generation of drives and batteries are expected to provide significant gains in efficiency in the NEUE KLASSE.

¹ [➤ Consumption and Carbon Disclosures.](#)

² Includes BMW Brilliance Automotive Ltd.



As part of the revolutionary user experience concept for the NEUE KLASSE, the BMW Panoramic Vision introduces a new generation of head-up displays that provide customers with a projection of comprehensive, relevant information across the entire windshield. This reinterpretation of driver orientation creates a new user interface and increases safety on the road by the “eyes on the road and hands on the wheel” approach. The NEUE KLASSE also features a newly defined electric/electronic architecture for hardware and software and a new module system for automated driving. This is expected to establish the basis for generation of an increasing proportion of sales through individually configurable and bookable features over the vehicle's life cycle.

Another aim of the NEUE KLASSE is to achieve a new level of sustainability across the entire vehicle life cycle. To this end, the BMW Group focuses on the concept of circularity, using an increasing proportion of secondary materials. [↗ Closing material cycles](#)

Production of vehicles for the NEUE KLASSE will get underway in 2025 at the newly constructed BMW Group plant in Debrecen and then be expanded to the BMW Group plant in Munich from 2026 onwards. Additional volumes will be achieved by integrating NEUE KLASSE into the BMW Group plant in San Luis Potosí from 2027. All-electric vehicles are expected to make up more than half of the BMW Group's total deliveries by 2030. The Rolls-Royce brand is set to become fully electric by 2030, and the MINI brand will follow suit by 2031. [↗ Electromobility](#)

PERFORMANCE INDICATORS AND PERFORMANCE MANAGEMENT

The BMW Group's strategic targets are derived from the findings of the [↗ Environmental Analysis and Megatrends](#) in an ongoing [↗ Strategy Process](#) and subsequently translated into a system for measuring performance. The resulting target system is therefore a key instrument for anchoring strategy throughout the Company. For corporate management purposes, the strategic targets are backed by effective performance indicators.

Long-range corporate planning for the Company as a whole and its segments is geared towards the structure of the BMW Group target system. In this way, the targets set out in the planning are regularly compared with the BMW Group's strategic goals.

Once approved by the Board of Management and the Supervisory Board, the target amounts decided upon within the strategic target system become the basis of planning for the current reporting year and for the target agreements with BMW Group managers. [↗ Remuneration Report](#) The following summarises the key performance indicators defined in DRS 20, which also form the basis for performance management in the BMW Group. [↗ Performance Management](#)

Group

- Profit before tax (EBT)
- Number of employees at the end of the year
- Share of women in management positions (in %)

Automotive segment

- Profit before financial result as a percentage of revenues (EBIT margin; in %)
- Return on capital employed (RoCE; in %)
- Deliveries (in units)
- Share of electrified vehicles in deliveries (in %; until 2022)
- Share of all-electric vehicles in deliveries (in %; from 2023, see [↗ Performance Management](#))
- CO₂ emissions EU new vehicle fleet (in g CO₂/km)
- CO₂ emissions per vehicle produced (in tonnes)

Motorcycles segment

- Profit before financial result as a percentage of revenues (EBIT margin; in %)
- Return on capital employed (RoCE; in %)
- Deliveries (in units)

Financial Services segment

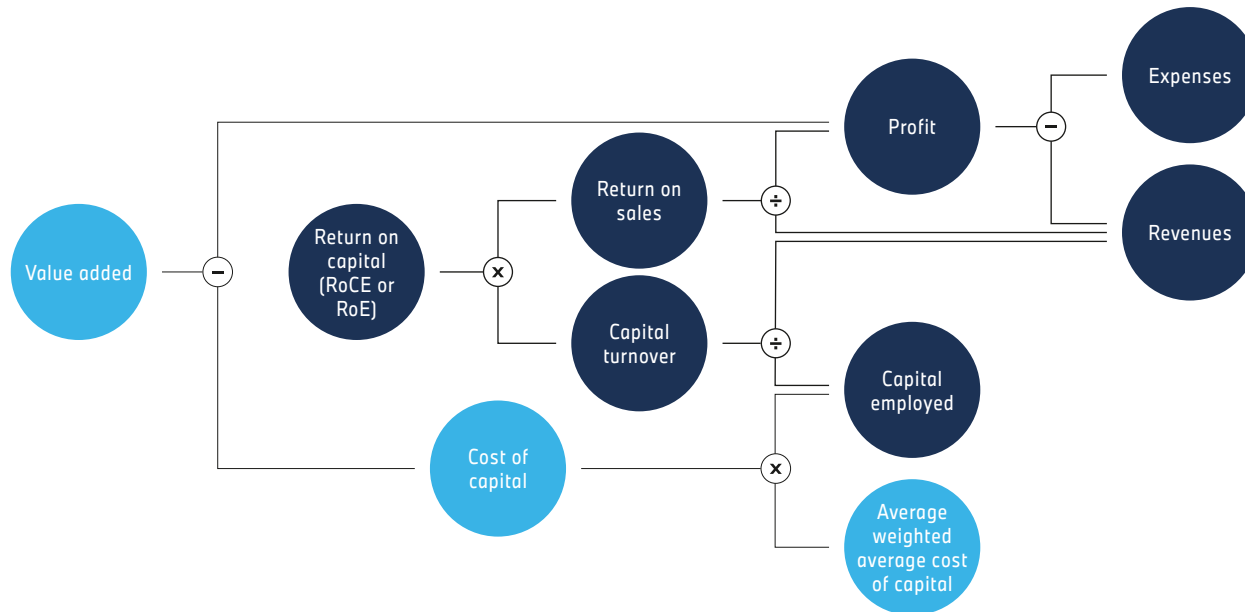
- Return on equity (RoE; in %)

Performance management

The BMW Group's performance management system follows a value-based approach that focuses on profitability, consistent company growth, value enhancement for capital providers, sustainability, climate protection and job security. Capital is considered to be employed profitably when the amount of profit generated on a sustained basis exceeds the cost of equity and debt capital. This strategy also secures the desired degree of corporate autonomy in the long term.

The BMW Group's performance management system is based on a multilayered structure. Operational performance is managed primarily at segment level. In order to influence long-term corporate performance, additional key performance figures are taken into account within the management system at Group level. In this context, the value added serves as one of several indicators to measure the contribution made to enterprise value during the financial year. This aspiration to add value is measured at both Group and segment level by means of the key performance indicators. The link between value added and the relevant value drivers is presented in a simplified form below.

BMW Group – value drivers



Managing sustainability

The BMW Group's long-term corporate strategy is determined by the Board of Management. Responsibility for implementing the Group's sustainability goals also lies with the full Board. Significant decisions are therefore also evaluated from the point of view of sustainability. This ensures that sustainability issues are systematically integrated in decision-making processes and to compensation at top management levels.

As part of the procedures for managing sustainability on an integrated basis at corporate level, a Group target system has been created which has been implemented for each of the Board members' areas of responsibility. The BMW Group has set itself the target of decarbonising its vehicle fleet by an average of 40 % overall over the entire life cycle by 2030, compared to the base year 2019. In this context, specific targets have been set for the scope of the vehicle's use phase, production and supply chain (**↑ Position, ↑ Carbon emissions**). Based on these targets, specific carbon requirements for each vehicle project are derived, digitally managed and monitored.

An integrated approach to target management ensures that the BMW Group's vehicle projects make a positive contribution towards achieving the sustainability targets that have been set. Furthermore, the BMW Group will increase targets for the use of secondary raw materials in the long term. Non-financial performance indicators such as carbon emissions and, in future, secondary raw materials quotas are therefore key performance indicators for all new vehicle projects. The overall result is a cohesive management model across all aspects of the business. This ensures that financial aspects are taken into consideration and the most effective measures are prioritised for implementation in all areas. **↑ GRI Index: 2-13**

Managing operational performance at segment level

At segment level, operational performance is managed using an aggregated approach based on returns on capital. Depending on the business model, the segments are measured on the basis of return on total capital or return on equity.

Return on capital employed (RoCE) is used for the Automotive and Motorcycles segments and return on equity (RoE) for the Financial Services segment. These indicators combine a wide range of relevant economic information, such as profitability (return on sales) and capital efficiency (capital turnover) to measure segment performance and the development of enterprise value.

Automotive segment

The most comprehensive key performance indicator used for the Automotive segment is RoCE, which provides information on the profitability of capital employed and business operations. Value driver analyses are used to interpret the causes of a change in RoCE and derive suitable measures to influence its development.

The capital employed items taken into account reflect the focus of operational segment management. Capital employed is calculated as the sum of intangible assets, property, plant and equipment and net working capital, the latter comprising inventories and trade receivables less trade payables. The amount of capital employed increased as compared to 2021 in light of the acquisition of further shares in BMW Brilliance and the resulting full consolidation of that entity in the BMW Group Financial Statements from 11 February 2022. The increase arose primarily due to the takeover of property, plant and equipment and intangible assets as well as the capitalisation of reacquired rights in conjunction with the purchase price allocation. The RoCE will be impacted temporarily by the higher capital base as well as the related amortisation expense expected to be recorded.

The strategic target for RoCE is 18 %. Value is enhanced for BMW AG shareholders when the RoCE exceeds the cost of capital.

Return on capital employed (Automotive segment)¹

	Profit before financial result in € million		Average capital employed in € million		Return on capital employed in %	
	2022	2021	2022	2021	2022	2021
Automotive	10,635	9,870	58,728	41,064	18.1	24.0

Due to the special significance of the RoCE for the BMW Group, additional key figures are used to manage the Automotive Segment which have a considerable influence on the return on investment and subsequently on the success of the segment as a whole. These value drivers include deliveries and the operating return on sales (EBIT margin: segment profit before financial result as a percentage of segment revenues) as a key figure for profitability in the segment.

Furthermore, the Automotive segment manages its compliance with fleet carbon emissions requirements in regulated markets. In this context, it also reports on the share of electrified vehicles in total deliveries. ↗ **Performance Indicators** As compliance with regulatory requirements is a significant factor in the BMW Group's success, business decisions relating to vehicle projects also take targets for fleet carbon emissions into account. ↗ **Managing sustainability** Starting with the financial year 2023, the performance indicator "share of electrified vehicles in deliveries" will be replaced by the indicator "share of fully electric vehicles in deliveries". The reason for the adjustment is the BMW Group's

increasing focus on fully electric vehicles and their increasing importance for the Company's ambitious CO₂ targets. ↗ **Outlook**

$$\text{RoCE Automotive or Motorcycles} = \frac{\text{Profit before financial result}}{\text{Average capital employed}}$$

Motorcycles segment

The Motorcycles segment is largely managed according to the same logic applied to the Automotive segment. The principal key performance indicator is the return on capital employed (RoCE). The strategic RoCE target set for the Motorcycles segment is 18 %.

The main value drivers are the deliveries and the operating return on sales (EBIT margin: segment profit before financial result as a percentage of segment revenues) as the key performance indicator for segment profitability.

Return on capital employed (Motorcycles segment)²

	Profit before financial result in € million		Average capital employed in € million		Return on capital employed in %	
	2022	2021	2022	2021	2022	2021
Motorcycles	257	227	1,031	1,034	24.9	21.9

¹ The term "RoCE" has been redefined with effect from the reporting year 2022 (for definition, see ↗ **Glossary**). The 2021 figure was adjusted accordingly for comparison purposes (2021 before adjustment: 59.9 %).

² The term "RoCE" has been redefined with effect from the reporting year 2022 (for definition, see ↗ **Glossary**). The 2021 figure was adjusted accordingly for comparison purposes (2021 before adjustment: 35.9 %).

Return on equity (Financial Services segment)

	Profit before tax in € million		Average equity capital in € million		Return on equity in %	
	2022	2021	2022	2021	2022	2021
Financial Services	3,205	3,753	17,891	16,586	17.9	22.6

Financial Services segment

The performance of the Financial Services segment is measured on the basis of the return on equity (RoE), a key performance indicator commonly used in the banking sector. Within the BMW Group, RoE is defined as segment profit before tax, divided by the average amount of equity capital in the Financial Services segment. The target is a return on equity of at least 14 %.

$$\text{RoE Financial Services} = \frac{\text{Profit before tax}}{\text{Average equity}}$$

The information provided by these key performance indicators at Group level is complemented by the two financial performance indicators of pre-tax return on sales and value added. Value added, as a highly aggregated performance indicator, also provides an insight into capital efficiency and the (opportunity) cost of capital required to generate Group profit. A positive value added means that a return on investment above the cost of capital has been achieved.

$$\text{Value added Group} = \text{earnings amount} - \text{cost of capital}$$

$$= \text{earnings amount} - (\text{cost of capital rate} \times \text{capital employed})$$

Strategic management at Group level

Strategic management and the measurement of its financial impact are coordinated primarily at Group level in conjunction with the long-term corporate plan. Group profit/loss before tax provides a comprehensive measure of the Group's overall corporate performance after consolidation effects and enables a transparent comparison over time. Other key performance indicators at Group level are the size of the workforce at the year-end as well as the share of women in management positions. By 2025, the BMW Group aims to increase the share of women in management positions to 22%. [↗ Strategy Process](#)

Value added Group

	Earnings amount		Cost of capital (equity + debt capital)		Value added Group	
in € million	2022	2021	2022	2021	2022	2021
BMW Group	23,730	16,289	11,194	8,938	12,536	7,351



Capital employed comprises the amount of Group equity and pension provisions as well as the financial liabilities of the Automotive and Motorcycles segments employed on average at the end of each of the last five quarters. The earnings amount corresponds to Group profit/loss before tax, adjusted for interest expense incurred in conjunction with the pension provisions and on the financial liabilities of the Automotive and Motorcycles segments (profit/loss before interest expense and tax). The cost of capital is the minimum rate of return expected by capital providers in return for the capital employed. Since capital employed comprises an equity capital (e.g. share capital) and a debt capital element (e.g. bonds), the overall cost of capital is determined on the basis of the weighted average rates for equity and debt capital, measured using standard market procedures. The pre-tax average weighted cost of capital for the BMW Group in 2022 was 12 %, unchanged from the previous year.

In order to determine the internal rate of return, risk-adjusted cost of capital rates are based on the average of actual rates in recent years. In light of the long-term nature of product and investment decisions, the following internal rates of return are used in conjunction with segment management:

in %	2022	2021
Automotive	12.0	12.0
Motorcycles	12.0	12.0
Financial Services	13.4	13.4

Value-based management for project decisions

Operational business in the Automotive and Motorcycles segments is largely shaped by the life-cycle-dependent character of investment projects that have a substantial influence on future performance. Project-related decisions are therefore a crucial element of financial management in the BMW Group. Project decisions are based on calculations derived from the expected cash flows of each individual project. Calculations are made for the complete term of a project, incorporating future years in which the project is expected to generate cash flows. Project decisions are taken on the basis of net present value and the internal rate of return calculated for the project. The net present value indicates the extent to which the project will be able to generate future net cash inflows over and above the cost of capital. A project with a positive net present value enhances future value added and therefore results in an increase in enterprise value. The project's internal rate of return measures the average return on the capital employed in the project. For all project decisions, the project criteria and long-term impact on periodic results are measured and incorporated in the long-term Group plan. This approach enables an analysis of the impact of project decisions on periodic earnings and rates of return for each year during the term of the project.

Board of Management remuneration

Performance criteria for the variable remuneration paid to members of the Board of Management are based on the key strategic targets and performance indicators. More information can be found in the [Remuneration Report](#).

FINANCIAL PERFORMANCE

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FINANCIAL PERFORMANCE

GENERAL AND SECTOR-SPECIFIC ENVIRONMENT

The extent to which the global economy recovered in 2022 from the disruptive impact of the coronavirus pandemic was significantly less pronounced than had been generally expected at the beginning of the year. According to the provisional calculations of the International Monetary Fund (IMF), global gross domestic product (GDP) grew by 3.4 % in 2022.

The eurozone economy as a whole grew by 3.5 % in 2022, influenced by the war in Ukraine and the rise in interest rates as a result of high inflation. With a growth rate of 1.8 %, Germany recorded the lowest increase in economic activity, mainly reflecting the impact of supply bottlenecks and higher energy prices, both of which hit the export-oriented German economy harder than others. By contrast, the economies of France (+ 2.6 %), Italy (+ 3.9 %) and Spain (+ 5.5 %) all managed to grow faster in 2022.

GDP grew in the UK by 4.0 % in 2022. In the USA, the economy grew by 2.1 % in the reporting period, reflecting the impact of interest rate hikes already made or expected to be made by the US Reserve Bank (Fed) to combat the very high rate of inflation still prevailing in the USA. China's economy grew by 3.0 % in 2022 and therefore at a significantly slower pace than one year earlier, mainly due to the recurrent coronavirus-induced lockdowns in a number of cities in light of the Chinese government's zero-Covid strategy. The Japanese economy recovered only slightly during the year under report. The growth rate of 1.1 % was due to weaker demand, particularly from private households.

Currency markets and international interest rate environment

Supply chain bottlenecks and significantly higher energy prices contributed to rising inflation in the world's major economies in 2022. In response to this development, many central banks tightened their monetary policies markedly over the course of the year.

In view of the war in Ukraine and the energy crisis, the euro came under pressure against the US dollar, falling sharply to a 20-year low of 0.95 US dollars to the euro in September, before recovering slightly in the following weeks. In 2022, the US currency fluctuated between 1.13 and 0.95 US dollars to the euro, culminating in an average exchange rate of 1.05 US dollars to the euro for the year. In light of high inflation rates, both the European Central

Bank (ECB) and the Fed tightened their monetary policy during the period under report and raised their benchmark interest rates significantly in a series of steps.

Throughout 2022, the British pound remained at the lower level to which it had fallen following the Brexit referendum in 2016. It fluctuated between 0.87 and 0.83 pounds to the euro, ultimately

recording an average rate for the year of 0.85 pounds to the euro and was therefore marginally stronger than in the preceding years. In response to high inflation, the Bank of England (BoE) also raised its benchmark interest rate significantly.

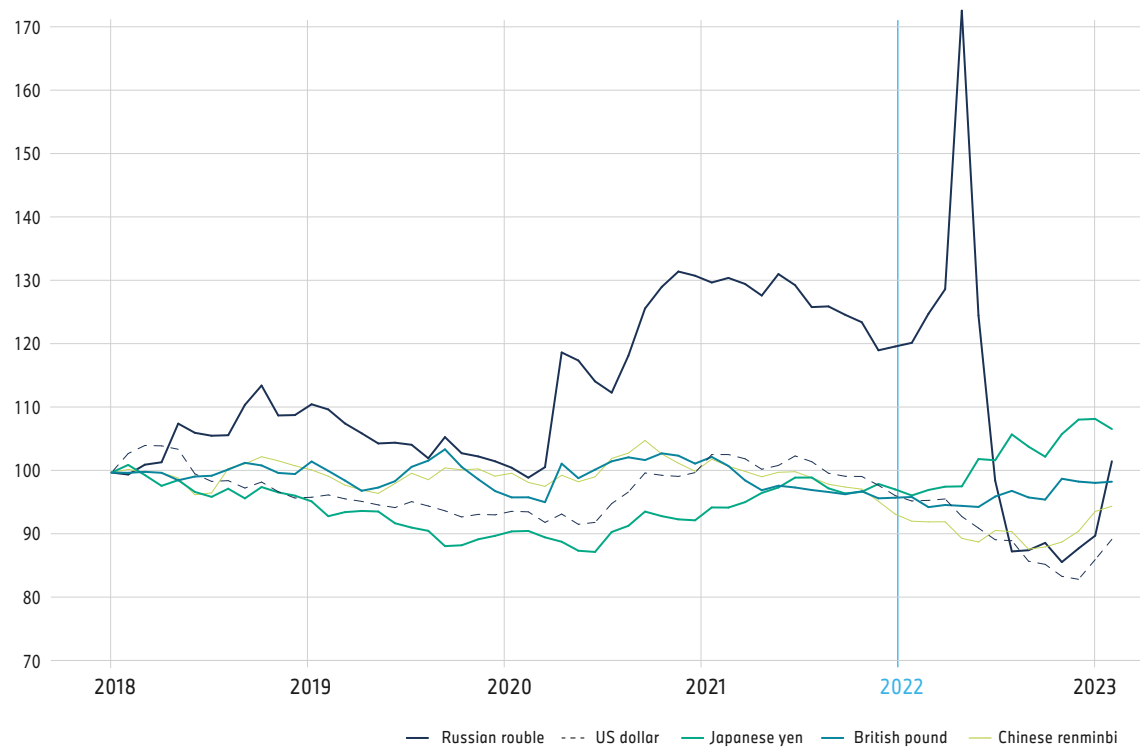
High inflation levels worldwide in combination with a weakening global economy in 2022 caused the value of the Chinese renminbi to fall continually, resulting in an average exchange rate for the year of 7.1 renminbi to the euro.

The Japanese yen fluctuated between 145 and 129 yen to the euro during 2022. Based on an average exchange rate of 138 yen, the Japanese currency fell in value against the euro compared to the previous year.

The currencies of major emerging markets appreciated during 2022, in some cases significantly, due to the sharp rise in raw materials prices. While the average value of the Indian rupee went up by around 6 % against the euro, the South African rand fell by 2 % and the Brazilian real by 14 % against the euro. Due to the rise in energy prices, the Russian rouble also appreciated significantly by 16 %.

Exchange rates compared to the euro

Index: December 2017 = 100



Source: Bloomberg



Energy and raw materials prices

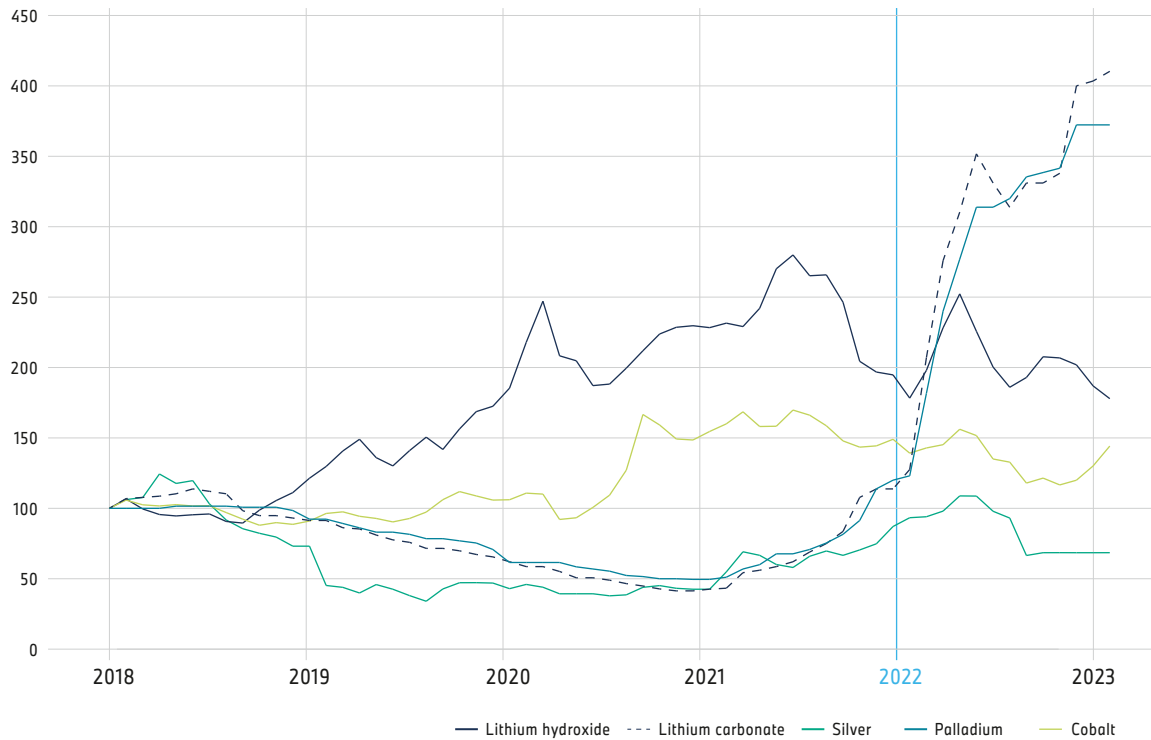
As a result of global supply bottlenecks and the war in Ukraine, the year under report was also marked by significantly higher energy and raw materials prices. Prices for natural gas in Europe, for instance, had effectively tripled by autumn 2022. The prices of aluminium and steel also rose by 30 % and 50 % respectively at the beginning of 2022. In the meantime, however, prices have returned to their previous year's levels.

Precious and non-ferrous metals also followed a similar trend. After rising sharply through to mid-2022, prices fell again during the second half of the year, particularly those of rhodium and palladium.

Prices for battery-related raw materials continued to rise, mainly due to the growing demand for electric vehicles. While cobalt declined significantly, lithium prices continued to rise through to the end of the year, effectively tripling in price year-on-year.

Development of metal prices

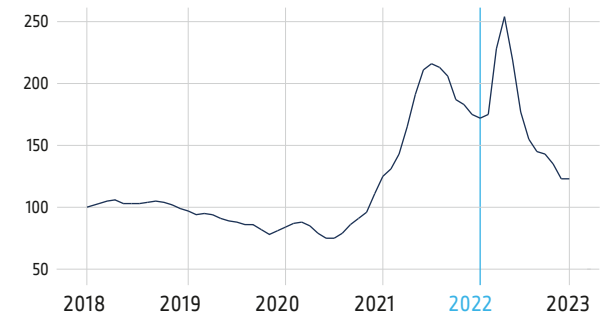
Index: December 2017 = 100



Source: Bloomberg

Steel price trend

Index: January 2018 = 100



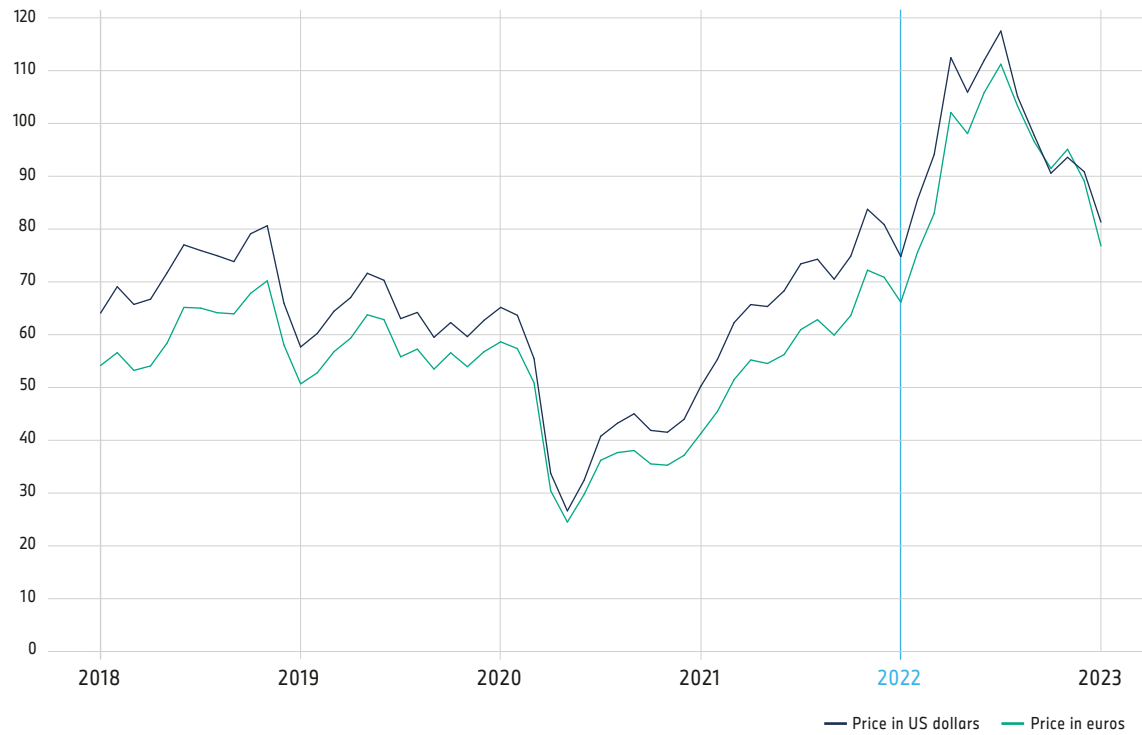
Source: Working Group for the Iron and Metal Processing Industry



The price of crude oil rose significantly in 2022. During the period under report, US WTI crude was temporarily quoted at over 120 US dollars and Brent crude at more than 125 US dollars per barrel. Prices fell again substantially towards the end of 2022, but remained above prior-year levels.

Oil price trend

Price per barrel of Brent Crude



Source: Bloomberg

International automobile markets

Due to the combined impact of ongoing supply bottlenecks, war in Ukraine and coronavirus-related measures in China, international automobile markets contracted slightly in 2022, despite stable demand. Worldwide, the number of new registrations fell by 4.3 % to 71.2 million units.

International automobile markets

	Change compared to previous year in %
Europe	- 4.2
thereof Germany	+ 1.1
thereof France	- 7.8
thereof Italy	- 9.5
thereof Spain	- 5.4
thereof UK	- 2.0
USA	- 7.3
China	+ 12.0
Japan	- 4.7
South Korea	- 2.8
Total	- 4.3

International motorcycle markets

Motorcycle markets in the 250 cc plus class declined slightly in 2022, with worldwide registrations 2.1 % down on the previous year. European markets also contracted slightly overall (-1.4 %), with motorcycle registrations falling slightly in Spain (-1.2 %) and moderately in Germany (-5.2 %) and France (-6.7 %), while Italy recorded a slight increase (+0.7 %). Registration figures in the USA fell slightly (-3.7 %). In Asia, registrations were significantly below the previous year's figures (-14.6 %), especially in China as a result of the strict measures to curb the coronavirus. Brazil saw only a slight decline of 1.3 %.

Registration figures on international motorcycle markets developed as follows in the year under report:

International motorcycle markets

	Change compared to previous year in %
Europe	- 1.4
thereof Germany	- 5.2
thereof France	- 6.7
thereof Italy	+ 0.7
thereof Spain	- 1.2
Americas	- 3.0
thereof USA	- 3.7
thereof Brazil	- 1.3
Asia	- 14.6
thereof China	- 14.6
Total	- 2.1

OVERALL ASSESSMENT BY MANAGEMENT OF THE FINANCIAL YEAR

The year 2022 was dominated by a number of ongoing global challenges, in particular semiconductor supply shortages, pandemic-related lockdowns in China and the impact of the war in Ukraine. Despite the resulting volatile business environment, however, the BMW Group can be satisfied with the overall positive course of business during the financial year 2022.

The BMW AG's solid financial condition is reflected in the results of operations, financial position and net assets reported for the financial year 2022. Business developed in line with management's revised expectations. This assessment also takes into account events after the end of the reporting period.

COMPARISON OF FORECASTS WITH ACTUAL OUTCOMES

The BMW Group's performance in 2022 was impacted in particular by the tight global supply situation for semiconductor components, the war in Ukraine and higher energy prices. Strict coronavirus-related measures in China also affected the course of business, with lockdowns resulting in a noticeable slowdown in economic growth, the repercussions of which were also felt globally. These negative factors had the effect of holding down the BMW Group's overall positive business performance compared to expectations at the beginning of the year.

The following table summarises the development of the BMW Group's key performance indicators as a whole as well as those of the Automotive, Motorcycles and Financial Services segments in the financial year 2022 compared to the forecasts made in the BMW Group Report 2021.

Detailed information on the BMW Group's key performance indicators is provided below in conjunction with the analysis of the Group's results of operations, financial position and net assets. Changes in the key performance indicators used for the Automotive, Motorcycles and Financial Services segments are explained in the respective sections on the segments.

BMW Group: comparison of the forecast for 2022 with actual outcomes in 2022

	Forecast for 2022 in 2021 Group Report	Forecast revision during the year	Actual outcome in 2022
GROUP			
Profit before tax	Significant increase		23,509 (+ 46.4 %) Significant increase
Workforce at year-end	Significant increase		149,475 (+ 25.7 %) Significant increase
Share of women in management positions in the BMW Group	Slight increase		20.2 (+ 7.4 %) Solid increase
AUTOMOTIVE SEGMENT			
Deliveries ¹	In line with last year's level	Q2: slight decrease	2,399,632 (- 4.8 %) Slight decrease
Share of electrified vehicles in deliveries	Significant increase		18.1 (+ 39.2 %) Significant increase
CO ₂ emissions EU new vehicle fleet ^{2,3,4}	Slight reduction	Q3: moderate reduction	105.0 (- 9.4 %) Moderate reduction
CO ₂ emissions per vehicle produced ⁵	Slight reduction		0.32 (- 3.0 %) Slight reduction
EBIT margin	Between 7 and 9		8.6 (- 1.7 % points)
Return on capital employed (RoCE)	Between 14 and 19		18.1 (- 5.9 % points)
MOTORCYCLES SEGMENT			
Deliveries to customers	Slight increase		202,895 (+ 4.4 %) Slight increase
EBIT margin	Between 8 and 10		8.1 (- 0.2 % points)
Return on capital employed (RoCE)	Between 19 and 24		24.9 (+ 3.0 % points)
FINANCIAL SERVICES SEGMENT			
Return on equity (RoE)	Between 14 and 17	Q2: 17 to 20	17.9 (- 4.7 % points)

¹ Includes BMW Brilliance Automotive Ltd. for the full year 2022, including the period prior to that entity's full consolidation in the BMW Group Financial Statements (1 January to 10 February 2022: 96,133 units).

² EU-27 countries including Norway and Iceland; with effect from 2021, values are calculated on a converted basis in line with WLTP (Worldwide Harmonised Light Vehicles Test Procedure).

³ This is a preliminary internal calculation with a potential variation of +/- 0.5 g CO₂/km, as official registration figures from the authorities are not available for all EU states. Figures officially published by the EU Commission are not expected to be available until November of the following year.

⁴ Including an allowance for eco-innovations (amounts of minor significance).

⁵ Efficiency ratio calculated on the basis of Scope 1 and Scope 2 carbon emissions (i.e. a market-based method according to GHG Protocol Scope 2 guidance; mainly based on the use of emissions factors for electricity, district heating and fuels of the VDA, each in the most current valid version: 12/2022) and occasionally using local emissions factors; excluding climate-changing gases other than carbon dioxide from vehicle production (BMW Group manufacturing sites including the BMW Brilliance Automotive Ltd. joint venture and Motorrad, but excluding partner plants and contract manufacturers), as well as BMW Group non-manufacturing sites (e.g. research centres, sales centres, offices) divided by the number of vehicles produced (BMW Group manufacturing sites including the BMW Brilliance Automotive Ltd. joint venture and partner plants, but excluding contract manufacturers).



FINANCIAL POSITION

EARNINGS PERFORMANCE OF THE BMW GROUP

BMW Group Condensed Income Statement

in € million	2022	2021	Change in %
Revenues	142,610	111,239	28.2
Cost of sales	- 118,042	- 89,253	- 32.3
Gross profit	24,568	21,986	11.7
Selling and administrative expenses	- 10,616	- 9,233	- 15.0
Other operating income and expenses	47	647	- 92.7
Earnings before financial result	13,999	13,400	4.5
Financial result	9,510	2,660	-
Profit before tax	23,509	16,060	46.4
Income taxes	- 4,927	- 3,597	37.0
Net profit	18,582	12,463	49.1
Earnings per share of common stock in €	27.31	18.77	45.5
Earnings per share of preferred stock in €	27.33	18.79	45.5

in %	2022	2021	Change in % points
Gross profit margin ¹	17.2	19.8	- 2.6
Pre-tax return on sales ²	16.5	14.4	2.1
Post-tax return on sales ³	13.0	11.2	1.8
Effective tax rate ⁴	21.0	22.4	- 1.4

¹ Gross profit as a percentage of Group revenues.² Group profit/loss before tax as a percentage of Group revenues.³ Group net profit as a percentage of Group revenues.⁴ Income taxes as a percentage of Group profit before tax.

Group revenues by region were as follows:

BMW Group revenues by region

in %	2022	2021
Europe	36.1	42.4
Asia	38.3	32.5
Americas	23.6	22.8
Other regions	2.0	2.3
Group	100.0	100.0

BMW Group cost of sales

in € million	2022	2021	Change in %
Manufacturing costs*	76,760	50,345	52.5
Cost of sales relating to financial services business	27,517	26,409	4.2
thereof interest expense relating to financial services business	2,114	1,643	28.7
Research and development expenses	6,624	6,299	5.2
thereof amortisation of capitalised development costs	2,265	1,935	17.1
Service contracts, telematics and roadside assistance*	2,775	2,607	6.4
Warranty expenditure	3,209	2,192	46.4
Other cost of sales	1,157	1,401	-17.4
Cost of sales	118,042	89,253	32.3

* Previous year's figure adjusted.

The first-time consolidation of BMW Brilliance as of 11 February 2022 has had a significant impact on the key performance indicators presented for the Group and the Automotive segment. Further information on the effect of the full consolidation is provided in [note 3](#) to the Group Financial Statements.

Supply bottlenecks for semiconductor components, the limited availability of wiring harnesses due to the war in Ukraine and pandemic-related lockdowns in China led collectively to worldwide production cutbacks during the financial year under report. Whereas the supply situation for wiring harnesses eased during the second quarter 2022, the limited availability of semiconductor components and numerous lockdowns in China in particular continued to cause problems for global supply chains and hence production. Towards the end of the third quarter, the supply situation for semiconductor components began to ease perceptibly, only for renewed pandemic-related lockdowns to take their toll in the form of production cutbacks and dealership closures in China during the fourth quarter. For the financial year as a whole, sales volumes were therefore slightly down on the previous year due to production-related factors.

Nevertheless, the Group revenues were significantly higher than one year earlier (2022: € 142,610 million; 2021: € 111,239 million/+ 28.2%), mainly due to the revenue impact of fully consolidating BMW Brilliance. Favourable pricing and product mix effects as well as the higher volume of business with spare parts and accessories also contributed to revenue growth, despite the decline in sales volumes. The favourable situation on pre-owned vehicle markets, particularly in the USA and Germany, enabled the BMW Group to achieve higher selling prices on lease returns during the financial year under report. Exchange rate factors also had a positive effect on revenues.

As with revenues, the fact that BMW Brilliance is now fully consolidated contributed significantly to the increase in cost of sales. The impact of a number of first-time consolidation-related expenses such as depreciation and amortisation arising on the purchase price allocation (€ 1.8 billion) and the elimination of intragroup profits (€ 1.3 billion) also drove up segment cost of sales. Increasing costs for materials and logistics as well as higher warranty expenses in 2022 had a corresponding negative impact on the cost of sales, particularly due to the limited availability of semiconductors, supply chain disruptions and higher

prices for raw materials and energy. Expenses arising on the sale of lease returns, a rise in financing costs due to higher interest rates, higher expenses for loan provisions and a larger share of electrified vehicles in total deliveries were further factors that drove up cost of sales. However, with residual values remaining high on pre-owned automobile markets, positive outcomes arising on the resale of lease returns had a dampening effect on cost of sales. The ongoing transformation towards electric mobility and the associated short- and medium-term impact on the product portfolio require a regular review of the useful lives of items of property, plant and equipment subject to systematic depreciation. Some useful lives were revised during the financial year and extended accordingly, giving rise to a positive effect of € 524 million, which also contributed to a reduction in the cost of sales. Further information is provided in [note 23](#) to the Group Financial Statements.

In the previous financial year, the changeover effects resulting from the modernisation of the pension plan model in Germany had a total positive impact of € 562 million on Group cost of sales as well as selling and administrative expenses. Depreciation and amortisation on property, plant and equipment and intangible assets recorded in cost of sales as well as in selling and administrative expenses totalled € 8,566 million (2021: € 6,495 million).

The BMW Group's research and development expenditure was moderately higher than one year earlier. By contrast, the research and development ratio went down year-on-year due to the higher level of revenues reported. A substantial portion of research and development expenditure relates to new models, the [NEUE KLASSE](#), and within this context, the sixth generation of electric drives, the digitalisation of the vehicle fleet, and automated driving.

The net amount of other operating income and expenses decreased significantly year-on-year, primarily due to the partial reversal of the provision relating to the antitrust proceedings conducted by the EU Commission in the second quarter 2021.

Due to the various factors affecting gross profit, as described above, profit before financial result edged up to € 13,999 million (2021: € 13,400 million).

The financial result improved significantly compared to the previous year at € 9,510 million (2021: € 2,660 million), whereby the main contributing factor was the gain of € 7.7 billion arising in conjunction with the remeasurement of the BMW Group's previous at-equity interest in BMW Brilliance at the date of the business combination. The result from at-equity accounted investments came in at a net negative amount of € 100 million, and therefore significantly lower than one year earlier (2021: net positive amount of € 1,520 million), reflecting the fact that the Group's at-equity share of earnings in the BMW Brilliance joint venture in China was only included in this line item until 10 February 2022.

The favourable fair value development of interest rate hedges contributed to the increase in other financial result in 2022, thanks in particular to significant upturns in yield curves, mainly in the USA, the UK and the eurozone. The net interest result was impacted by interest income earned on bank balances and income in connection with the measurement of provisions due to changes in interest rates.

As forecast most recently in the quarterly statement to 30 September 2022, Group profit before tax amounting to € 23,509 million was significantly higher than one year earlier (2021: € 16,060 million).

Group income tax expense for the year rose to € 4,927 million (2021: € 3,597 million; + 37.0 %), mainly due to the tax expense arising at the level of BMW Brilliance being reported in this line item with effect from the date of full consolidation. The effective tax rate for the 12-month period was 21.0 % (2021: 22.4 %). The tax-neutral gain recognised in conjunction with the remeasurement of the BMW Group's previous at-equity interest in BMW Brilliance reduced the effective tax rate.

The size of the workforce increased significantly to 149,475 employees compared to one year earlier and was therefore in line with expectations (2021: 118,909 employees; + 25.7 %).

BMW Group research and development expenses

in € million	2022	2021
Research and development expenditure	7,178	6,870
Capitalised development costs	- 2,819	- 2,506
Amortisation	2,265	1,935
Research and development expenses	6,624	6,299

BMW Group performance indicators relating to research and development expenses

in %	2022	2021	Change in % points
Research and development expenditure ratio ¹	5.0	6.2	- 1.2
Capitalisation rate ²	39.3	36.5	2.8

¹ Research and development expenditure as a percentage of Group revenues.

² Capitalised development costs as a percentage of research and development expenditure.

³ Further information is provided in [note 32](#) to the Group Financial Statements.

Share buyback programme

At the Annual General Meeting of BMW AG on 11 May 2022, the shareholders authorised the Board of Management to acquire treasury shares via the stock exchange, up to a maximum of 10 % of the share capital in place at the date of the resolution and to withdraw those shares from circulation without any further action required by the Annual General Meeting. The buyback authorisation remains valid until 10 May 2027. BMW AG resolved to initiate a share buyback programme on the basis of this authorisation. The programme has a volume of up to € 2.0 billion (total purchase price excluding incidental acquisition costs), comprising

up to € 1.85 billion for shares of common stock and up to € 0.15 billion for shares of preferred stock. The programme was launched on 1 July 2022 and is scheduled to be completed by no later than 31 December 2023. During the period from 1 July 2022 to 31 December 2022, BMW AG repurchased 15,312,007 shares of common stock for € 1,172 million and 1,448,950 shares of preferred stock for € 106 million, all of which are now reported as treasury shares. At 31 December 2022, BMW AG therefore held a total of 16,760,957 treasury shares, corresponding to a nominal amount of € 16,760,957 or 2.53 % of the Company's share capital.

FINANCIAL POSITION OF THE BMW GROUP

The consolidated cash flow statements for the Group and the Automotive and Financial Services segments show the sources and applications of cash flows for the financial years 2022 and 2021, classified according to operating, investing and financing activities. Cash and cash equivalents in the cash flow statements correspond to the amounts disclosed in the balance sheet.

Cash flows from operating activities are determined indirectly, starting with Group/segment profit before tax. By contrast, cash flows from investing and financing activities are based on actual payments and receipts.

The decrease in new credit financing and leasing business with retail customers resulted in lower levels of leased products and receivables from sales financing and hence to a positive impact on cash inflows from operating activities. The decrease in retail customer financing was partially offset by an increase in dealership financing, mainly due to improved vehicle availability towards the end of the year under report and higher selling prices. The increase in trade receivables caused working capital to rise significantly, whereby the impact was partially offset by the higher level of trade payables. The year-on-year change in provisions was mainly due to the partial reversal of the provision relating to the EU antitrust proceedings in the previous year.

Higher investments in property, plant and equipment and intangible assets, attributable in particular to the launch of new vehicle models as well as the full consolidation of BMW Brilliance, resulted in higher cash outflows from investing activities year-on-year. This was offset by a positive effect of € 3,587 million arising on the first-time consolidation of BMW Brilliance (see [note 3](#) to the Group Financial Statements). In addition, the lower net amount reported for cash flows from investing activities was influenced by cash inflows arising on the sale of marketable securities.

The increase in the net outflow amount reported for cash flows from financing activities was mainly due to higher repayments of financial liabilities. Cash flows from financing activities were also impacted by higher dividend payments (2022: € 5,282 million, 2021: € 1,277 million) as well as payments in conjunction with the share buyback programme at the level of BMW AG amounting to € 1,278 million (2021: € 0 million).

BMW Group cash flows

in € million	2022	2021	Change
Cash inflow (+) / outflow (-) from operating activities*	23,523	15,914	7,609
Cash inflow (+) / outflow (-) from investing activities*	- 4,772	- 6,400	1,628
Cash inflow (+) / outflow (-) from financing activities	- 17,984	- 6,735	- 11,249
Effects of exchange rate and changes in composition of segment	94	- 307	401
Change in cash and cash equivalents	861	2,472	- 1,611

* Previous year's figure adjusted.

Free cash flow for the Automotive segment was as follows:

Free cash flow Automotive segment

in € million	2022	2021	Change
Cash inflow (+) / outflow (-) from operating activities	14,782	12,583	2,199
Cash inflow (+) / outflow (-) from investing activities	- 3,179	- 6,208	3,029
Adjustment for net investment in marketable securities and investment funds	- 532	- 21	- 511
Free cash flow Automotive segment	11,071	6,354	4,717

The Automotive segment's free cash flow includes operating cash flows from the fully consolidated entity BMW Brilliance with effect from 11 February 2022. The segment's free cash flow came in at a record level of € 11,071 million at 31 December 2022. The main reason for the year-on-year increase was the reduction in cash flows from investing activities, whereby higher cash outflows for intangible assets and property, plant and equipment were more than offset by the cash acquired of € 5,011 million resulting from the full consolidation of BMW Brilliance (see [note 3](#) to the Group Financial Statements).

The change in working capital was affected positively by the decrease in inventories and negatively by the increase in trade receivables. At the same time, trade payables increased by a less pronounced amount in 2022 as a consequence of production cutbacks caused by supply bottlenecks for semiconductor components, the limited availability of wiring harnesses and pandemic-related lockdowns, resulting in a lower offsetting impact. Liabilities for advance payments received and dealership bonus liabilities were also lower than at the end of the previous year, influenced in part by pandemic-related dealership closures in China during the fourth quarter 2022. The net cash inflow from operating activities was also negatively impacted by the significantly higher level of income taxes paid, reflecting higher earnings and the fact that BMW Brilliance is now fully consolidated.

The decrease in the net cash outflow from investing activities was mainly attributable to the changes described in the Group Cash Flow Statement.

In the Automotive segment, net financial assets comprised the following:

Net financial assets Automotive segment

in € million	31.12.2022	31.12.2021	Change
Cash and cash equivalents	13,109	12,009	1,100
Marketable securities and investment funds	3,031	3,767	- 736
Intercompany net financial receivables	11,197	9,111	2,086
Financial assets	27,337	24,887	2,450
Less: external financial liabilities ¹	- 2,734	- 2,525	- 209
Net financial assets Automotive segment	24,603	22,362	2,241

¹ Excluding derivative financial instruments.

Cash and cash equivalents held by the Financial Services segment changed as follows:

Cash flows Financial Services segment

in € million	2022	2021	Change
Cash inflow (+) / outflow (-) from operating activities ²	9,145	3,270	5,875
Cash inflow (+) / outflow (-) from investing activities ²	- 50	63	- 113
Cash inflow (+) / outflow (-) from financing activities	- 9,042	- 2,629	- 6,413
Effects of exchange rate and changes in composition of segment	6	- 96	102
Change in cash and cash equivalents	59	608	- 549

² Previous year's figure adjusted.

The higher net cash inflow from operating activities mainly reflected a decrease in leased products during the year under report. Receivables from sales financing (primarily retail customer financing) were also reduced, whereby the resulting increase in cash inflows was partially offset by the impact of higher dealership financing. The change in the net cash outflow from financing activities was attributable to higher cash outflows relating to intragroup refinancing on the one hand and the repayment of external financial liabilities on the other.

REFINANCING

A broad range of instruments on international money and capital markets is used to finance worldwide operations. The funds raised are used almost exclusively to refinance the BMW Group's Financial Services business. The overall objective of Group financing is to ensure the solvency of the BMW Group at all times, focusing on three areas:

1. The ability to act through permanent access to strategically important capital markets
2. Autonomy through the diversification of refinancing instruments and investors
3. A focus on value through the optimisation of financing costs

Financing measures undertaken at corporate level ensure access to liquidity for the Group's operating subsidiaries at standard market conditions and consistent credit terms. Funds are acquired in line with a target liability structure, comprising a balanced mix of financing instruments. The use of longer-term instruments to refinance the Group's Financial Services business and the maintenance of a sufficiently high liquidity reserve serves to rule out any imminent liquidity risk for the portfolio. This conservative financial approach also has a favourable effect on the Group's rating. Further information is provided in the section Liquidity risks within the chapter [↗ Risks and opportunities](#).

Focused capital market management, good ratings and the high level of acceptance enjoyed by the BMW Group on those markets enabled it to refinance itself on the world's debt capital markets at favourable conditions during the 12-month period under report. In addition to bonds, the BMW Group also issued commercial paper in 2022. Moreover, retail customer and dealership financing receivables as well as rights and obligations from leasing contracts were securitised in the form of asset-backed securities (ABS) financing arrangements. Specific banking instruments, such as the customer deposits used by the Group's own banks in Germany and the USA, were also deployed for refinancing purposes. In addition, loans were taken from international banks.

In 2022, the BMW Group issued bonds totalling approximately € 4.4 billion. The Group refinanced itself by means of 144A transactions with a total volume of 2.0 billion US dollars on the US capital market and by means of so-called Panda bonds with a volume of 4.0 billion Chinese renminbi on the Chinese capital market. Activities on international capital markets were rounded off by a euro benchmark bond amounting to € 2.0 billion. ABS transactions with a total financing volume equivalent to € 11.1 billion were executed in 2022, including both new and rolled-over ABS transactions. During the year under report, the BMW Group was party to ABS transactions in the following markets: Australia, Canada, China, France, Germany, Japan, South Africa, South Korea, Switzerland, the USA and the UK.

The following table provides an overview of amounts utilised at 31 December 2022 in connection with the BMW Group's money and capital market programmes:

Programmes	Programme volume	Amount utilised*
in € billion		
Euro medium-term notes	50.0	24.3
Commercial paper	13.0	1.7

* Measured at the year-end exchange rate.

The BMW Group continued to deploy robust liquidity-related measures throughout 2022 to ensure its ability to act flexibly and independently at all times. At 31 December 2022, liquidity on hand totalled € 20.3 billion and was therefore similar to the previous year's corresponding figure of € 20.2 billion.

The BMW Group also has access to a syndicated credit line, which was renegotiated in July 2017. The term of the syndicated credit line amounting to € 8 billion ends in July 2024 and is being made available by a consortium of 44 international banks.

The credit line was not being utilised at 31 December 2022. Further information with respect to financial liabilities is provided in [↗ note 37](#) to the Group Financial Statements.

NET ASSETS POSITION OF THE BMW GROUP

BMW Group Condensed Balance Sheet at 31 December

in € million	2022	2021	Change in %	Currency-adjusted change ¹ in %	Proportion of balance sheet total in % 2022
ASSETS					
Intangible assets	21,776	12,980	67.8	67.5	8.8
Property, plant and equipment	32,126	22,390	43.5	42.1	13.0
Leased products	42,820	44,700	- 4.2	- 6.0	17.3
Investments accounted for using the equity method	420	5,112	- 91.8	- 91.8	0.2
Other investments	1,351	1,241	8.9	5.3	0.5
Receivables from sales financing	85,708	87,417	- 2.0	- 2.0	34.7
Financial assets	8,237	7,515	9.6	9.1	3.3
Deferred and current tax	2,854	3,731	- 23.5	- 24.6	1.2
Other assets	10,632	10,243	3.8	2.9	4.3
Inventories	20,005	15,928	25.6	24.7	8.1
Trade receivables	4,127	2,261	82.5	82.8	1.7
Cash and cash equivalents	16,870	16,009	5.4	5.1	6.8
Total assets	246,926	229,527	7.6	6.9	100.0
EQUITY AND LIABILITIES					
Equity	91,288	75,132	21.5	21.6	37.0
Pension provisions	339	1,247	- 72.8	- 72.7	0.1
Other provisions	15,761	13,954	12.9	11.6	6.4
Deferred and current tax	3,989	2,379	67.7	67.5	1.6
Financial liabilities	94,196	103,463	- 9.0	- 9.9	38.1
Trade payables	14,120	10,932	29.2	28.5	5.7
Other liabilities	27,233	22,420	21.5	20.3	11.0
Total equity and liabilities	246,926	229,527	7.6	6.9	100.0

¹ The adjustment for exchange rate factors is calculated by applying the relevant current exchange rates to the prior-year figures.

² Further information on the full consolidation of BMW Brilliance is provided in [note 3](#) to the Group Financial Statements.

The BMW Group's balance sheet total showed a solid year-on-year rise both before and after adjustment for currency effects, including in particular those relating to the US dollar and the Chinese renminbi.¹ The main factor influencing the increase in the balance sheet total was the first-time consolidation of BMW Brilliance with effect from 11 February 2022.²

Intangible assets, adjusted for currency fluctuations, increased significantly compared to 31 December 2021, mainly due to the recognition of reacquired rights and dealership relationships in conjunction with the first-time full consolidation of BMW Brilliance.

Adjusted for currency effects, property, plant and equipment went up by 42.1% year-on-year, driven by the inclusion of BMW Brilliance, in particular its land, buildings and production facilities. Higher investments for the fifth generation of electric drive systems and for new vehicle projects such as the new BMW 7 Series and the BMW X1 also contributed to the increase. The ongoing transformation towards electric mobility and the associated short- and medium-term impact on the product portfolio require a regular review of the useful lives of items of property, plant and equipment subject to systematic depreciation. Some useful lives were revised during the financial year and extended accordingly, giving rise to a positive effect of € 524 million.

Based on constant currencies, leased products were moderately down over the 12-month period. The size of the contract portfolio under management also decreased compared with one year earlier. This development arose against the backdrop of the lower level of new business, mainly in the USA, offset to some extent by a higher average financing volume per vehicle in light of favourable product mix and price penetration effects.

Investments accounted for using the equity method (adjusted for currency effects) decreased significantly, reflecting BMW Brilliance's derecognition as an equity-accounted investment and its full consolidation in February 2022, as described above.

Receivables from sales financing (also adjusted for currency effects) went down compared to 31 December 2021, primarily due to the lower volume of retail customer financing, particularly in China, where competition remained strong and sales volumes shrank during the year under report. An increase in dealership financing, particularly in the USA and Germany, had an offsetting effect.

The number of contracts in place with dealerships and retail customers fell by 5.7% to 3,705,225 contracts.

The main factors for the rise in inventories were the full consolidation of BMW Brilliance on the one hand and higher levels of raw materials and supplies on the other.

The increases in trade receivables and payables were mainly attributable to the full consolidation of BMW Brilliance.

Group equity climbed to € 91,288 million, driven primarily by the Group net profit amounting to € 18,582 million. The first-time recognition of the non-controlling interest in BMW Brilliance also contributed to the increase.

Equity attributable to shareholders of BMW AG rose to € 87,125 million, mainly due to the net profit for the year attributable to shareholders of BMW AG amounting to € 17,941 million.

The dividend payout amounting to € 3,827 million reduced Group equity and, to an equal extent, equity attributable to shareholders of BMW AG.

Pension obligations decreased significantly to € 339 million, mainly due to actuarial gains resulting from the higher discount rate applied.

Financial liabilities decreased over the 12-month period due to the repayment of bonds in light of lower demand in the Financial Services segment.

BMW Group equity ratio

in %	31.12.2022	31.12.2021	Change in % points
Group	37.0	32.7	4.3
Automotive segment	45.7	41.5	4.2
Financial Services segment	11.9	11.3	0.6

VALUE ADDED STATEMENT

The value added statement shows the value of work performed by the BMW Group during the financial year, less the value of work bought in. Depreciation and amortisation, cost of materials, and other expenses are treated as bought-in costs in the net value added calculation. The allocation statement applies value added to each of the participants involved in the value added process. The bulk of the net value added benefits the employees. The remaining proportion in the Group is retained to finance future operations. The gross value added amount treats depreciation and amortisation as a component of value added which, in the allocation statement, would be treated as internal financing.

Net value added by the BMW Group rose sharply in 2022 due to the year-on-year improvement in earnings.

BMW Group value added statement

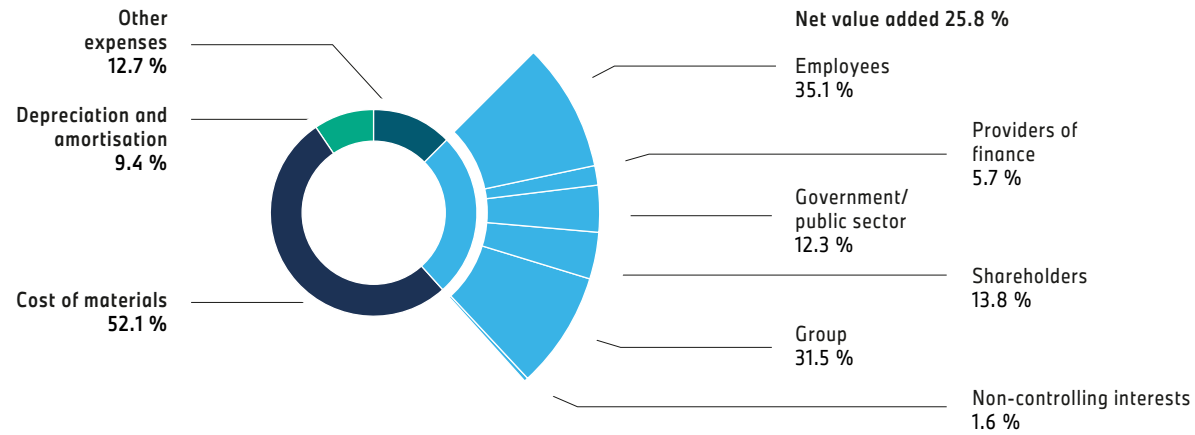
	2022 in € million	2022 in %	2021 in € million	2021 in %	Change in %
WORK PERFORMED					
Revenues	142,610	92.7	111,239	96.0	28.2
Financial income	9,783	6.4	2,904	2.5	-
Other income	1,377	0.9	1,702	1.5	- 19.1
Total output	153,770	100.0	115,845	100.0	32.7
Cost of materials *	80,181	52.1	60,173	51.9	33.3
Other expenses	19,479	12.7	13,599	11.8	43.2
Bought-in costs	99,660	64.8	73,772	63.7	35.1
Gross value added	54,110	35.2	42,073	36.3	28.6
Depreciation and amortisation of total tangible, intangible and investment assets	14,456	9.4	11,758	10.1	22.9
Net value added	39,654	25.8	30,315	26.2	30.8
ALLOCATION					
Employees	13,932	35.1	12,286	40.5	13.4
Providers of finance	2,274	5.7	1,808	6.0	25.8
Government/public sector	4,866	12.3	3,758	12.4	29.5
Shareholders	5,481	13.8	3,827	12.6	43.2
Group	12,460	31.5	8,555	28.2	45.6
Non-controlling interests	641	1.6	81	0.3	691.4
Net value added	39,654	100.0	30,315	100.0	30.8

* Cost of materials comprises all primary material costs incurred for vehicle production plus ancillary material costs (such as customs duties, insurance premiums and freight).



BMW Group value added 2022

in %



COURSE OF BUSINESS AND SEGMENTS

SALES FIGURES FOR DELIVERIES¹

The preparation of BMW Group's retail vehicle delivery data involves a variety of estimates and judgements, some of which are complex and all of which are inherently subjective, and is subject to other uncertainties. In addition, as BMW Group continues to enhance its policies and procedures regarding retail vehicle delivery data, it may not always be practicable for BMW Group to adjust prior-period data (and any such adjustments would be of a de minimis nature without any material impact on the comparability of periods). Examples of the foregoing include:

- The vast majority of deliveries of vehicles are carried out by independent dealerships or other third parties, and BMW Group is reliant on such third parties to correctly report relevant data to BMW Group.
- The definition of deliveries includes vehicles delivered in the United States and Canada if the relevant dealers designate such vehicles as service loaner vehicles or demonstrator vehicles.

Retail vehicle deliveries during a given reporting period do not correlate directly to the revenue that BMW Group recognises in respect of such reporting period.

AUTOMOTIVE SEGMENT

Strong market presence despite challenging environment

On the back of its strong market presence, business developed positively overall for the BMW Group in the financial year 2022. The Group's attractive range of products helped generate brisk customer demand, which was reflected in high order book levels throughout the year. However, due to the prevailing tight supply situation for semiconductor components, the high demand for BMW, MINI and Rolls-Royce brand automobiles could not be fully met in 2022. The situation was further exacerbated by the impact of the coronavirus pandemic, particularly in the form of local lockdowns in China. Despite these various global challenges, the BMW Group delivered a total of 2,399,632² vehicles to customers in 2022. In line with expectations, deliveries were therefore slightly down on the previous year (2021: 2,521,514² units; – 4.8 %).

During the 12-month period under report, a total of 2,100,689 BMW brand (2021: 2,213,790² units; – 5.1 %) and 292,922 MINI brand vehicles (2021: 302,138 units; – 3.1 %) were delivered. The ultra-luxury Rolls-Royce marque achieved a new sales volume record in 2022, with deliveries climbing to 6,021 units (2021: 5,586 units; + 7.8 %).

Deliveries of all-electric vehicles more than doubled

The systematic electrification of its products, with a wide range of attractive models, is proving to be a key success factor for the BMW Group. High demand for BMW and MINI brand all-electric vehicles gave rise to dynamic sales growth in this area in 2022. Overall, the BMW Group delivered a total of 215,752³ all-electric vehicles to customers, more than doubling the number achieved one year earlier (2021: 103,854³ units; + 107.7 %). The innovative BMW iX⁴ and BMW i4⁴ in particular played a major role in this development, with both models generating an extremely positive response. The BMW iX⁴ and the MINI Cooper SE⁴ also continued to meet with an unchanged high level of demand in their various markets. Towards the end of 2022, the BMW Group's ever-growing product range was added to with the launch of two

further all-electric models, the BMW i7⁴ luxury sedan and the all-electric BMW iX1⁴. Sales of battery electric (BEV) and plug-in electric (PHEV) vehicles in 2022 totalled 433,792³ units (2021: 328,314³ units; + 32.1 %). The share of electrified automobiles in total deliveries during the 12-month period under report rose to 18.1 % (2021: 13.0 %; + 39.2 %). At the same time, the higher share enabled further progress to be made in reducing fleet emissions. ↗ [Carbon emissions](#)

BMW Group deliveries of electrified models

in units	2022	2021	Change in %
BEV	215,752	103,854	107.7
BMW	172,008	69,003	149.3
MINI	43,744	34,851	25.5
PHEV	218,040	224,460	– 2.9
BMW	200,945	206,069	– 2.5
MINI	17,095	18,391	– 7.0
Total³	433,792	328,314	32.1

¹ See ↗ [Glossary](#) for definition of deliveries.

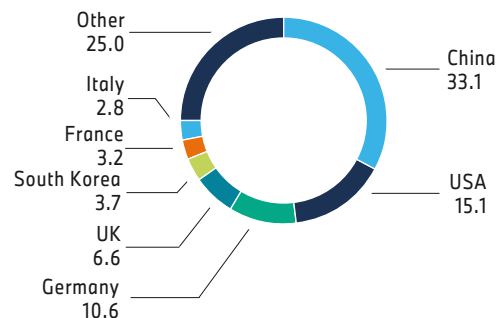
² Includes BMW Brilliance Automotive Ltd. for the full year, i.e. including the period prior to that entity's full consolidation in the BMW Group Financial Statements (1 January to 10 February 2022: 96,133 units, 2021: 651,236 units).

³ Including BMW Brilliance Automotive Ltd.

⁴ ↗ [Consumption and Carbon Disclosures](#).

BMW Group largest automobile markets in 2022

in % of sales



Review of performance by sales market

Against the backdrop of a tight global supply situation for vehicle components and pandemic-related lockdowns in China, deliveries in the major regions of the world declined overall. In Europe, automobile sales decreased moderately to 878,515 units (2021: 949,124 units; –7.4%). However, the contraction in Germany was less pronounced, with deliveries down slightly to 254,292 units (2021: 266,818 units; –4.7%). In the UK, deliveries fell on a similar scale to 157,329 units (2021: 164,344 units; –4.3%).

A slight decrease was also recorded in the Americas, with 441,471 units (2021: 451,747 units; –2.3%), including 363,541 units delivered in the USA (2021: 368,032 units; –1.2%), where the market remained relatively firm.

BMW Group deliveries of vehicles by region and market

in 1,000 units	2022	2021	2020	2019	2018
Europe	878.5	949.1	913.6	1,081.6	1,097.4
thereof Germany	254.3	266.8	285.0	330.5	310.6
thereof UK	157.3	164.3	163.2	233.8	236.8
Americas	441.5	451.7	379.7	472.9	457.1
thereof USA	363.5	368.0	307.9	375.7	355.4
Asia ¹	1,031.0	1,067.9	986.5	930.8	871.8
thereof China ¹	793.5	847.9	778.4	724.7	635.8
Other markets	48.6	52.8	45.4	52.2	59.9
Total¹	2,399.6	2,521.5	2,325.2	2,537.5	2,486.1

The coronavirus-related measures taken in China, including strict lockdowns, had a noticeable impact on the development of sales in Asia. Deliveries of BMW Group vehicles in this region totalled 1,030,987¹ units, slightly down on the previous year (2021: 1,067,914¹ units; –3.5%). Against the backdrop of pandemic-related measures, deliveries in China fell to 793,520¹ units (2021: 847,935² units; –6.4%), somewhat more pronounced than for the region as a whole.

BMW retains top spot in premium segment

The core BMW brand delivered a total of 2,100,689¹ units to customers during the year under report (2021: 2,213,790¹ units; –5.1%). Dynamic growth was recorded in particular for the brand's all-electric models. Sales of all-electric BMW brand vehicles more than doubled to 172,008² units (2021: 69,003² units; +149.3%). The X family also continued to enjoy great popularity among customers. The successful BMW X3 and BMW X4 models as well as the top-range classes of the X models, such as the new BMW X7³, accounted for a major share of the sales growth recorded.

¹ Includes BMW Brilliance Automotive Ltd. for the full year, i.e. including the period prior to that entity's full consolidation in the BMW Group Financial Statements (1 January to 10 February 2022: 96,133 units, 2021: 651,236 units).

² Includes BMW Brilliance Automotive Ltd.

³ ↗ Consumption and Carbon Disclosures.

Deliveries of BMW vehicles by model series¹

in units	2022	2021	Change in %	Share of BMW deliveries 2022 in %
BMW 1 Series/BMW 2 Series	205,971	265,964	-22.6	9.8
BMW 3 Series/BMW 4 Series	478,932	490,969	-2.5	22.8
BMW 5 Series/BMW 6 Series	315,590	326,212	-3.3	15.0
BMW 7 Series/BMW 8 Series	48,708	62,628	-22.2	2.3
BMW Z4	12,029	14,778	-18.6	0.5
BMW X1/X2	242,189	311,928	-22.4	11.5
BMW X3/X4	400,898	414,671	-3.3	19.1
BMW X5/X6	277,057	240,504	15.2	13.2
BMW X7	57,905	54,957	5.4	2.8
BMW iX	39,130	2,638	1,383.3	1.9
BMW i3/i8	22,280	28,541	-21.9	1.1
BMW total	2,100,689	2,213,790	-5.1	100.0
thereof BEV	172,008	69,003	149.3	8.2
thereof PHEV	200,945	206,069	-2.5	9.6

**New BMW brand products**

The BMW brand presented an array of outstanding new products during the year under report. Firstly, the new BMW 2 Series Active Tourer was launched at the beginning of the year. This was followed in the summer by the model revisions of the BMW X7², the BMW 3 Series Sedan and the BMW 3 Series Touring. The new version of the BMW Z4² Roadster was presented towards the end of 2022. The fully electric BMW i7² was also launched as part of the new BMW 7 Series. This all-electric luxury sedan became available towards the end of the year under report. The new fully electric BMW iX1² also celebrated its market launch at the end of the year.

BMW M achieves record sales in anniversary year

BMW M can look back on a particularly successful year. In the year of its 50th anniversary, BMW M delivered a record number of its high-performance vehicles, with sales up by 8.4 % year-on-year to 177,258 units (2021: 163,541 units). A key factor for this excellent performance was the initial electrification of the BMW M model range, with the all-electric BMW i4 M50² finishing the year as the best-selling BMW M automobile of 2022.

BMW M celebrated its 50th anniversary with a variety of new products. Alongside the BMW i4 M50², the beginning of the era of electrification within the high-performance class was marked by the launch of the BMW iX M60², the brand's first all-electric Sports Activity Vehicle. This was followed in the spring of 2022 by new versions of the BMW M8 and the BMW M8 Competition, and by the launch of the first BMW M3 Touring in the summer. The BMW XM², which was unveiled in autumn, gave customers a preview of likely developments in the coming year. The first BMW M plug-in hybrid powered by a high-performance engine will go on sale worldwide in the course of 2023.

¹ Includes BMW Brilliance Automotive Ltd. for the full year i.e. including the period prior to that entity's full consolidation in the BMW Group Financial Statements (1 January to 10 February 2022: 96,133 units, 2021: 651,236 units).

² ↗ Consumption and Carbon Disclosures.

Deliveries of MINI vehicles by model variant

in units	2022	2021	Change in %	Share of MINI deliveries 2022 in %
MINI Hatch (3- and 5-door)	163,929	164,270	- 0.2	56.0
MINI Convertible	24,423	25,120	- 2.8	8.3
MINI Clubman	27,870	30,385	- 8.3	9.5
MINI Countryman	76,700	82,363	- 6.9	26.2
MINI total	292,922	302,138	- 3.1	100.0

MINI: electrified and packed with driving fun

In total, 292,922 MINI brand vehicles were delivered to customers during the year under report (2021: 302,138 units; - 3.1 %). The most popular vehicle model in the MINI family in 2022 was the all-electric MINI Cooper SE*, sales of which rose by 25.5 % to 43,744 units (2021: 34,851 units). Together with the MINI Countryman Plug-in Hybrid*, it accounted for 20.8 % of the brand's total deliveries in 2022, which means that approximately every fifth MINI delivered in 2022 was electrified. With the unveiling of the MINI Concept Aceman concept car in 2022, MINI gave the world a glimpse into the future of electrification within the premium compact segment.

Moreover, new edition models of the MINI 3-door, the MINI 5-door and the MINI Convertible were presented during the year under report. In early 2023, MINI intends to celebrate the 30th anniversary of its convertible with a special model.

Rolls-Royce achieves best figures to date

The Rolls-Royce marque can look back on a highly successful year, during which it delivered a total of 6,021 ultra-luxury vehicles to its customers (2021: 5,586 units; + 7.8 %), thereby exceeding the 6,000 mark for the first time. This excellent result was driven in particular by sales of the Rolls-Royce Cullinan* and the Rolls-Royce Ghost*. A similarly successful performance was achieved with the Bespoke programme which enables buyers to customise their Rolls-Royce according to their individual wishes.



Deliveries of Rolls-Royce vehicles by model variant

in units	2022	2021	Change in %
Phantom	418	427	- 2.1
Ghost	2,015	1,909	5.6
Wraith/Dawn	328	828	- 60.4
Cullinan	3,260	2,422	34.6
Rolls-Royce total	6,021	5,586	7.8

With the presentation of the Rolls-Royce Spectre* in 2022, the marque reached an important milestone on the road to electrifying its product range. The first all-electric ultra-luxury coupé will become available towards the end of 2023.



* ↗ Consumption and Carbon Disclosures.

Results of operations of the Automotive segment

Automotive segment revenues amounted to € 123,602 million (2021: € 95,476 million; + 29.5 %, currency-adjusted: + 24.1 %) and were therefore significantly higher than one year earlier. The main reason for the revenue growth reported was the full consolidation of BMW Brilliance (see [note 3](#) to the Group Financial Statements). As already described in the section on the Group's earnings performance, automobile sales were in fact down on the previous year due to production factors, the impact of which was offset by the renewed increased volume of high-revenue vehicles sold, favourable price penetration effects and the continuing positive trend on pre-owned vehicle markets, the latter being reflected in improved residual values. Growth in spare parts and accessories business as well as favourable currency effects also contributed to the rise in revenues.

Segment cost of sales amounted to € 104,324 million and was therefore significantly higher than one year earlier (2021: € 78,637 million; + 32.7 %). As with revenues, the fact that BMW Brilliance is now fully consolidated contributed significantly to the increase in cost of sales. The impact of a number of first-time consolidation-related expenses such as depreciation and amortisation arising on the purchase price allocation (€ 1.8 billion) and the elimination of intragroup profits (€ 1.3 billion) also drove up segment cost of sales. Significantly rising costs for materials and logistics also had a negative impact on the segment's cost of sales during the financial year, particularly due to the limited availability of semiconductors, supply chain disruptions and higher prices for raw materials and energy. A larger proportion of electrified vehicles and higher warranty expenses due to the exhaust gas recirculation cooler, BMW Brilliance's first-time consolidation, and climbing inflation also had the effect of increasing segment cost of sales.

In the previous financial year, the changeover effects arising from the modernisation of the pension model in Germany had a total positive impact of € 542 million on Automotive segment cost of

sales as well as selling and administrative expenses. Cost of sales benefited from the extension of useful lives as described above in the amount of € 524 million.

The net amount of other operating income and expenses decreased significantly year-on-year primarily due to the partial reversal of the provision relating to the antitrust proceedings conducted by the EU Commission in the second quarter 2021.

Profit before financial result for the year amounted to € 10,635 million, representing a solid improvement over the previous year (2021: € 9,870 million).

The EBIT margin came in at 8.6 % (2021: 10.3 %; – 1.7 percentage points) for the segment. As forecast in the Quarterly Statement to 30 September 2022, the EBIT margin was within the target range of between 7.0 and 9.0 % and therefore in line with expectations.

At € 8,283 million, the Automotive segment's financial result was significantly up on the previous year (2021: € 1,935 million). The sharp increase in the year under report was primarily due

to the gain of € 7.7 billion arising on the remeasurement of the segment's previous at-equity interest in BMW Brilliance, which is reported within other financial result. The result from equity-accounted investments went down to a net negative amount of € 100 million (2021: net positive amount of € 1,520 million). The deterioration reflects the fact that the segment's at-equity share of earnings in BMW Brilliance was only included in this line item until 10 February 2022. The net interest result was impacted by income arising on the change in interest rates in connection with the measurement of provisions as well as by interest income earned on positive bank balances.

Profit before tax for the year amounted to € 18,918 million, a significant improvement year-on-year (2021: € 11,805 million).

In line with the forecast, the Automotive segment's RoCE for 2022 finished at 18.1% and therefore within the target range of 14 to 19 % (2021: 24 %; – 5.9 percentage points). The deterioration was mainly due to the increase in capital employed resulting from the addition of the net assets identified in BMW Brilliance and the impact of fair value adjustments arising on the purchase price allocation.

BMW GROUP MARGINS BY SEGMENT

in %	2022	2021	Change in % points
AUTOMOTIVE			
Gross profit margin ¹	15.6	17.6	– 2.0
EBIT margin ²	8.6	10.3	– 1.7
MOTORCYCLES			
Gross profit margin ¹	17.3	17.8	– 0.5
EBIT margin ²	8.1	8.3	– 0.2

¹ Gross profit as a percentage of segment revenues.

² Profit before financial result as a percentage of segment revenues.

MOTORCYCLES SEGMENT

Sales volume growth for BMW Motorrad

The Motorcycles segment also felt the tangible dual impact of semiconductor component supply issues and the coronavirus pandemic. Despite these negative factors, sales volume continued to grow in 2022, rising to a new record of 202,895 units (2021: 194,261 units; + 4.4%).

Deliveries worldwide: significant growth achieved in the Americas

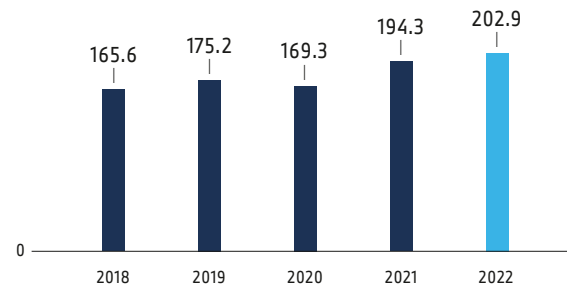
A total of 110,788 units were delivered to customers in European markets in 2022, similar to the level recorded one year earlier (2021: 111,126 units; – 0.3%). Solid growth was reported for France, with deliveries up by 6.7% to 21,223 units (2021: 19,887 units), while Italy finished the year slightly down at a total of 15,668 units (2021: 16,034 units; – 2.3%). Spain performed at the previous year's level (2021: 12,616 units; – 0.9%). Within a contracting market, deliveries in Germany decreased on a moderate scale to 24,129 units (2021: 25,972 units; – 7.1%).

In the Americas region, the number of motorcycles delivered rose sharply to a total of 45,775 units (2021: 40,010 units; + 14.4%), with double-digit growth recorded both in the USA (2022: 17,690 units; 2021: 16,030 units; + 10.4%) and in Brazil (2022: 13,051 units; 2021: 11,150 units; + 17.0%).

Despite the impact of strict coronavirus-related measures in China, deliveries on that market grew by a solid 7.7% to 15,404 units (2021: 14,309 units).

Deliveries of BMW motorcycles

in 1,000 units



Market launches in 2022

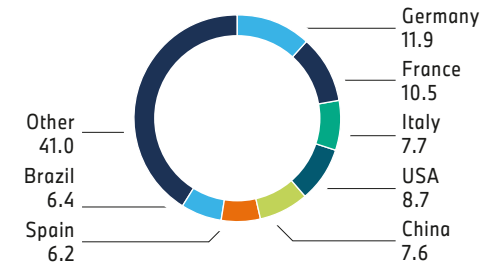
A key aspect of the year 2022 for BMW Motorrad was the continuing process of electrification. In March, a new chapter in two-wheeled urban mobility was opened with the market launch of the BMW CE 04 electric scooter (Urban Mobility segment). This new model, together with the BMW CE 02 concept vehicle previously presented, provides a valuable insight into BMW Motorrad's electrification initiative. Also in March, the model revisions of the 6-cylinder K 1600 GT, the K 1600 GTL and the K 1600 B luxury tourers (Touring segment) went on sale.

New products unveiled by BMW Motorrad

BMW Motorrad presented one new model and four model revisions during the year under report. Two model revisions from the Sports segment were announced in the form of the S 1000 RR (in September) and the M 1000 RR (in October), the market launches of which are both scheduled for 2023. Following the presentation of the BMW M 1000 R in October, BMW Motorrad unveiled an additional M model, this time in the form of a highly dynamic roadster.

BMW Group largest motorcycle markets 2022

in % of sales



The two revisions of boxer models showcased during the year – the BMW R 1250 R in October and the BMW R 1250 RS in November – are expected to generate momentum in the Roadster and Sports segments.

In 2023, BMW Motorrad will be celebrating its centenary as a motorcycle manufacturer. As a preview to the centenary year, special models of the BMW R nine T and the R 18 were presented to the public in December 2022.



Results of operations of the Motorcycles segment

The Motorcycles segment EBIT margin (profit before financial result as a percentage of revenues) came in at 8.1% (2021: 8.3%; –0.2 percentage points) and thus within the forecast target range of between 8 and 10%.

Profit before tax for the year was significantly higher at € 269 million (2021: € 228 million; +18.0%), mostly driven by higher sales volumes as well as favourable pricing and product mix effects. Both materials and logistics also became more expensive for the Motorcycles segment in 2022, with a corresponding negative impact on segment earnings.

The RoCE for the Motorcycles segment in 2022 was 24.9% and therefore above the target range of between 19 and 24% (2021: 21.9%; +3 percentage points), mainly due to the improved EBIT performance year-on-year.

FINANCIAL SERVICES SEGMENT

Financial Services segment earnings significantly down on previous year

Profit before tax reported by the Financial Services segment for the financial year 2022 amounted to € 3,205 million (2021: € 3,753 million; –14.6%), significantly down on the previous year, when earnings had benefited from an exceptionally favourable risk profile. The combination of geopolitical uncertainties and a weaker macroeconomic outlook resulted in a higher credit risk provisioning expense in 2022. Rising inflation and the general increase in interest rates also made conditions for consumers more challenging. However, despite these adverse factors, credit losses remained at a historically low level. At the same time, earnings continued to benefit from high remarketing proceeds from lease returns.

In balance sheet terms, business volume decreased slightly compared to one year earlier to stand at € 135,689 million at the end of the reporting period (2021: € 139,530 million; –2.8%).

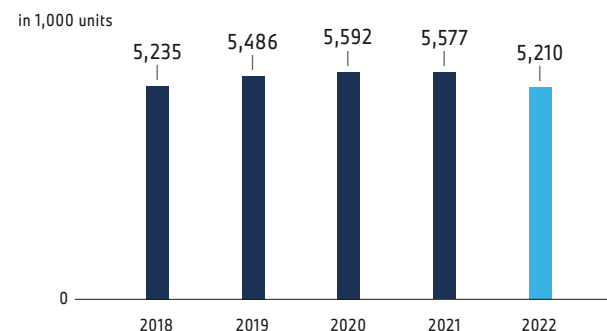
Results of operations of the Financial Services segment

Return on equity finished at 17.9% and therefore below the prior-year level (2021: 22.6%; –4.7 percentage points), mainly due to the year-on-year decrease in profit before tax. The RoE for 2022 was therefore in line with the revised forecast of between 17 and 20%. Originally, an RoE within a range of 14 to 17% was predicted for 2022 in the BMW Group Report 2021.

Lower volume of new business with retail customers

Credit financing and leasing business with retail customers decreased sharply during the year under report, with a total of 1,545,490 new contracts signed (2021: 1,956,514 contracts; –21.0%), mainly reflecting the impact of higher interest rates and related price increases. Further exacerbating factors were the

Retail customer contract portfolio in Financial Services segment



high level of competition within the financial services sector and the general limited availability of new vehicles.

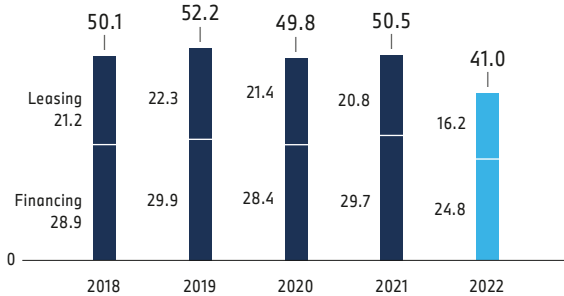
Burdened by these circumstances, the volume of new leasing and credit financing business fell by 23.1% and 20.0% respectively. In 2022, leasing accounted for 30.9% and credit financing for 69.1% of new business.

New contracts signed included 321,535 credit financing and leasing contracts relating to pre-owned BMW and MINI brand vehicles (2021: 411,520 contracts; –21.9%).

Higher selling prices achieved by the Automotive segment in combination with an improved product mix gave rise to a higher average financing volume per vehicle in the Financial Services segment during the period under report, partially offsetting the impact of the lower overall number of new contracts signed. Favourable currency effects also helped to cushion the impact of the decrease. The total volume of new credit financing and leasing contracts with

New BMW Group vehicles leased or financed by the Financial Services segment¹

in %



retail customers fell by 12.6 % to € 55,449 million (2021: € 63,414 million) year-on-year.

The share of new BMW Group vehicles either leased or financed by the Financial Services segment stood at 41.0 %³ (2021: 50.5 %; – 9.5 percentage points).

At 31 December 2022, a total of 5,210,246 credit financing and leasing contracts were in place with retail customers (31 December 2021: 5,577,011 contracts; – 6.6 %). The contract portfolio finished at the previous year's level (–0.4 %) for the Asia/Pacific region, slightly down for the Europe/Middle East/Africa region (–3.9 %) and moderately down for the EU Bank² (–6.2 %). Significant decreases were recorded for the Americas (–10.1 %) and China (–11.1 %) regions.

Fleet business at previous year's level

Under the brand name "Alphabet", the Financial Services segment offers credit financing and leasing contracts as well as related services, mainly to commercial customers as part of its fleet management business. At the end of the reporting period, the fleet contract portfolio stood at 701,470 contracts, similar to its level one year earlier (2021: 696,393 contracts; + 0.7 %).

Dealership financing up on previous year

At 31 December 2022, the total volume of dealership financing stood at € 15,209 million, up sharply compared to the end of the previous financial year (2021: € 13,149 million; + 15.7 %), reflecting the impact of improved vehicle availability in the latter part of the year and higher selling prices for automobiles.

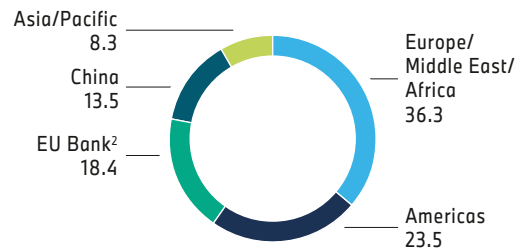
OTHER ENTITIES SEGMENT / ELIMINATIONS

The Other Entities segment recorded a profit before tax of € 995 million (2021: € 531 million). The main reason for the improvement was the level of fair value measurement gains recognised within the line item "Other financial result" on interest rate hedges as a result of significant interest rate increases in the USA, the UK and the eurozone.

At the level of profit before tax, eliminations increased to a positive amount of € 122 million (2021: € –257 million), due to positive effects from eliminations required for leasing and credit financing business.

Contract portfolio retail customer financing of Financial Services segment 2022

in % per region



¹ The values have been adjusted retrospectively due to the adjustment of the delivery figures. ² Glossary

² EU Bank comprises BMW Bank GmbH with its branches in Italy, Spain and Portugal.

³ The calculation only includes automobile markets in which the Financial Services segment is represented by a consolidated entity.

COMMENTS ON THE FINANCIAL STATEMENTS OF BMW AG

Bayerische Motoren Werke Aktiengesellschaft (BMW AG), based in Munich, Germany, is the parent company of the BMW Group. The comments on the BMW Group and Automotive segment provided in earlier sections apply to BMW AG, unless presented differently in the following section. The Financial Statements of BMW AG are drawn up in accordance with the provisions of the German Commercial Code (HGB) and the relevant supplementary requirements contained in the German Stock Corporation Act (AktG).

The key financial performance indicator for BMW AG is the dividend payout ratio. This is defined as the unappropriated profit of BMW AG in accordance with HGB in relation to the Group net profit attributable to shareholders of BMW AG in accordance with IFRS (2021: unappropriated profit of BMW AG in accordance with HGB in relation to the Group net profit in accordance with IFRS; the definition was changed in light of the acquisition of shares in BMW Brilliance Automotive Ltd., Shenyang). The key non-financial performance indicators are essentially identical and concurrent with those of the BMW Group. These are described in detail in the [Financial Performance](#) section of the Combined Management Report.

Differences in accounting treatments based on HGB (used for the Company Financial Statements) and IFRS (used for the Group Financial Statements) are mainly to be found in connection with the capitalisation of intangible assets, the creation of valuation units, the recognition and measurement of financial instruments and provisions as well as the recognition of deferred tax assets. Differences also arise in the presentation of assets and liabilities and of items in the income statement.

Business environment and review of operations

The general and sector-specific environment of BMW AG is essentially the same as that of the BMW Group and is described in the [Financial Performance](#) section of the Combined Management Report.

BMW AG develops, manufactures and sells automobiles and motorcycles as well as spare parts and accessories manufactured in-house, by foreign subsidiaries and by external suppliers, and performs services related to these products. Sales activities are carried out primarily through branches, subsidiaries, independent dealerships and importers. Automobile deliveries decreased by 52,292 units to 2,385,299 units in the financial year 2022. This figure includes 641,794 units relating to series sets supplied to BMW Brilliance Automotive Ltd., Shenyang, a decrease of 33,201 units compared with the previous year.

At 31 December 2022, BMW AG employed a workforce of 87,183 people (31 December 2021: 83,308 people).

The year 2022 was dominated by a number of ongoing global challenges, in particular semiconductor supply shortages, pandemic-related lockdowns in China and the impact of the war in Ukraine. Despite the resulting volatile business environment, however, BMW AG can be satisfied with the overall positive course of business during the financial year 2022.

BMW AG's solid financial condition is reflected in the results of operations, financial position and net assets reported for the financial year 2022. Business developed in line with management's revised expectations. This assessment also takes into account events after the end of the reporting period.

Results of operations

BMW AG Income Statement

in € million	2022	2021
Revenues	98,807	88,526
Cost of sales	-81,653	-72,283
Gross profit	17,154	16,243
Selling expenses	-4,058	-3,858
Administrative expenses	-3,624	-3,243
Research and development expenses	-6,782	-6,451
Other operating income	2,529	2,199
Other operating expenses	-2,889	-1,460
Result on investments	8,520	2,991
Financial result	-2,926	-426
Income tax	-1,594	-1,068
Profit after income tax	6,330	4,927
Other taxes	-19	-17
Net profit	6,311	4,910
Transfer to revenue reserves	-830	-1,083
Unappropriated profit	5,481	3,827

Revenues increased by € 10,281 million compared to the previous year, whereby favourable pricing and product mix effects as well as the higher volume of business with spare parts and accessories more than offset the decline in sales volumes. Exchange rate factors also had a positive effect on revenues. In geographical terms, most of the increase in revenues was generated in the USA and Rest of Europe regions. Revenues totalled € 98,807 million (2021: € 88,526 million), of which Group internal revenues accounted for € 77,843 million (2021: € 60,373 million) or 78.8 % (2021: 68.2 %).

Production costs went up by 13.0 % to € 81,653 million, mostly due to higher costs for materials and logistics.

Gross profit rose by € 911 million to € 17,154 million.

Overall, selling expenses increased solidly and general administrative expenses significantly.

A large proportion of research and development expenses was related to new vehicle models (including the all-electric BMW i7* and BMW iX1* models and the electrified BMW 7 Series,

BMW XM* and BMW X1 models) as well as the development of digital products, automated driving and the [NEUE KLASSE](#). In line with the ramp-up of vehicles and kits in connection with the electrification initiative, research and development expenses rose by 5.1 % year-on-year.

Other operating income increased to € 2,529 million (2021: € 2,199 million), mainly due to higher gains arising on financial transactions. Income from the reversal of other provisions was down.

Other operating expenses increased significantly to € 2,889 million (2021: € 1,460 million) and, as in the previous year, mainly comprised expenses from financial transactions and additions to other provisions.

Income from profit and loss transfer agreements with Group companies, reported in the line item Result on investments, rose significantly. The increase mainly reflected the substantially higher level of profit transferred by BMW INTEC Beteiligungs GmbH, Munich, made possible largely by improved returns on investments received by that entity.

The financial result deteriorated significantly by € 2,500 million year-on-year, mainly due to losses arising in conjunction with the fair value measurement of designated plan assets offset against pension obligations.

The expense for income taxes related primarily to current tax for the financial year 2022.

After deducting the expense for taxes, the Company reported a net profit of € 6,311 million, compared to € 4,910 million in the previous year.

* [Consumption and Carbon Disclosures](#).

Subject to the shareholders' approval of the appropriation of results at the Annual General Meeting, the unappropriated profit available for distribution amounts to € 5,481 million (2021: € 3,827 million). As a percentage of Group net profit attributable to shareholders of BMW AG in accordance with IFRS (2021: unappropriated profit of BMW AG in accordance with HGB as a percentage of Group net profit in accordance with IFRS), this corresponds to a payout ratio of 30.6%. The payout ratio for 2021

was 30.7% based on the previous definition (or 30.9% based on the new definition) and therefore within the forecast corridor of 30 to 40%.

The payout ratio takes into account the number of shares entitled to dividends at 31 December 2022 and may change prior to the Annual General Meeting due to the ongoing share buyback programme.

Financial and net assets position

BMW AG Balance Sheet at 31 December

in € million	2022	2021
ASSETS		
Intangible assets	1,444	704
Property, plant and equipment	14,004	12,740
Investments	12,093	5,067
Tangible, intangible and investment assets	27,541	18,511
Inventories	7,523	7,287
Trade receivables	1,161	758
Receivables from subsidiaries	24,510	21,019
Other receivables and other assets	2,281	4,071
Marketable securities	2,904	3,077
Cash and cash equivalents	6,207	8,824
Current assets	44,586	45,036
Deferred income	116	72
Surplus of pension and similar plan assets over liabilities	-	1,086
Total assets	72,243	64,705

in € million	2022	2021
EQUITY AND LIABILITIES		
Subscribed capital	663	662
Nominal amount of own shares	-17	-
Capital reserves	2,426	2,342
Revenue reserves	11,665	12,096
Unappropriated profit	5,481	3,827
Equity	20,218	18,927
Registered profit-sharing certificates	25	26
Pension provisions	2,871	422
Other provisions	11,686	9,995
Provisions	14,557	10,417
Liabilities to banks	1	1
Trade payables	6,786	6,531
Liabilities to subsidiaries	25,703	24,462
Other liabilities	902	462
Liabilities	33,392	31,456
Deferred income	4,051	3,879
Total equity and liabilities	72,243	64,705

Capital expenditure on intangible assets and property, plant and equipment in the year under report totalled € 4,498 million (2021: € 3,304 million), up by 36.1% compared to the previous year. Depreciation and amortisation amounted to € 2,452 million (2021: € 2,846 million).

Investment assets increased by € 7,044 million to € 12,093 million (2021: € 5,067 million) mainly due to a contribution in kind recorded in capital reserves at the level of BMW INTEC Beteiligungs GmbH, Munich. Inventories increased to € 7,523 million (2021: € 7,287 million), mainly due to higher levels of raw materials and supplies.

Receivables from subsidiaries climbed to € 24,510 million (2021: € 21,019 million), mainly due to the higher level of inter-company trade receivables reported following the reclassification of receivables from BMW Brilliance Automotive Ltd., Shenyang, as a consequence of the acquisition of further shares in that entity.

The decrease in other receivables and other assets to € 2,281 million (2021: € 4,071 million) was mainly attributable to lower receivables from companies in which an investment is held, following the acquisition of further shares in BMW Brilliance Automotive Ltd., Shenyang.

Liquidity within the BMW Group is ensured by means of a liquidity concept applied uniformly across the Group. This involves concentrating a significant part of the Group's liquidity at the level of BMW AG. An important instrument in this context is the cash pool based at BMW AG.

Cash and cash equivalents decreased by € 2,617 million to € 6,207 million, mainly due to the net cash outflow from financing activities, offset in part by the higher net cash inflow from operating activities.

Equity increased by € 1,291 million to € 20,218 million due to the higher unappropriated profit recorded in 2022 compared with the dividend paid out for the financial year 2021. The reduction in other revenue reserves in conjunction with the ongoing share buyback programme had an offsetting effect. The equity ratio changed from 29.3% to 28.0%.

In order to secure pension obligations, cash funds totalling € 382 million were transferred to BMW Trust e.V., Munich, in conjunction with a Contractual Trust Arrangement (CTA), to be invested in plan assets. Plan assets are offset against the related guaranteed obligations. In the previous year, a surplus of assets over liabilities arose which was reported in the BMW AG balance sheet on the line item Surplus of pension and similar plan assets over liabilities.

After offsetting pension plan assets against pension obligations, provisions for pensions increased from € 422 million to € 2,871 million.

Other provisions increased sharply from € 9,995 million to € 11,686 million, mainly due to additions to provisions for statutory and non-statutory warranty and product guarantee obligations as well as for liability risks.

Payables to subsidiaries rose to € 25,703 million (2021: € 24,462 million), mainly reflecting the higher level of inter-company trade payables.

Deferred income went up by € 172 million to € 4,051 million and included primarily amounts for services still to be performed relating to service and maintenance contracts.

Risks and opportunities

BMW AG's performance is essentially dependent on the same set of risks and opportunities that affect the BMW Group and which are described in detail in the [Risks and Opportunities](#)

chapter of the Combined Management Report. As a general rule, BMW AG participates in the risks entered into by Group companies in proportion to the respective shareholding percentage. At the same time, the result on investments has a significant impact on the earnings of BMW AG.

BMW AG is integrated in the Group-wide risk management system and internal control system of the BMW Group. Further information is provided in the [Internal Control System](#) chapter of the Combined Management Report.

Outlook

For the financial year 2023, BMW AG expects an unchanged dividend payout ratio (unappropriated profit of BMW AG in accordance with HGB in relation to the Group net profit attributable to shareholders of BMW AG in accordance with IFRS), and therefore within the targeted range of between 30 and 40% (2022: 30.6%).

Due to its significance in the Group and its close ties with Group companies, expectations for BMW AG with respect to its non-financial performance indicators correspond largely to the BMW Group's outlook. This is described in detail in the [Outlook](#) chapter of the Combined Management Report.

PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, Munich branch, has issued an unqualified audit opinion on the Company Financial Statements of BMW AG, of which the balance sheet and the income statement are presented here. For the purposes of their inclusion in Company Register, the Company Financial Statements of BMW AG for the financial year 2022 will be submitted electronically to the body that maintains the Company Register, and may be obtained via the Company Register website. The financial statements are also available on the BMW Group website at www.bmwgroup.com/ir.

EU TAXONOMY

Within the framework of the implementation of the European Green Deal and the Action Plan "Financing Sustainable Growth", the EU Taxonomy is a cornerstone of the EU's aspiration to become climate-neutral by 2050. Its key objectives are to increase transparency and provide an objective benchmark for capital market participants in order to channel capital flows towards environmentally sustainable economic activities.

The EU Taxonomy is a classification system that defines economic activities as environmentally sustainable based on fulfilment of predetermined technical screening criteria.

Essentially, an economic activity can only be classified as sustainable if it substantially contributes to one of the following six environmental objectives:

- I. Climate change mitigation
- II. Climate change adaptation
- III. Sustainable use and protection of water and marine resources
- IV. Transition to a circular economy
- V. Pollution prevention and control
- VI. Protection and restoration of biodiversity and ecosystems

This contribution is based on fulfilment of specific predetermined requirements. Moreover, no other environmental objective may be significantly harmed as a result of performing the activity and the Company involved must observe minimum safeguards, among them compliance with human rights.

On the basis of the phased introduction of the EU Taxonomy in the Delegated Acts, companies such as the BMW Group were required to report the Taxonomy-eligible proportion of their revenues, capital expenditures and operating expenditures for Environmental Objectives I and II for the first time in the previous year. Since reporting year 2022, the reporting requirements have been expanded to include Taxonomy-aligned proportions for both these environmental objectives. The reporting scope is expected to be expanded to the environmental objectives III to VI starting with the reporting year 2024.

Our holistic understanding of sustainability

The BMW Group supports the overarching goal of the EU Taxonomy to promote the private financing of environmentally sustainable economic activities in order to make Europe the world's first climate-neutral continent by 2050. As a company aspiring to achieve net zero across its entire value chain by no later than 2050, we welcome all initiatives that serve this objective. As part of this commitment, the BMW Group had already set ambitious, science-based targets for all three scopes in 2020, which it aims to achieve by 2030 (base year 2019). These goals were validated by the Science Based Targets initiative (SBTi). Each year, the BMW Group Report informs about the level of progress. [↗ Strategy](#)

In the coming years, the significant growth in electromobility will imply that the majority of carbon emissions will be generated within the upstream value chain, rather than primarily in the use phase. Without the anticipated set of measures to reduce carbon emissions generated within the BMW Group supply chain, these emissions would already exceed actual carbon emissions in the use phase prior to 2030. [↗ Strategy](#), [↗ Production and Supplier Network](#), [↗ Carbon emissions](#) Accordingly, the BMW Group is taking a holistic approach to achieving its sustainability-related targets and is committed to considering carbon emissions over the entire life cycle of the vehicles produced. [↗ Carbon emissions](#) However, for the economic activities that are relevant to the BMW Group, the EU Taxonomy focuses exclusively on reducing carbon emissions during the use phase that are attributable to low-emissions (until 2025) and emissions-free drive systems. Indirect carbon emissions, for instance those produced when generating charging current or during the energy-intensive production of high-voltage batteries, are not taken into account in the context of these economic activities. Moreover, the EU Taxonomy only reflects the impact of decarbonisation measures in in-house production to the extent that they serve to manufacture Taxonomy-aligned products or to the extent that they are explicitly included in the description of an activity. The deficit of this approach is shown by the example that increasing the energy efficiency of paint shop processes also reduces carbon emissions in in-house production when a conventionally powered vehicle is painted. In light of the BMW Group's selected economic activities, its sustainability efforts in this regard are not, or are only partially, taken into account in the EU Taxonomy. [1\]](#)

[Explanatory comments on reporting procedures

Explanatory comments on reporting procedures for the reporting year 2022, we are reporting on Taxonomy alignment for the first time in relation to Environmental Objective I "Climate change mitigation" and Environmental Objective II "Climate change adaptation", in addition to reporting on Taxonomy eligibility. Taxonomy eligibility is an initial indicator of the maximum environmental sustainability potential of economic activities as defined by the EU Taxonomy. Taxonomy alignment, on the other hand, serves as an indicator of an organisation's transformation towards environmentally sustainable economic activities.

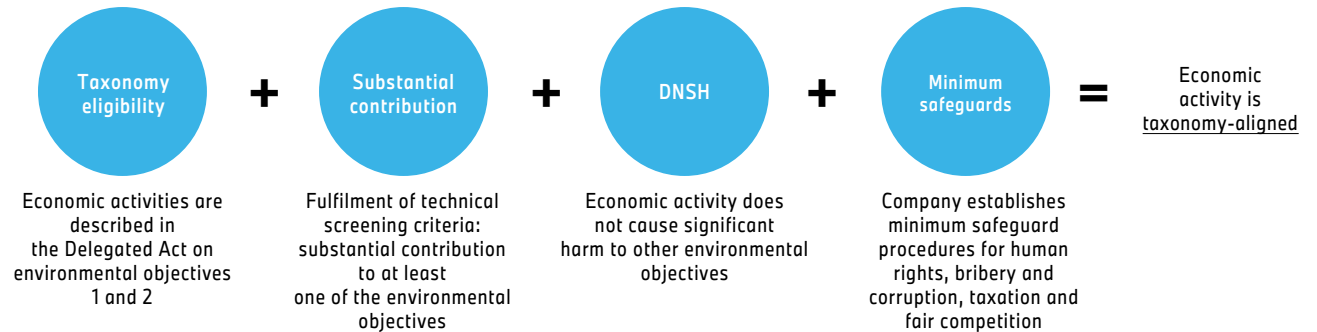
An economic activity is to be seen as Taxonomy-eligible if it is described in the Delegated Acts relating to one of the six environmental objectives, regardless of whether that economic activity meets the technical screening criteria stipulated in those Delegated Acts. Following an analysis, the BMW Group's business activities can best be summarised under the following economic activities¹:

- Economic activity 3.3 "Manufacture of low carbon technologies for transport" including the production of passenger cars and motorcycles.
- Economic activity 6.5 "Transport by motorbikes, passenger cars and light commercial vehicles" including the acquisition, financing, lease and operation of automobiles and motorcycles.

Based on the descriptions of the two economic activities listed for Environmental Objective I "Climate change mitigation" and in consideration of the additional clarification by the EU Commission regarding the Taxonomy eligibility of vehicles with combustion engines under economic activity 3.3, a large part of the BMW Group's business model falls within the scope of the EU Taxonomy Annex.²

Only the sale of parts and components, such as after-sales business excluding the provision of repair services, the supply of components for production to BMW Brilliance up to and including

[Explanatory comments on reporting procedures



10 February 2022³ and/or to other third parties, and banking and insurance services performed by our non-automotive Financial Services segment, are not described as economic activities in the Delegated Regulation and are therefore not Taxonomy-eligible.

Consequently, in order to determine the Taxonomy alignment of the two aforementioned economic activities in the reporting year, they must be reviewed against the technical screening criteria relevant to them:

- 1) They make a substantial contribution to the fulfilment of the environmental objective based on the specific carbon emissions for the vehicles in question.
- 2) They do not cause any significant harm to other environmental objectives based on the specific requirements for each relevant economic activity ("Do no significant harm" or "DNSH").

It must also be ensured that the organisation carrying out the economic activities has established minimum safeguards aimed at guaranteeing compliance with human rights in particular and also minimum safeguards relating to bribery, corruption, taxation and fair competition.

Substantial contribution

The BMW Group has reviewed its contribution to the environmental objectives "Climate change mitigation" and "Climate change adaptation" for the reporting year. Economic activity 3.3 and economic activity 6.5 both make a substantial contribution to the achievement of Environmental Objective I "Climate change mitigation" due to the manufacture, financing and leasing of low-emissions (PHEV < 50 g CO₂/km WLTP until 2025) and zero-emissions vehicles (BEV and motorcycles with 0g CO₂/km). The contribution of the two economic activities to the second environmental objective "Climate change adaptation" was subsumed under environmental objective I "Climate change mitigation" for reasons of materiality.^{1]}

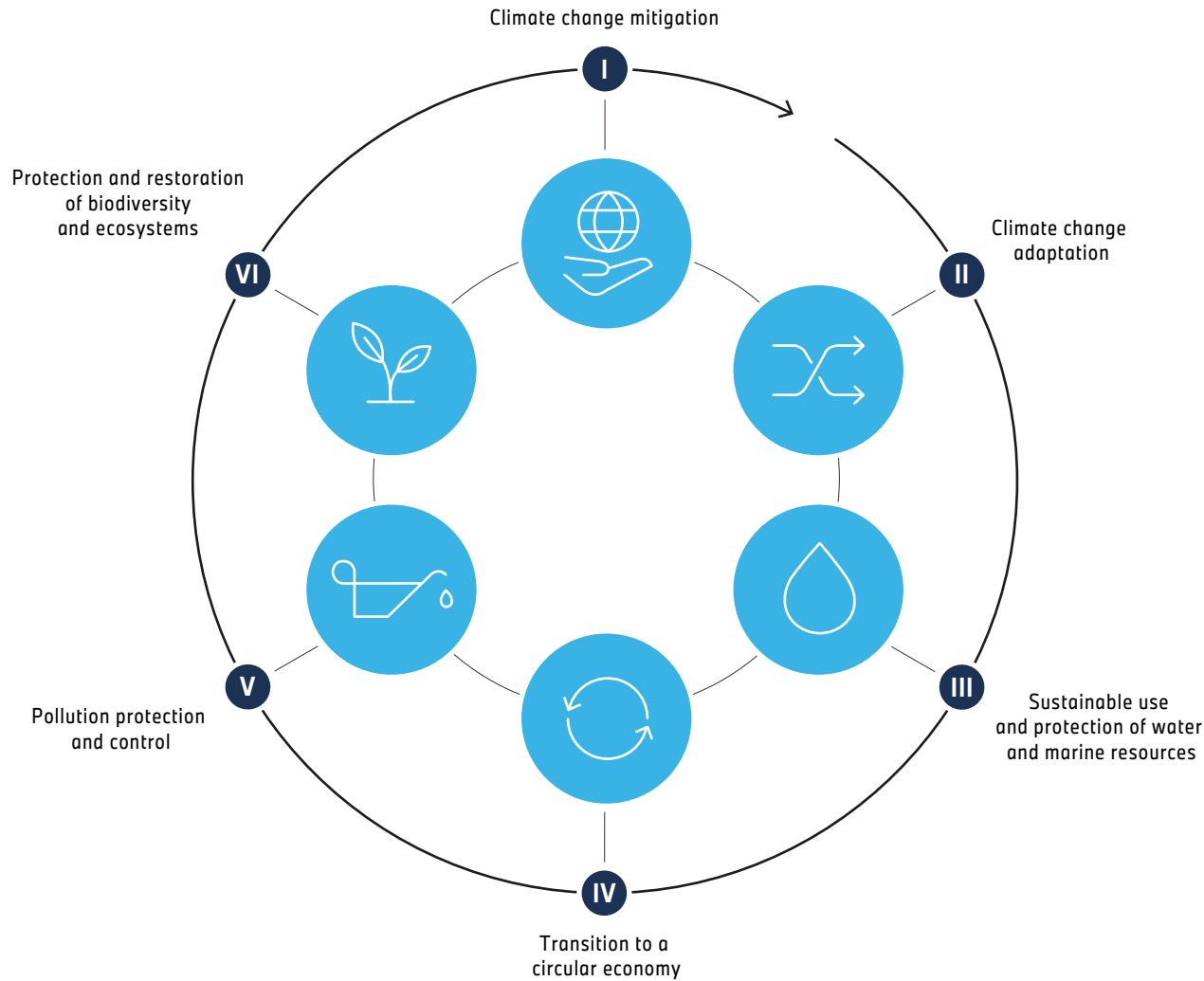
¹ The additional economic activities specified in Delegated Regulation (EU) 2022/1214 of 9 March 2022 (in particular with regard to nuclear energy and gaseous fossil fuels) are not relevant to the BMW Group. Accordingly, specific reporting tables for these activities are not included.

² It should be noted that the relevant Delegated Act describes the economic activity "Manufacture of low carbon technologies for transport" differently for Environmental Objective I "Climate change mitigation" and Environmental Objective II "Climate change adaptation". For the purposes of consistent reporting on the Taxonomy eligibility of vehicle production, the BMW Group follows the description given for Environmental Objective I, given that Taxonomy-eligible vehicle production as listed for Environmental Objective II is a subset of Taxonomy-eligible vehicle production for Environmental Objective I.

³ Further information on the consolidation of BMW Brilliance is provided in [Note \[3\]](#) to the Group Financial Statements.



Environmental objectives of EU Taxonomy



[In order to identify the specific carbon emissions of PHEV that are not determined in line with Regulation (EU) 2019/631 (USA, China, etc.), assumptions were made based on the worst-case value for that vehicle model, even though these emissions may have been lower in reality.

Avoidance of significant harm

Compliance with the DNSH criteria was reviewed in the reporting year for the five additional environmental objectives, based in each case on the specific requirements for economic activity 3.3 "Manufacture of low carbon technologies for transport" and economic activity 6.5 "Transport by motorbikes, passenger cars and light commercial vehicles".

The vehicle portfolio for economic activity 6.5 includes BMW Group vehicles and vehicles from other manufacturers. As no data are available regarding the relevant attributes of these third-party products, it is not currently possible to make a comprehensive assessment in relation to the DNSH criteria. For this reason, these vehicles are not currently reported as Taxonomy-aligned.



Climate change adaptation

A robust climate risk and vulnerability assessment is required for both economic activity 3.3 and economic activity 6.5 to determine that they do not cause significant harm to Environmental Objective II. It considers the physical climate risks at all key BMW Group production sites as well as any potential damage that may occur as a result of climate change based on long-term climate projection scenarios* up to 2034 and 2050. Moreover, we consider potential natural hazards at all of our direct supplier locations in order to adequately take supply risks into account when selecting and evaluating suppliers. Adaptive solutions to mitigate risks are drawn up and implemented as appropriate based on []

* SSP1-2.6, SSP2-4.5, SSP5-8.5.

the results of this risk analysis and in consultation with site representatives. For further information, see [Climate-related Risks and Opportunities](#).

The DNSH requirements for Environmental Objective II are fulfilled for economic activities 3.3 and 6.5.



Sustainable use and protection of water and marine resources and protection and restoration of biodiversity and ecosystems

In order to establish that no significant harm is caused to Environmental Objectives III and VI, it is necessary to perform a comprehensive risk analysis that looks at the preservation and protection of environmental resources for economic activity 3.3 (in both cases, not relevant for economic activity 6.5). In this context, the BMW Group carries out environmental impact assessments in accordance with Directive 2011/92/EU during the construction of new and expansion of existing sites within the EU that also take account of water and biodiversity. At locations outside the EU, the BMW Group carries out an environmental impact assessment based on EU requirements. Moreover, a certified environmental management system in accordance with ISO 14001 has been implemented at all BMW Group production sites and all local legal requirements are met. [Resource Management at all locations](#)

The DNSH requirements for Environmental Objectives III and VI are fulfilled for economic activity 3.3.



Transition to a circular economy

The requirements for both economic activities of the BMW Group to do no significant harm to Environmental Objective IV differ for each stage of the value chain. We fulfil these requirements during the manufacturing process for BMW Group vehicles (economic activity 3.3) by, for example, using secondary raw materials in our products, designing products to facilitate their recycling, managing waste at our production sites in a way that prioritises recycling over disposal as well as registering substances of concern systematically along the entire supply chain. With regard to the use phase and recycling of BMW Group vehicles (economic activity 6.5), we have set up appropriate processes to comply with recycling requirements and established measures for managing waste during maintenance and at the end of the life cycle. All these criteria also form part of our comprehensive approach to the [Transition to a circular economy](#).

The DNSH requirements for Environmental Objective IV are fulfilled for economic activities 3.3 and 6.5.



Pollution prevention and control

The requirements to do no significant harm to Environmental Objective V differ considerably for economic activity 3.3 and economic activity 6.5.

With regard to economic activity 3.3, the BMW Group has established corresponding processes which aim to monitor and ensure legal compliance with any prohibitions and limits relating to the use of chemical substances at vehicle level. All substances used by the BMW Group are in compliance with national and European laws. The use of any other substances, such as those classified under the CLP Regulation which go beyond current prohibitions established in applicable legislation (including the REACH

Regulation), is reviewed. Substitutes are sought for substances if their use cannot be avoided owing to current societal needs, taking into account factors such as economic and technical requirements.

Never the less, it is not possible to meet all criteria to do no significant harm to Environmental Objective V in the case of economic activity 6.5. Current PHEV models under 50 g CO₂/km WLTP offered by the BMW Group and other manufacturers may make a significant contribution as defined by the EU Taxonomy. However, manufacturer specifications for air pollutant emissions in real driving conditions (real driving emissions, RDE) cannot be declared as 80 % of the limit as required by the EU Taxonomy with reference to table 2 in the notes to the Clean Vehicles Directive, due to potentially extreme driving situations. All PHEVs in the vehicle portfolio for economic activity 6.5 must therefore be considered as not Taxonomy-aligned, even if they meet these specifications in everyday driving situations.

For the remaining BEV in the BMW Group's vehicle portfolio, further deductions have to be made in the context of economic activity 6.5. In the case of individual models in light of the requirements for rolling resistance coefficients for tyres and in particular the external rolling noise of tyres. Owing to the limited availability of data, the eligibility of the models concerned is calculated in a simplified manner based on the tyres approved for these models, weighted by their purchase volumes and take rates.

The DNSH requirements for Environmental Objective V are fulfilled for economic activity 3.3; however, not all are fulfilled for economic activity 6.5. [1\]](#)

Minimum safeguards

In addition to making sure that no significant harm is caused to the other environmental objectives, it must also be ensured that the organisation carrying out the economic activities has established minimum safeguards. These require the implementation of processes to ensure compliance with due diligence obligations both within an organisation and in the stages of the upstream and downstream value chain that have been outsourced. Specifically, this refers to compliance with human rights and regulations on bribery, corruption, taxation and fair competition. In its [Policy statement on respect for human rights and environment-related standards](#), the BMW Group has, among other things, committed to compliance with the following standards for minimum safeguards as defined in Article 18 of the Taxonomy Regulation: Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights and the Ten Principles of the UN Global Compact, which we signed back in 2001.

[Purchasing and supplier network](#), [Compliance and human rights](#)

The minimum safeguard requirements are met.

EU Taxonomy performance indicators

Please refer to the remarks in the glossary for the definition and calculation of the Taxonomy-specific performance indicators revenues, capital expenditure and operating expenditure. [Glossary](#)

The proportion of revenues, capital expenditure and operating expenditure relating to eligible and non-eligible economic activities are shown in each case as an aggregate percentage for the BMW Group. Only Taxonomy-eligible revenues, capital expenditure and operating expenditure as listed for Environmental Objective I "Climate change mitigation" are disclosed, given that Taxonomy-eligible revenues, capital expenditure and operating

expenditure for Environmental Objective II "Climate change adaptation" are a subset of the values for Environmental Objective I "Climate change mitigation". This approach avoids double counting of revenues, capital expenditure and operating expenditure when determining the KPI in the numerator across multiple economic activities.

In the case of capital expenditure, all Taxonomy-eligible expenditure is allocated to the two economic activities 3.3 and 6.5. In most cases, values from financial data were allocated directly to the economic activities for all three performance indicators, based for example on the drivetrain or the vehicle model. In the remaining cases, an allocation mechanism was used for each economic activity and each performance indicator. For Taxonomy-eligible and Taxonomy-aligned capital expenditure, the allocator is based on long-term Taxonomy-aligned revenues generated from the automobile and motorcycle business for economic activity 3.3 and on the Taxonomy-aligned financing volume for new customers in the current financial year for economic activity 6.5:

- Allocator for economic activity 3.3: (BEV + PHEV (<50g)) x Automotive segment revenues (2023–2028)
- Allocator for economic activity 6.5: (DNSH alignment factor x BEV) x proportion of financing volume attributable to new customer contracts (2022)

For capital expenditure, the allocator is based on detailed long-term corporate planning for the next six years, as approved each year by the Board of Management and Supervisory Board.

This allocator is used for capital expenditure on property, plant and equipment (including right-of-use assets), intangible assets and expenditure on research and development for economic activity 3.3, and for capital expenditure on leased products for economic activity 6.5. For operating expenditure, the formula is also applied to non-capitalised development costs.

For other operating expenditure (non-capitalised right-of-use assets (lessee), maintenance/repair expenses) relating to economic activity 3.3, the allocator is based on the Taxonomy-aligned revenues generated from the automobile and motorcycle business in the reporting period.

Interpretation of the performance indicators for reporting year 2022

The following overview tables summarise the performance indicators revenues, capital expenditure and operating expenditure resulting from Taxonomy-eligible and Taxonomy-aligned economic activities of the BMW Group.

— BMW Group perspective

Taxonomy-aligned revenues of the BMW Group amounted to € 15,705 million, corresponding to 11 % of total Group revenues. The Taxonomy-aligned share of capital expenditure was 21 % (€ 5,100 million). Operating expenditure incurred for Taxonomy-aligned economic activities amounted to € 1,661 million, corresponding to almost 29 % of Taxonomy-eligible operating expenditure.

— Economic activity 3.3, "Manufacture of low carbon technologies for transport"

The Taxonomy-aligned share of revenues generated by the Automotive and Motorcycle segments corresponded to 10.7 % (economic activity 3.3 "Manufacture of low-carbon technologies for transport") of total Group revenues. As a percentage of external revenues of the two segments, the Taxonomy-aligned share rises to 14 %. [Segment information 1](#)

ⓘ Additions to intangible assets and property, plant and equipment of the BMW Group were more than 19 % Taxonomy-aligned. This proportion more than doubles to 43 % in relation to additions recorded by the Automotive and Motorcycle segments. The latter highlights the high proportion of Taxonomy-aligned capital expenditure of the Automotive segment. ⓘ

— Economic activity 6.5, "Transport by motorbikes, passenger cars and light commercial vehicles"

The Taxonomy-aligned shares for the three performance indicators were at a low single-digit level for the Financial Services segment. This was due to the fact that – compared to the Automotive segment – there is a time lag before the effects of the vehicle fleet electrification ramp-up are felt in the financing and leasing lines of business. A further reason is the stricter DNSH requirements for economic activity 6.5, in particular those relating to environmental objective V "Pollution prevention and control", which lead to the exclusion of all PHEV and a significant restriction in the recognition of BEV in the scope of EU Taxonomy reporting (for details see Section "Avoidance of significant harm"). In addition, with economic activity 6.5, third-party brands can only be included in the vehicle portfolio under restrictive conditions, such as for the purpose of assigning tyre categories or WLTP emissions values as part of the process of testing compliance with the DNSH criteria. As a result, no specific deductions can be allocated, with the consequence that the models concerned must be excluded from the scope of reporting on Taxonomy alignment.

The growing share of zero-emissions vehicles, the development and production methods used, and – where applicable – contributions made to other environmental objectives as yet to be defined are expected to lead to an increase in Taxonomy-aligned revenues, capital expenditure and operating expenditure. Due to the high level of investment in the transformation of our business activities, for example in the electrification of our vehicles and research into alternative drivetrains, these economic activities have the potential to become Taxonomy-aligned over time. Overall, we anticipate that the proportion of Taxonomy-aligned economic activities will steadily rise as a result of the increasing electrification of our product portfolio. ↗ [Strategy](#)

The contribution of the two economic activities considered for Environmental Objective II is subsumed in the contribution reported for Environmental Objective I. Regardless of the taxonomy criteria, the BMW Group regularly and comprehensively addresses risks arising from climate change and their potential impact on its locations and supply chains.

↗ [DNSH adaptation to climate change](#), ↗ [TCFD climate risks](#)

As the overview tables from Delegated Regulation (EU) 2021/2178 do not provide a detailed picture of the BMW Group's business model per economic activity, the following table provides detailed information about the three performance indicators for both economic activities. ⓘ

ⓘ Voluntary additional information on the Taxonomy-aligned share per economic activity*

	in € million	in € million	in %
Revenues 2022	by activity	of which Taxonomy-aligned	Proportion
Manufacture of low carbon technologies for transport (3.3)	109,029	15,264	14.0
Transport by motorbikes, passenger cars and light commercial vehicles (6.5)	33,581	441	1.3
Total	142,610	15,705	11.0
Capital expenditure 2022	by activity	of which Taxonomy-aligned	Proportion
Manufacture of low carbon technologies for transport (3.3)	10,659	4,596	43.1
Transport by motorbikes, passenger cars and light commercial vehicles (6.5)	13,452	504	3.7
Total	24,111	5,100	21.2
Operating expenditure 2022	by activity	of which Taxonomy-aligned	Proportion
Manufacture of low carbon technologies for transport (3.3)	5,584	1,655	29.6
Transport by motorbikes, passenger cars and light commercial vehicles (6.5)	232	6	2.5
Total	5,816	1,661	28.6 ⓘ

* Taxonomy-aligned share calculated with denominator as the sum of Taxonomy-aligned, non-Taxonomy-aligned and Taxonomy-capable values of the respective economic activity.

Contextual KPI information related to Taxonomy-aligned economic activities

in € million	
Revenues	2022
Sales of products, related goods and revenue of service contracts	15,264
Revenues related to financial services	441
Total	15,705
Capital expenditure	2022
Economic activity 3.3	
Property, plant and equipment ¹	3,554
Development costs	1,042
Leased products	0
Total	4,595
Economic activity 6.5	
Property, plant and equipment ¹	1
Development costs	0
Leased products	503
Total	504
Total	5,100
Operating expenditure	2022
Economic activity 3.3	
Development costs – not capitalised ²	1,485
Right-of-use assets (lessee) – not capitalised	14
Maintenance/repair expenses	156
Total	1,655
Economic activity 6.5	
Development costs – not capitalised ²	3
Right-of-use assets (lessee) – not capitalised	0
Maintenance/repair expenses	3
Total	6
Total	1,661

[Revenue includes small amounts from Taxonomy-aligned activities related to the BMW Group's Company car programme. These Company cars are generally transferred to the BMW Group's external sales programme within twelve months after a short period of in-house use.]

¹ Including intangible assets and right-of-use assets from lessee relationships.

² Including Spotlight Automotive Ltd.

[t CapEx plan for Environmental Objective I "Climate change mitigation"

A CapEx plan is required to be drawn up for capital expenditure and operating expenditure that expand Taxonomy-aligned economic activities or allow Taxonomy-eligible economic activities to become Taxonomy-aligned. This plan has been approved by the Board of Management of BMW AG and covers a seven-year period (2022–2028). The CapEx plan covers capital expenditure and operating expenditure for the reporting year and planned capital expenditure and operating expenditure (only non-capi-

talised development costs) for 2023–2028 for economic activities 3.3 and 6.5. The selected future period corresponds to the detailed long-term corporate planning of the BMW Group and contains various investment measures with different implementation times (e.g. electrification of the vehicle fleet, model revisions, structural investments in production sites). The CapEx plan earmarks € 55,989 million for economic activity 3.3 (with € 6,081 million attributable to financial year 2022) and € 16,520 million for economic activity 6.5 (with € 507 million attributable to financial year 2022).^{1]}

[t CapEx plan for transformation into or expansion of Taxonomy-aligned economic activities

in € million	Code(s)	2022	2023–2028	Total
Economic activities				
Manufacture of low carbon technologies for transport	3.3	6,081	49,908	55,989
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	507	16,013	16,520
Total		6,588	65,921	72,509

The following tables provide an overview of the three performance indicators for EU Taxonomy in the 2022 reporting year:

Revenues

Code(s) ¹	Substantial contribution criteria ²									DNSH criteria ("Do no significantly harm")									Taxonomy-aligned prop. of turnover year N-1	Category (Enabling activity)	Category (Transitional activity)
	Absolute turnover	Proportion of turnover	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution prevention and control	Biodiversity and ecosystems	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution prevention and control	Biodiversity and ecosystems	Minimum safeguards						
	in € million	%	%	%	%	%	%	%	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%	%	E	T		
Economic activities																					
A. TAXONOMY-ELIGIBLE ACTIVITIES																					
A.1 Environmentally sustainable activities (Taxonomy-aligned)																					
Manufacture of low carbon technologies for transport	3.3	15,264	10.7	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	10.7	n/a	E			
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	441	0.3	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	0.3	n/a				
Turnover of environmentally sustainable activities (Taxonomy-aligned)	15,705	11.0	100.0	0	n/a	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	11.0	n/a				
A.2 Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																					
Manufacture of low carbon technologies for transport	3.3	81,945	57.5																		
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	32,603	22.9																		
Turnover of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)	114,548	80.3															n/a				
Total A.1 + A.2	130,253	91.3														11.0					
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																					
Turnover of Taxonomy-non-eligible activities (B)	12,356	8.7																			
Total (A+B)	142,610	100.0																			

¹ With reference to ANNEX I of Delegated Regulation (EU) of 4 June 2021 (EU 2021/2139).

² Environmental objectives III-VI not applicable to financial year 2022.

³ Taxonomy-aligned share of turnover per economic activity amounts to 14.0 % for 3.3 and 1.3 % for 6.5. Voluntary additional information on Taxonomy-aligned share per economic activity.

Capital expenditure

	Code(s) ¹	Absolute capital expenditure in € million	Proportion of capital expenditure %	Substantial contribution criteria ²						DNSH criteria ("Do no significantly harm")						Taxonomy-aligned capital expenditure year N ³ %	Taxonomy-aligned capital expenditure year N-1 %	Category (Enabling activity) E	Category (Transitional activity) T
				Climate change mitigation %	Climate change adaptation %	Water and marine resources %	Circular economy %	Pollution prevention and control %	Biodiversity and ecosystems %	Climate change mitigation Y/N	Climate change adaptation Y/N	Water and marine resources Y/N	Circular economy Y/N	Pollution prevention and control Y/N	Biodiversity and ecosystems Y/N				
Economic activities																			
A. TAXONOMY-ELIGIBLE ACTIVITIES																			
A.1 Environmentally sustainable activities (Taxonomy-aligned)																			
Manufacture of low carbon technologies for transport	3.3	4,595	19.1	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	Y	19.1	n/a	E
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	504	2.1	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	Y	2.1	n/a	
Capital expenditure of environmentally sustainable activities (Taxonomy-aligned)		5,100	21.2	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	Y	21.2	n/a	
A.2 Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																			
Manufacture of low carbon technologies for transport	3.3	6,032	25.0																
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	12,948	53.7																
Capital expenditure of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)		18,980	78.7															n/a	
Total A.1 + A.2		24,080	99.9														21.2		
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																			
Capital expenditure of Taxonomy-non-eligible activities (B)		31	0.1																
Total (A+B)		24,111	100.0																

¹ With reference to ANNEX I of Delegated Regulation (EU) of 4 June 2021 (EU 2021/2139).

² Environmental objectives III-VI not applicable to financial year 2022.

³ Taxonomy-aligned share of capital expenditure per economic activity amounts to 43.1 % for 3.3 and 3.7 % for 6.5 ³ Voluntary additional information on Taxonomy-aligned share per economic activity.

Operating expenditure

	Code(s) ¹	Absolute operating expenditure in € million	Proportion of operating expenditure %	Substantial contribution criteria ²							DNSH criteria ("Do no significantly harm")							Taxonomy-aligned operating expenditure year N-1 %	Category (Enabling activity) E	Category (Transitional activity) T
				Climate change mitigation %	Climate change adaptation %	Water and marine resources %	Circular economy %	Pollution prevention and control %	Biodiversity and ecosystems %	Climate change mitigation Y/N	Climate change adaptation Y/N	Water and marine resources Y/N	Circular economy Y/N	Pollution prevention and control Y/N	Biodiversity and ecosystems Y/N	Minimum safeguards Y/N				
Economic activities																				
A. TAXONOMY-ELIGIBLE ACTIVITIES																				
A.1 Environmentally sustainable activities (Taxonomy-aligned)																				
Manufacture of low carbon technologies for transport	3.3	1,655	28.5	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	Y	28.5	n/a	E	
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	6	0.1	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	Y	0.1	n/a		
Operating expenditure of environmentally sustainable activities (Taxonomy-aligned)		1,661	28.6	100.0	0	n/a	n/a	n/a	n/a		Y	Y	Y	Y	Y	Y	28.6	n/a		
A.2 Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)																				
Manufacture of low carbon technologies for transport	3.3	3,929	67.6																	
Transport by motorbikes, passenger cars and light commercial vehicles	6.5	226	3.9																	
Operating expenditure of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)		4,155	71.4															n/a		
Total A.1 + A.2		5,816	100.0														28.6			
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES																				
Operating expenditure of Taxonomy-non-eligible activities (B)		0	0																	
Total (A+B)		5,816	100.0																	

¹ With reference to ANNEX I of Delegated Regulation (EU) of 4 June 2021 (EU 2021/2139).

² Environmental objectives III-VI not applicable to financial year 2022.

³ Taxonomy-aligned share of operating expenditure per economic activity amounts to 29.6 % for 3.3 and 2.5 % for 6.5. ³ Voluntary additional information on Taxonomy-aligned share per economic activity.

PRODUCTS

90 Innovation, Digitalisation and Customer Orientation

95 Product Quality and Safety

97 Carbon Emissions

100 Electromobility

PRODUCTS

INNOVATION, DIGITALISATION AND CUSTOMER ORIENTATION

The BMW Group's innovations are characterised by their consistent orientation towards customer needs and the use of digital solutions. During the year under report, numerous innovations again resulted in processes being optimised, products improved and new technologies introduced to make everyday life easier for our customers.

Vision UI/UX: user interaction and the user interface of the future

With its BMW i Vision Dee concept vehicle, the BMW Group is demonstrating how interaction between people and automobiles could look like going forward. "Dee" is a sporty, elegant mid-size sedan that epitomises the core values of the BMW brand in a new, reduced design language. It is the most recent affirmation of our digital expertise and stands for Digital Emotional Experience. "Dee" is yet another milestone on the road to the NEUE KLASSE and forms an innovative link between everyday reality and the virtual world. As of 2025, with the NEUE KLASSE the BMW Group will be taking a major technological leap forward and creating innovative drivetrain and digital modules for all relevant classes of vehicle across the BMW model range. Electrification, digitalisation and circularity are the key elements that signify the transformation currently taking place within the automotive

industry, which is being driven forward at a considerable pace with this new generation of vehicles. The BMW Group has already demonstrated the great potential of the circular economy principle with its BMW i Vision Circular. The BMW i Vision Dee now illustrates the impact that digital technology will have on driving pleasure in years to come.

MINI Concept Aceman

The Concept Aceman marks the dawn of a new era for the MINI brand. The crossover model is a preview of a completely new type of vehicle that is destined to occupy the position between the MINI Cooper and the MINI Countryman in the model family going forward. This concept vehicle reflects how MINI is reinventing itself to be part of an all-electric future and what the brand stands for by creating an electrified go-kart feeling, digital features for all the senses and a keen focus on minimising its ecological footprint.

"Charismatic Simplicity" – the new design language – pares back the look of the MINI models of the future to the essentials. The exterior of the MINI Concept Aceman features a prominent front end with an octagonal, closed, illuminated radiator grille element, an athletic shoulder section and a powerful rear fitted with vertically arranged taillights. The interior is greatly reduced and focuses on a round OLED display that enables the driver to personalise the sound, interaction, projection and light via three "Experience Modes". Like all future MINI models, the MINI Concept Aceman is designed completely without leather, is practically chrome-free and features a variety of sustainable materials.]



[[Digitalisation – an opportunity for innovation and customer orientation

Digitalisation is a key factor when it comes to keeping the vehicle “fresh” and therefore up to date throughout its life cycle. Since the launch of Operating System 7 in 2018, a Remote Software Upgrade (i.e. updating the vehicle's software remotely) has been available for BMW vehicles. In addition to its remote software upgrades, the Group is continually releasing new functions and features. Since autumn 2022, for example, a service for conveniently paying parking fees has been available in BMW vehicles with Operating Systems 7 and 8 in Germany and Austria – and other countries are set to follow. Upon arriving in a parking zone, the vehicle automatically detects whether the service is available at that location and displays the payment option accordingly.

With “Functions-on-Demand”, additional functions can also be bought in, long after the vehicle has been purchased, or even booked for a specific period.

The vehicle as a digital experience

In 2021, the BMW Group launched its Operating System 8, featuring a new display and control system. Since then, every new BMW model has been equipped with this flexible, scalable infotainment operating system. Currently, the latest BMW 7 Series is presenting the full capabilities of Operating System 8, ranging from “Augmented View” in the information display to a genuine cinema experience with the “BMW Theatre Screen”. The “My Modes” function can be used to create a holistic user experience within the vehicle by changing vehicle features as well as displays and interior ambience, depending on the “My Mode” selected. The My Mode “Digital Art” feature brings digital art to the BMW Curved Display for the first time.

One key advantage of BMW Operating System 8 is its scalability across all classes of vehicle. Since its launch, the system has been rolled out across the compact, mid-size and luxury classes and systematically enhanced in line with customer demand. The focus is on new entertainment offerings such as the integration of AirConsole and the expansion to include third-party apps via the Faurecia Aptoide app store.

Digitalisation also enables innovations, simplifications and advances outside the vehicle. With the My BMW App and the MINI App, which are now being used by over nine million customers worldwide on their smartphones, it is possible, for example, to plan travel routes, request information on the vehicle's condition, or control the charging process.

Software expertise at the BMW Group

Twenty years ago, the BMW Group began developing its own software with the founding of BMW Car IT. Since then, the Company has continued to expand its teams of developers to form a global network. Beginning with the Ulm site in southern Germany, its software expertise has been bolstered by the joint ventures]]



Remote software upgrades*

The software architecture, which has been successively developed over the last 15 years, enables BMW to install software on all control units in the vehicle's electrical system within a matter of minutes. Over 30 BMW models worldwide can now be upgraded using this method. The last remote software upgrade in 2022 was already accessible to 3.8 million BMW Group vehicles. The free upgrades include improvements and feature enhancements in the areas of infotainment, driving, drivetrain, driver assistance, convenience and safety.

* The availability and content of remote software upgrades depend on the country, model, equipment and software version installed.



BMW Theatre Screen

The BMW Theatre Screen is much more than just a screen fitted in the rear of the new BMW 7 Series: it raises the bar in terms of in-car entertainment and creates a cinema-like entertainment experience for back-seat passengers. During a journey, the 31.3-inch (79.5 cm) display can stream popular apps via the vehicle's 5G connectivity and pre-installed Amazon Fire TV (depending on the country-specific Fire TV offering; in China, Huawei and Iqiyi).

Critical TechWorks in Portugal and BA TechWorks in China. Overall, the BMW Group employs more than 8,500 people in IT and software development.

Range of innovative mobility services

Together with the Mercedes-Benz Group, the BMW Group offers mobility services via the YOUR NOW joint venture, which was established in 2019. The range of services provides customers with access to various modes of transport other than their own vehicle.

As Europe's largest multimodal mobility platform, FREE NOW combines the entire range of various forms of mobility in one app, enabling registered users in European cities to reach their destination both swiftly and according to their needs. Apart from taxi cabs and private ride services, various types of e-scooters as well as car-sharing vehicles can also be booked via the FREE NOW app. Moreover, FREE NOW consistently promotes the electrification of the current fleet. By 2025, the share of electrically powered trips is projected to increase to 50 % and users are set to travel fully electrically as of 2030. During the year under report, YOUR NOW Holding sold the car-sharing provider SHARE NOW to Stellantis. Car-sharing services from various providers will continue to be offered via FREE NOW.

Since July 2022, the BMW Group's range of mobility services has been enlarged to include the BMW Add-On Mobility app in cooperation with SIXT. Among other benefits, the app gives BMW and MINI customers prioritised access to rental vehicles in Germany, Belgium and Luxembourg. Furthermore, the BMW Group offers its business customers and fleet operators individualised mobility solutions with a focus on flexible, keyless vehicle use and based on digital, data-driven vehicle management that boosts process efficiency and enhances the customer experience.

The BMW Group's range of services also includes comprehensive charging solutions for the home, the workplace and on the road.

➤ Expanding charging infrastructure and enabling faster charging

Digital connectivity and automation

Automated functions and digitally connected vehicles can help cut emissions, reduce the risk of accidents and ease traffic congestion. The BMW Group is therefore firmly committed to making further progress in this area – with a clear focus on customer convenience and safety.

The BMW Group has been pooling the development of assistance and automation functions at its Autonomous Driving Campus north of Munich since 2017. It also operates research facilities in both China and the USA, enabling it to include its two largest markets in terms of traffic-related as well as traffic law specifics right from the outset. In order to take the diverse demands placed on automated driving systems into account from the beginning, the BMW Group also has a globally unique driving simulation centre in Munich, making it possible to test driver assistance systems and automated driving functions in a realistic setting.

One of the many successes to come from our development work is the innovative technology toolkit, which is integrated in the BMW iX¹ as well as in the new BMW 7 Series and is being rolled out successively across the entire range of vehicles. The toolkit excels in terms of its computing power, its highly efficient sensor technology, the continuous improvement of the software via data-driven development and the use of artificial intelligence (AI). It also forms the basis for our upcoming automated features, including a highly automated Level 3 function for the new BMW 7 Series.

When it comes to developing the next generation of software solutions for automated driving, the BMW Group has been collaborating with Qualcomm Technologies and Arriver since 2022. Together, we aim to develop technologies ranging from New Car Assessment Program (NCAP) solutions to advanced Level 2 driving assistance systems and the Level 3 functionalities of highly automated driving. Since 2021, the BMW Group has also been involved in the Munich-based research project TEMPUS², which explores questions of technical feasibility.

Safety of automated smart systems

The BMW Group's highest priority is to ensure that its automated systems operate in a safe, secure manner. It is therefore promoting the development of an industry-wide ISO standard for highly and fully automated driving functions, a project it has been involved in right from an early stage. The work has culminated in an ISO Technical Report, which is due to be published as an ISO Technical Specification in the course of 2023, and sets out uniform technical standards for safe automated driving.

Drivetrain technologies of the future

When developing drivetrain technologies, the BMW Group focuses on the needs of its customers worldwide. For this reason we are constantly developing existing drivetrain technologies in the interests of efficiency, decarbonisation and resource conservation. At the same time, we continue to research new drivetrain technologies with the ultimate aim of developing them for series production.

New generation of battery cells

High-performance, innovative and sustainably produced battery cells are the key to success for individual electric mobility. With its NEUE KLASSE models, the BMW Group will be entering a new era of e-mobility as of 2025, using newly developed round battery cells for the first time that are ideally suited to the new architecture.

The sixth generation of our lithium-ion cells represents a giant technological leap forward compared with the previous generation, effectively increasing energy density by more than 20 %, charging speed by up to 30 % and range by around 30 %. The carbon emissions generated by cell production will be reduced by up to 60 %.

The BMW Group has placed orders worth a double-digit billion euro amount prior to the production of the new BMW battery cells. [1](#)

¹ ↗ Consumption and Carbon Disclosures.

² Munich test site – pilot test of automated driving in urban traffic.

Benefiting from the extensive in-house expertise gained from the Group's own Cell Manufacturing Competence Centre, the team consisting of Development, Production and Purchasing has succeeded in significantly cutting the total cost of the high-voltage storage system, thanks to the new battery cell and the innovative integration concept for the storage technology developed by the BMW Group. Based on current market assumptions, the cost can potentially be reduced by up to 50 % compared to the current fifth generation.

Hydrogen fuel cell technology

During the period under report, we began testing the BMW iX5 Hydrogen with its hydrogen fuel cell drive system under everyday conditions. We aim to test the interaction between the CO₂-free drivetrain, the chassis technology and the electronic systems in realistic situations. In order to gain further experience, a pilot fleet of the all-electric model has been in production since the end of 2022.

Hydrogen fuel cell technology has the potential to become a sustainable complement to battery-powered e-drive systems. The technology really comes into its own when a comprehensive electric charging infrastructure is not available; it could also be deployed for long-distance use or in larger classes of vehicle. Depending on market requirements and developments, we intend to offer the model as a series production vehicle in the second half of this decade.

The BMW iX5 Hydrogen is equipped with fuel cells developed in collaboration with the Toyota Motor Corporation. The fuel cell stack and the overall drive system have both been developed in-house. The collaboration project has been in place since 2013 and aims to optimise the technology's suitability for everyday use in each company's own series production vehicles.

The BMW Group is supporting initiatives across Europe with the aim of establishing an efficient, hydrogen-based economy and promoting the production of green [Hydrogen](#).

Inspiration and cooperation

Good ideas often emerge when different partners work together. According to this principle, we are focusing on cooperations in which the strengths of the BMW Group complement those of established partners as well as innovation drivers such as start-ups, enabling us to continue developing our innovative strengths.

The global network of BMW Group Technology Offices is also making an essential contribution to maintaining the Group's leading role in terms of innovation.

These offices are strategically positioned worldwide and focus on key hotspots of technology and innovation. The potential of new technologies is therefore being explored in pilot projects and transferred to the Group's centralised teams. Whether manufacturing, developing smart city solutions or the mobility of the future, these Technology Offices are driving forward innovations that benefit the Group in all its lines of business. [1\]](#)

[

Metaverse

The virtual worlds of the Metaverse are a catalyst for digitalisation for the BMW Group, as the use of X-Reality (VR/AR/MR) technologies and Web 3.0 generates benefits across all areas of the value chain. Our holistic activities comprise the following three pillars:

1. Corporate Metaverse (virtualisation of internal processes: virtual working platform for collaboration and interaction, training and recruiting)
2. Commercial Metaverse (in the "digital brand" context, the new potential for interaction becomes possible for brands and customers alike)
3. In-Car Metaverse (offers customers new options for information management, increased productivity, communication and all-round entertainment within the vehicle)

Using the mixed reality approach, which was introduced during the year under report, a team of engineers from BMW M GmbH has developed an immersive driving experience for the BMW M2. Using XR goggles, drivers can immerse themselves in a virtual

world to master high-rev challenges, similar to a racing game. Integrated gaming elements, such as avoiding obstacles or collecting virtual coins, enhance the immersive in-car experience. The system takes all the BMW M2's axes of motion and rotation into account. The vehicle itself becomes the controller, in this case the fastest controller in the world.



]1

¶ The trend research conducted by its Technology Offices helps the BMW Group to predict tomorrow's technological developments. The results are now publicly available in the [Trend Radar](#). Scientific institutions, start-ups and even potential partners can make use of these. ¶]

Worldwide culture of innovation

Global dialogue with start-ups is an important means for the BMW Group to gain impetus. This is based on three pillars, comprising [BMW i Ventures](#) (through which we invest in technology start-ups), the MINI brand-initiated start-up [Accelerator URBAN-X](#) that focuses on urban living and the [BMW Startup Garage](#) (which serves as the BMW Group's venture client unit and searches for innovations that represent a significant benefit for products, services, systems and processes). The aim of the programme is to evaluate and empower start-ups to become suppliers and partners.

¶ Shaping the future of mobility

The BMW Group is involved in numerous research and implementation projects for developing new mobility concepts. The main focus is on pilot projects that improve the quality of life and promote more sustainable urban mobility.

For example, the BMW Group is working with the city of Munich to develop urban projects with the involvement of the local population. Among other things, this entails making more efficient use of the available road space, establishing new on-demand services, and promoting parking space management. Moreover, in the Berlin project ["New Mobility Berlin"](#) we are jointly developing solutions to meet people's changing mobility needs and address the shortage of space in a growing city. The project is helping to create shared spaces in order to provide, for example, mobility stations for car sharing or rental bikes. Based on a long-term cooperation with the City of Rotterdam, we are also working on numerous pilot projects; from the better networking of different modes of transport (intermodality) to the more efficient use of charging infrastructure.

Vehicles as part of the power grid

The BMW Group is conducting its own research and development work to integrate electrified vehicles in the power grid, thereby contributing to the energy transition, grid stability, and the carbon-free operation of electrified vehicles. The focus is on technologies such as smart charging, a key component of the [BMW ChargeForward](#) service, which enables customers in numerous states of the USA to synchronise their charging behaviour with the current grid load and the use of renewable energy. Another cross-sector initiative is the so-called [Bidirectional Charging Management \(BCM\)](#) research project, which is being subsidised by the German Federal Ministry for Economic Affairs and Climate Action. BCM transforms electric vehicles into mobile energy storage devices and thus into a part of the energy grid in that their batteries can not only absorb electricity, but at the same time feed it in the opposite direction into the grid operator's power supply. In the V2G (Vehicle to Grid) project together with the City of Rotterdam, the BMW Group is also conducting research into using the batteries of electrified vehicles to store surplus renewable energy – with a positive impact on the environment and energy efficiency as well as cutting costs for customers. ¶]

Worldwide cooperations and partnerships

To ensure its long-term success, the BMW Group enters into targeted cooperations and partnerships with companies from various industries with the aim of pooling expertise and implementing innovations as swiftly as possible. Several of the Group's largest collaborations and investments are listed below:

At the beginning of 2022, the BMW Group, Qualcomm Technologies and Arriver Software jointly entered into a long-term cooperation to develop solutions for next-generation automated driving and signed an agreement to that effect. The three companies aim to develop technologies ranging from New Car Assessment Program (NCAP) solutions and advanced Level 2 driving assistance systems to the Level 3 functionalities of highly automated driving. The joint development of software functions is based on BMW's current software toolkit for automated driving. Within the terms of the cooperation, more than 1,400 specialists will work together at various locations worldwide, including sites in Germany, the USA, Sweden, China, Romania and the BMW AD Test Centre Sokolov in the Czech Republic.

Since the joint acquisition of the HERE mapping service by the BMW Group, the Mercedes-Benz Group and Audi in 2015, the three partners have been working on high-precision digital maps that can be linked to real-time vehicle data. These maps will form the foundation for the next generation of location-based services and are also the basis for new assistance systems. As an independent platform, HERE remains accessible for the automotive industry as well as other partners. In the year under report, the location data and technology platform had nine direct and indirect shareholders: Audi, Bosch, the BMW Group, Continental, Intel, Mitsubishi, the Mercedes-Benz Group, Nippon Telegraph and Telephone, and Pioneer. In November 2022, the BMW Group and HERE Technologies jointly announced that HERE HD Live Map – HERE's high-resolution road map – will be used for automated driving functions.



The BMW Group is a founding partner of the IONITY joint venture, which aims to establish a high-power charging network for electric vehicles right across Europe. This is an important step in ensuring that electric mobility is convenient to use, even over long distances. The founding partners, i.e. the BMW Group, the Mercedes-Benz Group, the Ford Motor Company and Porsche, together with Volkswagen and Audi, all participated in equal measure. In 2019, the Hyundai Motor Group with its Hyundai and Kia brands joined IONITY as an additional shareholder. In April 2022, BlackRock became a further investor, enabling IONITY to continue investing in the densification and expansion of the high-power charging network. [↗ Expanding charging infrastructure and enabling faster charging](#)

In collaboration with Amazon Web Services (AWS), the BMW Group is developing innovative cloud technologies for processing vehicle data. The two companies are also working together to develop commercial standard cloud solutions for the secure handling of vehicle data. The agreement is a continuation of the partnership between BMW and AWS in the field of vehicle data that began back in 2015. As in all previous collaborations with AWS, the BMW Group retains full and exclusive control over the data and complies with the data protection regulations applicable in its respective markets.

Since the launch of the first BMW voice assistant (BMW Intelligent Personal Assistant) in 2018, voice interaction has become an increasingly important part of the BMW iDrive display and operating concept. The next generation of the voice assistant will be based on Amazon's Alexa technology, thus enabling an even more natural dialogue between driver and vehicle.

Information on the overall scope of the BMW Group's research and development activities is available in the section on the Group's results of operations. [↗ Financial performance](#)

PRODUCT QUALITY AND SAFETY

[All BMW Group products and services are required to meet the highest standards in terms of quality and safety, which are ensured by the Group's comprehensive quality management system. All measures taken reflect the BMW Group's constant focus on human safety.

Effective safety systems

The BMW Group regards the safety of its vehicle's occupants and road users in general as its foremost priority when developing its products. Optimum chassis tuning, highly effective braking systems and stable passenger compartments are key factors in this context. Moreover, BMW Group vehicles are equipped with state-of-the-art safety systems that reduce the risk of accidents and injuries (active safety systems such as collision warning or lane departure warning systems) as well as mitigate the consequences in the event of an accident (passive safety systems such as airbags or seat belts).

We work continuously to further improve the safety of our vehicles. For example, since 2021 the BMW iX* has been setting new standards in this field with its active safety systems. These latest-generation safety features are currently being transferred to other models, including the BMW 7 Series and the BMW X1. The sustained high safety level of BMW Group vehicles was again confirmed externally by the European New Car Assessment Programme (Euro NCAP) in the course of 2022. Following the BMW iX*, which was awarded 5 stars in the previous year, the BMW 2 Series Active Tourer and the BMW X1 also earned this maximum rating in the year under report. These results also underpin the BMW Group's premium aspiration in terms of vehicle safety. [↗ GRI Index: 416-1](#)

Quality management

Product safety is an essential part of the BMW Group's comprehensive quality management system, which is in place to ensure that its products are safe, of excellent quality and legally compliant. From the development stage to manufacturing, the Group's products are therefore subject to strict testing procedures. However, in our view, quality management goes much further. Any information from customers regarding potential deviations from quality standards are systematically followed up. The BMW Group informs the relevant authorities without delay if required to do so for market-related reasons. This is especially true for safety-related and compliance-relevant aspects.

If a safety risk or a compliance-related defect is found, the BMW Group implements all the measures required to remedy the issue in close coordination with the responsible authorities. Safety- and compliance-related technical actions affected around 3.4 million vehicles during the year under report. These actions were all of a voluntary nature and carried out in close coordination with the authorities. The BMW Group works according to the principle of prevention. To avoid technical actions of this type going forward, the BMW Group has developed a comprehensive programme that is in place as of 2023.

Pollutants management

The BMW Group aspires to comply with all legal requirements regarding the use and handling of pollutants at every link in the value chain and also insists on corresponding requirements throughout its entire supply chain. To the extent possible, the use of problematic substances is ruled out right from the vehicle design stage. In this respect we use the [↗ Global Automotive Declarable Substance List \(GADSL\)](#) as a guideline. At the same time, we are working to reduce pollutant emissions in the interior of our vehicles to an absolute minimum. All BMW, MINI and Rolls-Royce brand vehicles are equipped as standard with interior air filters **1]**

* [↗ Consumption and Carbon Disclosures.](#)

that prevent exterior pollutants and particles such as dust or pollen from entering the vehicle. Since 2020, the BMW Group has been using air filters equipped with nanofibre technology that are specially designed to prevent certain microbial particles and allergens as well as ultra-fine particulate matter from entering the vehicle.

Sensitising and empowering customers

The BMW Group provides its customers with a broad range of information regarding the proper use of its products and services. Information on safety, the correct operation of vehicles, and health protection is available in both printed and digital form (online or via app). The information is supplemented by detailed notes and background information on the services, accessories and components pertaining to each individual vehicle.

With the [BMW M Driving Experience](#), the BMW Group offers driver and rider safety training for BMW, MINI and BMW Motorrad brand vehicles in 25 countries. In addition to the product experience itself, participants learn how to handle their vehicles in a safe manner and are made aware of potentially dangerous situations when using public roads. In 2022, more than 100,000 customers worldwide took part in these training courses.

Customer data protection

In view of the increasing scale of digitalisation and the higher level of IT risks, the BMW Group regards data protection as a key responsibility. Strict data protection requirements are therefore taken into account at an early stage when developing functions and services. Any personal data required in the course of contact with our customers are only collected, processed or used to the extent legally permitted and with the active consent of the data subject. The BMW Group deploys an individually configurable data protection menu to ensure transparency, informational self-determination and thus data sovereignty for all its customers.

In order to ensure the protection of customer data, despite the challenge posed by the growing number of digitalised services, we are constantly developing our data management systems and respond promptly to any information received regarding data protection risks. During the year under report, we additionally improved customer data protection by tightening customer data governance. If customers have any queries regarding the processing of their personal data, they are welcome to contact the Customer Interaction Centre or the Data Protection Officer in their respective market.

At the same time, we work continuously to maintain our high level of data protection and regularly check all applications deployed for processing customer data to ensure they comply with all currently applicable and appropriate IT security measures. Our specialised teams search specifically for weak points in applications. We also translate any new findings into binding, Group-wide standards if the need arises.

The BMW Group collaborates closely with the relevant data protection supervisory authorities, particularly regarding fundamental data protection issues such as the increasing connectivity of vehicles. [GRI Index: 3-3, 418-1](#)

Secure connectivity

The BMW Group's responsibility for its products includes the secure transmission of vehicle data to third parties. For example, Group vehicles are not directly connected to the Internet, but communicate directly and exclusively with the BMW Connected-Drive back-end facilities via a secure connection within a virtual private network. The strategy enables the BMW Group to minimise the risk of unauthorised third parties accessing either the vehicle itself or any of its sensitive data. The access point to the Internet is controlled via a gateway. We see this extended vehicle copytext approach in accordance with ISO 20078 as the best solution to providing outstanding data security and data protection and meeting statutory cybersecurity requirements (e.g. UN R155).

[CarData](#) provides BMW and MINI customers with transparency and sovereignty over the transfer of data to authorised third parties. With the introduction of the service in Germany and Europe in 2017 and the USA in 2020, the BMW Group is fully implementing the current requirements of the EU General Data Protection Regulation (EU GDPR) and the California Consumer Privacy Act (CCPA). The BMW Group deploys state-of-the-art technologies to prevent vehicle theft. In the BMW iX* for example, ultra-wide-band technology further enhances the level of vehicle security. [1\]](#)

* [Consumption and Carbon Disclosures.](#)

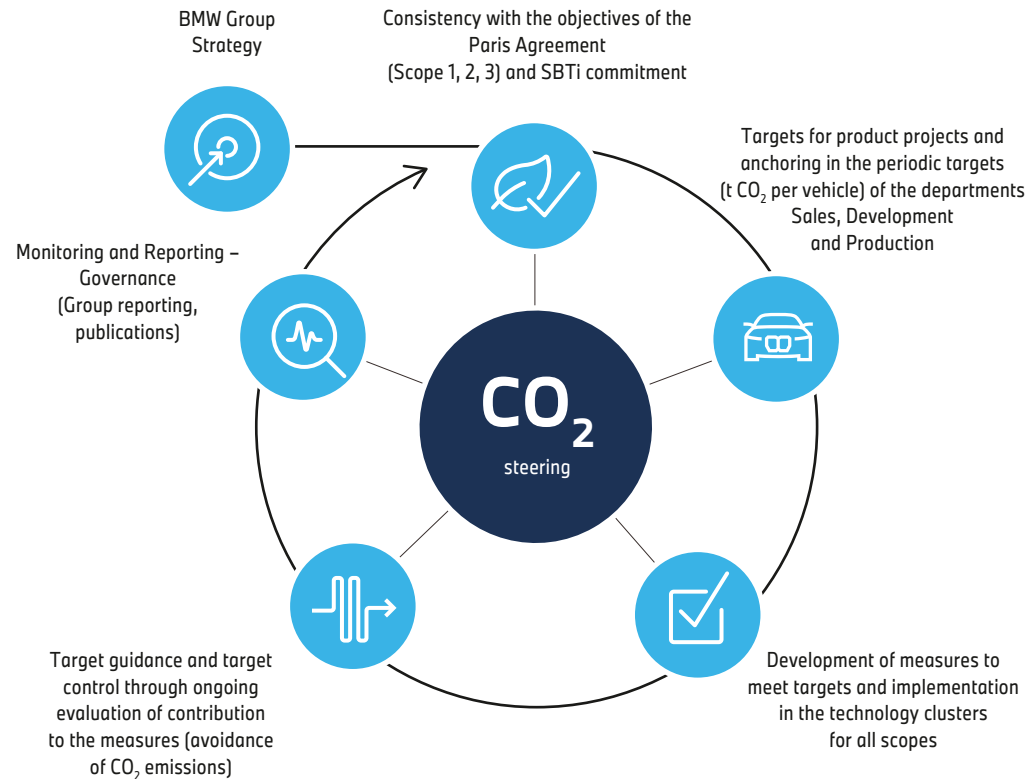
CARBON EMISSIONS

The BMW Group is fully committed to the climate protection targets set out in the Paris Agreement. We are taking ambitious steps to contribute to progressive decarbonisation. At its base is our holistic carbon reduction strategy. By 2050 at the latest, we intend to achieve net zero in terms of our carbon emissions across the entire value chain.

By holistic, we mean reducing the carbon emissions of our vehicles not only during the use phase, but over their entire life cycle. With this approach we aim to achieve substantial improvements that stretch across all our vehicle generations. This point is particularly important in view of the increasing electrification of entire fleets: although the strategy reduces the carbon emissions generated during the **Use phase**, at the same time, however, they increase, particularly in the supply chain, mainly due to the carbon-intensive production of components such as high-voltage batteries. Reducing carbon emissions is therefore one of the key criteria we apply when awarding contracts to partners within our supplier network. Via this strategy, the BMW Group is simultaneously promoting cross-sector decarbonisation, particularly for energy-intensive primary materials such as steel, light metals and plastics. **Carbon emissions in the supply chain**

The BMW Group's ambitious decarbonisation targets are part of its integrated corporate target system. They are in line with the climate protection targets set out in the Paris Agreement and validated by the Science Based Targets initiative (SBTi). These targets are being implemented under the responsibility of the Board of Management in the BMW Group's various departments and thus consistently throughout the organisation. **Performance indicators and management** The BMW Group derives its specific decarbonisation targets for each vehicle project from its overarching goals. The responsibility for achieving these goals lies with defined specialist units in the management areas of Development, Purchasing and Supplier Network as well as Production. Internal control and reporting systems take into account the various stag-]

CO₂ steering



ties along the value chain, comprising the supply chain, development, production and the use phase of the vehicles. Among other factors, emissions targets at component level form the basis for the Group's carbon reduction measures. Target management and the monitoring of target achievement are performed at vehicle level and subsequently aggregated for various purposes, including reporting at Group level.

We explain how the BMW Group manages the topic of sustainability across the organisation in the chapter [Strategy](#). We also report on the management of climate-related opportunities and risks, such as the stricter regulation of carbon emissions, in the chapters [Outlook](#) and [Risks and Opportunities](#).

Carbon reduction targets across the value chain in detail

For now, efforts to reduce the BMW Group's carbon emissions are based on measurable, science-based targets set to 2030. In this context, we joined the SBTi in 2020.

With these targets in mind, we are moving forward along a pathway in line with the Paris Agreement set to limit global warming. On this basis, we also became the first German automobile manufacturer to join the [Business Ambition for 1.5°C initiative](#) of the SBTi in 2021. The BMW Group is therefore also part of the international [Race to Zero Campaign](#) initiated by the United Nations. With this strategy, we are also seeking to motivate other companies to take ambitious steps to protect the climate. [1\]](#)

We have set ourselves the following SBTi-validated carbon reduction targets¹ by 2030 (base year 2019 for each scope):

- Carbon reduction by an average of 80 % per vehicle produced at our own plants and sites (Scope 1 and 2)². These targets can be achieved by for example reducing our energy requirements and simultaneously increasing the use of renewable energy.³ [Carbon emissions at BMW Group sites](#)
- Carbon reduction in the use phase⁴ of the vehicle (Scope 3 downstream⁵) by an average of more than 50 % per kilometre driven. To accomplish this target, we are driving forward the electrification of the entire product portfolio and deploying new, efficiency-enhancing technologies. [Efficient Dynamics technologies](#)
- Carbon reduction by more than 20 % on average⁶ per vehicle in the supply chain (Scope 3 upstream⁷). Thus we also have a scientifically tested and confirmed target for reducing carbon emissions in the supply chain. In particular, the use of renewable energy sources³ as a criterion for awarding contracts to suppliers and a continuously rising secondary raw materials ratio will contribute to achieving the target. [Carbon emissions in the supply chain.](#)

Over the entire life cycle⁸ of a vehicle, the individual targets mentioned above will result in an average carbon reduction of more than 40 % by 2030. In order to achieve this, we rely on measures to reduce carbon emissions, such as the use of renewable energies³, in both our own operations and those of our suppliers. Accordingly, compensation measures are not included. In particular, the significant increase in the [sale of electrified vehicles](#), efficiency improvements in all drivetrain technologies and effective measures to [reduce carbon emissions in the supply chain](#) are expected to help achieve the targets. The BMW Group will continuously review and further develop its carbon reduction targets with the aim of continuing to meet its high standards for decarbonising its business model going forward.

[1\]](#) Absolute carbon emissions decreased by 4.2 % to around 117.4 million tonnes during the year under report (2021: 122.5 million tonnes), the main driver being the increasing electrification of the product portfolio. We provide comprehensive information on the BMW Group's carbon footprint in the chapter [Further GRI Information. 1\]](#)

¹ Scope 3 emissions (upstream) in the supply chain and transport logistics, as well as well-to-tank emissions from the supply of fuel in the use phase, take into account not only carbon but also other climate-impacting greenhouse gases such as methane and are stated in carbon equivalents (CO₂e). The measurement of Scope 1 and Scope 2 emissions, as well as the additional Scope 3 emissions, does not include climate-impacting gases other than carbon dioxide. [Glossary](#)

² In addition to production emissions, CO₂ Scope 1 and 2 emissions also include those generated at sites not allocated to production.

³ In-house generation, direct purchase or Energy Attributes Certificates (e.g. certificates of origin).

⁴ Takes into account an additional 10 % in line with SBTi to cover possible differences between WLTP figures and actual emissions. The upstream supply chain emissions generated by various energy sources (fossil fuels and electricity) according to the well-to-wheel approach are also included. The assumed average mileage is 200,000 km (in accordance with VDA 900-100). For definition and further information, see [Glossary](#) (carbon emissions of the new vehicle fleet worldwide including upstream supply chain emissions).

⁵ Categories included under Scope 3 downstream according to the Greenhouse Gas Protocol; Category 11: Use phase. [Further information](#) (carbon footprint).

⁶ For the sake of simplicity, this figure has been rounded. The target validated under SBTi is 22 %.

⁷ Categories included under Scope 3 upstream according to the Greenhouse Gas Protocol: Category 1: Purchased goods and services; Category 4: Transportation and distribution. [Further information](#) (carbon footprint).

⁸ Not including carbon emissions generated through waste disposal.

Statutory carbon limits again achieved in the use phase

Carbon emissions generated in the use phase are not only an important metric in our life cycle assessment, but also subject to numerous regulatory requirements. The BMW Group aims not only to meet the statutory carbon emissions limits, but to undercut them. Within the EU¹, average carbon fleet emissions, taking into account regulatory requirements² and in accordance with WLTP³, were 105.0 g CO₂/km⁴. We have thus reduced the carbon emissions of the new vehicle fleet EU⁵ by a further 10.9 g compared to the previous year (2021: 115.9 g CO₂/km⁴). We remained significantly below the limit of 127.5 g CO₂/km⁴ applicable to the BMW Group in the year under report by 22.5 g CO₂/km, continuing the trend seen in recent decades, driven by the electrification of the vehicle fleet and the fleet-wide deployment of innovative [Efficient Dynamics technologies](#). On this basis, we shall continue to work on reducing greenhouse gas emissions going forward.

Regulatory GHG fleet consumption targets were met in the US market during the year under report.⁶ In the USA, GHG fleet emissions⁷ averaged 137.3 g CO₂/km for model year (MY) 2022 for the Passenger Cars category (MY 2021: 134.0 g CO₂/km) and 154.9 g CO₂/km (MY 2021: 150.1 g CO₂/km) for the Light Truck category. Volume-weighted fleet carbon emissions averaged 145.9 g CO₂/km in the USA (MY 2021: 140.9 g CO₂/km).⁸ Despite higher sales of all-electric vehicles in the US market, GHG fleet emissions increased slightly year-on-year, as significantly more vehicles from higher segments with correspondingly higher emissions were also sold during the year under report. In China, average fleet carbon emissions were 150.6 g CO₂/km⁹ in accordance with the WLTC test cycle (2021: 163.0 g CO₂/km WLTC). Thus we also met the regulatory CAFC fleet consumption requirements applicable in that country during the year under report.¹⁰

The BMW Group's worldwide carbon fleet emissions¹¹ averaged 193.7 g CO₂/km¹² (2021: 197.9 g CO₂/km) in the year under report. These figures correspond to a decrease of 11.4 % compared to the base year 2019 (2019: 218.5 g CO₂/km). When calculating the emissions figure, the BMW Group takes into account the average

carbon fleet emissions (including upstream emissions for fuel and electric charging) in the EU, the USA and China and standardises them in accordance with WLTP. With a share of more than 80 % of BMW Group deliveries, these three core markets and regions form a reliable basis for calculating global carbon fleet emissions.

The BMW Group is paying close attention to carbon emissions legislation in its various markets. Current developments during the year under report included the EU's agreement on new fleet emissions targets for the years 2030 and 2035 and the tightening of national fleet consumption targets in the USA. At state level, the California Environmental Protection Agency (CARB) also adopted a new Zero Emission Vehicle (ZEV) mandate in 2022 that calls for a ZEV quota of 100 % by 2035, which is expected to be adopted by several states. In principle, the BMW Group supports the development of harmonized regulations – both nationally and internationally. Comparable specifications in major markets create reliable, predictable framework conditions and make an important contribution to combating climate change as well as improving air quality. We provide information on the BMW Group's most important climate policy positions and activities in our [Climate Commitment Report](#).

[(Making conventional drivetrains more efficient and generating fewer emissions

From the BMW Group's point of view, modern, efficient combustion engines also continue to play an important role. This perspective will continue to apply as long as unrestricted access to charging infrastructure cannot yet be guaranteed across all regions and for every customer. For this reason, the BMW Group will continue to work on improving the efficiency of its conventional drivetrain systems as part of its Efficient Dynamics strategy. Efficient Dynamics is a technology package comprising various coordinated measures to reduce fuel consumption in the fields of engine technology, aerodynamics and lightweight construction that has been in use across the fleet since 2007.]

¹ EU-27 countries including Norway and Iceland.

² Including an allowance for eco-innovations (amounts of minor significance).

³ Average carbon fleet emissions within the EU (including Norway and Iceland) are required to be reported in accordance with the new Worldwide Harmonized Light Vehicles Test Procedure (WLTP) type test cycle as of 2021. Since 2021, this metric has been used by the EU Commission as the basis for calculating carbon fleet emissions.

⁴ This is a preliminary internal calculation with a potential variation of +/- 0.5 g CO₂/km, as official registration figures from the authorities are not available for all EU states. Figures officially published by the EU Commission are not expected to be available until November of the following year. Prior-year figures have not been retrospectively adjusted.

⁵ [Glossary](#)

⁶ In the US market, manufacturers receive positive credits for undercutting regulatory GHG (Greenhouse Gas) fleet limits. Failure to remain below the regulatory limits results in negative credits. At the end of a model year, a positive GHG credit balance must be achieved in order to meet regulatory requirements. As GHG credits are valid for five years on the US market, a short-term failure to meet fleet limit targets in one year can be offset by undercutting them in a previous year. Moreover, it is possible to purchase credits from other manufacturers. In the year under report, the BMW Group used this type of flexibility to meet regulatory GHG requirements on the US market. As of 2023, the BMW Group will no longer purchase credits from other manufacturers, but meet the requirements without exception using credits it generates itself.

⁷ Converted from g/mi to g/km for comparison purposes.

⁸ Average volume-weighted fleet emissions, including regulatory allowable crediting factors (EV multipliers, credits for advanced technologies) in accordance with USC (United States Combined). Preliminary internal calculation.

⁹ Average volume-weighted fleet emissions, including regulatory allowable crediting factors (off-cycle technologies, NEV multipliers, phase-in) in accordance with WLTC (Worldwide Harmonized Test Cycle under China-specific test boundary conditions). Preliminary internal calculation.

¹⁰ On the Chinese market, manufacturers receive positive credits for undercutting regulatory CAFC (Corporate Average Fuel Consumption) fleet limits. Failure to remain below the regulatory limits results in negative credits. In addition, manufacturers receive positive credits for meeting or undercutting the ZEV quota specifications (Zero Emission Vehicle quota). At the end of a calendar year, a positive CAFC/ZEV credit balance must be achieved in order to meet regulatory requirements. As CAFC/ZEV credits are valid for five years on the Chinese market, a short-term failure to meet fleet limit targets in one year can be offset by undercutting them in a previous year. Moreover, it is possible to purchase credits from other manufacturers. In the year under report, the BMW Group used this type of flexibility to meet regulatory CAFC and ZEV requirements on the Chinese market. As of 2023, the BMW Group will no longer purchase credits from other manufacturers, but meet the requirements without exception using credits it generates itself. A balance between CAFC and ZEV remains in place.

¹¹ For definition, see [Glossary](#) (carbon emissions generated by the new vehicle fleet worldwide, including upstream supply chain emissions).

¹² Takes into account an additional 10 % in line with SBTi to cover possible differences between WLTP figures and actual emissions. The upstream supply chain emissions generated by various energy sources (fossil fuels and electricity) according to the well-to-wheel approach are also included. The assumed average mileage is 200,000 km (in accordance with VDA 900-100). For definition and further information, see [Glossary](#) (carbon emissions of the new vehicle fleet worldwide including upstream supply chain emissions).

A key component in this respect is currently the extended use of 48-volt technology. 48-volt recuperation systems use the energy recovered from the braking process to supply the vehicle's electrical system and generate additional propulsion. The technology helps reduce fuel consumption and thus also carbon emissions. In Europe, in addition to its all-electric models and plug-in hybrids, we offer numerous new model series that feature a 48-volt recuperation system. Since 2022, our modular engines have been fitted with the second, even more efficient, generation of 48-volt technology. The further development of energy management in BMW Group vehicles, alongside other measures such as switching to highly efficient tyres, is designed to ensure additional efficiency and optimised consumption figures.

Further reduction in pollutant emissions

Since the early 1990s, the BMW Group has significantly reduced the regulated pollutant emissions of its vehicles, such as nitrogen oxides (NOx), carbon monoxide (CO) and particulate matter (PM)¹ by deploying new technologies and further developing existing ones. In Europe alone, we have reduced the relevant exhaust emissions of our new vehicle fleets for diesel-powered passenger cars in line with the limits of the Euro 1 to Euro 6d emissions standards by well over 90 % from 1992 to 2021 compared with levels measured prior to the introduction of the Euro emissions standards. All BMW Group vehicles offered during the year under report meet the current Euro 6d emissions standard applicable within the European Union as well as comparable regulations in Switzerland, Norway, the UK and Iceland.

The level of nitrogen oxides is a crucial factor for air quality in cities. For this reason, since mid-2018 the BMW Group has been using a highly effective combination of NOx storage catalytic converters (NSC) and selective catalytic reduction (SCR) systems that include urea injection (AdBlue) in all BMW vehicles as well as in the larger diesel-powered MINI models. The efficiency of exhaust gas aftertreatment has been further raised by the use of an improved oxidation catalytic converter in combination with a two-stage SCR system. This new technology has been available since 2020 with the revised generation of 6-cylinder diesel

engines and will be rolled out across the entire product portfolio in the coming years. There have already been signs of a reduction in NOx pollution in German cities over the last few years. Apart from various measures taken to reduce pollutants, the ongoing renewal of the vehicle fleets of all automobile manufacturers has also contributed to the improvement. ↗ [GRI-Index: 305-7](#)

ELECTROMOBILITY

Electric mobility is among the major topics driving the ongoing transformation in the automotive industry. The BMW Group is systematically continuing to electrify its model range as a key component of its product strategy. Our electrified vehicles are playing a major role in reducing fleet emissions and thus achieving our ambitious strategic ↗ [carbon reduction targets. 1](#)

Growing demand for electrified vehicles

With our constantly expanding range of all-electric, battery-powered vehicles (BEV²) and plug-in hybrid models (PHEV³), we are serving a rapidly growing demand. In 2022, the BMW Group delivered a total of 433,792⁴ units to customers, i.e. significantly more electrified vehicles than in the previous year (2021: 328,314⁴ units; + 32.1 %). On this basis, the share of electrified vehicles had also increased significantly to 18.1 % by the end of the year under report (2021: 13.0 %). To date, the BMW Group has therefore handed over a total of more than 1.4 million vehicles with either all-electric or plug-in hybrid drive systems to customers. ↗ [Automotive segment](#)

The share of electrified vehicles in total deliveries might exceed 30 % by as early as 2025. In our view, the ↗ [NEUE KLASSE](#) has the potential to additionally accelerate the market penetration of electric mobility, and thus a 50 % share of all-electric vehicles in the BMW Group's global unit sales could be achieved even earlier than 2030. Under these conditions, the BMW Group aims to surpass the mark of ten million all-electric vehicles delivered to customers in total by 2030. This positive expectation for future sales



will also play a key role in the review of our carbon emissions reduction targets scheduled to take place in 2023.

↗ [Carbon emissions reduction targets across the value chain in detail](#)

Both the MINI and the Rolls-Royce brands are also firmly on track towards an electrified future. Based on their respective typical user profiles, the model ranges of the two brands are set to be exclusively all-electric by the early 2030s.

¹ Particulate matter.

² Battery Electric Vehicle.

³ Plug-in Hybrid Electric Vehicle.

⁴ Including BMW Brilliance Automotive Ltd.

⁵ ↗ [Consumption and Carbon Disclosures.](#)

Model range consistently focused on customer needs

The BMW Group's product range not only serves the growing demand for electrified models, but also reflects varying framework conditions and customer needs in its individual markets. Our customers can therefore continue to choose between all-electric vehicles, plug-in hybrids and efficient internal combustion engines. We make this customer-oriented offering possible by means of our [flexible production systems](#) and the scalable modular system of our vehicles. The diversity of the range is embodied in particular by the BMW X1, BMW X3, BMW 3 and 4 Series and BMW 7 Series models, each of which is available with all three types of drivetrain. This will also apply to the BMW 5 Series as of 2023.

At the end of the reporting period, the BMW Group had a total of 12 BEV motor variants in eight different models available to order. New additions include the BMW i7¹, the BMW iX1¹ and the extended-wheelbase version of the BMW 3 Series for the Chinese market, deliveries of which began in 2022. The existing, all-electric product portfolio will be expanded to include the BMW iX3¹, BMW i4¹, BMW iX¹ and the MINI Cooper SE¹. The inclusion of these variants in the range means that at least one all-electric model will be available in each of the high-yield model series. Over the next two years, vehicles such as the BMW i5 and the all-electric variant of the MINI Countryman are set to follow. As of 2025, the Group will take its core BMW brand into a new, consistently all-electric dimension with the [NEUE KLASSE](#).

Moreover, in the course of 2022, the BMW Group either launched or revised seven different PHEV engine variants. At the end of 2022, a total of 19 PHEV engine variants¹ in a total of 13 models were available to order worldwide. With offers such as the BMW eDrive Zone, attractive electricity tariffs for driving, charging equipment and increased ranges, we are helping drivers of plug-in hybrids to drive electrically as frequently and over as long a distance as possible. For instance, the BMW 2 Series Active Tourer Plug-in Hybrid¹ from the compact segment can cover up to 93 kilometres (WLTP²) solely on battery power.

Increasing range in line with customer needs

The BMW Group assesses the increase in the electric ranges of its vehicles from various points of view. Basically, we are not aiming to achieve the greatest technically possible range across all vehicle segments, but see it as important to optimally adapt ranges to the intended use of the respective vehicle. At the same time, we also take into account the environmental impact, as greater range also means deploying larger and therefore heavier high-voltage batteries. This relationship has a direct effect on resource consumption, the environmental footprint of the supply chain and, of course, vehicle weight, which in turn has a significant impact on electricity consumption.

With these points in mind, the MINI Cooper SE¹ has a range of more than 200 kilometres (WLTP²), which is fully in line with customer requirements for urban areas. On the other hand, the BMW iX¹, the BMW i4¹ and the BMW i7¹ are designed to cover long distances of around 600 kilometres (WLTP²) on one charge.

Thinking holistically about electric mobility

The BMW Group's electrified vehicles are characterised by high efficiency and thus low consumption when driving. However, the BMW Group has greater aspirations: its vehicles need to be as eco-friendly as possible, not only during their locally carbon-free use phase, but also in terms of their overall footprint, including the supply chain and production. [CO₂ steering](#) With battery-powered automobiles in particular, the environmental impacts are predominantly in the upstream value chain, where the purchase of raw materials to make battery cells and the carbon-intensive production of batteries have a significant impact.

The BMW Group therefore attributes great importance to including environmental and social aspects when producing components such as electric motors, high-voltage storage units and battery cells. [Carbon emissions in the supply chain](#) [Social and ecological responsibility](#) Other approaches to mitigating the environmental impacts include recycling and reusing high-voltage storage units from our BEV and PHEV models. The BMW Group

already offers all customers who purchase its battery-powered vehicles the opportunity to take back their high-voltage batteries free of charge.

Expanding charging infrastructure and enabling faster charging

An expanded, customer-friendly charging infrastructure will pave the way for the rapid and widespread use of electric mobility. This relationship is supported, for example, by market data collected within the EU – both at the level of member states and in a comparison of different regions. A prerequisite for the swift development of an efficient charging infrastructure is a high level of willingness on the part of all stakeholders. This applies in particular to the expansion of charging and hydrogen refuelling infrastructure within the EU – a key factor in achieving the ambitious fleet carbon reduction targets adopted in 2022. The BMW Group continues to advocate for standardised framework conditions and creates offers that enable customer-friendly charging on a broad basis.^{1]}

¹ [Consumption and Carbon Disclosures](#).

² Range calculated based on the new WLTP test cycle (Worldwide Harmonized Light Vehicles Test Procedure). However, the actual range possible depends on a variety of factors, particularly variables such as personal driving style, route conditions, outside temperatures, heating, air conditioning and pre-heating. Preliminary figure.

Reliable charging opportunities

With BMW and MINI Charging, the BMW Group is offering its customers attractive electricity tariffs for driving as well as convenient charging solutions whether on the road, at home or at work. Customers can access a large number of public charging points via their BMW or MINI Charging Card and the My BMW or MINI App. Digital Charging Services GmbH (DCS) provides broad access to various charging networks throughout Europe. As a joint venture of the BMW Group, the Mercedes-Benz Group and bp, DCS is among Europe's leading providers of digital charging solutions.

A total of almost 900,000 charging points is available to BMW and MINI customers worldwide. In Europe alone, BMW customers have easy access to a network with over 360,000 charging points, including fast-charging stations with a capacity of up to 350 kilowatts (kW). These are all part of IONITY's European high-power charging services initiated by the BMW Group, which can be used via BMW and MINI Charging. IONITY currently operates 430 stations with 1,900 charging points in a total of 24 countries, which are publicly accessible, brand-independent and designed in accordance with the European Combined Charging System (CCS) charging standard. Furthermore, they are all powered by 100 % green electricity.

Beyond the public charging service, BMW and MINI Charging provide a standard charging solution both for homes and on the road in the form of the Flexible Fast Charger and other charging products. We also offer charging solutions for corporate customers in cooperation with our partners. The BMW Group itself operates one of the largest company charging networks in Germany.

Digital, innovative and more eco-friendly charging solutions

Charging should be as easy as conventional refuelling and we are working on digital solutions in particular to meet this demand. These include Connected Charging – an application that can be accessed from the vehicle as well as via an app. Via the service, drivers not only receive up-to-date charging information, since 2022 they have also been able to control the charging process at the touch of a button. The eRoute function also enables customers to plan their charging stops on long-distance trips. In the course of 2023, the first BMW models will also be equipped with a Plug&Charge function, in which both authentication and billing will be done automatically by connecting the vehicle to the charging system. Using the so-called multi-contract functionality, individual driving electricity tariff contracts from various providers can also be stored digitally within the vehicle to facilitate the use of charging stations from different operators.

We also promote the use of renewable energy. Since 2022, for each charging process conducted via BMW and MINI Charging, the equivalent amount of energy consumed is fed into the power grid as green electricity, which is certified via Energy Attribute Certificates (EACs) as recognised proofs of origin. Moreover, we are continuously working on integrating electric vehicles with their high-voltage storage systems in the energy grid. [Vehicles as part of the power grid](#)

Advancing hydrogen technology

Customer-oriented technological diversity also includes the further development of fuel cell technology. Depending on the segment, we see hydrogen-powered electric vehicles as an important complement to electric mobility with batteries and thus as an opportunity to reduce carbon emissions even more quickly. Following the presentation of the first [BMW iX5 Hydrogen](#) at the IAA Mobility in 2021, at the end of August 2022 we began producing fuel cells for a pilot fleet of these vehicles. In December, this was followed by the start of production of these vehicles at the pilot plant of the Research and Innovation Centre in Munich.

We are also driving hydrogen technology forward at a higher level and thus are involved in global organisations and associations such as the [Hydrogen Council](#). As an associated partner of [H2 Mobility Deutschland GmbH](#), the BMW Group is supporting the development of hydrogen infrastructure in Germany. In this context, the BMW Group welcomes the requirement under the EU's Fit for 55 legislative package to establish a basic infrastructure of 700-bar hydrogen filling stations. [1\]](#)



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PRODUCTION AND SUPPLIER NETWORK

PRODUCTION NETWORK

The BMW Group's production network features a high level of expertise in terms of integration. Its plants are capable of manufacturing vehicles with both all-electric and plug-in hybrid drive systems as well as conventional combustion engines – all on one single line. The Group's entire production facilities are geared towards electrification, profitability, sustainability and digitalisation. The strategic aims of the BMW iFACTORY form the framework – lean, green and digital. "Lean" stands for efficiency, precision, maximum flexibility and an outstanding ability to integrate. "Green" involves the use of state-of-the-art technologies to systemise production with the lowest possible use of resources. "Digital" focuses on data science, AI, virtual planning and development.

Electric mobility globally integrated

The share of electric mobility in total sales is steadily growing and further milestones were reached in the course of 2022. With the start of production of the BMW iX1* in Regensburg, the BMW Group achieved its aim of producing at least one all-electric model at each of its German vehicle plants by 2022. Moreover, the first BMW i7* was manufactured at the BMW Group's Dingolfing plant. Production also began in Lydia, an extension of the BMW Brilliance plant in Tiexi, China, where the all-electric long-wheelbase version of the BMW 3 Series is being manufactured for the Chinese market.

We produce units with electrified drivetrains in our production network at 13 [↗ locations](#) worldwide. Fully electric units roll off the production line in Dingolfing, Leipzig, Munich, Regensburg, Oxford and Shenyang. As of 2025, the [↗ NEUE KLASSE](#) will also feature a vehicle architecture systematically geared to suit electric drive systems. The vehicle is due to be manufactured initially at the new Debrecen plant in Hungary as well as in Munich as of 2026. We aim to gradually transfer the new vehicle architecture to the global production network in the years that follow. It also plans to produce all-electric vehicles at the plant in Spartanburg (USA) and at least six all-electric X models are scheduled to be manufactured there by 2030.

Integrated component production for electrified vehicles

The BMW Group's production network also manufactures the systems required for the electric drivetrain. The competence centre for e-drive production in Dingolfing plays a leading role in this respect, as battery modules, high-voltage batteries and fifth-generation electric motors are all produced at the site. High-voltage batteries and their components are also made at BMW Group production plants in Leipzig and Regensburg, as well as in Spartanburg (USA) and Shenyang (China).

At the same time, the Group is preparing its network to produce the next generation of electric drivetrains. The Steyr engine manufacturing plant in Austria is also being expanded to develop and produce the BMW Group's sixth generation of e-drive systems

* [↗ Consumption and Carbon Disclosures.](#)

in addition to the diesel and petrol engines already being manufactured at the site. The next generation of high-voltage batteries will be assembled nearby the plant. A new assembly centre for high-voltage batteries is also due to be established close to the Spartanburg plant for this purpose. A corresponding announcement concerning the Debrecen plant in Hungary was made in 2022.

The Cell Manufacturing Competence Centre (CMCC) in Parsdorf near Munich, which went into operation in 2022, is making a vital contribution to the next generation of e-drive systems. Starting with the pilot production line in Parsdorf, the BMW Group intends to continue optimising the manufacturing processes of battery cells in terms of quality, performance and costs. The CMCC complements the Battery Cell Competence Centre in Munich, which focuses primarily on the battery cell as a product.

Production sites in key markets

The BMW Group always aims to strike a good balance between production and deliveries in the various regions of the world where it operates. Group plants in Europe, South Africa, the USA and Mexico serve the global market. The BMW Brilliance plants in China mainly manufacture for the local market. During the year under report, expansion and extension measures were completed at the Chinese plants and further models integrated in our production processes. The BMW Group's automotive partner plants in Jakarta (Indonesia), Cairo (Egypt), Kulim (Malaysia) and, since 2022, Chu Lai (Vietnam) primarily serve their respective regional markets, producing both BMW and MINI brand models. The same applies to the BMW Group plants in Araquari (Brazil), Rayong (Thailand) and Chennai (India). The Group also awards contracts for the series production of automobiles and motorcycles to external partners (contract manufacturers). During the year under report, Magna Steyr Fahrzeugtechnik produced the BMW 5 Series Sedan and the BMW Z4* in Graz (Austria). VDL Nedcar in Born (the Netherlands) manufactured the MINI Convertible and the MINI Countryman as well as the BMW X1 until summer 2022.

The BMW Group manufactures BMW motorcycles and scooters at its Berlin plant as well as at two international locations in Manaus (Brazil) and Rayong (Thailand). BMW motorcycles and scooters are also produced by the partner companies TVS Motor Company in Hosur (India) and Loncin Motor Co., Ltd in Chongqing (China).

The BMW Group's production network also includes engine plants in Hams Hall (UK), Munich (Germany), Steyr (Austria) and Shenyang (China), as well as component plants at sites in Eisenach, Landshut and Wackersdorf (Germany) and Swindon (UK). The production network thus comprises a total of 31 plants in 15 countries.

BMW Group vehicle plants

Location	Country	Production programme 2022	Electrification portfolio
Araquari	Brazil	BMW 3 Series, BMW X1, BMW X3, BMW X4	
Berlin	Germany	BMW motorcycles	BEV
Chennai	India	BMW 2 Series, BMW 3 Series, BMW 5 Series, BMW 6 Series, BMW 7 Series, BMW X1, BMW X3, BMW X4, BMW X5, BMW X7, MINI Countryman	
Dingolfing	Germany	BMW 4 Series, BMW 5 Series, BMW 6 Series, BMW 7 Series, BMW 8 Series, BMW M, BMW i7*, BMW iX*	BEV, PHEV
Leipzig	Germany	BMW 1 Series, BMW 2 Series, BMW i3	BEV, PHEV
Manaus	Brazil	BMW motorcycles	
Munich	Germany	BMW 3 Series, BMW 4 Series, BMW i4*, BMW M	BEV, PHEV
Oxford	UK	MINI, MINI Clubman, MINI Cooper SE*	BEV
Rayong	Thailand	BMW 2 Series, BMW 3 Series, BMW 5 Series, BMW 7 Series, BMW X1, BMW X3, BMW X5, BMW X6, BMW X7	PHEV
Regensburg	Germany	BMW 1 Series, BMW 2 Series, BMW X1, BMW iX1*, BMW X2	BEV, PHEV
Rossllyn	South Africa	BMW X3	
San Luis Potosí	Mexico	BMW 2 Series, BMW 3 Series, BMW M	PHEV
Spartanburg	USA	BMW X3, BMW X4, BMW X5, BMW X6, BMW X7, BMW XM*, BMW M	PHEV
Rolls-Royce Manufacturing Plant, Goodwood, UK	UK	Rolls-Royce Cullinan*, Dawn*, Ghost*, Phantom*, Wraith*	BEV from 2023

* ↗ Consumption and Carbon Disclosures.

BMW Brilliance Automotive (vehicle plants)¹

Location	Country	Production programme 2022	Electrification portfolio
Dadong (Shenyang)	China	BMW 5 Series, BMW X3, BMW X5, BMW iX3 ²	BEV, PHEV
Tiexi (Shenyang)	China	BMW 1 Series, BMW 3 Series, BMW X1, BMW X2, BMW i3 (extended-wheelbase version of BMW 3 Series)	PHEV

Stable production volume despite challenging environment

The coronavirus pandemic and the ongoing limited availability of semiconductor components again led to adjustments in the production programme during the year under report.

↗ Supply security

Despite these challenges, the BMW Group achieved a production volume of 2,382,305³ BMW, MINI and Rolls-Royce brand vehicles during the period under report (2021: 2,461,269³ automobiles; –3.2%). BMW brand models accounted for 2,089,801³ vehicles (2021: 2,166,644³ vehicles; –3.5%), MINI for 286,265 units (2021: 288,713 units; –0.8%), and Rolls-Royce Motor Cars for a record 6,239 units (2021: 5,912 units; +5.5%). Production of electrified vehicles increased to a new high level of 462,396 units (2021: 341,097 units; +35.6%), of which 252,077

were all-electric (2021: 119,010 units; +111.8%). The production of motorcycles by BMW Motorrad rose by 15.2% to 215,932 units (2021: 187,500 units).

BMW Group automobile production by plant

in units	2022	2021	Change in %
Spartanburg	416,301	433,810	–4.0
Dingolfing	282,661	244,734	15.5
Regensburg	143,654	183,485	–21.7
Leipzig	151,949	191,604	–20.7
Oxford	186,301	186,883	–0.3
Munich	201,323	151,154	33.2
Rossllyn	61,609	61,580	0.0
Rayong	12,912	24,624	–47.6
Chennai	9,960	8,472	17.6
Araquari	8,208	10,104	–18.8
Goodwood	6,239	5,912	5.5
San Luis Potosí	63,600	69,149	–8.0
Tiexi (BMW Brilliance) ⁴	279,645	335,311	–16.6
Dadong (BMW Brilliance) ⁴	395,021	365,466	8.1
Born (VDL Nedcar) ⁵	99,126	105,214	–5.8
Graz (Magna Steyr) ⁵	45,184	54,547	–17.2
Partner plants	18,612	29,220	–36.3
Total	2,382,305	2,461,269	–3.2

¹ Due to the increase in the BMW Group's shareholding in the joint venture BMW Brilliance Automotive Ltd. (BMW Brilliance) at the beginning of the financial year 2022, BMW Brilliance was included in the Group reporting entity. Further information on the first-time consolidation is available in [note 3](#) to the Consolidated Financial Statements.

² ↗ Consumption and Carbon Disclosures.

³ Includes vehicles produced by BMW Brilliance Automotive Ltd. for the period prior to full consolidation in the consolidated financial statements of the BMW Group (1 January to 10 February 2022): 58,507 automobiles (2021: 700,777 automobiles).

⁴ BMW Brilliance Automotive Ltd., Shenyang.

⁵ Contract manufacturing.

CIRCULAR ECONOMY, RESOURCE EFFICIENCY AND RENEWABLE ENERGY

Against a backdrop of rising raw materials prices and the growing scarcity of resources, the BMW Group is taking further steps to increase the proportion of reused materials in its vehicles and thus promote the circular economy. The circularity approach requires a holistic strategy – beginning at the product design stage and including the broader use of secondary materials in the supply chain as well as the recycling of end-of-life vehicles. The strategy also reduces dependence on primary raw materials at the same time. At all levels of in-house production, we remain committed to systematically conserving resources, continuously improving energy efficiency and further reducing carbon emissions.

Closing material cycles

In order to reduce the use of primary materials in the automotive value chain, the BMW Group endeavours to close cycles within the production chain and therefore returns selected production residues to its suppliers of material. The recovery of essential groups of materials at the end of a product's life cycle can be significantly increased by focusing on recycling-compatible concepts at the development stage, thereby enabling materials to be recovered and recycled for use in new production processes. Going forward, the cobalt, lithium and nickel used by cell manufacturers to produce battery cells for the BMW Group's [NEUE KLASSE](#) will include a proportion of secondary materials. This approach reduces the need for primary materials and thus the sourcing of potentially critical raw materials.

[Average distribution of materials in BMW Group vehicles](#)

Already today, BMW Group vehicles are manufactured to a certain extent from recycled and reused materials. In line with the "Secondary First" approach, we aim to maximise the use of secondary materials going forward, taking both technical feasibility and availability into account. For this reason, within the framework of selected product, material and supplier requirements, we clearly specify that secondary materials will be given preference in future vehicles. The BMW i Vision Circular is symbolic of our ambitions in this respect, by showing that it is possible to build a vehicle entirely out of recycled or renewable raw materials.

We encourage the return of end-of-life vehicles, components and materials for reuse as a secondary source of raw materials in order to drive the circular economy. Together with its national sales companies, the BMW Group has already organised the return of end-of-life vehicles in 30 countries and offers environmentally friendly recycling at more than 2,800 points of return.

[GRI Index: 301-3, 301-3, SASB Index](#)

Secondary materials also generate fewer carbon emissions compared with primary materials – for example, in the amount of up to 80 % for aluminium and up to 70 % for steel.* At the same time, this strategy avoids the need to extract natural resources and critical raw materials. The circularity principle therefore also contributes to a more effective mitigation of the risks associated with the extraction of primary materials, ranging from potential availability issues in light of market or political developments through to risks connected with environmental and social standards.

[Purchasing and supplier network](#)

Any secondary materials used by the BMW Group must meet the same high standards as primary materials in terms of quality, safety and reliability. [GRI Index: 3-3](#)]

* Based on the Gabi database.

Closed material cycle for nickel, lithium and cobalt in China

For the first time, the BMW Group is currently setting up a closed cycle in China with the aim of reusing the raw materials nickel, lithium and cobalt from end-of-life high-voltage batteries. The batteries originate primarily from fully and partially electrified development vehicles, test facilities, production scrap and are reused in forklifts. In the long term, the BMW Group also plans to reuse batteries from end-of-life vehicles. In this context, the BMW Group is working together with a local recycling company that dismantles the batteries and recovers a high percentage of the raw materials from the battery cells using an innovative technology. These secondary raw materials are intended to be used to produce new battery cells for the BMW Group.



Investments in resource-friendly technologies

Via its [own venture capital fund](#), the BMW Group also invests in key technologies that can make a decisive contribution to achieving carbon neutrality and conserving natural resources. For example, through BMW i Ventures, we have held a stake in the US start-up Lilac Solutions since 2021. Lilac Solutions is pursuing the goal of extracting lithium from the brine of saltwater deposits using ion exchangers in a far more eco- and resource-friendly way than previously possible. During the period under report, we continued to invest in the resource-conserving extraction of lithium by acquiring a stake in the company Mangrove Lithium. Its innovative technology makes it possible to refine and process both virgin and recycled lithium directly into battery-grade lithium using a special procedure. An additional focus of our investments via BMW i Ventures is on an innovative process for carbon-free steel production developed by US start-up Boston Metal.

Resource management at all BMW Group sites

Resource efficiency and the control of the use of resources in general are integral parts of the environmental management system in place across the BMW Group's global production network. Alongside [carbon emissions](#), the other key variables are [energy](#) and [potable water consumption](#), the volume of [waste generated](#) and the use of [VOC solvents](#). The BMW Group intends to reduce its energy and potable water consumption, waste for disposal, and the amount of solvents used per vehicle produced by 25 % in each category by 2030 (base year 2016).

A steering committee manages the international environmental protection network within the BMW Group. Each separate facility, area and building is assigned to an internal operator who is responsible for the technical systems in their area and the smooth running of processes and workflows as well as their environmental impact.¹

A certified environmental management system in accordance with ISO 14001 has been implemented at all BMW Group production sites. Moreover, all German and Austrian sites are certified under the EMAS environmental management system. The BMW Group coordinates its environmental protection measures covering the areas Emissions, Water, Waste, Training/Qualifications and Environmental Management System in a total of five competence centres located worldwide. Environmental improvements that have proven effective at one location are then implemented at other locations to the extent possible. Continuous further training and the exchange of experience within the workforce ensure that relevant knowledge is transferred and that learnings are applied throughout the organisation. In the year under report, our environmental management system again made a major contribution to ensuring that there were no significant environmental incidents involving the payment of fines throughout the production network.

Water

In terms of water consumption in production, the BMW Group aims to continuously optimise the circulation systems at its plants, for example by expanding the purification stages in wastewater treatment at the Leipzig plant. The [specific potable water consumption](#)^{2, 3, 4} of the automobile production at 1.90 m³ per vehicle produced is almost on the same level as the previous year (2021: 1.91 m³).

[Water consumption in detail](#)

Waste

In its efforts to reduce the total volume of waste, the BMW Group uses recycling and preparation concepts that are adapted to the specific waste streams at its various plants as well as to regionally applicable statutory regulations and locally available waste management structures. In 2022, a total of 99.3 %⁵ (2021: 99.2 %) of the waste generated by production was either recycled or recovered. The BMW Group was able to reduce the proportion of [waste for disposal per vehicle produced](#)⁶ by a solid 5.5 % to 2.74 kg compared with the previous year (2021: 2.90 kg). We intend to maintain this high level of recycling and recovery at its

plants in the course of gradually transitioning to electric mobility. With this goal in mind, we are currently in the process of integrating any newly identified waste streams in our recycling and processing systems.

[GRI Index: 306-4, 306-5](#) [Waste generation in detail](#) [SASB Index](#)

VOC solvent emissions

The BMW Group cut its [VOC solvent emissions per vehicle produced](#)^{7, 8} significantly by 12.9 % to 0.61 kg (2021: 0.70 kg) during the year under report. Owing to the progress made in the use of solvent-free substances and the optimisation of our paint shops, we expect a further reduction in emissions levels going forward.

[GRI Index: 305-7 1\]](#)

¹ In accordance with the BMW Group's environmental management system, each operator is required to describe the environmental impacts in the aspects register and identify measures for improvement (e.g. long-term targets).

² The efficiency indicator is calculated from potable water consumption measured for automobile production (BMW Group plants including BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing) divided by the number of vehicles produced (BMW Group plants including BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing).

³ Potable water consumption refers to water purchased from external water suppliers. If a BMW Group site does not purchase water from an external supplier, the primary source of supply is counted as potable water. This method applies to the BMW Group plants in San Luis Potosí (Mexico) and Araquari (Brazil) where groundwater is the main source of supply.

⁴ Potable water consumption per vehicle produced replaces the previously reported efficiency indicator of water consumption per vehicle produced. The previous year's figure was adjusted for comparison purposes (2021 figure prior to adjustment: 2.15 m³).

⁵ Waste for disposal in relation to the total weight of waste.

⁶ The efficiency indicator is calculated from the waste for disposal in automobile production (BMW Group plants including BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing) divided by the number of vehicles produced (BMW Group plants including BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing).

⁷ VOC solvent emissions (volatile organic compounds = VOC) are mainly generated during the painting process and can be reduced by deploying new painting technologies.

⁸ Efficiency indicator calculated from solvent emissions generated in automobile production (BMW Group plants including BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing) divided by the number of vehicles produced (BMW Group plants including BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing).

Biodiversity

The BMW Group also takes biodiversity into account at all its locations. As part of this strategy, we endeavour to minimise any potentially negative impacts caused by its production and construction activities. In addition, after analysing biodiversity with the help of relevant biodiversity indicators, we identify targeted measures with a view to creating natural habitats at selected sites or when planning the construction of any new buildings. With this strategy, we want not only to help preserve, but also to improve on biodiversity in and around our sites. [↗ GRI Index: 304-2.1](#)

Energy use and carbon emissions

The BMW Group intends to reduce carbon emissions (Scope 1 and Scope 2) at all the locations of the BMW Group by a further 80 % on average per vehicle produced in comparison to 2019 by 2030. Production accounts for the majority of the BMW Group's [↗ Scope 1 and Scope 2 emissions](#). In order to reduce emissions, we remain committed to a combined approach of implementing additional energy efficiency measures, increasing the volume of in-house electricity generated from renewable sources, buying in green electricity from direct supply contracts and using certificates of origin.

The remaining emissions are largely attributable to the use of natural gas. In this respect, the BMW Group faces the challenge of replacing natural gas with non-fossil energy sources such as biogas, green hydrogen or green electricity. However, the physical availability of alternative energy sources, the retrofitting of the technical systems and political framework conditions largely define the speed of the transition.

Since 2021, the BMW Group has made the remaining carbon emissions generated at its own plants and sites completely carbon-neutral by balance sheet through the use of voluntary compensation certificates.¹ [↗ Compensation of site-related carbon emissions](#)

Energy management and efficiency

The BMW Group continuously invests in improving the energy efficiency of its worldwide production network. With further optimisation measures in mind, processes are in place throughout the organisation to facilitate the planning and implementation of energy management measures. In this context, clear roles – in each case with corresponding responsibilities, targets and reporting obligations – are assigned to central strategy departments, regional management units and plants at local level.

In response to the ongoing tight supply situation for semiconductor components, restrictions due to the coronavirus pandemic and the impact of the war in Ukraine, production at BMW Group plants had to be repeatedly adjusted during the year under report. As a result, production volumes and therefore absolute energy consumption decreased slightly year-on-year. In conjunction with the transformation towards electric mobility, sites are being and have been modified, expanded and newly developed, such as the Lydia plant in China in 2022. [↗ Energy consumption in detail](#), [↗ GRI Index: 302-1, 302-4](#)

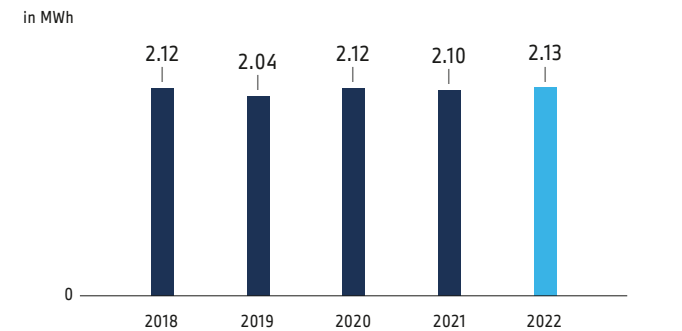
The amount of energy used specifically for vehicle production increased slightly to 2.13 MWh per vehicle (2021: 2.10 MWh; +1.4 %). In absolute terms, energy consumption decreased slightly year-on-year to 6,295,990 MWh (2021: 6,476,955 MWh; –2.8 %).

Renewable energy

Worldwide, all Group production sites⁵ and the majority of its other sites use electricity derived from renewable sources via in-house generation, direct procurement or Energy Attribute Certificates (e.g. certificates of origin).

At present, the BMW Group is unable to entirely cover its energy needs by generating its own renewable energy and therefore purchases additional electricity from other renewable sources. An increasing share of our electricity requirements is covered by so-called Power Purchase Agreements (PPAs), i.e. direct purchases from defined renewable energy generation plants, such

Energy consumption per vehicle produced^{2, 3, 4}



as the purchase of regional green electricity to produce the BMW iX⁶ and BMW i4⁶.

The complex energy issues that have arisen in the wake of the war in Ukraine serve to reinforce the BMW Group's declared strategy of becoming more independent of fossil fuels. We are therefore currently in the process of auditing all our production sites to ascertain whether natural gas can be dispensed with and replaced by sources such as biogas, hydrogen or geothermal energy.

¹ To the degree recordable in the carbon footprint; market-based method in accordance with the GHG Protocol.

² Efficiency indicator calculated from the absolute energy consumption (adjusted for CHP losses) of automobile production (BMW Group plants including BMW Brilliance Automotive Ltd., excluding partner plants and contract manufacturing) divided by the number of units produced (BMW Group plants including BMW Brilliance Automotive Ltd. and partner plants, excluding contract manufacturing).

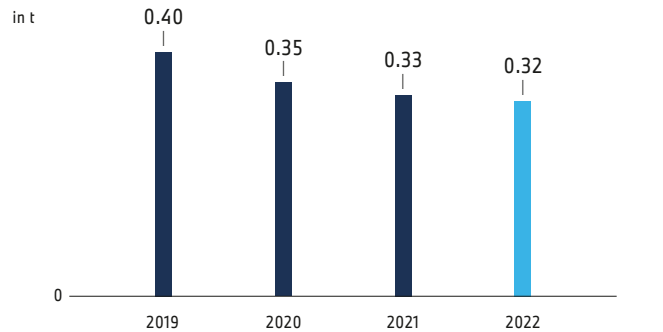
³ Value of the base year 2016 to the target reduction of – 25 % by 2030: 2.21.

⁴ Figures for 2016 and 2018 were subjected to a limited assurance review.

⁵ Including BMW Brilliance Automotive Ltd.

⁶ [↗ Consumption and Carbon Disclosures](#).

CO₂ emissions per vehicle produced^{1,2}



Carbon emissions at BMW Group locations

Despite lower capacity utilisation at BMW Group plants due to the war in Ukraine, carbon emissions per vehicle produced¹ at BMW Group locations fell by 3.0 % year-on-year to 0.32 t CO₂ (2020: 0.33 t CO₂). The figure corresponds to a reduction of 20.0 % compared to the base year 2019.

The absolute carbon emissions generated at BMW Group locations were 7.9 % below the previous year at 705,417 t CO₂ (2021: 766,153 t CO₂). The mild temperatures and savings driven by the threat of a gas shortage led to a reduction in the use of natural gas for heating purposes.

↗ [Carbon footprint](#) ↗ [GRI Index: 305-1, 305-2, 305-3, 305-5](#)

Compensation of site-related carbon emissions

The carbon emissions either directly or indirectly generated by BMW Group locations are already within the 1.5°C pathway calculated for the BMW Group. The remaining emissions³ in the BMW Group's [carbon footprint](#) Scope 1 and Scope 2 as well as the Scope 3 category "business travel" are neutralised by means of voluntary compensation certificates. The remaining carbon emissions are therefore verifiably compensated by promoting external projects. In cooperation with well-known partners such as atmosfair or First Climate, we support climate protection

projects that meet strict criteria, such as permanent decarbonisation. Furthermore, for the post-Kyoto phase of the carbon compensation market, we ensure that the emissions saved are not counted twice with the nationally determined contributions for the affected countries in the Paris Climate Agreement. We also see it as important that the projects have a social benefit.

↗ [GRI Index: 305-5](#)

Carbon emissions generated by transport logistics

The BMW Group's Green Transport Logistics project pursues the aim of reducing the emissions generated by transportation within its global production and sales network, using a technologically open approach as well as carbon-efficient energy sources and modes of transportation.

Using second-generation biofuel produced from residual and waste materials, we are reducing our carbon footprint, for example, by selected vehicle transports via sea freight between Europe and South Africa, and as part of a pilot project conducted on public roads to supply the Group's Munich plant. We are also participating in the "H2Haul" and "HyCET" research projects in order to gain some early experience in the use of hydrogen to power heavy goods vehicles.

About half of the vehicles produced by the BMW Group leave its plants by rail. In Germany, a significant volume of rail transport already runs on green power. [1\]](#)

¹ Efficiency ratio calculated on the basis of Scope 1 and Scope 2 carbon emissions (i.e. a market-based method according to GHG Protocol Scope 2 guidance; mainly based on the use of emissions factors for electricity, district heating and fuels of the VDA (each in the most current valid version: 12/2022) and occasionally using local emissions factors; excluding climate-changing gases other than carbon dioxide from vehicle production (BMW Group manufacturing sites including the BMW Brilliance Automotive Ltd. joint venture and Motorrad, but excluding partner plants and contract manufacturers), as well as BMW Group non-manufacturing sites (e.g. research centres, sales centres, offices) divided by the number of vehicles produced (BMW Group manufacturing sites including the BMW Brilliance Automotive Ltd. joint venture and partner plants, but excluding contract manufacturers).

² From 2019, this indicator includes the carbon emissions of the other BMW Group locations in addition to the carbon emissions generated by production.

³ To the degree recordable in the carbon footprint; market-based method in accordance with the GHG Protocol.

PURCHASING AND SUPPLIER NETWORK

The BMW Group's Purchasing and Supplier Network is responsible for the global procurement and quality assurance of production materials, raw materials, components, capital goods and services as well as the in-house production of vehicle components.

The main responsibilities of the network include:

- Ensuring security of supply to the plants
- Creating resilient supply chains within the geopolitical environment
- The quality assurance of components
- Access to innovations
- Cost management in competition
- The digitalisation of processes within the supplier network
- The integration of social and environmental aspects within the supplier network

Supply chains and supplier network

The year 2022 was dominated by fragile supply chains and rising prices for many materials. The cost drivers for the BMW Group's Purchasing team were primarily the price hikes seen for raw materials, semiconductors, energy and transportation coupled with a challenging supply situation. The combined impact of supply bottlenecks for semiconductor components, the temporarily restricted availability of wire harnesses owing to the war in Ukraine, and pandemic-related lockdowns in China led to production interruptions worldwide, particularly in the first half of the year. Although the situation eased slightly during the second six-month period, global supply chains remained in a fragile state.

[↗ Outlook](#), [↗ Risks and opportunities](#)

The BMW Group follows the principle of procuring vehicle components close to its production sites to the extent possible and is therefore represented by local teams in all its key purchasing markets, in order to identify risks promptly and respond flexibly to the respective market circumstances. In the face of geostrategic aspects, a resilient strategy for the Group's supply chains is also becoming increasingly important and the BMW Group takes this fact into account when selecting its partners.

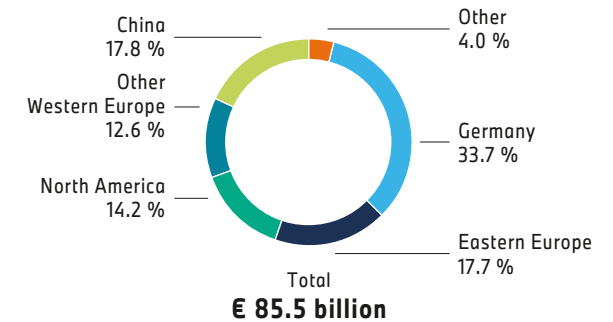
In-house production: a competitive advantage

The BMW Group regularly examines its range of products in terms of their profitability and strategic importance. A special focus is currently on e-mobility. In this central area of transformation, the BMW Group is building up its own skill sets in strategically important components, particularly in areas where technology is not competitively available on the market. The in-house production of certain key components also helps us to improve the level of supply security and thus gain a competitive advantage. At the same time, we are looking to strengthen our process-related expertise in technologies relevant for quality management within the supplier network.

Quality assurance

Quality is a vital competitive factor and of key importance for ensuring customer satisfaction. Our quality experts monitor the entire product development process, including the phases of industrialisation and series production. Regular visits to suppliers and a preventive, systematic review of all processes are aimed at ensuring the agreed quality.

Regional distribution of BMW Group*



Raw materials security and strategy

The volatile situation on energy and raw materials markets had a major impact on purchasing over the course of 2022. There are signs of increasing competition for the raw materials required to drive forward electric mobility. With the help of measures such as the direct purchase of lithium and cobalt, the BMW Group is making itself technologically and regionally less dependent on individual deposits and suppliers. Direct purchasing in Australia, Argentina and Morocco underpin our dual intention of securing raw material supplies, whilst also maintaining our high sustainability standards, particularly in supply chains involving critical raw materials. At the same time, the BMW Group analyses the development of raw materials prices and hedges against price fluctuations – provided the capital market offers the opportunity to do so. [↗ Raw materials price risks and opportunities 1\]](#)

* Direct and indirect purchasing;
this includes the entire year 2022 for BMW Brilliance Automotive Ltd.

Our commitment to upholding environmental and social standards as well as human rights in our raw materials supply chains is enshrined in the [BMW Group Supplier Code of Conduct](#) and the [High-level commitment to sustainable natural rubber](#) among others. The BMW Group Supplier Code of Conduct also requires Tier-1 suppliers to demand minimum standards within their sub-supplier chains.

Annual risk analyses regarding the BMW Group's sustainability standards are the starting point for raw materials-related hedging activities that are designed to reduce environmental and human rights risks. Key levers in this respect are to forgo, substitute or reduce the use of primary risk raw materials. We also focus in particular on cooperating closely with our partners in the supplier network as well as in multi-stakeholder initiatives and projects. We use scientific findings to gain an even better understanding of the raw material extraction process and to take it into account accordingly when analysing the level of risk in order to further reduce any negative impacts.

The BMW Group places a particular focus on so-called "conflict minerals" and uses standardised Responsible Minerals Initiative (RMI) tools to ensure that the raw materials deployed can be traced back to the smelter. It uses existing certifications to ensure the origin of other raw materials. The BMW Group is also involved in developing certified standards for critical stages of the value chain, for example as part of the Initiative for Responsible Mining Assurance (IRMA), and subsequently applies them. Further details and raw materials profiles are available [online](#). [SASB Index](#)

Moreover, the BMW Group has set itself the goal of generating a positive impact for selected raw materials through our involvement in local development projects. During the year under report, for example, we initiated a project with a locally based NGO to improve living conditions associated with the mining of the raw material mica in India.

Purchasing battery cells

As of 2025, the BMW Group plans to deploy a new generation of battery cells. We have therefore concluded agreements with our partners that guarantee annual production capacities of 40 GWh in Europe, 40 GWh in China and 30 GWh in the USA. Via this strategy, the Company is reinforcing its "local for local" approach by sourcing battery cells regionally where our production facilities are located. The BMW Group will also use secondary raw materials to replace the primary raw materials cobalt, lithium and nickel in the new generation of battery cells and purchase green electricity in order to further reduce the size of our carbon footprint in the supply chain. [Carbon emissions in the supply chain](#)

Supply security

To cushion the impact of the ongoing war in Ukraine on our European plants, the BMW Group has introduced a comprehensive raft of measures with its partners and therefore continues to source components from western Ukraine. At the same time, our partners have established additional production sites outside Ukraine and the supply of wiring harnesses to our plants has returned to normal as a result.

Lockdowns in China designed to contain the coronavirus pandemic kept supply chains on tenterhooks, not to mention the challenging supply situation for semiconductors. In an effort to mitigate the worldwide shortage of semiconductors, among other measures the BMW Group has entered into supply agreements involving increased levels of buffer stock when placing orders, as well as the direct purchase of strategically important semiconductors.

Risk management in purchasing

An interconnected risk management system is fundamental for managing the supplier network. With this point in mind, the Company has established a RiskHub that analyses information from external, publicly available data sources with regard to potential risks such as natural disasters or financial risks. We also employ state-of-the-art methods derived from the fields of AI and big data analytics. For selected issues such as semi-

conductor component supplies, we also take account of the locations of sub-suppliers in our risk assessment, thus enabling us to respond rapidly and counter supply bottlenecks preventively. The RiskHub is subject to continuous improvement.

In order to avoid cyber risks and provide adequate protection, we analyse the entire value chain. The BMW Group expects its partners to provide evidence of a preventive and responsive level of security. We require our partners to provide information security certificates in accordance with the TISAX automotive standard, and monitor their implementation. Collaborative IT security analyses and a constant exchange of information additionally bolster resilience in the supplier network. The awareness of cyber risks is raised internally through training and information campaigns. Externally, the BMW Group supports its business partners with a regular flow of information.

Innovations

Cooperation in the supplier network based on trust and the development of new partnerships is essential for us when it comes to swiftly deploying innovations in the products on offer. In this context, we work closely with the [BMW Startup Garage](#) and [BMW i Ventures](#). At Newcomer Day 2022, selected start-ups presented a broad range of future technologies – including our new partner for innovative natural fibre composite solutions.

The highly innovative achievements of start-ups are also reflected in the [BMW Supplier Innovation Award](#). During the year under report, various companies won awards in the categories of e-mobility, sustainability, digitalisation, customer experience, exceptional team performance and Newcomer of the Year, which are essential for driving forward transformation. [1\]](#)



Digitalisation in the supply chain

A digital flow of information throughout the supply chain is a prerequisite for more resilient and flexible supply chain management.

[Catena-X](#) is one of the largest ongoing projects in the automotive industry. It is open to all BMW Group partners and designed to enable data exchange across the various levels of the value chain between automotive manufacturers and their suppliers. With the platform due to be launched in 2023, Catena-X is expected to offer an end-to-end solution that will lead to closer and even more coordinated cooperation between partners. One of our aims is to improve transparency and response speed by regularly comparing the demand and capacity situation in order to adjust the supply of parts at short notice. Further improvements are expected for the network partners, whether raw materials suppliers, n-Tier suppliers or automotive manufacturers, for example in terms of delivery reliability and customer satisfaction. At the same time, costs can be effectively cut by improving capacity utilisation and avoiding special procurement processes. Recording carbon emissions data in supply chains enables measures to reduce greenhouse gas emissions to be agreed upon and their effectiveness verified going forward. The BMW Group has already begun preparations for the pilot tests of the initial applications.

Social and environmental responsibility

The BMW Group considers responsible supply chain management as an integral part of good corporate governance. Against the backdrop of the Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz), the BMW Group continued to develop its well-established processes during the year under report. The BMW Group's requirements and the expectations it places on its suppliers are set out in the [BMW Group Supplier Code of Conduct](#). [GRI Index: 2-23, 3-3, 407-1, 408-1](#)

Due diligence in the supplier network

A multi-stage due diligence process has been established across all relevant areas of the organisation to delineate our responsibility for the supplier network. A comprehensive description of the due diligence process can be found [online](#).

The BMW Group is committed to the application of standardised procedures and a cooperative approach with a view to implementing the due diligence obligations that are integrated in its business processes and avoiding redundant activities. For this reason, we engage in the Sector Dialogue Automotive Industry initiative, for example to develop guidelines for action and create an industry-wide grievance mechanism.

— Risk analysis

The BMW Group monitors and assesses sustainability and human rights risks in its supplier network, including its business relationships with both potential and active supplier locations. Among other strategies, we use risk filters and media analyses to identify abstract environmental and human rights risks, as well as standardised sustainability questionnaires and audits to conduct specific risk analysis at our Tier-1 suppliers. Supply chain mapping forms the basis for analysing risks at n-Tier suppliers.

[GRI Index: 2-24, 308-1, 414-1](#)

— Prevention and remediation

Prior to signing a contract with the BMW Group, suppliers are required to implement any necessary preventive or remedial measures to minimise potential risks or eliminate any deficits that may have been identified – including those in the areas of corporate governance, human rights and working conditions, health and safety, and environmental protection – by an agreed target date, no later than the start of production, and to demand that these measures are also complied with by subcontractors. [Further GRI Information](#), [Sustainability assessment of relevant supplier sites](#) The extent of the preventive measures is partially based on the potential risks, the nature and scope of the business activity and the size of the supplier.

er. Alongside its preventive measures, the BMW Group offers a training programme on sustainability in the supply chain aimed at internal buyers and process partners as well as suppliers. [GRI Index: 2-24, 308-2, 414-2](#)

— Effectiveness and grievance mechanisms

For suppliers operating in high-risk regions or high-risk product groups, the BMW Group has implemented additional control mechanisms, such as audits of environmental and social standards at supplier locations using its own auditors or external auditors. The Group reviewed a total of 49 potential and active supplier locations via this method during the year under report (2021: 38)^{1, 2}. We have set ourselves the target of ensuring that all Tier-1 supplier sites that have been audited meet the locally applicable legal requirements for sustainability as well as international human rights standards (BMW Group minimum requirements). In 2022, the final audits confirmed that all cases of non-compliance with minimum requirements (non-conformities) that were identified in initial audits had been redressed.

The internal Human Rights Contact Supply Chain unit deals with any indications of possible violations of the sustainability requirements stipulated by the BMW Group for the supplier network. We also use the standardised RBA Voices grievance mechanism as a complementary measure. In addition, [whistle-blower systems to detect possible legal violations](#) are in place and compliance checks performed. Our aim is to ensure that any substantiated reports of environmental or human rights violations are redressed by agreeing on corrective measures. 1]

¹ The audits carried out worldwide were conducted to a large extent in accordance with the standards of the Responsible Business Alliance (RBA).

² The number of audits reported in the previous year totalled 196 and was adjusted for purposes of comparison, as Environmental Performance Assessments (EPA) in China will no longer be included in the metric from 2022 due to the Group's new environmental and social audit requirements.



If necessary, the BMW Group temporarily suspends a given business relationship during efforts to mitigate the detected risk. However, the business relationship will only be terminated if no other effective means are available and we are unable to further leverage our ability to exert influence. We endeavour to avoid this latter situation by carefully selecting our suppliers and empowering and working with them to improve their sustainability performance. No existing supplier relationship needed to be terminated due to serious sustainability violations during the year under report.

➤ [GRI Index: 2-24, 3-3, 308-1, 414-1](#)

Carbon emissions in the supply chain

The BMW Group is pressing ahead with its efforts to decarbonise its own supply chain. The Group's goal is to reduce carbon emissions generated in the supply chain by more than 20 % per vehicle by 2030 (base year 2019)¹. For this reason, the Group has established a firm commitment to make carbon-reducing measures² an award criterion in its supplier network. We specifically empower suppliers via the BMW Group Partner Portal and additionally provide face-to-face formats for conducting partner workshops at our plant in Landshut (Germany). ➤ [GRI Index: 3-3](#)

In 2022, the number of contractual agreements with suppliers on carbon-reducing measures increased to 468 awards (2021: 429 awards), including agreements on the use of secondary raw materials, biomaterials and carbon-reduced steel routes. However, in our view, green electricity offers the greatest potential for reducing carbon emissions in the supply chain. The BMW Group makes its use² for direct suppliers (Tier-1) and energy-intensive processes in the upstream chain (n-Tier) a criterion for awarding new contracts to manufacture carbon-intensive components and materials. During the year under report, we concluded agreements for 343 contracts (2021: 427 contracts). In addition, since mid-2021 the BMW Group has concluded framework agreements with 46 of its largest suppliers regarding the use of green electricity³ to manufacture its components.

Agreements reached with suppliers regarding carbon reduction measures in production scenarios already began to take effect in 2022. Together with an external auditor, the BMW Group has developed a concept for verifying compliance with these agreements and confirmed compliance with contractually agreed [carbon-reducing measures in the supplier chain](#) at 23 suppliers in the course of 2022. As a result, the BMW Group helped reduce carbon emissions at the production facilities of its suppliers by approximately 1.0 million tonnes in the reporting period.⁴

The Group also continues to rely on the Carbon Disclosure Project (CDP) supply chain programme to assess supply chain performance in terms of its decarbonisation commitment. Measures relevant for supplier development and empowerment are also derived from the programme. In 2022, 247 suppliers took part in the rating (84 % of the production-relevant purchasing volume). [1](#)

¹ For the sake of simplicity, this figure has been rounded. The target validated under SBTi is 22 %.

² For the BMW Group this includes measures to reduce carbon emissions. Correspondingly, this does not include any compensation measures.

³ In-house generation, direct purchase or Energy Attributes Certificates (e.g. certificates of origin).

⁴ The carbon reductions achieved in the year under report resulting from measures agreed upon with suppliers were not taken into account when calculating the [Carbon footprint](#).

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EMPLOYEES AND SOCIETY

EMPLOYER ATTRACTIVENESS AND EMPLOYEE DEVELOPMENT

[The BMW Group aims to offer its employees interesting, future-proof jobs with attractive conditions and secure prospects. At the same time, we want to offer employees the opportunity to develop personally as well as help shape the BMW Group's future. By doing so, we are able to lay the foundations for long-term success in the competitive market for talented professionals. **]**

At 31 December 2022, the BMW Group employed a total workforce of 149,475 people worldwide – significantly more than in the previous year (2021: 118,909/+25.7%). [↗ Further GRI Information](#) This increase is primarily due to the full consolidation of BMW Brilliance. Beyond this, the growth in employment took place in Development and IT in particular, as well as in our global production network. [↗ GRI Index: 2-7, 2-8](#)

The BMW Group HR strategy serves as a tool for identifying the need to readjust personnel and competence structures at an early stage. In particular, this involves attracting highly qualified employees, deploying them in the areas that best match their strengths, and helping them develop their potential and build up the necessary skills for the future. On this basis, we continue to improve our programmes in the fields of vocational and further training, personnel development, marketing, recruiting and training programmes for future talents. [↗ GRI Index: 3-3](#)

[Developing expertise for the future

The transformation of the automotive industry entails numerous far-reaching changes. The BMW Group takes a forward-looking approach to the related challenges for the workforce structure, equally considering social, economic, political and technological developments. **]**



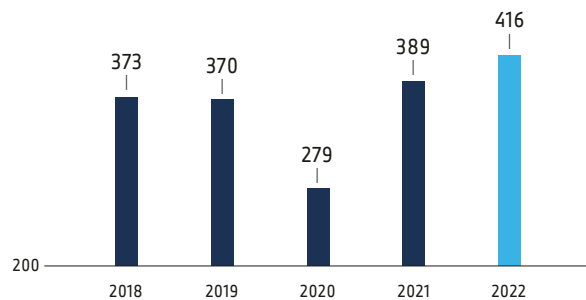
Securing our competitive edge with further education

The largest training initiative in the BMW Group's history, launched in 2021, helps to build up and transform expertise in all divisions. It is aimed at maintaining the ability of its workforce to perform with the requisite expertise while ensuring the Group's long-term competitiveness. In 2022, the focus of our training measures was on the future-oriented fields of electricians and electronics, data analytics, AI, innovative production technologies and new working methods.

In the year under report, the number of people undertaking training measures across the BMW Group was around 1 million (2021: 1.1 million). Each employee of the BMW Group received an average of 21.6 hours of training (2021: 23.1 hours). [Further GRI Information 1](#) In total, the BMW Group invested € 416.0 million in training and further education during the reporting period (2021: € 388.6 million). [GRI Index: 404-1, 404-2](#)

Spending on employee training and development¹

in € million



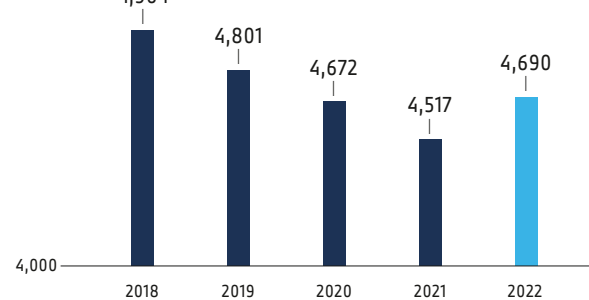
Recruiting and promoting new staff

Recruiting and promoting future talents plays a key role in building up expertise within the BMW Group. With a comprehensive programme and a variety of entry opportunities, we want to secure our recruiting requirements. [1](#)

These opportunities include a vocational training and instruction programme which has grown over the years, a dual study programme and student support programmes. For the most talented individuals, the BMW Group also offers its ProMotion PhD programme as well as the Global Leader Development Programme (GLDP)² traineeship. Participants in the ProMotion programme write their doctoral dissertations in partnership with the BMW Group and thereby bring valuable innovations to the Company – especially since the assignment of dissertation topics is aligned with our innovation strategy. Our trainee programme aims to prepare future managers for the tasks that await them in the future.

Apprentices and participants in young talent programmes³

Number



The total number of apprentices, dual study students and participants in young talents programmes³ increased slightly to 4,690⁴ during the year under report (2021: 4,517/+3.8%). Trainees are currently being prepared for their future occupations within the BMW Group in approximately 30 skilled trades and 20 dual study programmes at 19 training locations and 20 branches around the world. In Germany, some 1,200 young people began an apprenticeship or a dual study programme in 2022 (2021: 1,200). The same number of apprenticeships and study places has been announced for the coming year. BMW AG continues to offer its apprentices and dual study students permanent employment at the BMW Group's plants and headquarters after they have completed their vocational training. [GRI Index: 401-1](#)

[1](#) The skills required to create the digital, electric and sustainable mobility of the future are shaping and changing the training programmes at the BMW Group. Course content is regularly reviewed and adapted to ensure that our expertise needs for the future are adequately covered. In the year under report, for instance, we included the dual course in sustainability and environmental management in our programme and expanded our global vocational training programme with the basic principles of augmented reality, the Internet of Things and data analytics. [1](#)

¹ Vocational and further training includes the internal training of all apprentices in the BMW Group [GRI Glossary](#) (Definition of apprentice) and further training for BMW Group employees and temporary employees at consolidated companies worldwide (including BMW Brilliance since 2022).

² From April 2023, the upgraded GLDP programme will be launched under its new name Acceleration.

³ Includes SpeedUp (an undergraduate programme) and Fastlane (a master's programme). These programmes vary by country and are adapted to local market requirements and university curricula.

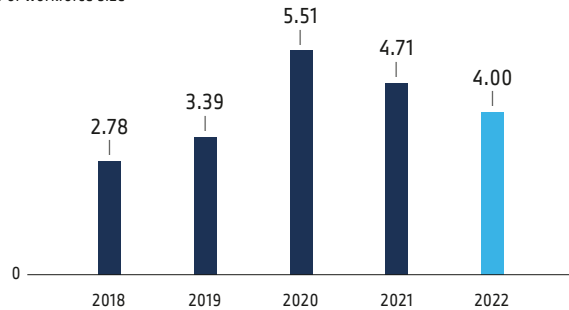
⁴ Including BMW Brilliance Automotive Ltd. for the first time, total number excluding BMW Brilliance Automotive Ltd.: 4,566.

[i] **Attractive employment conditions**

Key factors in the BMW Group's attractiveness as an employer include a positive perception of the Company, exciting, future-oriented tasks, individual opportunities for personal development and flexibility, attractive working conditions including remuneration and additional benefits, and a modern working environment. [1\]](#)

Employee attrition rate*

in % of workforce size



[i] Based on their overall remuneration package, we aim to ensure that our employees earn above median for the respective labour markets. To confirm this, we conduct remuneration studies each year on a worldwide basis. The BMW Group also consistently applies the principles of performance-related compensation. The total salary package consists of a monthly remuneration and a variable component dependent on the BMW Group's overall performance. Added to this are extras that differ by country, such as company pension plans and an attractive range of mobility-related services such as subsidised local public transport tickets and rail cards. Employees can get information about the full range of additional benefits on an internal company platform.

[↗ GRI Index: 2-21, 401-1, 401-2](#)

Employees have varying needs when it comes to organising their work and their working hours. For this reason, the BMW Group offers a great deal of individual personal scope in the form of flexible working hours, remote working, additional holidays in return for a corresponding reduction in salary, sabbaticals, and temporary or permanent part-time solutions. [↗ Further GRI Information](#) During the year under report, we also continued with a process launched in 2013 entitled ConnectedWorks. This incorporates various options for flexible, performance-oriented and collaborative working.

Involving employees

Our employees represent a crucial stakeholder group for the BMW Group. As such, we actively involve them in our corporate strategy development. The internal dialogues on the topic of sustainability, first introduced in 2020, have become a central platform used to achieve this end. At the two dialogue events held in 2022, we provided information and background details on the role of sustainability in the supply chain and in finance, for example. [↗ Dialogue with stakeholders](#)

The BMW Group's ideas management system encourages employees to contribute ideas on matters that do not fall within their normal remit. Employee ideas that generate a positive effect for the BMW Group with regard to efficiency or sustainability are rewarded with the payment of a bonus. In 2022, a total of 5,028 ideas were submitted (2021: 4,810). A total of 1,188 ideas were implemented during the year under report (2021: 1,318), resulting in first-year benefits totalling €20.5 million (2021: €30.4 million). As in the previous year, around one-third of the ideas implemented in 2022 were primarily related to sustainability. [↗ GRI Index: 2-29](#)

The BMW Group also gauges the general mood of the workforce every two years with a Group-wide employee survey. Senior executives consult with their employees to derive specific measures from the results and take responsibility for implementing them. The next survey will take place in 2023. [1\]](#)

Excellent results in employer rankings

In 2022, highly regarded employer ratings once again ranked the BMW Group as one of the world's most attractive employers. In the current ranking of the [↗ World's Most Attractive Employers 2022](#) as rated by Universum, a well-known study provider, the BMW Group was again the world's top-ranked automotive manufacturer. Among aspiring engineers, the BMW Group ranked fourth worldwide, directly after Google, Microsoft and Apple. For IT students, the BMW Group is the only automotive company among the world's top 10 employers, mostly in competition with prestigious technology enterprises. The BMW Group again achieved the top spot in the Trendence Professionals Barometer for Germany in 2022 for the eleventh time in a row.

* BMW AG;
employees with permanent contracts leaving the Company.

HEALTH AND PERFORMANCE

Whether in the plants, R&D centres or in administrative offices, BMW Group employees engage in a wide range of tasks every day. This results in comprehensive requirements regarding workplace health and safety.

The right to health and safety in the workplace is a key feature of the [BMW Group's Code on Human Rights and Working Conditions](#), which includes a commitment to comply with the relevant local occupational health and safety legislation. Furthermore, uniform standards applying to all sites are constantly improved, with a view to ensuring that health and safety requirements are consistent throughout the Group. Responsibility for the topics of health and occupational safety is enshrined in the Work Environment, Health, Group Safety and Group Data Protection unit.

[GRI Index: 403-1](#)

Health management on a holistic basis

A key factor in the success of the BMW Group is maintaining the health and performance of our employees. The BMW Group bundles all measures aimed at maintaining health within its Health Initiative programme. During the year under report, our health management continued to focus on fighting the coronavirus pandemic. In this context, we introduced a variety of additional preventive measures, including a new hygiene concept for internal and external in-person events.

We use regular action days, dialogue events and training courses to inform our employees and raise awareness of current health-related topics such as nutrition, exercise and fitness, behavioural ergonomics and cancer prevention. Another major topic is the psychological well-being of our employees. Training sessions and useful tips provide advice on how to better deal with stress and how to boost mental resilience. The special role

of senior executives with regard to their employees' mental health is a topic covered by the Health and Leadership executive training programme.

To help promote a balanced diet, the BMW Group runs Company canteens in Germany, which focus on regional and sustainably sourced food. Sustainability criteria are also included in supplier screening as part of the Company's audits. From 2023, we will be implementing a Sustainable Catering guide at our international sites.

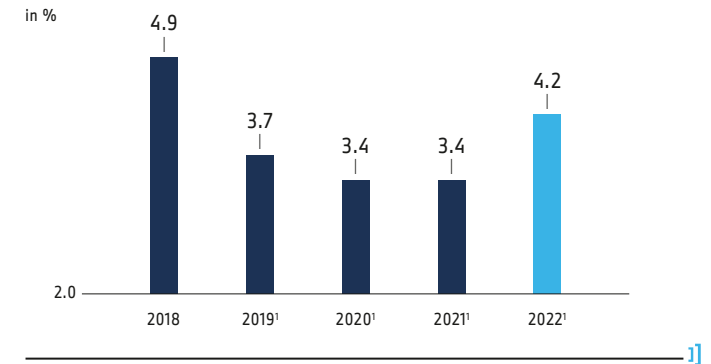
The BMW Group places great emphasis on ensuring that all employees have access to its in-house health services. In Germany, these services focus on providing acute care to employees and temporary workers during working hours. In some countries, however, the Group's health management also takes on primary care tasks, such as at the sites in Thailand, India and Mexico. The BMW Group's Company doctors also advise employees on individual preventive measures if requested to do so, and help them adapt their work environment to ensure that their health and performance are maintained in the long term.

[GRI Index: 3-3, 401-2, 403-3, 403-6](#)

One of the parameters the BMW Group uses to quantify the success of its health management measures is the sickness rate. At BMW AG, this was higher than in the previous year at 4.2% (2021: 3.4%). The sickness rate in Germany reached its highest level in 2022. This was significantly above pre-pandemic levels as a result of various infectious diseases such as coronavirus, flu and other respiratory illnesses. Nevertheless, we aim to continuously reduce this level, for example with targeted measures in accordance with our Attendance Management works agreement and the relevant initiatives as part of our health management.

[GRI Index: 403-10](#)

Sickness rate¹



Certified occupational health and safety management system

The BMW Group also aims to foster consistent measures worldwide when it comes to occupational safety, to ensure that health and safety standards apply throughout the Group. There are occupational health and safety management systems in all plants, which are certified to ISO 45001 or OHRIS² in 29 of 31 plants. This means that 99.79% (2021: 99.72%) of employees and 99.98% (2021: 99.98%) of temporary employees at BMW Group plants work at a site covered by an international occupational health and safety management system. The BMW Group plant in Manaus (Brazil) and the contract manufacturing site in Born (the Netherlands) are not yet certified. [1\]](#)

¹ BMW AG; number of hours of absence due to paid sick leave divided by the contractually agreed number of working hours. Until 2018, unpaid sick leave was also taken into account. Figures up to 2018 are not comparable.

² Occupational Health and Risk Management System.

† The BMW Group has set the goal of obtaining certification to one of the aforementioned international standards for all of its plants by 2025. Employer and employee representatives work together at nearly all locations to bring about a continual improvement in health and safety standards. ↗ [GRI Index: 403-1, 403-4, 403-8](#)

Recognising and avoiding risks

The BMW Group conducts comprehensive risk and stress analyses in order to identify potential work-related risks in both production and office workplaces. With its Digital Workplace Stress Management (DWSM) project, used to assess workplace ergonomics on a fully automated basis, the BMW Group is going beyond current legal requirements and setting the benchmark for the automotive industry. All assembly sites in Germany were certified through this project in 2022. We want to enable our international sites in Mexico, the US, South Africa and the UK to also use this system as of 2023. At the same time, we are continuing to develop our DWSM project.

The BMW Group regularly assesses all methods and instruments used within the Company. The results of the assessments are subsequently used to enhance internal norms. As part of co-determination arrangements, the Works Council and, if necessary, the representatives of severely disabled employees and HR management are involved.

The BMW Group ensures the quality of its processes by means of annual internal audits. Audits and certifications of sites are conducted by external service providers. All necessary audits were again successfully performed in 2022, resulting, for example, in the elimination of defects identified in machinery and equipment. ↗ [GRI Index: 403-2, 403-7](#)

Regular training for employees

By providing regular training to its employees, the BMW Group aims to raise awareness of the topics of occupational health and safety at all sites. Responsibility for the training measures implemented in this field lies with the Training Competence Centre, which comprises staff from the occupational safety, ergonomics, environmental protection and health management departments. The seminar curriculum is drawn up in collaboration with safety specialists, Company doctors and the BMW Group Academy. The specialised departments can also be called on to provide solutions to help meet short-term needs.

Accident frequency reduced

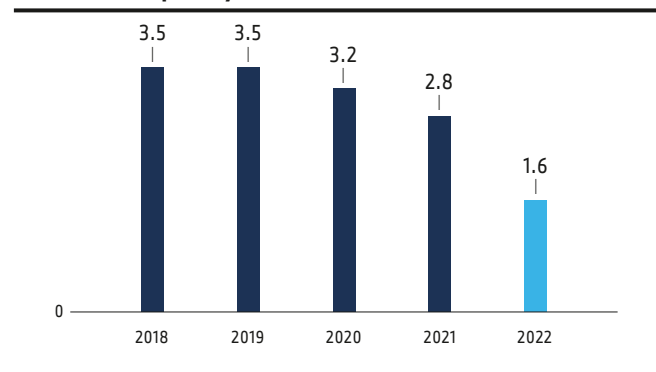
The measures implemented by the BMW Group are also helping in accident prevention terms. The accident frequency rate of the BMW Group was 1.6 and dropped further in 2022 (2021: 2.8). Along with the implementation of global standards, the integration of BMW Brilliance has also noticeably contributed to this improvement in the rate (for 2022, the accident frequency rate of the BMW Group excluding BMW Brilliance was 2.4). There were no fatal accidents during the year under report (2021: no fatal accidents). ↗ [Further GRI Information](#), ↗ [GRI Index: 403-9](#)

Occupational safety along the value chain

It is important for the BMW Group that external partners also find a safe environment to work in at our locations and take advantage of the safety measures. For this purpose, cooperation with contractual parties is regulated in a separate contractor declaration, enabling potentially hazardous situations to be identified and appropriate protective measures to be taken on this basis. On large-scale construction sites of the BMW Group, all employees of partner companies are given safety briefings by BMW Group experts. In the case of smaller contracts, the contractor is responsible for performing this duty. The department responsible for placing the order monitors compliance with the occupational health and safety regulations, supported by the relevant occupational health and safety unit as required.

In order to also improve occupational safety at the upstream stages of the value chain, the BMW Group requires its suppliers – via the agreed purchasing terms and conditions – to comply with internationally recognised occupational health and safety requirements. ↗ [GRI Index: 403-7 1\]](#)

† Accident frequency rate¹



¹ Number of workplace accidents resulting in at least 1 lost day per 1 million hours worked.

² Management systems in accordance with ISO 45001 and derived from the International Labour Organization (ILO) or United Nations Global Compact (UNGC).



DIVERSITY, EQUAL OPPORTUNITY AND INCLUSION

People from over 100 countries work successfully together at the BMW Group. They bring different perspectives, experiences and competencies to their daily work, and can therefore make us more innovative and competitive as a company. The BMW Group therefore values an unprejudiced, appreciative and inclusive working environment for all its employees. Key principles such as protection against discrimination, equal treatment of all employees and respect at all times are firmly embedded in the [BMW Group Code of Conduct](#) and the [BMW Group Code of Human Rights and Working Conditions](#). These principles include equal pay regardless of gender, religion, background, age, disability, sexual orientation and country-specific characteristics. [GRI Index: 405-2](#)

All employees can contact their line managers, the responsible specialist departments, the HR department, the Works Council or disability representatives if they have any pertinent concerns. The BMW Group SpeakUP Line is a telephone service available in over 30 languages that gives employees worldwide the opportunity to report possible violations both anonymously and confidentially ([Whistleblower Systems for Detecting Possible Legal Violations and Compliance Controls](#)). In addition, a Zero Tolerance hotline was launched in late 2022. This provides employees with free, anonymous and professional advice on the topics of discrimination, workplace bullying and sexual harassment at work.

[GRI Index: 406-1](#)

Promoting diversity

The BMW Group sees diversity as a strength. Using a variety of training events, presentations and dialogue formats, we raise awareness among employees and managers to the positive contribution that diversity, equal opportunity and inclusion can make to the business. The BMW Group also promotes these topics in its recruitment and personnel development strategies.

We embrace diversity in all its facets on the basis of our concept for diversity, equal opportunity and inclusion. This is implemented by HR management together with the disciplinary line managers. The concept contains aims and measures that focus on five key dimensions:

- Gender
- Age and experience
- Cultural background
- Sexual orientation and identity
- Physical and mental ability

We provide information about our commitment to these categories on our [website](#).

BMW AG employees according to age group, divided into functions and gender

in %	< 30 years	30-50 years	> 50 years
2020 in total	10.4	59.9	29.7
2021 in total	9.8	59.9	30.3
2022 in total	10.8	59.8	29.4
direct ¹	14.4	54.1	31.5
indirect ²	8.6	63.3	28.1
male	9.9	59.1	31.0
female	15.4	63.6	21.0

We launched a variety of measures within the scope of these five dimensions during 2022. For example, the trainee exchange programme MOVE was launched in the reporting year and attracted more than 100 trainees. This gives young people the opportunity to experience intercultural collaboration through practical work experience placements at different sites. During the year under report, we also continued with measures such as the Joint Leadership Programme, which enjoyed greater popularity during its second year. The Group-wide Diversity Week took place for the tenth time in 2022. In the newly developed Zero Tolerance training course, we also increase managers' awareness of the importance of providing a non-discriminatory work environment.

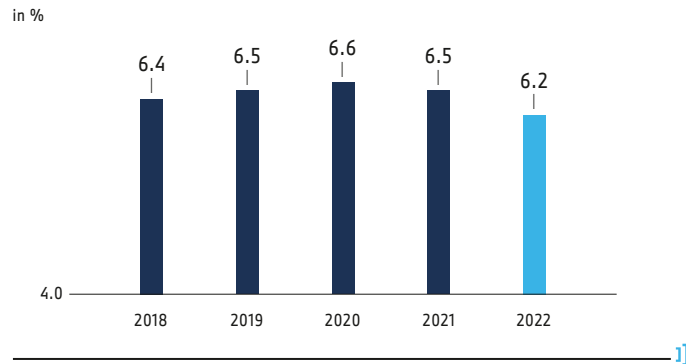
The BMW Group actively promotes an environment that offers equal opportunity regardless of physical or mental disabilities. Last year, we joined the international [The Valuable 500](#) initiative, which champions a more inclusive world of work. In 2022, we also adopted a revision of BMW AG's Company inclusion agreement for employees with disabilities, thus strengthening our commitment in this area. At the same time, we expanded our requirements for barrier-free access in the areas of construction and IT. As in previous years, BMW AG in Germany awarded contracts amounting to around € 41.1 million (2021: € 24.2 million) in 2022 to workshops staffed by people with disabilities.^{3]}

¹ Direct: Clock-controlled and production employees.

² Indirect: All employees not engaged in clock-controlled work.

³ The significant increase in the total order volume to workshops staffed by people with disabilities is due to an adjustment of the calculation logic as well as the fact that all workshops listed by the Federal Employment Agency as recognised workshops for people with disabilities have been recorded. According to the new calculation logic, the figure for 2021 is € 39.2 million.

Share of employees with severe disabilities at BMW AG¹



Our employees continue to play a key role in ensuring that diversity, equal opportunity and inclusion are actively practised. Many employees are involved in internal networks that have been set up, including a number of women's networks at various locations and the BMW Group PRIDE group, which campaigns across borders for the interests of the LGBTIQ+² community. The dialogue generated by these internal networks creates further momentum for the BMW Group's commitment to this area.

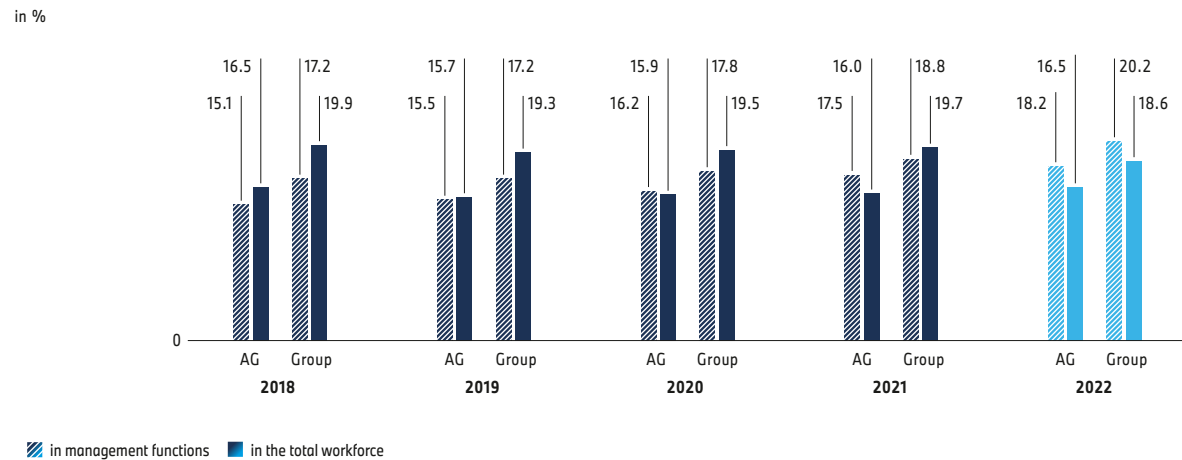
Concepts to promote diversity, equal opportunity and inclusion have also been developed in relation to the composition of the Board of Management and Supervisory Board. Information on the stipulated diversity criteria and their implementation is provided in the [Corporate Governance Statement](#).

[GRI Index: 3-3, 405-1](#)

Increasing the share of women

The BMW Group is working continuously to increase the share of women in the workforce as a whole and in management functions in particular. This remains a challenging task in that it is still the case that more men go through the process of vocational training, particularly in technical fields, and are therefore in the majority on the market.

Share of women in management functions and in the total workforce in the (BMW AG and BMW Group)⁴



The BMW Group has set targets for the percentage share of women at all levels of the Company. By 2025, we aim to increase the share of women in the BMW Group workforce as a whole to between 20 and 22 % and to between 17 to 19 % for BMW AG. We aim to boost the share of women holding management positions in the BMW Group to 22 % by 2025, and to 20 % for BMW AG.

The share of women in management functions³ within the BMW Group has been rising steadily for many years. Globally, the share of female managers in the BMW Group stood at 20.2 % at the end of the year under report (2021: 18.8 %). During the period from 2011 to 2022, the number of women in management positions in BMW AG has more than doubled.

Expressed as a percentage, the share of female managers at BMW AG was 18.2 % at the end of 2022 (2021: 17.5 %).

The share of women in the BMW Group workforce as a whole reached 18.6 % (2021: 19.7 %). For BMW AG, the share was 16.5 % (2021: 16.0 %). [Further GRI Information](#)

The BMW Group is also aware of the need to achieve a high percentage of women in our future talents programmes. By doing so, we aim to ensure that the share of women in the total workforce and in management functions continues to rise in the future. The proportion remained high in the trainee programme (Global Leader Development Programme⁵) in 2022 at 45 % (2021: 47 %). The same applied to the student support programmes (Fastlane, SpeedUp), with a proportion of around 31 % (2021: 32 %). For our vocational training in STEM subjects (science, technology, engineering and mathematics), the share of women at BMW AG in 2022 was 16.1 % (2021: 15.6 %), and 16.4 % (2021: 16.1 %) in the BMW Group⁶.

¹ The share of employees with severe disabilities is based on the statutory requirements in accordance with the German Social Code (SGB IX).

² Abbreviation for all sexual orientations and forms of identity.

³ For a definition of the term management functions, please refer to the [Glossary](#).

⁴ For a definition of the term employee, please refer to the [Glossary](#).

⁵ Trainee programme renamed to AcceleratiON for new trainees from 4/2023.

⁶ Including BMW Brilliance Automotive Ltd., China, and BMW Group plant Mexico; excluding sales companies.

CORPORATE CITIZENSHIP

[1] As part of its [corporate citizenship](#), the BMW Group champions environmental, economic and social issues even outside of its core area of business. As such, we not only live up to our own aspirations but also the expectations of society and our stakeholders worldwide. The close partnership with the [BMW Foundation Herbert Quandt](#) plays a central role in this. As an important partner, the independent corporate foundation contributes with its activities to the perception of social responsibility at the BMW Group.

Enshrining responsible practices within the Company

The BMW Group aspires to address concrete concerns and achieve a long-term impact by means of its corporate citizenship activities. We only get involved in areas where our own resources can actually make an effective contribution to society. Four main areas can be derived from our core area of business and our skills:

- Responsible Leadership for sustainable development
- Education for future generations
- Inclusion for equal opportunities
- Culture and Sports for a united world

Our employees are multipliers for this approach. One area of focus is therefore to provide opportunities for networking and flexibility. One example of this is the accelerator programme Innovation for Impact, which supports young employees at the BMW Group to develop their own projects looking at innovative technologies that can help to solve global challenges. This programme resulted in [PowerUp](#), for example – a project considering the secondary use of high-voltage batteries from the Development unit. Thanks to the commitment of the project members, these batteries are now used by a school in South Africa in order to store energy generated by its photovoltaic system.

The international networking of young executives has been facilitated since 2016 by participation in the One Young World Summit. A delegation from the BMW Group took part once again in 2022. Fostering dialogue is also at the heart of our partnership with the UN Alliance of Civilizations. The Intercultural Innovation Award, which was first granted in 2011, was further developed in 2022 into the Intercultural Innovation Hub – a platform for networking and promoting social innovation as part of an intercultural dialogue. By late 2022, we had already reached over six million people through the platform's outstanding projects – thereby achieving the goal originally set out for 2025 ahead of schedule.

Commitment in the context of the war in Ukraine

With regard to the consequences of the war in Ukraine, the BMW Group provided fast, direct assistance during the year under report. This included providing immediate financial aid of € 1 million, as well as a subsequent donation of the same amount to UNICEF. As part of a donations drive, employees also collected € 250,000, which were matched by another € 250,000 by the BMW Group. The € 2.5 million collected in total is being used in particular for children from Ukraine who are in need of help.

The BMW Group also provides specific humanitarian help at the BMW Group sites and along refugee routes. This includes providing vehicles for transporting food and medicines at the Poland/Ukraine border and practical help at refugee reception centres in the form of language classes.

We also offer refugees long-term perspectives in the form of the BMW Group Fellowship Programme in cooperation with the European School of Management and Technology (ESMT) in Berlin. As part of this programme, ten women from Ukraine received a scholarship for a Master's in Business Administration in 2022.^[1]



Valuing and facilitating employee commitment

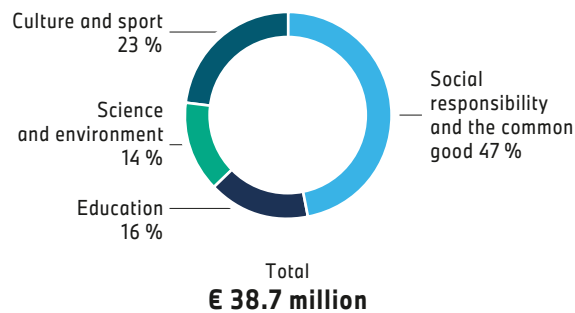
A great number of BMW Group employees around the world are committed to social issues in a variety of ways, including through educational projects and projects for the common good at our locations.

For 11 years now, the BMW Group has been rewarding exceptional commitment by individual employees with the BMW Group Award for corporate citizenship. Of the ten finalists in 2022, four emerged as winners – one of whom also won the special Doppelheld Foundation prize. The prize money of € 10,000 per winner will be used to fund the relevant charity projects. With a wide-ranging supporting programme related to social commitment by employees, the first global Social Week provided a special framework for the awards ceremony in 2022. The BMW Group has also been supporting this since 2022 by providing an online platform, which is used by employees in Germany to find out about charitable projects and to offer their support in the form of lending a hand and providing monetary and non-monetary donations.

Donations and expenses for corporate citizenship activities

The BMW Group's expenditure on corporate citizenship activities in 2022 totalled € 38.7 million (2020: € 34.6 million). This expenditure can be assigned to the categories of science/environment, education, social responsibility and the common good, culture and sport. [1\]](#)

Total expenditure on corporate citizenship 2022 by category

[1\]](#)



OUTLOOK

The outlook and [↗ Risks and opportunities](#) of the BMW Group presented in this report reflect the expected development in 2023 from the perspective of Group management. In line with the Group's performance management, the outlook covers a period of one year. Short-term risks and opportunities are managed on the basis of a two-year assessment period. In addition, we report on medium- and long-term risks and opportunities arising in connection with climate change.

The continuous forecasting process applied within the BMW Group ensures that it is constantly ready to take advantage of opportunities as they arise, but also to react appropriately to any unexpected risks. The principal [↗ Risks and opportunities](#) are described in detail in the chapter of the same name and concern all performance indicators. Actual outcomes may, however, deviate from the outlook due to unexpected events.

Economic outlook

The International Monetary Fund has raised its global growth projection for 2023 to 2.9%. Despite this upward revision, economic growth over the coming year is nevertheless likely to be significantly weaker than in 2022. High inflation and the war in Ukraine are likely to continue weighing on the global economy. New virus variants, renewed pandemic-related restrictions and prolonged supply bottlenecks could additionally slow the pace of economic growth. Further information on political and global economic risks is also available in the section [↗ Risks and opportunities](#).

Forecasts for the eurozone as a whole indicate slight growth in 2023 (+0.3%). In this context, corresponding rates of economic growth are predicted for France (+0.4%), Italy (+0.3%) and Spain (+1.2%). In the case of Germany, a recession cannot be ruled out in 2023 (-0.1%), with private consumption held down by high inflation and industrial production potentially affected by the energy crisis. Moreover, the global economic slowdown could result in falling demand for German export goods.

Economic output in the UK is also expected to shrink in 2023 (-0.7%).

The growth rate in the US is forecast to slow to 0.7% in 2023. The Fed's interest rate hikes and the resulting unfavourable financing conditions available on the market are forcing companies and households alike to cut back on spending.

Following the easing of pandemic-related restrictions, the Chinese economy is expected to be significantly stronger again in 2023 and grow by 5.0%.

Japan's growth rate in 2023 is forecast to be at a similar level to the previous year (+1.2%).

Currency markets and international interest rate environment

Currencies of particular importance for the international operations of the BMW Group are the Chinese renminbi, the British pound, the US dollar and the Japanese yen.

In view of high inflation, both the ECB and the Fed will continue to tighten their monetary policies in 2023. Against the backdrop of the war in Ukraine and high energy prices, the euro is forecast to weaken slightly against the US dollar during the outlook period.

As in the previous year, the British pound is expected to move sideways against the euro in 2023.

Following its appreciation against the euro in 2022, the Chinese renminbi is forecast to depreciate slightly against the euro in 2023.

In Japan, the central bank's highly expansionary monetary policy is unlikely to change significantly in 2023, potentially resulting in a further depreciation of the yen against the euro.

The currencies of emerging market countries such as Brazil and India are likely to remain under pressure against the US dollar and the euro in 2023 against the background of the benchmark interest rate hikes imposed by the Fed and the ECB.

International automobile markets

In light of the challenging macroeconomic conditions, new registrations worldwide are expected to decrease slightly in 2023, with ongoing supply bottlenecks and geopolitical risks in particular continuing to exert a negative impact on the world's markets.

Taking these factors into account, the BMW Group forecasts a slight decrease in new registrations in Europe and the USA in 2023. In China, the economy is likely to stabilise following the easing of coronavirus-related measures, thereby resulting in a slight increase in registration figures.

International motorcycle markets

The BMW Group expects the world's motorcycle markets in the 250 cc plus class to decline slightly year on year in 2023. In particular, some major European markets, such as France and the UK, as well as the USA and Brazil, are likely to contract slightly. By contrast, the German market is set to develop solidly, while the markets in Spain and Italy are predicted to recover slightly compared to the preceding year. Motorcycle markets could also be severely impacted by supply bottlenecks, the further course of the coronavirus pandemic, especially in China, and a possible recession in 2023.

Expected consequences for the BMW Group

Future developments on international automobile markets have a direct impact on the BMW Group. A challenging competitive environment, the supply situation for vehicle components, the further course of the coronavirus pandemic and geopolitical developments could all have a significant impact on business performance. Flexible coordination between the Group's sales and production networks will help cushion the impact of unforeseeable developments in individual regions. [↗ Risks and opportunities](#)

Assumptions used in the outlook

The outlook contains forward-looking statements based on the BMW Group's expectations and assessments and may be influenced by unforeseeable events. As a result, actual outcomes can deviate either positively or negatively from the expectations described below, due to changes in the political and economic environment as well as other factors such as the further course of the coronavirus pandemic.

The following outlook covers a forecast period of one year and is based on the composition of the BMW Group during that time. The outlook takes account of all information available at the time of reporting and which could have an impact on the Group's performance. The expectations contained in the outlook are based on the BMW Group's forecast for 2023 and reflect its most recent status. The basis for the preparation of and the principal assumptions used in the forecasts – which consider the consensual opinions of leading organisations, such as economic research institutes and banks – are set out below. The BMW Group's outlook takes account of these assumptions.

The war in Ukraine and its potential implications for the BMW Group's course of business are being closely monitored. All applicable restrictions resulting from sanctions have been factored into the outlook.

From a current perspective, the coronavirus pandemic is not predicted to have any significant impact on the results of operations, financial position and net assets position of BMW AG and the Group as a whole, and this assumption has therefore been applied for the financial year 2023. However, uncertainties remain regarding the impact of the lifting of the zero-Covid policy in China and any associated constraints on production and sales volumes.

The supply situation continues to be challenging. Under these circumstances, raw materials markets are expected to remain tense during the financial year 2023. The cost of precious metals is likely to continue rising, especially for the battery-related raw materials required to move ahead with the electrification strategy the BMW Group has adopted. On the other hand, the general availability of components and semiconductors is projected to improve slightly in 2023. The BMW Group also expects energy supplies to stabilise due to a number of factors, including higher energy efficiency and the various alternative sources of energy available. However, supply chains remain exposed to the risk of disruptions and substantial cost increases in light of labour shortages, limited parts availability, continued high prices for raw materials and energy and other unfavourable factors. As in 2022, higher logistics-related costs will therefore continue to have a negative impact on earnings.

Despite the current high level of inflation and interest rates as well as the various challenges described above, the BMW Group is confident that demand will remain stable. Targeted investments and the Group's close cooperation with its strong network of suppliers will help to achieve the targets it has set itself for 2023.

Against this backdrop, deliveries to customers are forecast to increase slightly compared with the previous year, with selling prices remaining at a stable level.

The Group expects the situation in the used car markets to normalise in 2023 due to the increased availability of new cars.

The outlook does not factor in the following:

- a deep recession in the BMW Group's key sales markets
- a further escalation of the conflict between Russia and Ukraine, combined with an expansion of the war
- an exacerbation of the pandemic situation in China and the resulting impact on the economic environment

In view of the growing unpredictability of political developments, actual macroeconomic developments in some regions may deviate from expected trends and outcomes. Potential sources of political uncertainty include policies affecting trade and customs tariffs, security developments and a possible worsening of international trade conflicts.

Outlook for the BMW Group – key performance indicators

Deliveries of BMW, MINI and Rolls-Royce brand vehicles by the Automotive segment are expected to rise slightly year on year due to improved availability and the considerable order backlog.

Taking into account all of the aforementioned developments, an EBIT margin of between 8 and 10 % is forecast for the Automotive segment in 2023. The RoCE for the Automotive segment is expected to finish within a range between 15 and 20 %.

The BMW Group expects to achieve its target of slightly reducing the carbon emissions generated by its EU new vehicle fleet by continuously improving the overall fuel consumption of its products and an increasing number of vehicles with alternative drivetrain systems.

In view of the increasing focus on all-electric vehicles, from the financial year 2023 onwards the BMW Group will report the share of all-electric vehicles in total deliveries, which is expected to increase significantly compared to 2022. The previous key performance indicator "share of electrified vehicles in deliveries" will no longer be reported.

Carbon emissions per vehicle produced are forecast to decrease slightly.

Motorcycles segment deliveries are predicted to increase slightly. The segment EBIT margin is expected to finish within a range between 8 and 10 % and the segment RoCE between 21 and 26 %.

The RoE in the Financial Services segment is predicted to finish within a range between 14 and 17 %. Compared with the financial year 2022, the favourable results from remarketing lease returns are expected to weaken in 2023.

Accordingly, Group profit before tax will decrease significantly. One of the main underlying reasons for this development is the one-time gain of € 7.7 billion recorded in 2022 in conjunction with the remeasurement of the BMW Group's previous equity interests in BMW Brilliance.

The aforementioned targets are to be met with a slight growth in the size of the workforce. Likewise, the share of women in management positions in the BMW Group is expected to increase slightly.

The BMW Group's actual business performance may also deviate from current expectations due to the risks and opportunities discussed below in the chapter [↗ Risks and opportunities](#).

The BMW Group key performance indicators

		2022 Reported	2023 Outlook
GROUP			
Profit before tax	€ million	23,509	Significant decrease
Workforce at year-end		149,475	Slight increase
Share of women in management positions in the BMW Group	%	20.2	Slight increase
AUTOMOTIVE SEGMENT			
Deliveries ¹	units	2,399,632	Slight increase
Share of electrified vehicles in deliveries	%	18.1	No longer reported
Share of all-electric vehicles in deliveries	%	Not reported	Significant increase ²
CO ₂ emissions EU new vehicle fleet ^{3,4}	g/ km	105.0	Slight reduction
CO ₂ emissions per vehicle produced ⁵	tons	0.32	Slight reduction
EBIT margin	%	8.6	between 8 and 10
Return on capital employed (RoCE)	%	18.1	between 15 and 20
MOTORCYCLES SEGMENT			
Deliveries	units	202,895	Slight increase
EBIT margin	%	8.1	between 8 and 10
Return on capital employed (RoCE)	%	24.9	between 21 and 26
FINANCIAL SERVICES SEGMENT			
Return on equity (RoE)	%	17.9	between 14 and 17

¹ Includes BMW Brilliance Automotive Ltd. for the full year 2022, including the period prior to that entity's full consolidation in the BMW Group Financial Statements (1 January to 10 February 2022: 96,133 units).

² The outlook relates to the share of all-electric vehicles in deliveries of 9 % in financial year 2022.

³ EU-27 countries including Norway and Iceland; with effect from 2021, values are calculated on a converted basis in line with WLTP (Worldwide Harmonised Light Vehicles Test Procedure).

⁴ Including an allowance for eco-innovations (amounts of minor significance).

⁵ Efficiency ratio calculated on the basis of Scope 1 and Scope 2 carbon emissions (i.e. a market-based method according to GHG Protocol Scope 2 guidance; mainly based on the use of emissions factors for electricity, district heating and fuels of the VDA (each in the most current valid version: 12/2022) and occasionally using local emissions factors; excluding climate-changing gases other than carbon dioxide from vehicle production (BMW Group manufacturing sites including the BMW Brilliance Automotive Ltd. joint venture and Motorrad, but excluding partner plants and contract manufacturers), as well as BMW Group non-manufacturing sites (e.g. research centres, sales centres, offices) divided by the number of vehicles produced (BMW Group manufacturing sites including the BMW Brilliance Automotive Ltd. joint venture and partner plants, but excluding contract manufacturers).



APPROPRIATENESS AND EFFECTIVENESS OF THE INTERNAL CONTROL SYSTEM AND RISK MANAGEMENT SYSTEM*

The BMW Group complies with Recommendation A.5 of the German Corporate Governance Code and in this respect issued its declaration pursuant to Section 161 of the German Stock Corporation Act www.bmwgroup.com/ezu in December 2022 on the following basis:

The BMW Group has set up an internal control system and a risk management system in accordance with the German Corporate Governance Code.

The internal control system includes all the principles, instructions and measures introduced by the Board of Management to ensure:

- the effectiveness and efficiency of business operations
- the propriety of accounting and financial reporting
- compliance with the statutory regulations relevant to the BMW Group

The BMW Group's internal control system comprises the following: the internal control system for accounting and financial reporting, the internal control system for reporting selected non-financial key figures [Internal Control System](#) (ICS in the narrower sense), the Compliance Management System [Compliance Management System](#) (CMS) and the Internal Audit Function (IAF).

The Risk Management System (RMS) comprises the entire set of organisational rules and measures in place to identify, assess, manage and communicate risks, including system monitoring. [Risk and Opportunity Management](#)

The ICS (in the narrower sense), the RMS and the CMS are audited independently on a risk-oriented basis by Internal Audit as part of the "Three Lines" model, with all systems interconnected by overarching structural elements. Internal Audit's findings are reported to the Board of Management and the Supervisory Board on a regular basis.

The design and implementation of the internal control system and the risk management system take particular account of the size, structure and complexity of the BMW Group. These systems are intended to detect, manage and mitigate significant risks. However, despite the comprehensive analysis of risks in general, any control and risk management system has inherent limitations. For this reason, the occurrence of risks cannot be ruled out in all circumstances.

Taking this factor into account, the Board of Management is not aware of any circumstances that give rise to doubts regarding the appropriateness and effectiveness of the systems. In particular, no material cases of non-compliance or systemic weakness were identified that preclude such appropriateness and effectiveness.

* The information provided in this section is extraneous to management reports which are not covered by PwC's audit.

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RISKS AND OPPORTUNITIES

RISK AND OPPORTUNITY MANAGEMENT

Managing risks and making full use of any opportunities is the basis for the BMW Group's business success. This is based on an effective risk and opportunity management strategy, which puts us in a position to be able to react quickly and flexibly to changes in the political, economic, environmental, social, technical or legal situation. The general risk situation is regularly evaluated as part of this. Changes are integrated during the year and within the long-term plans for the business.

The aim of our risk management system (RMS) is to identify, measure and actively manage risks, both individual and cumulative, that could pose a threat to the profitability of the business.

Risks and opportunities (including risks to reputation and climate-related risks) are considered for the current and subsequent financial year. ↗ [Material short-term risks and opportunities](#) In addition, medium-term and long-term risks and opportunities are also presented in connection with climate change.

↗ [Climate-related risks and opportunities](#)

Organisation of risk management

Risk management is organised as a decentralised, Group-wide network and steered by a centralised risk management function. The various BMW Group divisions are represented by Network Representatives. We draw on the expertise of climate experts in order to evaluate climate-related risks and opportunities. The responsibilities and tasks of the centralised risk management function, Network Representatives and climate experts are documented and accepted. All significant risks are firstly presented for review to the Risk Management Steering Committee, which is chaired by Group Controlling. Any material risks are then reported to both the Board of Management and the Supervisory Board's Audit Committee.

Other functions such as Compliance and Human Rights and the Internal Control System (ICS) serve as key interfaces to the risk management system. In its capacity as an independent control body, Corporate Audit reviews the RMS established by the Board of Management on an annual basis.



According to our Group-wide guidelines, every employee and manager has a duty to report risks via the relevant reporting channels. The key elements of the risk management processes and an appropriate risk culture are embedded in the BMW Group's core values, the Group's extensive rules and regulations on risk management and in its overall risk strategy. Furthermore, the BMW Group's risk management strategy is continually developed to reflect new findings and requirements. Training programmes and informational events are regularly conducted throughout the BMW Group, particularly within the risk management network.

The risk management process is applicable across the entire Group and comprises the early identification, analysis and measurement of risks, the use of appropriate risk management tools and the monitoring and assessment of the measures taken. If no specific reference is made, risks and opportunities relate to the Automotive segment.

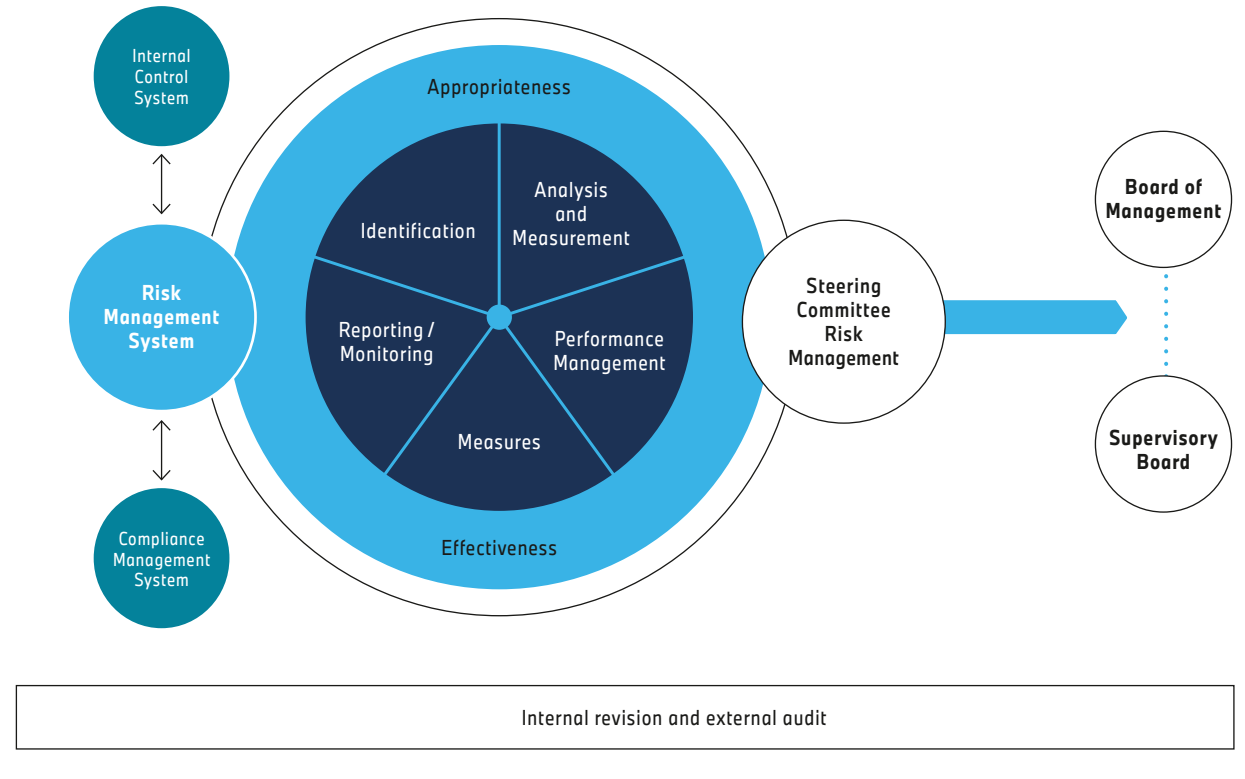
Risk measurement

The BMW Group uses standardised, suitable methods for measuring all short-term risks, reputational risks and medium to long-term climate-related risks.

Short-term risks

Risks relating to the current and subsequent financial year are shown in the section [Material short-term risks and opportunities](#). These risks are measured using value-at-risk models and assessed on the basis of uniform loss distribution metrics, thereby enabling better comparability of risks for both internal and external reporting purposes. Risks are measured net of any risk mitigation measures that are already taking effect (net basis).

RISK MANAGEMENT IN THE BMW GROUP



Risks are classified according to the risk amount (average earnings impact, taking into account the probability of occurrence). The earnings impact may be significantly higher if the risk actually materialises (worst-case scenario, confidence interval: 99 %).

The impact of risks and opportunities is presented separately without offsetting.

Group-wide effects and trends can be identified by aggregating all material short-term risks at Group level. For this purpose, the potential earnings impact of the risks is aggregated, taking correlation effects into account. In order to assess the risk-bearing capacity of the BMW Group, the aggregated amount of risks is compared with the risk cover amount (i.e. the equity capital of the BMW Group recognised for accounting purposes). A limit system for various risks helps monitor the risk-bearing capacity.

Reputational risks

Quite apart from the financial consequences, risks can also have an impact on the BMW Group's reputation. For these purposes, the BMW Group assesses all risks with regard to their impact on its reputation using a scoring model. Moreover, other overarching topics are monitored by means of regular media analysis. Any material reputational repercussions are described in the section [↗ Material short-term risks and opportunities](#).

Climate-related risks

Risks associated with climate change are presented in the section [↗ Climate-related risks and opportunities](#). Climate-related risks are evaluated as physical and transitory risks in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Transitory risks arise from the transition to a lower-carbon economy and are measured with the help of climate-related risk drivers and qualitative expert assessments. Physical risks arise due to climate change and are evaluated using external data on potential natural hazards. Potential short-term effects of climate change are already taken into account in the short-term risks. All short-term risks are evaluated for their climate impact. If a risk is categorised as climate-relevant, the climate-related portion of the risk is determined. The potential development of climate-related risks is measured for two reporting periods (medium-term until 2034 and long-term until 2050) and for three global warming scenarios.

Non-financial risks as reported in the non-financial statement (NFS)

Alongside the maintenance of a comprehensive system of risk management, conducting business in a sustainable manner constitutes a core strategic principle of the BMW Group. Risks resulting from sustainability issues are generally identified via the Group-wide risk management network.

In accordance with § 289c of the German Commercial Code (HGB), risks that could have an impact on the non-financial aspects referred to in the relevant legislation are reviewed as part of the reporting process. Material risks in this context are defined as those stemming from business activities, business relationships and products and services provided by the BMW Group that are highly likely to have a seriously adverse impact. No material non-financial risks were identified during the year under report.

Opportunity management

Identifying opportunities is an integral part of the BMW Group's strategic planning processes. The Group's range of products and services is continually reviewed on the basis of these analyses.

The continuous monitoring of key business processes and strict cost controls are also essential factors for ensuring high levels of profitability and return on capital employed.

The importance of short-term opportunities for the BMW Group is classified on a qualitative basis in the categories "material" and "immaterial". Probable measures aimed at increasing profitability are already incorporated in the outlook.

Climate-related opportunities are identified progressively as part of the ongoing strategy development process and described in the section [↗ Climate-related risks and opportunities](#).

MATERIAL SHORT-TERM RISKS AND OPPORTUNITIES

The overall risk situation for the BMW Group deteriorated significantly as compared with the previous year.

Consistently high inflation with lower real incomes and a corresponding widespread drop in demand may have a negative impact on sales volumes and result in unfavourable price and product mix effects. Considerable uncertainties remain in the form of potential supply bottlenecks along the entire supply chain. Higher prices for energy, raw materials and transport may have a negative impact. The ongoing war between Russia and Ukraine, as well as the progression of the coronavirus pandemic may also significantly affect the global economy. However, if the effect of these issues were to prove less severe in 2023 than currently expected, opportunities could arise that could benefit both revenues and earnings.

Overall, no risks capable of threatening the continued existence of the BMW Group were identified either at the balance sheet date or at the date on which the Group Financial Statements were drawn up. The Management and the Supervisory Board do not see any threat to the BMW Group's status as a going concern. As in the previous year, the current set of risks to the BMW Group are considered to be manageable. All risks and opportunities that are expected to materialise have already been addressed in the Outlook Report. Liquidity requirements are currently covered by existing liquidity as well as the various financing instruments available.

The following sections illustrate potential future developments or events that could result in a negative (risk) or a positive (opportunity) deviation from the outlook for 2023 and 2024 and indicate their significance to the BMW Group.

In addition, unforeseen events could affect business operations and hence the BMW Group's results of operations, financial position and net assets as well as its reputation.

The following overview provides a summary of the material short-term risks and opportunities:

	Risks		Opportunities	
	Classification of the risk level	Change compared to prior year	Classification	Change compared to prior year
Macroeconomic risks and opportunities	High	Increased	Immaterial	-
Strategic and sector-specific risks and opportunities				
Changes in legislation and regulatory requirements	High	-	Immaterial	-
Market developments	High	Increased	Immaterial	-
Risks and opportunities relating to operations				
Production and technology	High	Increased	Immaterial	-
Purchasing	High	-	Immaterial	-
Sales network	Low	-	Immaterial	-
Information security, data protection and IT	High	-	Immaterial	-
Financial risks and opportunities				
Foreign currencies	Low	-	Material	-
Raw materials	High	-	Material	-
Liquidity	Low	-	-	-
Other financial risks	Medium	-	Immaterial	-
Pension obligations	Medium	-	Material	-
Legal risks	Medium	-	-	-

The following ranges apply for the purpose of classifying the risk amount for material short-term risks:

Class	Risk amount
Low	€ 0–200 million
Medium	> € 200–1,000 million
High	> € 1,000 million

Due to the particular features of the business model, significant risks and opportunities relating to the Financial Services segment are presented separately in the section [Risk management system in the Financial Services segment](#).

Macroeconomic risks and opportunities

Economic conditions have an impact on business performance and hence on the level of earnings generated by the BMW Group. Unforeseen disruptions in global economic relations can have highly unpredictable effects. The risk is classed as being high and has increased as a result of various geopolitical challenges.

With regard to the war in Ukraine, there is a risk of a further escalation of the conflict and therefore of further sanctions imposed by Western countries on Russia as well as possible counter-sanctions and/or retaliatory measures by Russia.

The coronavirus pandemic and its impact remain a risk to the global economy. If the virus should continue to spread quickly following the end of the coronavirus restrictions in China, a high number of cases or a new variant of the coronavirus may once again require strict containment measures and continue to put global supply chains under great strain. As a result, shortages of (upstream) products may cause the recovery of the global economy to slow down.

In the trade war between the US and China, the focus is currently shifting from simple tariff increases to further import and export restrictions on specific technologies. The tougher rhetoric on the status of Taiwan may heighten geopolitical tensions and pose an additional risk. This could also lead to less favourable import and export conditions for the BMW Group.

Another risk is of recession in Europe and the United States. Further interest rate hikes by the central banks due to high inflation could slow economic growth over the long term. If the higher interest rates do not take effect quickly or effectively enough, lower real incomes and a corresponding widespread drop in demand may have a negative impact on sales volumes.

Macroeconomic opportunities that could have a sustained positive impact on the BMW Group's results of operation are classified as immaterial.

Strategic and sector-specific risks and opportunities

Changes in legislation and regulatory requirements

The introduction of more stringent legislation and regulations, particularly regarding emissions, safety and consumer protection as well as regional vehicle-related purchase and usage taxes, poses a significant risk for the automobile industry. Country- and sector-specific trade barriers can also be subject to change at short notice. Any sudden tightening of regulations in these areas could necessitate significantly higher investments and expenses or exert influence on customer behaviour and lead to disruptions in supply. The risk is categorised as high.

The BMW Group is seeing increasingly stringent vehicle emissions regulations for conventional drive systems. The Euro 7 legislative proposal, published by the European Commission in November 2022, will result in tougher emissions requirements from July 2025. The use of additional technologies will be required so that all vehicles are able to fulfil the expanded test parameters, and this is associated with additional risks. Elsewhere in the legislative process, there may be substantive changes with regard to requirements and implementation dates.

The EU institutions have agreed to reduce the CO₂ fleet target to 0 g/km by 2035. In order to achieve this, it is important that the urgently needed framework conditions, such as full availability of renewable energies, adequate private and public charging infrastructure and access to raw materials for the construction of electric vehicles is reflected in the EU's legislative initiatives.

A discussion of consumption values and carbon emissions may have an impact on the Company's reputation.

Changes in trade policies could also have a positive impact on the BMW Group's earnings in the short to medium term. Any reduction in tariff barriers, import restrictions or direct excise duties could result in lower manufacturing costs or enable products and services to be offered to customers at more attractive prices. Opportunities potentially arising from changes in legislation and regulations are classified as immaterial.

Market developments

Increasingly fierce competition among established premium manufacturers and the emergence of new competitors may affect the market share and the price and product mix. Shifts in consumer preferences or changes in brand perception pose both risks and opportunities. For instance, the BMW Group could be confronted with short-term supply and demand distortions in the transition from conventionally powered vehicles to alternative drive concepts. The likelihood of market risks occurring may be categorised as high. It has increased because the current positive price and product mix may potentially worsen if there is a recession in individual markets.

The BMW Group's sales markets are continuously monitored in order to optimally meet customer requirements and, at the same time, capitalise on opportunities in terms of sales growth and pricing. Opportunities arising as a result are classified as insignificant.

Risks and opportunities relating to operations

Risks and opportunities relating to production and technologies

Plant downtime is the main risk affecting production. Disruptions to production may be caused by supplier bottlenecks, shortages of production resources such as gas or electricity and also by problems with logistics. Information technology is playing an increasingly significant role and, as a result, IT breakdowns (for example due to cyberattacks) may cause issues in production. Furthermore, damage to the plant infrastructure as a result of fire or natural hazards, or due to machine and tooling failures, may also result in production downtime. The likelihood of such risks occurring is deemed high and has increased as a result of the very volatile environment.

All plants have drawn up measures to avoid and mitigate risks, and are supported in this by other business units, such as Purchasing.

The risk of production downtime due to parts supply is reduced via measures related to logistics, purchasing and the use of the production network. Measures are also taken to prevent and counteract damage to manufacturing equipment and longer downtimes due to targeted cyberattacks.

Potential natural hazards are already taken into account when selecting a site and through the implementation of measures during construction. We reduce the risk posed by natural hazards or fire with the use of on-site fire services and employee training.

Risks resulting from property-related damage and damage due to downtime, as well as transport damage to vehicles already manufactured, are transferred to highly solvent insurance companies. Due to the volatility of the international insurance markets, the BMW Group itself bears significant risks today. This solution may become increasingly relevant if premiums and deductibles continue to rise.

Potential short-term changes to the relevant legislation and regulations or changes in their national interpretation by the authorities may jeopardise our ability to receive type approvals in good time and, in extreme cases, may lead to the non-admission of a vehicle derivative, sub-market or even a complete market.

Product recalls can lead to additional costs. The BMW Group establishes appropriate provisions for statutory and non-statutory warranty obligations. It cannot be ruled out, however, that additional costs could be incurred that are either not covered or not fully covered by these provisions. Despite the deployment of thorough quality assurance processes, such risks can always arise if the materials and/or processing procedures used prove insufficient – in some cases years after a product has been launched. A high number of recalls could also have a negative impact on the BMW Group's reputation. Further information on risks in conjunction with provisions for statutory and non-statutory warranty obligations is provided in [note \[33\]](#) to the Group Financial Statements.

The BMW Group sees opportunities relating to production processes primarily in the competitive edge gained from mastering new and complex technologies. Given the long lead times involved in developing new products, additional opportunities are not expected to have a significant earnings impact on the BMW Group.

Risks and opportunities relating to purchasing

Purchasing risks relate primarily to supply risks caused by the failure of a supplier as well as to threats to BMW Group-relevant know-how within the supplier network. Production problems at the supplier level could lead to consequences caused by increased expenditure for the BMW Group due to production interruptions and a corresponding reduction in vehicle sales. The risk is categorised as high.

Potential reasons for the failure of suppliers to deliver include the lack of availability of raw materials, energy and other input materials, the occurrence of natural hazards and/or fires, developments in the security situation of a country, IT-related risks and non-compliance with sustainability or quality standards. An increasingly complex supplier network, particularly with sub-suppliers over which the BMW Group has only an indirect influence, as well as a lack of solvency on the part of suppliers, may influence the delivery of supplies to plants.

Further price hikes and additional charges from suppliers may also have a negative impact on earnings.

The rising threat of cyberattacks along the entire supply chain affects both the security of supply and the protection of expertise relevant to the BMW Group. In order to optimise the level of IT security along the value and supply chain, the BMW Group requires its suppliers to provide proof of appropriate IT security certification.

When selecting its suppliers, the BMW Group not only takes into account external requirements such as those contained in the German Supply Chain Due Diligence Act (Lieferkettensorgfaltspflichtengesetz), but also ensures that the BMW Group's sustainability targets are met.

Cost advantages gained by developing local supplier structures near BMW plants in addition to innovative manufacturing technologies could lead to lower material expenses for the BMW Group. Opportunities arising as a result are classified as insignificant.

Supply bottlenecks may also have a negative impact on the reputation of the BMW Group if customer demand cannot be met as expected.

Risks and opportunities relating to the sales network

In order to sell its products and services, the BMW Group operates a global sales network comprising independent dealerships, branches, subsidiaries and importers. The insolvency of dealerships may have a negative impact on vehicle sales and the range of services available to our customers.

Currently, the necessary preconditions are being established for vehicles also to be sold via direct sales in future, particularly in Europe. It may not be possible to realise the associated earnings potential to the degree expected.

Overall, the risks arising from the sales network can be categorised as low.

As in other areas, the BMW Group is actively shaping the future of its sales organisation with a clear focus on placing customer requirements at the centre of its activities. Opportunities arising as a result are classified as insignificant.

Information security, data protection and IT

Digitalisation and automation across all areas of the business and its products offer a wide range of opportunities for the BMW Group. At the same time, information technology (IT) requirements regarding the confidentiality, integrity and availability of information are becoming increasingly strict. The threat level has continued to rise over recent years and the war in Ukraine is also contributing to the rise in cyberattacks. Moreover, legal and regulatory requirements are becoming ever stricter worldwide. Cyberattacks may be directed at applications or vehicle functions.

In view of the higher incidence of observed attacks, the risk amount – despite extensive security measures – is still classified as high.

Information and data can also be compromised by a lack of risk awareness and inappropriate behaviour. The main direct consequences would be negative effects on Group revenues, disruption in production, or reputational damage. For this reason, the BMW Group has launched an interactive programme to provide regular training for every employee on the correct way to handle dangerous emails.

Protecting information, for example from unauthorised access or misuse, has the highest priority. In conjunction with risk management requirements, risks relating to information security, data protection and IT are systematically documented, allocated appropriate measures by the departments concerned and continuously monitored with regard to threat level and risk mitigation. Regular analyses and controls as well as tight security management policies ensure an appropriate level of security.

However, despite continuous testing and preventive security measures, it is impossible to completely eliminate risks in this area. All authorised persons are required to treat information such as confidential business, customer and employee data with great care, use information systems securely and handle risks in a transparent manner. Uniform requirements that apply throughout the Group are documented in a comprehensive set of rules and guidelines. A consistently applied policy of updating such rules and regulations to the current situation, coupled with regular communication, awareness-raising and training measures, form the basis for a high level of security and risk awareness in general.

Financial risks and risks relating to the use of financial instruments

Currency risks and opportunities

As an internationally operating enterprise, the BMW Group conducts business in a variety of currencies, thus giving rise to currency risks and opportunities. A substantial portion of Group revenues, production, other purchases and funding occur outside the eurozone. Regularly updated cash-flow-at-risk models are used to limit currency risks and identify opportunities. The risk amount associated with currency risks is classified as low.

The BMW Group manages currency risks at both the strategic (medium to long term) and operational level (short to medium term). Over the medium and long term, it is possible to ramp up production or also increase purchase volumes in foreign currency regions (natural hedging). Currency risks are managed in the short to medium term and for operational purposes by means of hedging on financial markets, the primary objective of which is to improve planning reliability for the BMW Group as a whole. Hedging transactions are entered into only with financial partners of good credit standing.

Depending on exchange rate developments, opportunities may also arise.

Risks and opportunities relating to raw materials prices

As a manufacturing company, the BMW Group is subject to price risks, particularly in relation to the raw materials used in vehicle production.

The analysis of raw materials price risks is based on planned purchases of raw materials and components containing those products. A cash-flow-at-risk model is deployed to measure risks relating to raw materials prices. Price fluctuations for many raw materials such as precious metals, non-ferrous metals, raw materials for batteries and steel, and also energy, are hedged using financial derivatives and supply contracts with fixed pricing arrangements.

The prices of many raw materials continue to be subject to a high degree of fluctuation on commodity markets. Accordingly, the risk amount associated with raw materials prices is classified as high, but there are also significant opportunities.

Liquidity risks

The major part of the Financial Services segment's credit financing and leasing business is refinanced on capital markets. The risk of restricted access to funds is deemed low.

The liquidity concept, based on the experience gained during the global financial crisis, is rigorously adhered to and continuously developed. In the Financial Services segment, the use of the "matched funding principle" ensures that liquidity risks are generally avoided.

Solvency is assured at all times throughout the BMW Group by adhering to liquidity ratios and using a broadly diversified range of refinancing sources.

The liquidity position is monitored continuously and managed through the Group-wide planning of financial requirements and funding. Further information on risks in conjunction with financial instruments is provided in [note \[39\]](#) to the Group Financial Statements.

Other financial risks

Other financial risks worth mentioning include counterparty risks as well as those arising in connection with investments in other entities.

The BMW Group works together with banks to ensure that the available liquidity is optimally invested in order to hedge against financial market risks (relating in particular to currency, raw materials and interest rate) using derivative financial instruments and to protect payments made in advance. Counterparty risk denotes the risk that the BMW Group will not receive, or not receive in full, the payments due to it in connection with the investment and hedging transactions referred to above. A value-at-risk model is employed to measure counterparty risk, taking into account the creditworthiness of the banks and the business volumes involved. Risk is managed using a limit system, which includes daily monitoring of the extent to which limits are being utilised at the level of the individual counterparties.

The BMW Group holds equity investments of varying amounts in numerous entities, which could give rise to risks requiring the recognition of impairment losses.

The risk associated with other financial risks is classified as medium. Potential opportunities resulting from the revaluation of investments are evaluated as immaterial.

Risks and opportunities relating to pension obligations

Future pension obligations are financed largely via external pension funds or trust constructs that are legally separate from the BMW Group. Externally managed funds are invested on capital markets in a broadly diversified portfolio with a view to enabling future pension payments to be disbursed out of pension assets. These arrangements greatly reduce the need to fund pension payments out of ongoing operations. Risks can arise due to fluctuations in pension provisions and the related pension assets and may be presented differently according to IFRS and HGB due to different accounting standards.

The risk amount associated with pension provisions based on IFRS valuations is categorised as medium. Material opportunities can arise if the value of pension assets on the capital markets develops favourably or if pension obligations decreased at a more pronounced rate than the related assets.

Pension obligations are primarily measured using a discount rate (derived from market yields from high-quality corporate bonds). This discount rate is subject to market fluctuations and therefore influences the level of pension obligations. Changes in other parameters, such as inflation rates and life expectancy, also impact the amount as well as the duration of future pension payments. Regulatory requirements may also affect the amount of pension obligations.

The fluctuation of pension assets reflects the volatility of various asset classes on capital markets. Investments are broadly diversified (interest-bearing securities, equities, real estate and other asset classes).

Remeasurements on the liabilities and assets sides are recognised net of deferred taxes through other comprehensive income and hence directly in equity of the BMW Group (within revenue reserves). Further information on risks in conjunction with pension provisions is provided in [note \[32\]](#) to the Group Financial Statements.

Legal risks

Due to the global nature of its operations, the BMW Group is exposed to various legal risks. Legal risks may result from non-compliance with laws or other legal requirements, or from legal disputes with business partners or other market participants. The risk amount is categorised as medium.

Like all entities with international operations, the BMW Group is confronted with legal disputes, alleged claims relating in particular to warranty and product liability or intellectual property rights infringements and proceedings initiated by government agencies.

Any of these could, amongst other consequences, have an adverse impact on the Group's reputation. Such proceedings are typical for the sector, may result as a consequence of realigning product or purchasing strategies to changed market conditions, or are antitrust related. Particularly in the US market, class action lawsuits and product liability risks can have substantial financial consequences and cause damage to the Group's reputation. More rigorous application, interpretation of, or changes to, existing regulations could result in a greater number of recalls.

For several years, lawsuits have been filed against BMW Bank GmbH (BMW Bank) by consumers claiming the withdrawal from loan and leasing contracts. Since the beginning of 2020, several references for a preliminary ruling have been filed with the European Court of Justice (ECJ). On September 9, 2021, the ECJ decided on the abstract requirements to be complied with by creditors in consumer loan contracts. The principal risk assessment in this regard for the BMW Group Report 2021 is still valid. The following developments result from the ongoing legal proceedings: in the second quarter of 2022, the Federal Court of Justice (BGH) stated in a ruling that the provision on the default interest rate contained in the particular BMW Bank loan contract at issue in the proceedings did not meet the requirements set out by the ECJ. Therefore, there is a legal risk that borrowers might withdraw from the affected consumer loan contracts. For the period of use of the vehicle, customers are obliged to pay compensation in case of withdrawal from their loan contract. In September 2022, the ECJ held proceedings on the preliminary ruling on kilometre-based lease agreements and loans. A decision by the ECJ is expected in the course of 2023. This may result in further withdrawal risks. The possible financial impact of these proceedings cannot be definitively assessed at this stage.

International movements of goods require compliance with extensive export control regulations. In addition to goods-related restrictions, international trading may also involve personal, country-specific and end-use-related restrictions. In particular, non-compliance with applicable EU and US export control reg-

ulations could result in significant legal consequences for the BMW Group. In light of its strong presence in the USA and China, any intensification of the trade dispute between the two countries could be a potential source of additional risk exposure.

The BMW Group is subject to governmental tax and customs audits in every country in which it operates, potentially resulting in back taxes, retrospective customs duties, interest, penalties and similar payments. Payments of this nature may, for instance, result from the non-recognition of intercompany transfer prices in the countries concerned. Further substantive legal risks may arise as a result of changes in tax or customs legislation or due to differences in the way that legislation is interpreted. In many cases, such changes can also have a retrospective impact on calendar years that were not yet subject to definitive audits. Risk management relating to tax and customs legislation is enshrined in the BMW Group's RMS. In order to minimise material procedural tax and customs risks, the BMW Group has set up a comprehensive Tax Compliance Management System (Tax CMS) that is already being applied in its principal entities in Germany and China and will be rolled out successively in other major countries.

The BMW Group recognises appropriate levels of provision for lawsuits and risks. In addition, a part of these risks is insured to an economically reasonable extent. Nevertheless, it cannot be ruled out that damages may occur in excess of the insured amounts. In accordance with International Financial Reporting Standards (IFRS), the required information is not provided if the BMW Group concludes that disclosure of the information could seriously prejudice the outcome of the relevant legal proceedings. Further information on contingent liabilities is provided in [note \[38\]](#) to the Group Financial Statements.

A Compliance Management System is in place across the BMW Group to ensure, among other things, that its representative bodies, executives and staff members worldwide consistently act in a lawful manner. Further information on this can be found in the chapter [Compliance and human rights](#).

Risk management system in the Financial Services segment

Risk management in the Financial Services segment is based on various pillars; namely, the prevailing risk culture, the risk strategy and the defined risk appetite for the various types of risk. In addition to this, there are a wide range of guidelines in place worldwide that are implemented by the individual companies in the Group.

The central pillar of risk management in the Financial Services segment is the continuous assurance of risk-bearing capacity. Depending on the type of risk, limits are assigned to define the risk appetite. Various value-at-risk models are used for this purpose, which are validated at regular intervals. The confidence interval used in this model is conservative. Care is always taken that the coverage amounts based on the equity of the Financial Services segment are sufficient.

Regular stress tests are carried out to support this model. These are another indicator of potential risk management measures and create a high degree of transparency with regard to extreme, realistic events, particularly in volatile times.

Risk management in the Financial Services segment is based on the requirements of the supervisory authorities, which are implemented consistently worldwide. Climate-related risks are also taken into account and analysed at regular intervals, thereby considering a medium-term period in the future.

[Climate-related risks and opportunities](#)

The following table provides an overview of the material short-term risks and opportunities in the Financial Services segment:

	Risks		Opportunities	
	Classification of the risk level	Change compared to prior year	Classification	Change compared to prior year
Credit risk	Medium	-	Immaterial	-
Residual value	High	-	Material	-
Interest rate changes	Low	-	Material	-
Operational risks	Medium	-	-	-

Credit risks and opportunities

In the Financial Services segment, the risk of default is factored into the interest rate when concluding an agreement. Furthermore, the credit portfolio is evaluated on an ongoing basis with the aim of determining if any impairment allowances need to be made for financial receivables. This evaluation is based on statistical methods and takes into account the following aspects, among others: the creditworthiness of the customer, the customer's payment history and the economic situation of the customer's region. The amount allocated to credit risks is categorised as medium.

There may be positive effects in the ongoing assessment of the portfolio's creditworthiness that lead to a reduction of the overall risk and therefore constitute an opportunity. The BMW Group classifies potential opportunities in this area as immaterial. Particularly in volatile times, the process of awarding credit may also be changed to take account of declining creditworthiness, or to not accept credit at all.

Residual value risks and opportunities

These primarily occur in connection with leased vehicles that are sold after being returned. The risk amount of residual value risks is classified as high. Opportunities may result from a positive deviation from the residual value forecast and are categorised as material.

The agreement is based on a forecast value for the vehicle's sale on return. This value may have been set too high or too low. Internal models ensure the ongoing measurement of the portfolio; hence, current market developments are always taken into account.

Sustainability aspects are also evaluated in this context and long-term scenarios consider the development of the portfolio. Changes in drivetrain types are constantly being monitored and the findings are also incorporated into the evaluation. The forecast models for the beginning of the contract, as well as the ongoing evaluation of the portfolio, are continually developed.

Interest rate risks

To a limited degree, interest rate risks are deliberately accepted in order to make use of the associated return potential. Risks thereby result when there is a partial mismatch between fixed interest rate periods. These are evaluated as low, though they have risen compared to the previous year due to greater volatility. The associated opportunities are classed as material.

Operational risks

Operational risks result from any form of ineffective or defective internal processes, systems, external events or human error. The aim is to systematically record and quantify all risks except for those listed in the paragraphs above. Because the risks arise in a wide range of areas of the Company, such as IT security or supplier management, the close dovetailing of these areas is essential and ensures that there is adequate transparency regarding the current risk situation of the entire division. The risk amount is categorised as medium.

CLIMATE-RELATED RISKS AND OPPORTUNITIES

Climate change may also impact the BMW Group business model. Consequently, the Company analyses a wide range of climate scenarios, identifies and measures climate-related risks and opportunities and adopts the relevant measures.

[GRI Index: 201-2](#)

In doing so, the BMW Group follows the recommendations of the TCFD and continually develops reporting processes and internal management strategies for climate-related risks and opportunities.

During the 2022 reporting year, all material risks for the BMW Group were considered for the first time in view of their sensitivity regarding climate change. The climate-relevant portions were analysed in accordance with TCFD for three different climate scenarios. For the medium-term timescale until 2034, we distinguish between transitory and physical climate risks. For the long-term timescale until 2050, the measurement focuses on the physical climate risks.

Climate scenarios

The BMW Group applies three scenarios to identify and assess climate-related risks, which are based on the scenarios of the Shared Socioeconomic Pathways (SSP) of the Intergovernmental Panel on Climate Change (IPCC).

These climate scenarios range from a low-emissions scenario with global warming of < +1.5°C (Paris Agreement, SSP1-2.6), a medium scenario with warming of an average of +2.5°C (the middle path, SSP2-4.5) to > +4°C (fossil development, SSP5-8.5).

The BMW Group has committed to aligning its business activities with the low-emissions scenario of the Paris Agreement and has consistently based its long-term corporate planning on this.

Transitory climate risks

Transitory climate risks arise from the transition to a low-emissions society across all sectors that is necessary in order to mitigate climate change. These risks become particularly apparent when conditions change more quickly or differently than expected. The transitory climate risks were identified and measured for five different risk dimensions.1]

The following table illustrates the transitory climate risks for the BMW Group:

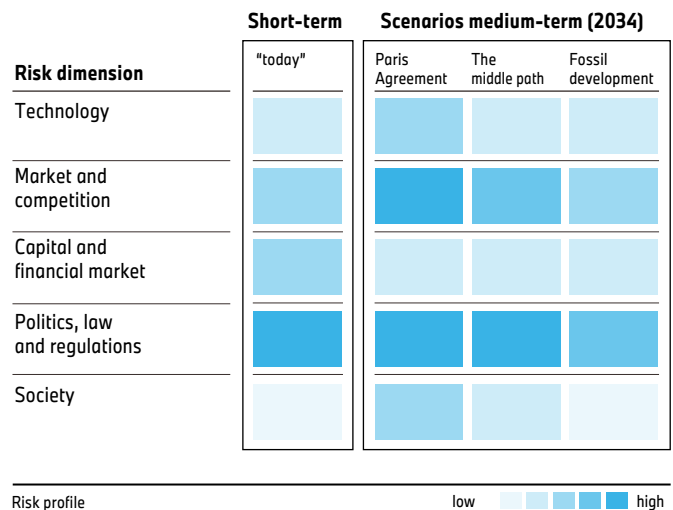
RISK DIMENSION	Transitory climate risks
Technology	<ul style="list-style-type: none"> — Innovations in sustainable technologies are fostered, accelerating the prevalence of electromobility. For the BMW Group, this may have a negative impact on deliveries and the residual value of existing products. In the Production and Purchasing units, remnant costs may result from switching processes and equipment. — The digital connectivity between companies and products to support decarbonisation is increasing in order to streamline processes and better manage emissions. Risks for the BMW Group result from the time delay until such technologies can be used if, for example, some areas of the supply chain cannot provide the relevant standards and interfaces quickly enough. — Disruptive technological innovations may make product and production technologies in use or in the pipeline today (from energy storage to recycling), as well as investments in these innovations, obsolete or throw their efficiency into question. In terms of infrastructure (such as new fuel options, charging technologies for electric vehicles), they may jeopardise the availability and acceptance of planned or expected conditions for the customer.
Market and competition	<ul style="list-style-type: none"> — Due to a global focus on sustainable products, energy prices and commodities costs are rising. This has a direct impact on manufacturing costs for the BMW Group and may go on to affect deliveries. Furthermore, credit and residual value risks in the Financial Services segment may also be impacted. — Existing and new competitors are accelerating the production of electrified vehicles. If products and business models are perceived as being more attractive by customers, this may have the corresponding impact on deliveries by the BMW Group. — Any serious failure to comply with sustainability or quality standards, or providing incorrect information, could cause disruptions in the supply chain or the inability of individual suppliers to deliver.
Capital and financial market	<ul style="list-style-type: none"> — A good position in the ESG ratings has a positive effect on the perception of a company on the capital market and has a favourable effect on investment decisions. Investment and financing decisions by investors or lenders depend on a good ESG rating. Short-term and unforeseeable regulatory changes may reduce the appeal of a company on the capital market and increase refinancing costs if it is not possible to react to the changes in the regulatory framework in good time. This may impact the credit rating and refinancing costs of the BMW Group. — The short-notice termination of government subsidies to promote low-carbon mobility may reduce the demand for electrified vehicles. — Uneven adjustments of prices for carbon emissions could have a negative impact on the macro- and microeconomic situation of a national economy, causing distortions in the credit risk, for example.
Politics, legal affairs and regulatory framework	<ul style="list-style-type: none"> — Any short-notice tightening of legislation or regulations in the BMW Group's principal markets (EU, US, China) may exceed the speed at which BMW Group and its suppliers can respond and pose risks in terms of delivery volume, costs and residual values. — Production processes must quickly be switched over to green energy sources and high-efficiency systems that protect resources. The BMW Group already consistently implements known requirements. However, additional costs may result if additional requirements are announced at short notice. — For suppliers, stricter requirements for a circular economy, recycling and avoiding the use of resources may quickly lead to higher costs. — Fast rises and/or selectively discriminating regional vehicle-related purchase and usage taxes may lead to higher costs or a decrease in deliveries.
Society	<ul style="list-style-type: none"> — Around the world, people's environmental awareness is increasing. Social discussions arising from a perceived worsening of the climate's health may lead to changes in mobility patterns and/or customer preferences that may vary by region. This may require us to adapt the product portfolio, which may impact deliveries and residual values for vehicles.



The following graphic juxtaposes the risk dimensions of the transitory risks with the global warming scenarios. Potential impacts are grouped into five different levels.

The potential transitory risks are deemed the highest over the medium term as a result of the fast-paced, sometimes unforeseeable developments in the Paris Agreement global warming scenario. It cannot be ruled out that more decisive measures will have to be taken globally in the next few years in order to achieve the < +1.5°C target. For the BMW Group, this is reflected primarily in the risk dimensions of "Politics, legal affairs and regulatory framework", as well as "Market and competition". Firstly, ad hoc regulatory requirements may enter into force that could impact products, production and the supply chain. In the "Market and competition" risk dimension, risks may also increase due to higher demand and the resulting higher prices for select (scarce) raw materials on the one hand and due to rising energy prices on the other.]

Transitory climate risks



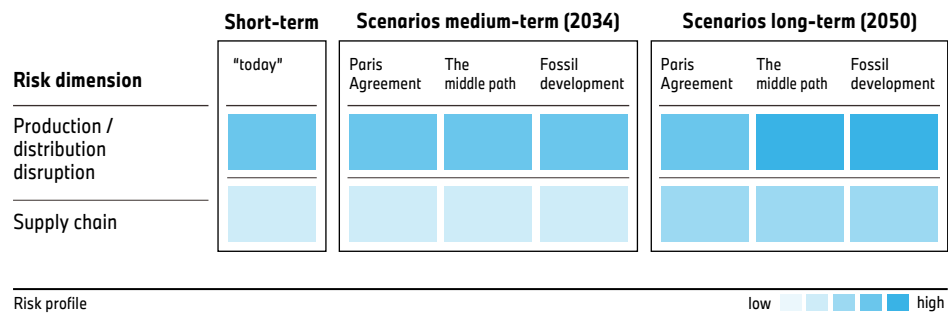
Physical climate risks

In addition to the transitory risks, the BMW Group also measures physical risks. In doing so, the increasing frequency and intensity of acute extreme weather events, such as heatwaves, storms and floods, are taken into account, along with longer-term changes such as in terms of temperature and rainfall. In order to measure such risks, we draw on external data that evaluate the development of acute and persistent natural phenomena across the global warming scenarios and across time.

For the BMW Group, this may result in damage to assets such as buildings, vehicles or parts on the one hand, and, on the other hand, such events may lead to downtime at BMW Group sites or at suppliers' sites.

Physical climate risks also increase for the BMW Group particularly in the long-term >+4°C scenario. This would lead to a higher risk both for the BMW Group's production sites and also for suppliers' sites. The risks of interruptions to production and distribution, as well as risks in the supply chain, are shown in the context of global warming scenarios over a medium-term (2034) and long-term (2050) period:]

Physical climate risks



Climate-related opportunities

The BMW Group sees an opportunity in making a verifiable contribution towards limiting global warming and achieving economic success in doing so. In contrast to the risk prospects, the five dimensions of climate-related, transitory opportunities refer to successes experienced by the Company's products, production processes and value chain, each of which make a contribution towards slowing climate change.1]

DIMENSION	Transitory opportunities
Technology	<ul style="list-style-type: none"> — By expanding the portfolio of electrified products and developing and producing our own electric drivetrains, batteries and battery cell prototypes, we will be able to safeguard know-how and system expertise early on. This may result in competitive advantages. — In the best interest of a circular economy, the BMW Group intends, among other things, to gradually increase its use of secondary materials via new technologies, thus reducing carbon emissions at the same time. With this strategy, the BMW Group is not only contributing towards achieving its decarbonisation target in the supply chain, but also reducing its dependence on primary materials in terms of their availability and cost.
Market and competition	<ul style="list-style-type: none"> — With its flexible vehicle architectures and production systems, opportunities arise for the BMW Group in terms of its ability to respond quickly and flexibly to fluctuating customer demand as well as regulatory and infrastructural differences in its markets. — Thanks to the exceptional sustainability credentials of its products and the acceleration towards a circular economy, the BMW Group may experience advantages arising from higher customer demand. — Generating our own electricity from green energy reduces our carbon footprint and minimises our dependence on external electricity sources as well as our exposure to price fluctuations on the energy market.
Capital and financial market	<ul style="list-style-type: none"> — By reporting comprehensively and transparently, the BMW Group is better able to ensure our access to capital markets and obtain attractive financing conditions on a long-term basis. — Making carbon-cutting measures more transparent and comparable makes it easier to remunerate such measures and generates trust among investors.
Politics, legal affairs and regulatory framework	<ul style="list-style-type: none"> — The BMW Group's strategic planning assumptions anticipate the foreseeable legal consequences of rising carbon prices in the form of taxes and levies as well as potential shortfalls in emissions credits under emissions trading schemes. — Improvements in the tax environment and incentives for customers, along with investment grants and easements for climate protection measures in production may accelerate progress in terms of cutting carbon emissions. — Significantly higher investments in charging infrastructure and in the generation and distribution of hydrogen may give the demand for low-emissions vehicles a significant boost and make it easier to replace fossil fuels in production.
Society	<ul style="list-style-type: none"> — Together with its suppliers, the BMW Group helps to reduce carbon emissions along the value chain and to work towards implementing decarbonisation measures. — Thanks to its focus on sustainability, the BMW Group can make an important social contribution to the fight against global warming.



1 SUMMARY AND OUTLOOK

The underlying conditions of material short-term risks, reputational risks and climate-related risks may point towards potential challenges for the BMW Group. The BMW Group actively considers the risks and corresponding opportunities and takes them into account in decision-making and planning processes. Drawing on internal and external momentum, the RMS is developed on an ongoing basis.1]

COMPLIANCE AND HUMAN RIGHTS

Compliance lays the foundation for the long-term success of the BMW Group, builds trust in our products and brands, and shapes our public image. Compliance is not just a matter of adhering to applicable laws and Company rules around the world. It forms part of our identity, our understanding of leadership and our living culture of integrity. Compliance creates a binding framework for all our business activities.

Compliance as a corporate function

Compliance is the managerial responsibility of the Board of Management of BMW AG, executed by creating an appropriate regulatory and supervisory framework, as well as through regular and ad hoc reporting, accompanied by clear communications. This approach is based on the core belief that compliance with applicable laws and related internal regulations is the responsibility of all employees. As role models, managers are tasked with anchoring compliance culture in their area of responsibility and ensuring compliance requirements and processes are implemented accordingly. [↗ GRI Index: 2-23](#)

In addition to being responsible for the Company-wide Compliance Management System, the Chief Compliance Officer also manages the Group Compliance division and briefs the Board of Management and Supervisory Board of BMW AG at regular intervals.

Compliance Management System (CMS)

The BMW Group's Company-wide Compliance Management System (CMS) reinforces the culture of compliance and integrity and helps reduce sanction and liability risks, as well as risks arising from other (non-)financial disadvantages, such as reputational risks. The CMS focuses on adequacy and effectiveness and is based on the Prevent, Detect, Respond model, which defines specific preventive, monitoring, control and response measures. Clear assignment of roles and responsibilities is also essential.

The CMS is tailored to the Company's risk situation and addresses all relevant compliance topics. Company-wide, these include corruption and fraud prevention, anti-money-laundering, antitrust and human rights compliance, export control, data privacy and product compliance. Responsibility for data privacy and product compliance lies with separate specialist departments outside Group Compliance. [↗ GRI Index: 2-27, 205-1, 205-3, 206-1](#)

Further development of CMS

The CMS is reviewed on a regular basis and refined as needed. The main drivers are strategic focus topics, legal and regulatory requirements and trends, best practices and industry standards, all of which are taken into account from a risk perspective. The objective is to consistently improve the CMS. The BMW Group is an active member of various associations and interest groups, including the German Institute for Compliance (DICO) at Board level and through its leadership of the working group on human rights.

One focus of work in the field of compliance during the reporting period was on amending the human rights compliance programme in response to the Supply Chain Due Diligence Act, which took effect on 1 January 2023. Since January 2022, the head of Group Compliance has also served as Human Rights Officer of BMW AG. Further priority areas emerged in the context of export control, due to the war in Ukraine, and in anti-money-laundering efforts, due to the increase in legislative initiatives.

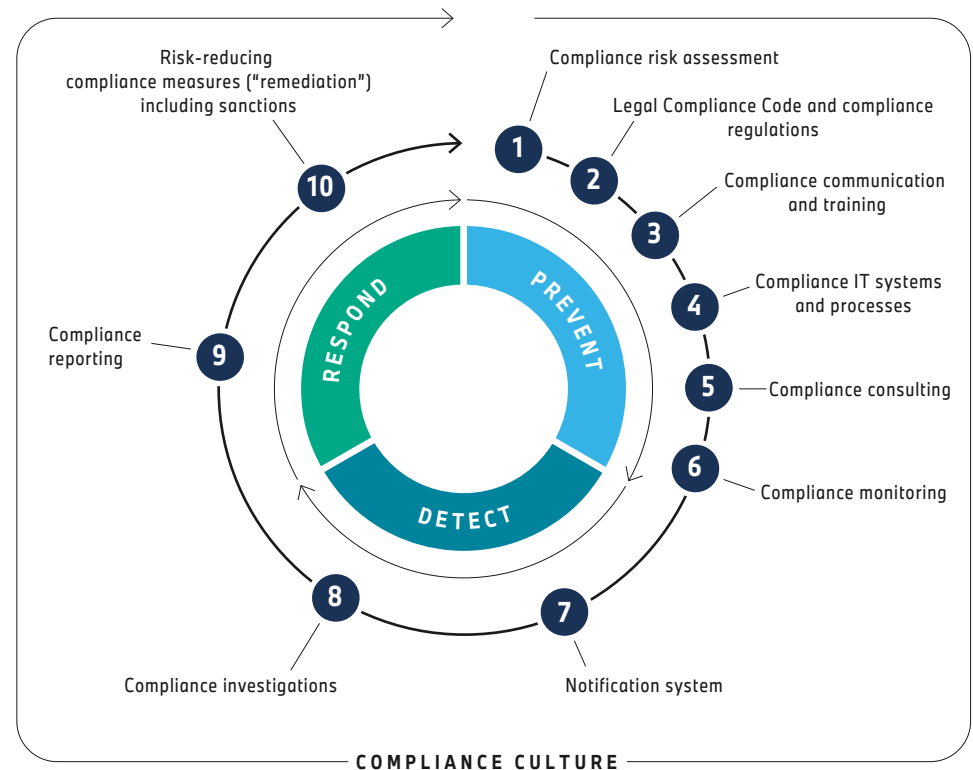
One component of the CMS is the Data Privacy Management System (DMS), which is the responsibility of Group Data Privacy Protection, and also based on the Prevent, Detect, Respond model. The data protection directive (Privacy Corporate Rules) and Binding Corporate Rules, which contractually protect the transfer of employee data within the BMW Group, form the basis of the

DMS. Implementation of the DMS is validated through regular reporting by affiliated companies and independent audits carried out by Group Data Privacy Protection.

As part of the CMS, responsibility for product compliance, with a focus on compliance with technical requirements for BMW Group products, lies with the Quality Management division. The pro-

gramme was further developed during the reporting year as part of a broad-based project, with a primary focus on integrating the governance function more closely into operating processes and expanding training and communications activities. Product-specific risk assessments ensure holistic risk monitoring. [GRI Index: 3-3](#)

Three-stage approach to the Compliance Management System



Company-wide compliance network

Relevant compliance risks are identified in the business departments on the basis of internal guidelines; an initial assessment is then made and measures taken to mitigate them. More than 250 managers group-wide perform these tasks for their area of responsibility as operational Compliance Responsibles.

Specialist departments worldwide are supported in their work by the central Group Compliance function, as well as the network of business unit and division Compliance Officers (heads of relevant compliance functions), supplemented by around 80 local Compliance Officers (heads of local compliance functions) at BMW AG's international subsidiaries. Every Compliance Officer is tasked with implementing the CMS and compliance programmes for defined topics in their area of activity, as well as identifying and realising division-specific compliance measures.

Expanded training activities

Training opportunities are continuously refined for specific target groups. For example, during the year under review, we expanded our mandatory Company-wide Compliance Essentials online training to six languages.

Online and classroom training with case studies and test questions, repeated every two years, strengthens the compliance culture and reinforces compliant behaviour. More than 81,000 staff and managers worldwide have so far completed the Compliance Essentials training and 38,000 have received antitrust compliance training.* This offering is supplemented by mandatory data privacy training, which is available in 13 languages worldwide, and training courses on [human rights](#).

[GRI Index: 205-2](#)

Digitalisation supports compliance

IT-based compliance systems have been used for transparent and efficient documentation, assessment and approval of compliance-relevant matters Company-wide for years. This includes topics such as money laundering and sanctions lists, exchange activities with competitors, business partner due diligence and verifying the legal admissibility of benefits in kind. The data collected in this way forms the basis for the compliance risk assessment.

Compliance and notification systems

Employees with questions or concerns relating to compliance can discuss these matters with their managers or relevant departments and, specifically, with the compliance functions.

Reports may also be submitted anonymously and confidentially in several languages via the BMW Group SpeakUP Line notification system or via the ombudsperson. [GRI Index: 2-16](#) [Checking effectiveness](#). The Compliance Contact serves as a further point of contact for both employees and external parties.

The BMW Group protects information providers in two ways: first, individuals may provide information without disclosing their identity; second, no one providing information faces retaliatory action. All queries and concerns relating to compliance are documented and processed using a Company-wide electronic case management system. If necessary, Corporate Audit, Corporate Security, the legal departments or the Works Council may be brought in. [GRI Index: 2-16](#)

CMS monitoring and controls

The CMS provides differentiated monitoring levels for reviewing observance and implementation of compliance rules and processes at regular intervals. In addition to the direct checks performed by Compliance Responsibles as business managers, risks are further reduced by additional measures integrated into business processes, which generally form part of the [Internal Control System](#).

In 2022, the Detect function of central Group Compliance was further expanded to enable it to carry out ad hoc, independent compliance investigations. These include internal investigations in connection with official investigations, which serve to clarify the facts internally. Risk-based compliance audits aimed at identifying specific compliance risks are currently focused on antitrust law. Corporate Audit also monitors adherence to compliance requirements by business managers, as well as selected elements of the CMS.

All control checks are geared towards reducing compliance risks. Any infringements are immediately remedied, with an emphasis on reducing the risk of repeat offences as far as possible. Where infringements can be traced to an individual, that person will be appropriately sanctioned, in accordance with the processes defined for this purpose.

In 2022, a compliance maturity measurement was also introduced, with the aim of using defined criteria to make the adequacy and effectiveness of the CMS, including implementation status, structured and transparent for the purpose of evaluation. In addition to the assessment of the Compliance Responsibles, the measurement also takes into account the assessment of compliance and other governance functions. Our overall statement on the adequacy and effectiveness of the Internal Control and Risk Management System, including the CMS, can be found in the section [Appropriateness and Effectiveness of the Internal Control System and Risk Management System](#).

* Excluding BMW Brilliance Automotive Ltd.

Regular compliance reporting to the Board of Management and Supervisory Board

The Board of Management and Supervisory Board of BMW AG, the Audit Committee (a committee of the Supervisory Board) and the Company's other executive committees are briefed regularly (at least twice a year), as well as on a case-by-case basis, by the CCO.

[Global implementation of labour standards and human rights

Internationally recognised guidelines for environmental and social compliance set the benchmark for the BMW Group's entire value chain. The fundamental principles for us in this context are the:

- Guidelines for Multinational Companies issued by the Organisation for Economic Cooperation and Development (OECD)
- UN Guiding Principles on Business and Human Rights
- Ten Principles of the UN Global Compact
- content of the ICC Business Charter for Sustainable Development
- United Nations Environment Programme's (UNEP) Declaration on Cleaner Production.

The Company concentrates on action areas where it can exert its influence as a company. With the participation of employee representatives in particular, these (supra)national requirements were incorporated into internal Company rules and principles through the [Joint Declaration on Human Rights and Working Conditions in the BMW Group](#) of 2005 (updated in 2010), clarified in the [BMW Group Code on Human Rights and Working Conditions](#) (2020) and integrated with the [Human rights compliance programme](#).

The automotive industry is closely integrated into global supply chains. In a collaborative global value creation process, the risk of individual violations of human rights requirements cannot be entirely excluded. For this reason, respect for human rights has been incorporated into the [BMW Group Supplier Code of Conduct](#).

To fulfil our [social and environmental responsibility](#), we implement a multistage due diligence process. Human rights issues also play an important role in the Company's choice of locations and major investment decisions. In addition to this, our dealer and importer contracts require compliance and respect for human rights to be taken into account. [GRI Index: 2-23.1](#)

Compliance management in the Financial Services segment

The Financial Services business is subject to its own regulations and risks. The focus of compliance management here is on anti-money-laundering, compliance with financial sanctions, information and privacy protection, fraud prevention, legislative and regulatory monitoring, consumer protection and implementing the requirements of the German Financial Supervisory Authority. To manage these risks, the Financial Services segment has established its own Compliance and Governance department, which works closely with the central Group Compliance function. On the basis of an annual analysis, it identifies the possible need for adjustments and defines appropriate measures. Worldwide implementation by the BMW Group's financial services companies is continuously reviewed and reported to the management of the Financial Services segment on a quarterly basis.

In the Financial Services segment, compliance is incorporated into the target management process. Integration of specific targets into strategic steering helps monitor implementation. A management system also supports the process of identifying risks arising from non-compliance with internal and external regulations at an early stage.



INTERNAL CONTROL SYSTEM

The Internal Control System¹ (ICS) is part of the BMW Group's overall system of internal governance, and based on a set of measures and control activities that are integrated in processes and organisational structures with a view to ensuring the accuracy of external financial and non-financial reporting. The requirements for the design and structure of ICS procedures incorporated in accounting and financial reporting processes as well as those used to generate selected non-financial information included in the BMW Group Report are defined on a Group-wide basis.

The ICS for financial reporting has the task of ensuring that significant accounting and financial reporting processes deployed within the BMW Group are both accurate and reliable. The ICS for non-financial reporting focuses primarily on the further development of the processes used to gather data as the basis for reporting the non-financial performance indicators disclosed and consolidated in the BMW Group Report.

The ICS is based on the "three lines" model, including a clear definition of how the various functions are required to interact with one another in order to manage risks. As a component of the second line, the ICS serves as the link between the operating units (first line) and Corporate Audit (third line).

Basically, the aim of any appropriate and effective ICS is to prevent or reduce the probability of occurrence of potential risks.

Internationally acknowledged standards for internal control systems were taken into account when designing the various elements of the ICS deployed by the BMW Group (e.g. COSO model²).

The principal features of the BMW Group's ICS are a role-based approach embedded throughout the organisation, an environment, risk assessment procedures, control activities, information and communication, and monitoring activities.

Both the system itself and the methods applied are subject to continuous improvement, with system functionality being assessed on a regular basis. Notwithstanding the measures taken, every control system is subject to inherent limitations, given that it is not possible to prevent all incorrect disclosures or detect them in a timely manner.

Relevant BMW Group working instructions and guidelines for recognising, measuring and allocating items to accounts as well as definitions of non-financial performance indicators are available to all employees via the BMW Group's intranet system. New financial reporting standards are assessed for their potential impact on the BMW Group's accounting and financial reporting systems.

The principle of segregation of duties is taken into account for all IT systems that are relevant for accounting and financial reporting. ICS requirements are also embedded in the ongoing development of all IT systems used in these areas. Furthermore, the BMW Group deploys data analysis tools to identify and subsequently eliminate any weaknesses detected in its processes and/or control systems.

Responsibilities for ensuring the appropriateness and effectiveness of ICS procedures for accounting and financial reporting processes as well as those relating to non-financial performance indicators are clearly defined in a role-based model and allocated to the relevant line and process managers. Once a year, the managers responsible report on their assessment of the ICS in place for accounting and financial reporting processes, based on the results of both internal and external audits as well as continual monitoring. The results of the assessment are gathered and documented in a centralised IT system. Both the Board of Management and the Audit Committee are informed about the effectiveness of the ICS on an annual basis. The Board of Management and, where appropriate, the Supervisory Board, are promptly informed in the event of any significant changes to the ICS.

¹ Disclosures pursuant to § 289 and § 315 HGB.

² Committee of Sponsoring Organizations of the Treadway Commission.

DISCLOSURES RELEVANT FOR TAKEOVERS* AND EXPLANATORY COMMENTS

Composition of subscribed capital

As of 31 December 2022, the subscribed capital (share capital) of BMW AG amounted to € 662,839,475 (2021: € 661,399,500) and, in accordance with § 4 no. 1 of the Articles of Incorporation, is sub-divided into 601,995,196 shares of common stock (90.82 %) (2021: 601,995,196/91.02 %), each with a par value of € 1, and 60,844,279 (9.18 %) (2021: 59,404,304/8.98 %) shares of non-voting preferred stock, each with a par value of € 1. The Company's shares are issued to the bearer.

The rights and duties of shareholders derive from the German Stock Corporation Act (AktG) in conjunction with the Company's Articles of Incorporation, the full text of which is available at www.bmwgroup.com. The right of shareholders to have their shares evidenced is excluded in accordance with the Articles of Incorporation. The voting power attached to each share corresponds to its par value. Each € 1 of par value of share capital represented in a vote entitles the holder to one vote (§ 18 no. 1 of the Articles of Incorporation).

The Company's shares of preferred stock are shares as defined in §§ 139 et seq. AktG, which carry a cumulative preferential right in terms of the allocation of profit and for which voting rights are excluded. These shares confer voting rights only in exceptional cases stipulated by law, in particular if the preference amount has either not been paid or not been paid in full within one year and the arrears are not paid in the subsequent year alongside the full preference amount due for that year. With the exception of voting rights, holders of shares of preferred stock are entitled to the same rights as holders of shares of common stock. In addition, § 24 of the Articles of Incorporation confers preferential treatment to the non-voting shares of preferred stock with regard to the appropriation of the Company's unappropriated profit. Accordingly, the unappropriated profit is required to be appropriated in the following order:

- (a) Subsequent payment of any arrears on dividends on non-voting shares of preferred stock in the order of accrument
- (b) Payment of an additional dividend of € 0.02 per € 1 par value on non-voting preferred stock
- (c) Uniform payment of any other dividends on shares of common and preferred stock, provided the shareholders do not resolve otherwise at the Annual General Meeting

Restrictions affecting voting rights or the transfer of shares

In addition to shares of common stock, the Company has also issued non-voting shares of preferred stock. Further information can be found in the section [↗ Composition of subscribed capital](#).

As of 31 December 2022, the Company owned a total of 16,760,957 common and preferred stock, from which the Company has no rights pursuant to § 71 b AktG. The Company regularly provides information about the current status of the share buyback on its website.

When the Company issues non-voting shares of preferred stock to employees in conjunction with its Employee Share Programme, these shares are generally subject to a Company-imposed blocking period of four years, calculated from the beginning of the calendar year in which the shares were issued.

Contractual holding period arrangements also apply to shares of common stock acquired by Board of Management members and certain senior department heads in conjunction with share-based remuneration programmes. [↗ Remuneration Report \(on shareholding periods for members of the Board of Managers\)](#)

* Disclosures pursuant to § 289 a and § 315 a HGB.

Direct or indirect investments in capital exceeding 10 % of voting rights

Based on the information available to the Company, the following direct or indirect holdings exceeding 10 % of the voting rights at the end of the reporting period were held at the stated reporting date:¹

in %	Direct share of voting rights	Indirect share of voting rights
Stefan Quandt, Germany	0.2	25.6 ²
AQTON SE, Bad Homburg v. d. Höhe, Germany	9.0	16.6 ³
AQTON Verwaltung GmbH, Bad Homburg v. d. Höhe, Germany		16.6 ⁴
AQTON GmbH & Co. KG für Automobilwerte, Bad Homburg v. d. Höhe, Germany	16.6	
Susanne Klatten, Germany	0.2	20.7 ⁵
Susanne Klatten Beteiligungs GmbH, Bad Homburg v. d. Höhe, Germany	20.7	

¹ Based on voluntary notifications provided by the listed shareholders as at 31 December 2022.

² Controlled entities, of which 3 % or more are attributed: AQTON SE, AQTON Verwaltung GmbH, AQTON GmbH & Co. KG für Automobilwerte.

³ Controlled entities, of which 3 % or more are attributed: AQTON Verwaltung GmbH, AQTON GmbH & Co. KG für Automobilwerte.

⁴ Controlled entities, of which 3 % or more are attributed: AQTON GmbH & Co. KG für Automobilwerte.

⁵ Controlled entities, of which 3 % or more are attributed: Susanne Klatten Beteiligungs GmbH.

The percentages of the share capital with voting rights disclosed above may have changed subsequent to the stated date if these changes were not required to be reported to the Company. As the Company's shares are issued to bearer, the Company is generally aware of changes in shareholdings only if such changes are subject to mandatory notification rules.

Shares with special rights that confer control rights

There are no shares with special rights that confer control rights.

Control of voting rights when employees participate in capital and do not directly exercise their control rights

Like all other shareholders, employees exercise their control rights pertaining to any shares they have acquired in conjunction with the Employee Share Programme and/or the share-based remuneration programme directly on the basis of relevant legal provisions and the Company's Articles of Incorporation.

Statutory regulations and provisions contained in the Articles of Incorporation governing the appointment and removal of members of the Board of Management and changes to the Articles of Incorporation

The appointment or removal of members of the Board of Management is based on the rules contained in §§ 84 et seq. AktG in conjunction with § 31 of the German Co-Determination Act (MitbestG).

Amendments to the Articles of Incorporation must comply with §§ 179 et seq. AktG. Amendments must be decided upon by the shareholders at the Annual General Meeting (§ 119 (1) no. 6, § 179 (1) AktG). The Supervisory Board is authorised to approve amendments to the Articles of Incorporation that only affect its wording (§ 14 no. 3 of the Articles of Incorporation). Resolutions are passed at the Annual General Meeting by a simple majority of shares cast unless otherwise explicitly required by binding provisions of law or, if a majority of share capital is required, by a simple majority of shares represented in the vote (§ 20 no. 1 of the Articles of Incorporation).

Authorisations of the Board of Management, in particular with respect to the issuing or buying back of shares

The Board of Management is authorised to buy back shares and sell repurchased shares in situations specified in § 71 AktG, for example to avert serious and imminent damage to the Company and/or to offer shares to persons either currently or previously employed by BMW AG or one of its affiliated companies.

In accordance with the resolution taken at the Annual General Meeting on 11 May 2022, the Board of Management is authorised until 10 May 2027 to acquire treasury shares (shares of common and/or preferred stock) representing a total of up to 10 % of the share capital in place at the date on which the resolution was adopted or – if lower – at the date on which the authorisation is exercised.

In accordance with § 4 no. 5 of the Articles of Incorporation, the Board of Management is authorised, with the approval of the Supervisory Board, to increase by means of cash contributions BMW AG's share capital during the period up to and including 15 May 2024 by up to € 282,625 for the purposes of an Employee Share Programme by issuing new non-voting shares of preferred stock, which carry the same rights as existing non-voting shares of preferred stock (Authorised Capital 2019). The subscription rights of existing shareholders are excluded. No conditional capital was in place at the reporting date.

Significant agreements of the Company taking effect in the event of a change in control following a takeover bid

BMW AG is party to the following major agreements, which contain provisions that would apply in the event of a change in control or the acquisition of control as a result of a takeover bid:

- An agreement concluded with an international consortium of banks relating to a syndicated credit line, which was not being utilised at the balance sheet date, entitles the lending banks to give extraordinary notice to terminate the credit line, such that all outstanding amounts, including interest, would fall due with immediate effect if one or more parties jointly acquire direct or indirect control of BMW AG. The term "control" is defined as the acquisition of more than 50 % of the share capital of BMW AG, the right to receive more than 50 % of the dividend, or the right to direct the affairs of the Company or appoint the majority of members of the Supervisory Board.
- A cooperation agreement concluded with Peugeot SA relating to small (1- to 1.6-litre) petrol engines entitles each of the cooperation partners to give extraordinary notification of termination in the event of a competitor acquiring control over the other contractual party and if any concerns of the other contractual party regarding the impact of the change of control on the cooperation arrangements are not resolved during the subsequent discussion process.
- BMW AG acts as guarantor for all obligations arising from the joint venture agreement relating to BMW Brilliance Automotive Ltd. in China. This agreement generally grants an extraordinary right of termination to either joint venture partner in the event of a change in control at either one of the parties, or if more than 25 % of the shares of the other party are acquired by a third party – either directly or indirectly – or if the other party is merged with another legal entity. Termination of the joint venture agreement may lead to the dissolution of the joint venture, with an optional purchase right for BMW AG (or the partner) to acquire the shares of the other partner or to the liquidation of the joint venture company.
- Framework agreements are in place with financial institutions and banks (ISDA Master Agreements) with respect to trading activities with derivative financial instruments. These agreements include an extraordinary right of termination that triggers actions in the event that the creditworthiness of the party involved is materially weaker following a direct or indirect acquisition of beneficially owned equity capital which confers the power to elect a majority of the Supervisory Board of a contractual party, or any other ownership interest that enables the acquirer to exercise control over a contractual party or which constitutes a merger or a transfer of net assets.
- BMW AG and Mercedes-Benz Group AG have entered into a joint venture agreement relating to mobility services, which includes the areas of ride-hailing and vehicle charging, and entitles both Mercedes-Benz Group AG and BMW AG (hereafter referred to as "principals") to initiate a bidding procedure in the event that (i) the other principal receives notice in accordance with § 33 of the German Securities Trading Act (WpHG) that – including shares attributed pursuant to § 34 WpHG – a shareholding of more than 50 % has been attained or, in accordance with § 20 AktG of the German Stock Corporation Act (AktG) that a shareholding of more than 50 % has been attained or (ii) a shareholder or a third party – including shares attributed pursuant to § 30 WpHG – holds more than 50 % of the voting rights or shares in the other principal, or (iii) the other principal has concluded a control agreement as a dependent company. The outcome of such a bidding procedure is that the joint venture will go to the principal making the highest bid.
- Several supply and development contracts between BMW AG and various industrial customers, all relating to the sale of components for drivetrain systems, grant an extraordinary right of termination to the relevant industrial customer in specified cases of a change in control at BMW AG (for example if BMW AG merges with a third party or is taken over by a third party; an automobile manufacturer acquires more than 50 % of the voting rights or share capital of BMW AG).



- BMW AG is party to the shareholder agreement relating to There Holding B.V., which is the majority shareholder of the HERE Group. In accordance with the shareholder agreement, each contractual party is required to offer its directly or indirectly held shares in There Holding B.V. for sale to the other shareholders in the event of a change in control. A change in control of BMW AG arises if a person takes over or loses control of BMW AG, with control defined as (i) holding or having control over more than 50 % of the voting rights, (ii) the possibility to control more than 50 % of voting rights exercisable at Annual General Meetings on all or nearly all matters, or (iii) the right to determine the majority of members of the Board of Management or the Supervisory Board. Furthermore, a change in control occurs if competitors of the HERE Group, or certain potential competitors of the HERE Group from the technology sector, acquire at least 25 % of the share capital or voting rights of BMW AG. If none of the other shareholders acquire these shares, the other shareholders are entitled to resolve that There Holding B.V. be dissolved.
- The development collaboration agreement between BMW AG, Intel Corporation and Mobileye Vision Technologies Ltd., relating to the development of technologies used in automated vehicles, may be terminated by any of the contractual parties if a competitor of one of the parties acquires and subsequently holds at least 30 % of the voting shares of one of the contractual parties.
- The development collaboration agreement between BMW AG, FCA US LLC and FCA Italy S.p.A, relating to the development of technologies used in conjunction with automated vehicles, may be terminated by of the contractual parties if certain competitors in the technology sector acquire and subsequently hold at least 30 % of the voting shares of one of the other contractual parties.
- BMW AG has entered into an agreement with Great Wall Motor Company Limited to establish the joint venture Spotlight Automotive Ltd. in China. The underlying joint venture agreement generally grants an extraordinary right of termination to either joint venture partner in the event that – either directly or indirectly – more than 25 % of the shares of the other party are acquired by a third party or the other party is merged with another legal entity. The termination of the joint venture agreement may result in the sale of the shares to the other joint venture partner, or in the liquidation of the joint venture entity.

Compensation agreements with members of the Board of Management or with employees in the event of a takeover bid

The BMW Group has not concluded any compensation agreements with members of the Board of Management or with employees for situations involving a takeover offer.