processes and thereby allows them to work more cost-efficiently and sustainably. Under the NEXT Farming brand, the BayWa Group company FarmFacts provides a farm management system that helps farmers to manage and oversee agricultural processes and machinery using telematics. The software combines essential documentation and contract management functions, from field management and the implementation of local rules under the German Fertiliser Application Ordinance (DüV) to agricultural equipment connectivity.

The BayWa subsidiary VISTA is constantly developing solutions that use satellite data and the PROMET spatial crop growth model to help conserve resources, reduce water consumption and increase harvest yields. PROMET calculates the development of crops with tremendous precision in hourly calculation intervals. Using up-to-the-minute satellite data, the model makes it possible to derive the current condition of crops through daily readings on factors such as biomass and yield that are unaffected by cloud cover and – more importantly – are absolute. The approach helps farmers to optimise the sowing process and the use of fertilizer and water.

As at 31 December 2022, 63 employees worked in research and development (2021: 77 employees). The BayWa Group's research and development expenses totalled €1.0 million in the financial year 2022 (2021: €1.3 million). Own work capitalised with regard to new Digital Farming products amounted to some €3.2 million (2021: €4.4 million).

Financial Report

Macroeconomic conditions

The development of the global economy was characterised in the financial year 2022 by considerable impairment of the economic climate, which had already been weakened by the coronavirus pandemic. The main negative factors were the war against Ukraine, high rates of inflation, an increase in central banks' interest rates to combat inflation and a significant economic slowdown in China in the wake of the country's zero-Covid strategy (IMF, World Economic Outlook, January 2023).

In its most recent estimate, dated January 2023, the International Monetary Fund (IMF) anticipates that the global economy saw growth of around 3.4% in 2022. In industrialised economies, growth stood at around 2.7%, according to the IMF. In emerging economies, gross domestic product increased by 3.9%. In the countries of the euro zone, economic growth amounted to 3.5%. In Germany and Austria, two particularly important markets for BayWa, economic growth stood at 1.9% and 4.7%, respectively (IMF, World Economic Outlook, January 2023; WIFO – Austrian Institute of Economic Research, Economic Outlook 4/2022, December 2022).

Following record figures of over 10% in the autumn months, the annual inflation rate in the euro zone stood at 9.2% as of December 2022, according to the European statistical office Eurostat. For the first time since 2016, the European Central Bank (ECB) raised the interest rate on the main refinancing operations (MRO) to 0.5% in July in the first of a series of rate hikes that peaked for the year at 2.5% in December (Eurostat, Annual inflation down to 9.2% in the euro area, January 2023; https://www.ecb.europa.eu/stats/policy_and_exchange_rates/key_ecb_interest_rates/html/index.en.html).

In the current financial year, 2023, global growth is expected to weaken further. The main factors behind this trend are increasingly tight fiscal policy to contain the high rate of inflation, the persistent impairment of global economic flows as a result of the war against Ukraine and lower investment rates in emerging economies (IMF, World Economic Outlook, January 2023).

For 2023, the IMF anticipates slower global growth momentum. Nevertheless, sentiment has improved somewhat, with growth forecast to reach 2.9%. Back in October, the IMF's analysts were still predicting economic growth of just 2.7%. In emerging economies, gross domestic product is expected to increase by 4.0%. In industrialised countries, growth of 1.2% is expected. For the euro zone, the IMF is forecasting just around 0.7% in growth. In Germany, the economy is expected to experience periods of recession over the course of 2023, but should still grow by a slight 0.1% for the year as a whole. In October, the IMF was still predicting a decline of 0.3% for Germany. For Austria, the WIFO anticipates slight growth of 0.3% (IMF, World Economic Outlook, January 2023; WIFO – Austrian Institute of Economic Research, Economic Outlook 4/2022, December 2022).

The ECB's goal is to achieve price stability in the medium term for the euro zone, with an inflation rate of 2%. However, this target remains far off for the time being. As a result, the key interest rate was raised by 50 basis points to 3.5% with effect from 22 March 2023. In doing so, the ECB Governing Council is staying its monetary policy course (ECB, Combined monetary policy decisions and statement, March 2023).

Operative business development

Energy business unit

Market and industry development 2022/23

Development of renewable energies
The international economy started 2022 on a relatively optimistic note. The risks stemming from the coronavirus pandemic had subsided in many parts of the world, and the economy had grown by 6.1% in 2021 after shrinking by 3.1% in 2020 (World Bank). Although European electricity and gas prices had risen to a historic record high in winter 2021/22, things looked likely to return to normal by spring. However, falling forecasts with regard to the availability of French nuclear power plants, low hydrogen power reserves and underwhelming natural gas deliveries from Russia to Europe all indicated that challenges were on the horizon (European power volumes & prices: 2022 in review, Wood Mackenzie).

The Russian attack on Ukraine at the end of February and the political instrumentalisation of gas deliveries to Europe led to the destabilisation of regional and global energy markets. European raw material prices reached unprecedented levels in 2022, with natural gas costing €122 per megawatt-hour (MWh) on average on the Title Transfer Facility (TTF, a virtual trading point in the Netherlands). Between 2015 and 2020, the average price stood at just €16 per MWh. As a result, electricity prices rose to between €400 and €550 per MWh in many countries of the European Union (EU) in August 2022 (European power volumes & prices: 2022 in review, Wood Mackenzie).

The crisis forced European governments and institutions to enact regulations that were poorly thought-out. One example is the revenue cap that was introduced at EU level to collect "surplus profits" from "inframarginal generators" such as wind farms and solar parks, as well as nuclear power plants. On account of the varying interpretations and measures taken to implement the cap by the individual EU member states, however, it led to uncertainty among markets and investors. The developments over the course of 2022 will have a fundamental impact on the future of electricity markets in Europe, as the regulatory agencies of the EU and its member states, as well as the United Kingdom, have started redefining the regulatory framework for their respective markets.

Despite these challenges, an estimated 375 GW of photovoltaic (PV) systems and wind turbines were installed worldwide in 2022 – 33% more than the record-setting figure of 283 GW seen in 2021 (BloombergNEF, December 2022). As a result, the aggregated global installed PV and wind energy output rose to 2,188 GW.

The annual PV capacity growth of 269 GW in 2022 – 47% more than in the previous year – includes 143 GW in roof-mounted installations and 126 GW in free-standing solar parks. The Asia-Pacific region was once again the engine of global PV market growth. Capacity in the region rose by 165 GW, which corresponds to growth of 61% year on year and accounts for roughly two-thirds of global PV capacity growth in 2022. Europe, the Middle East and Africa (EMEA), along with North and South America, follow at 52 GW and 41 GW; 10 GW are not classified. China retained its regional and global leadership role by installing 126 GW in PV solar capacity in 2022. The US (24 GW), India (18 GW) and Brazil (11 GW) trailed immediately behind.

In the EMEA region, Germany led the pack, with estimated PV capacity expansion of 7.4 GW, followed by Spain (7 GW), Poland (4.3 GW) and the Netherlands (4.3 GW). Of the EMEA PV capacity, 57% was installed on roofs of commercial, industrial and private consumers. Demand for rooftop systems is expected to remain high in 2023/24 on account of high electricity prices and government subsidies, which will promote growth for solar PV wholesalers.

In 2022, the global wind energy market saw an estimated 106 GW in new capacities, which corresponds to a rise of 6% year on year. The expansion of onshore wind turbines increased by 11% year on year to a total of 93 GW and balanced out the decline in offshore construction, which stood at 13 GW in 2022 (compared to 17 GW in 2021). The Asia-Pacific region led the global market, with expansion of 63 GW, followed by 26 GW in the EMEA region and 17 GW in North and South America. China continued to build on its globally leading position by expanding its wind energy capacity by 55 GW in 2022, followed by 11 GW in the United States, 4.3 GW in Germany and 3.9 GW in the United Kingdom. Wind energy projects have longer lead times and require stricter environmental impact assessments than PV. Moreover, the modularity of the latter enables users to generate anywhere from a few kilowatts to several megawatts of electricity without negatively impacting profitability, which makes PV the technology of choice for decision makers when it comes to reducing energy costs.

The easing of pandemic-related restrictions in China, the increased resolve of Europe to accelerate the expansion of renewable energies as part of the REPowerEU programme and the introduction of the Inflation Reduction Act in the US are expected to help push the expansion of PV capacity to over 300 GW in 2023. The wind energy market will also continue on its growth trajectory, albeit at a slower pace than the PV market. Independent analysts predict that newly installed wind power capacity will stand at 109 GW in 2023. With a plethora of political measures stimulating demand for renewable energies, annual global installations are anticipated to exceed 500 GW between now and 2025. Additional growth will be possible if political decision makers and the industry succeed in overcoming the challenges in terms of approvals and the supply chain (BloombergNEF, December 2022).

Development of energy

The price of crude oil plays a key role in market development for the Energy Segment. It is a leading indicator of demand and price trends for various fossil energy carriers. After starting 2022 at around USD80 a barrel, the price of crude oil started to skyrocket once the war against Ukraine started and the associated uncertainty began spreading on global commodity markets. In March, the crude oil price reached its highest level since 2008, peaking at around USD139 per barrel for the day. Another factor driving prices was the oil price cap for Russian oil exports that the G7 members and the EU imposed with effect from December 2022. Low global oil production exerted further pressure on markets. Having already fallen short of the intended targets by a substantial margin over the course of the year, the OPEC+ oil cartel additionally decided in October 2022 to cut its crude oil production targets, which led to another clear jump in prices at short notice. The emergence of a global recession and the associated expectations of lower demand stood in contrast to this development, causing the price of crude oil to fall successively as the second half of the year continued. By the end of December, it was back where it had been at the start of 2022. At USD98.1 per barrel on average over the course of 2022, however, the price of crude oil was roughly USD28 higher than the average for the previous year (TECSON, Rohölpreis, 2022).

Based on subdued demand, the U.S. Energy Information Administration (EIA) anticipates a much lower average crude oil price of around USD84 per barrel for the current year (2023). The forecast is subject to uncertainty, particularly with regard to macroeconomic development in China and the role of Russian oil production (EIA, Short-Term Energy Outlook February, 2023). In addition to the sanctions already in place, Germany has also been abstaining from Russian oil deliveries via the Druzhba pipeline since the start of the year. At the same time, some of the imports are to be replaced with oil from Kazakhstan (GTAI, https://www.gtai.de/de/trade/kasachstan/ branchen/gruenes-licht-kasachstan-liefert-mehr-oel-nach-deutschland-946248).

In the heating sector, demand for fossil fuels is subject on the one hand to weather-related fluctuations in consumption. On the other hand, purchasing behaviour is influenced by price trends. The price of heating oil largely follows the development of crude oil prices. After starting at a comparatively high level of just under €87 per 100 litres, heating oil prices saw a clear uptick in the financial year 2022 and leapt to a record high of €204.5 per 100 litres in March 2022. In the months that followed, heating oil prices, like crude oil prices, eased by a clear margin. At an annual average of €139 per 100 litre, the price of heating oil was still clearly up on previous years (TECSON, Heizölpreise, 2022). Sales of heating oil in Germany increased by 8.2% year on year in 2022 (BAFA, Amtliche Mineralöldaten, December 2022). Fears of gas shortages motivated large-scale industrial and commercial consumers to switch to heating oil and were among the main reasons for the higher demand. All in all, though, lower consumption thanks to modern technologies, energy-efficiency renovations, milder winters and the increasing use of renewable energy sources contribute to a decline in heating oil consumption. This trend is set to continue going forward. The German Buildings Energy Act (GEG), for instance, stipulates that oil heaters may only be installed from 2026 onward as part of a hybrid system that combines oil heating with a renewable heat energy carrier. In Austria, the federal government's plan for the years 2020 to 2024 has banned the use of oil heaters in new buildings since 2020 and has prohibited the installation of new oil heating systems in existing buildings since 2021.

In 2022, the price of wood pellets also soared, at times more than tripling year on year to around €746 a tonne (for a 26-tonne bundle). The increase in prices was primarily due to a clear rise in demand, as well as higher production and transport costs (DEPI, Pelletpreis/ Wirtschaftlichkeit, February 2023; DEPV, Energiekrise beeinflusst Pelletpreis, November 2022). In addition, supply was also temporarily interrupted by supply chain problems and an EU-wide ban on wood pellet imports from Belarus and Russia that was issued in March 2022 (GTAI, https://www.gtai.de/de/trade/russland/branchen/holz-und-papier-unterliegen-ein-und-ausfuhrbeschraenkungen-819516). The consumption of wood pellets increased by 10.3% in Germany in 2022. Because the number of newly installed pellet-fired systems also continued to increase in 2022, pellet consumption growth is expected to accelerate in 2023 (DEPV, Pelletproduktion und -verbrauch in Deutschland, Zubau von Pelletfeuerungen in Deutschland, 2 March 2023). In the medium term, however, market growth should level off as a result of changes in subsidy conditions for pellet heating. Due to the amendment of the Bundesförderung für effiziente Gebäude (federal subsidy for efficient buildings – BEG) in August 2022, the Deutscher Energieholz- und Pellet-Verband (German energy wood and pellet association – DEPV) estimates that over 95% of central wood-fuelled heating systems that were previously eligible for subsidies will stop receiving subsidies on 1 January 2023, thereby making it less appealing to install wood furnace systems. Existing systems are not affected by the changes. Nevertheless, wood pellets should remain an important element of decentralised energy supplies.

Total fuel sales in Germany rose by 0.7% in 2022. Sales of Otto fuels increased by 3.5%, whereas sales of diesel fell by 0.6%. Total sales of lubricants decreased by 3.6% due to the scarce availability of base oils as a primary material in 2022 (BAFA, Amtliche Mineralöldaten, December 2022). The scarcity was mainly triggered by developments on the crude oil market and Russia's tremendous significance for the procurement of base oils. The sharp rise in fuel prices stood in contrast to lower mileage in the previous year on account of lockdowns (Federal Ministry for Digital and Transport, Verkehr in Zahlen, 2022/2023). Other important factors include vehicle stock and the development of the economy as a whole. Given the anticipated slight decline in economic performance in Germany, sales of oil-based fuels should fall slightly. A structural reduction in demand for fuels and lubricants can be expected in general in the years ahead, with the German federal government planning to have at least 15 million electric cars on the road by 2030 (German federal government, 2021 coalition agreement). By contrast, the move will result in tremendous opportunities for the expansion of charging infrastructure. The use of liquefied natural gas (LNG) in the transport sector, especially in heavy-goods vehicles, also offers enormous potential (Gas e. V., Bio-LNG im Schwerlastverkehr).

Business performance

Renewable Energies Segment

The Renewable Energies Segment saw very positive development in 2022. Plant sales achieved a total output of 797.0 MW in the reporting year, with turnkey energy plants accounting for a share of roughly 97%. In 2021, that figure stood at around 74% of a total completed project output of 612.8 MW. Alongside the construction of turnkey wind farms and solar parks, total output also includes the sale of ready-to-build project rights and general contracting services such as planning, procurement and construction services.

The Wind Projects business entity sold six wind farms with a total output of 59.8 MW (2021: 119.8 MW) in the national markets of France (19.1 MW), Australia (18.2 MW), Italy (18.0 MW) and Germany (4.5 MW). In the case of one particular project in France, only 49% was sold to an external buyer. The remaining 51% of the wind farm, as well as three others, was transferred to the portfolio held by the IPP (Independent Power Producer) business entity (75.6 MW in total). The BayWa r.e. Group will assume responsibility for the commercial and technical management of the lion's share of these turbines and wind farms. In addition, a first milestone for embarking on offshore project planning was reached when the BayWa r.e. Group, together with two partners, was awarded the contract for a floating offshore wind farm with a total output of 960 MW as part of a tender procedure by Crown Estate Scotland. During the construction of a 95 MW wind farm in the US, site-related uncertainties led to a halt in some aspects of construction work and, in turn, to significant delays and cost increases. As a consequence, the book value of the wind farm under construction was subject to a write-down. After completion, the wind farm is to be operated by BayWa r.e.

The Solar Projects business entity sold 16 free-standing solar parks and four floating solar parks with a total output of 704.7 MW (2021: 394.0 MW), as well as four sets of project rights for the construction of free-standing solar parks (26.4 MW) and battery storage systems (208 MW 416 MWh). Of the total solar output, 270.5 MW were attributable to the US, 202.44 MW to the Netherlands, 115.0 MW to Spain and 110.1 MW to the United Kingdom. In addition, three projects that had been brought into operation with a total of 43.0 MW were transferred to the IPP business entity.

The IPP (Independent Power Producer) business entity operates selected solar parks and wind farms and successfully completed its second full financial year in 2022. Energy trade activities are also part of the IPP business entity. In 2022, the portfolio was increased by seven parks. As a result, 26 wind farms and solar parks in Europe, North America and Australia with a total output of roughly 0.8 GW were part of the operating portfolio at the end of the year. Both the portfolio and the energy trade activities benefited from the high electricity prices. However, the increased volatility in energy prices also led to higher procurement prices in energy trading.

The Services business entity recorded a rise in total plant capacity under its management around the world of over 5% to more than 10.2 GW in 2022 (2021: 9.7 GW). This growth was rounded out by successful photovoltaic (PV) repowering sales in Germany, Italy and France. Supply-chain-related delays in the commissioning of renewable energy systems, as well as delays in the start dates of repowering projects, made business difficult in the Services business entity.

In trade activities involving photovoltaic (PV) components, the total output of PV modules sold rose by roughly 71% to just under 3.5 gigawatt-peak (GWp). The inverter and assembly system product groups each saw a significant increase of around 60% and 110%, respectively. Business involving storage products grew by roughly 140% year on year. The growth is primarily attributable to the continued high demand for renewable energies and good product availability at solar trading companies despite adverse conditions. Revenues of just under €480 million were processed in these product areas through the web stores established in national markets, which corresponds to an increase of approximately 100% year on year. Overall, the lion’s share of solar trade revenues was generated in Europe, the Middle East and Africa (74%), followed by the Americas (23%) and Asia (3%).

In 2022, the Energy Solutions business entity was able to expand its project pipeline through successful sales activities, both in Europe and South East Asia, and execute a large number of roof-mounted, carport and free-standing projects. As a result, it succeeded in further establishing itself as an international developer of integrated solutions in the fields of renewable energies for businesses.

Revenues in the Renewable Energies Segment rose by 82.3% to €6,489.2 million in the financial year 2022. At €239.1 million, EBIT climbed to a new record and exceeded the previous record of €135.0 million, which was set in 2021, by around 77%. The improvement in the operating result is primarily attributable to strong growth in solar trade activities. The IPP business entity also exceeded the previous year’s result by a clear margin. The improvement in earnings in the portfolio resulted both from the newly acquired solar parks and wind farms and from the higher electricity prices, as in energy trading. In addition, the sale of BayWa r.e. Bioenergy GmbH had a positive effect on earnings in the Renewable Energies Segment.

The coronavirus pandemic had a less significant effect on the BayWa r.e. Group in the reporting year than in previous years. Although there were still supply bottlenecks and delays in approval processes, for instance, the former had less to do with the pandemic than with the continued disruption in supply chains.

Energy Segment
The Energy Segment saw positive development in the reporting period. Demand for fuels and heat energy carriers was solid despite high prices. The war against Ukraine, as well as the associated high level of uncertainty regarding the supply in winter, and further price hikes on global commodities markets led some private and commercial consumers to stock up in advance. In this situation, BayWa's active inventory management paid off.

As a result, the Group was able to meet the high demand (particularly for wood pellets) without virtually any limitations. To continue meeting the demand for solid fuels going forward, BayWa is further expanding its storage and distribution capacities and opened an additional wood pellet warehouse in Schlacht, near Glonn, in the third quarter. With 680 square metres of storage space, the warehouse has room for up to 3,000 tonnes of wood pellets for delivery to private customers in a radius of 50 kilometres. BayWa now maintains 16 pellet warehouses of its own, with a total capacity of 73,000 tonnes of wood pellets. BayWa expects wood pellets to remain a key component of the energy mix.

The company also strengthened its logistics capacities in the reporting period. In January 2022, the BayWa subsidiary Pellog GmbH took over the business activities of Heyne & Naumann GmbH, a haulage company based in Oelsnitz, Germany. The acquisition helps to ensure the company's access to valuable service and logistics resources in the competitive logistics market. In September 2022, BayWa announced a long-term, exclusive partnership with Danpower GmbH, Potsdam, Germany, for its pellet plant in Heidegrund, Germany. BayWa will provide raw materials and manage pellet sales for the plant in Heidegrund in order to make sure that customers receive products and services in the long term. All in all, customers placed smaller orders on account of the high prices, on the hope that prices would fall. As a result, sales of wood pellets were down 8.6% year on year in the reporting period.

In heating oil trade, BayWa recorded a 2.1% decline in sales overall. While demand in Germany was almost on a par with the previous year, demand in Austria fell to a greater extent. The decline was primarily attributable to the Austrian federal government's plan for the years 2020 to 2024, which has banned oil heaters in new buildings since 2020 and has prohibited new oil heating systems in existing buildings since 2021.

By contrast, the fuels business recorded an additional boost in demand, especially prior to the end of the temporary fuel tax cut on 31 August 2022. Increased mileage for engines run on Otto fuels likewise had a positive effect, whereas mileage was down by a clear margin in the comparable period in 2021 due to the applicable lockdown rules. All in all, fuel sales volume was 7.1% higher year on year.

In April 2022, the new subsidiary BayWa Power Liquids GmbH commenced operation. The wholly owned subsidiary of BayWa AG positions itself as a solutions provider for eco-friendly heavy vehicle mobility and operates BayWa's network of LNG filling stations, which currently has 11 locations and was transferred from BayWa Mobility Solutions GmbH to BayWa Power Liquids GmbH in April. Through the BayWa filling station card, customers also have access to additional LNG stations run by partners.

In lubricants, the scarce availability of base oils as an input led to a clear increase in product prices for motor, hydraulic and gear oils. At the same time, higher energy costs led to temporary AdBlue production stops, especially in the fourth quarter of 2022. Overall, sales of lubricants and operating resources fell by 9.3% year on year. By ensuring that customer needs were met at all times, BayWa succeeded in compensating in earnings terms for declines in sales in these product groups.

The subsidiary BayWa Mobility Solutions GmbH continued driving forward the expansion of charging infrastructure for electromobility in the reporting period. Roughly 300 charging parks with an average of six charging points were built, bringing the total number of charging points up to 2,100 (including 1,800 quick charging points). Thanks to a partnership with SMATRICS EnBW, which was launched in spring, the reach of the BayWa charging cards in Austria has now been expanded by about 400 quick charging points. The new Chargemondo platform for the operation of private charging solutions was launched back on 1 January 2022. Since February 2022, www.chargemondo.de has also been marketing GHG quotas (greenhouse gas reduction quotas). GHG trading allows participants to offer the CO_2 they save by using an electric vehicle on the emissions market. As a next move, BayWa Mobility Solutions GmbH plans to extend its GHG quota trading service to commercial clients. The non-strategic home charging infrastructure business was sold to Werner Pletz GmbH in December 2022.

Building services benefited substantially in the financial year from the increased demand for new heating solutions. In particular, upgrades for existing heating systems in single- and multi-family homes, as well as the switch to heat pumps, proved to be earnings drivers.

All in all, the Energy Segment generated strong revenue growth of 57.1% to €3,343.6 million in the reporting period (2021: €2,128.2 million). That growth is primarily attributable to the rise in prices. On the earnings side, EBIT more than tripled year on year to €53.6 million.

Agriculture business unit

Market and industry development 2022/23

Development of grain and oilseed

Global balance of grain (excluding rice)	Grain year			Change	
in millions of tonnes	2020/21	2021/22	**2022/23**	2021/22 compared to 2020/21	2022/23 compared to 2021/22
Production					
World	2,215.7	2,280.0	2,227.7	2.9%	- 2.3%
thereof: wheat	774.5	779.3	781.3	0.6%	0.3%
thereof: coarse grain	1,441.2	1,500.7	1,446.4	4.1%	- 3.6%
Consumption					
World	2,238.5	2,282.7	2,246.8	2.0%	- 1.6%
thereof: wheat	782.7	792.5	789.7	1.3%	- 0.4%
thereof: coarse grain	1,455.8	1,490.2	1,457.1	2.4%	- 2.2%
Inventory changes					
World	- 22.8	- 2.7	- 19.1		
thereof: wheat	- 8.2	- 13.2	- 8.4		
thereof: coarse grain	- 14.6	10.5	- 10.7		

European balance of grain (excluding rice)	Grain year			Change	
in millions of tonnes	2020/21	2021/22	**2022/23**	2021/22 compared to 2020/21	2022/23 compared to 2021/22
Production					
EU	282.1	292.6	270.3	3.7%	- 7.6%
thereof: Germany	43.3	42.4	43.3	- 2.1%	2.1%
Consumption					
EU	264.2	268.1	262.0	1.5%	- 2.3%
thereof: Germany	42.9	39.0	41.2	- 9.1%	5.6%
Inventory changes					
EU	17.9	24.5	8.3		
thereof: Germany	0.4	3.4	2.1		

Sources: USDA, Grain: World Markets and Trade, January 2023, pp. 20, 26; DRV, Jahresbericht Agrarwirtschaft 2022, p. 10; BLE, Getreideverbrauch Deutschland, Inlandsverwendung insgesamt

Global agricultural markets are characterised by a narrow corridor between production volume and demand. In recent years, however, supply has often failed to meet demand. At the same time, demand is expected to rise continuously as the world's population keeps growing between now and 2050. The consequences of climate change will also play a role, with securing global food supplies constituting a major challenge. The war against Ukraine has further exacerbated the situation, and the consequences will have a significant effect on agricultural markets in the business periods ahead (BayWa, own estimates).

The most important indicator of how the plant-based product market is developing is the grain market. In the grain year 2021/22, global consumption increased by 2.0%, causing inventories to decrease by 2.7 million tonnes. The European Union harvested around 3.7% more grain in the harvest year 2021/22 than in the previous year, and consumption outperformed the previous figure by a clear margin (USDA, Grain: World Markets and Trade, January 2023, pp. 20, 26). In Germany, the harvest was 2.1% smaller in the harvest year 2021/22 than in the previous year on account of unusually dry weather conditions in many regions and the associated decline in hectare yields.

The financial year 2022 saw a clear rise in global market prices for grain due to the aforementioned decline in global grain stocks, as well as anticipated weaker harvests in key producer countries and lower exports from Ukraine. General uncertainty with regard to global supply trends also played a role (DBV, Situationsbericht 2022/23, p. 192). Starting from a low for the year of just under €261 per tonne in early February 2022, the price of wheat leapt to an annual high of around €438 per tonne on the MATIF commodity futures exchange by May 2022. In the second half of the year, wheat prices hovered around a somewhat lower, yet still high level of €350 per tonne until November. By the end of 2022, wheat was trading on the MATIF at around €309 per tonne. At an average of 143.7 points (2021: 125.7 points), the grain price index of the Food and Agriculture Organization of the United Nations (FAO) exceeded the level seen in the past ten years by a clear margin in 2022 (FAO Food Price Index, January 2023).

According to the latest forecasts from the U.S. Department of Agriculture (USDA), global grain production is likely to be 2.3% lower year on year in the grain year 2022/23. Global consumption is expected to fall by 1.6%. With consumption once again outpacing production on the whole, a reduction of wheat and coarse grain inventories appears likely, meaning that prices should be higher in 2023 than in previous years. The European Union is expected to harvest roughly 7.6% less grain in the grain year 2022/23, according to projections (USDA, Grain: World Markets and Trade, January 2023, pp. 20, 26). The lower grain harvest is attributable to an unusually dry summer in parts of the EU, which led to lower yields per hectare (DBV, Situationsbericht 2022/23, p. 190). By contrast, the grain harvest in Germany rose by 2.1% year on year to around 43.3 million tonnes, bringing it back to the level seen between 2016 and 2021 on the heels of a poor harvest year in 2021/22. The increase was fuelled by a larger amount of land under cultivation and a slight uptick in yields per hectare. However, grain maize harvest losses on account of heat and dry conditions reduced the grain harvest (DBV, Situationsbericht 2022/23, p. 191; DRV: Jahresbericht Agrarwirtschaft 2022, p. 10). The FAO and OECD anticipate high prices for all types of grain in the years ahead (DBV, Situationsbericht 2022/23, p. 193).

Global soya meal harvest volume fell slightly by 0.5% in the marketing year 2021/22 to stand at 247 million tonnes (World Markets and Trade, January 2023, p. 11). Soya meal accounts for around 70% of all oilseed meal. After hitting a low for the year of roughly €380 per tonne in January 2022, prices for soya meal hovered at a higher level of around €450 to €550 per tonne in the subsequent months in the wake of a general rise in commodity and agricultural prices. Following a slight downward trend in autumn, a clear deterioration in harvest prospects in Argentina led to a renewed rise in prices on the Chicago Board of Trade (CBoT) commodity futures exchange in December. Soya meal finished the year at a price of around €493 per tonne.

In the marketing year 2022/23, global soya production (soya meal) is expected to rise by 4.2% to 257 million tonnes, due mainly to anticipated record soya harvests in Brazil and China (USDA, Oilseeds: World Markets and Trade, January 2023, p. 10 et seq.).

Development of fruit cultivation

At roughly 1.33 million tonnes, the fruit harvest in Germany was 3% higher year on year in 2022, according to estimates by Agrarmarkt Informations-Gesellschaft mbH (AMI). The total tree fruit harvest in Germany stood at 1.17 million tonnes in 2022, equating to an increase of around 4% compared to the previous year. Higher har vest volumes for apples, sweet cherries, sour cherries, plums and prune plums stood in contrast to lower harvest volumes for fruits such as pears or mirabelles. At 44,500 tonnes, the soft fruit harvest was roughly 2% lower year on year, mainly due to factors limiting the cultivation and growth of blackcurrants (DBV, Situationsbericht 2022/23, p. 205). The apple harvest volume increased by 6.6% year on year in 2022 to stand at around 1.1 million tonnes and exceeded the multi-year average for 2012 to 2021 by 10.3% on account of good fruit setting in spring and the good weather conditions, which resulted in less disease and pest infestation (Destatis, press release, 9 January 2023, Apple yield in 2022 by 10.3% above average of the last ten years). At roughly 12.2 million, the apple harvest volume achieved in the member states of the EU in 2022 was up slightly on the previous year's level of 12.0 million, according to preliminary figures (World Apple and Pear Association – WAPA, EU 27 apple production by country, November 2022).

Owing to lower demand and higher inventory levels than in previous years, apple prices in Germany were below the five-year average throughout 2022. As marketing of the new harvest kicked off in August, prices stabilised at a low level of between 60 and 63 cents per kilogramme. By contrast, average apple prices in the EU remained above the five-year average, except for between April and August 2022. Consumer sentiment in Europe, and in Germany in particular, was dampened by exploding energy costs and high inflation. Inventories therefore continued to increase month after month, despite low imports from overseas, resulting in a conflict between efforts to clear out stocks and the new harvest. Extensive quantities of inventories from previous harvests remained in stock well into September, which negatively impacted the fresh produce market through October and were partially sold off to industrial producers (DG Agri Dashboard Apples, 17 November 2022). According to preliminary figures, the EU had 4.4 million tonnes of apples in stock as at 1 December – a decrease of 9% year on year, and 4% less than the average for the past three years. Brisk exports to countries outside Europe made it possible to sell 18% more apples in November than in 2021. Prices for stable qualities are very likely to pick up in 2023 (Agrarmarkt Informations-Gesellschaft mbH – AMI).

In the southern hemisphere, the harvest volume of apples declined by 6.7% year on year to approximately 4.9 million tonnes in the harvest year 2021/22, falling short of the original expectations by a clear margin. At 502,000 tonnes, New Zealand – BayWa's most important non-European country of origin for fruit – recorded its smallest apple harvest since 2013/14. Adverse climatic growth conditions led not only to lower harvest volumes, but also to poorer fruit quality. The country also saw an extensive shortage of harvest workers on account of the pandemic-related restrictions on travel to New Zealand. Based on the current status of fruit development, the World Apple and Pear Association (WAPA) forecasts that the apple harvest in the southern hemisphere will increase by just under 6% to 5.1 million tonnes in the harvest year 2022/23. All countries except Australia look likely to benefit from higher harvest volumes. In New Zealand, the harvest volume is expected to increase by just under 7% (WAPA, Southern Hemisphere Apple and Pear Crop Forecast, February 2023), mainly due to the opening of New Zealand's borders to the outside world and the associated return of foreign workers. In the wake of the natural disaster caused by the floods that have occurred in New Zealand since mid-February 2023 and have affected T&G Global's cultivation regions, among many others, the above forecast may fail to fully materialise. However, it is not yet possible to make a credible assessment.

Development of agricultural inputs

Prices of agricultural inputs rose by a clear margin year on year, especially in the first half of 2022. Fertilizer prices were 99% higher on average than in the previous year (Destatis, Index of purchase prices of the means of agricultural production, Genesis 61221-0001). Sales fell by around 7% due to higher prices for all types of fertilizer, including nitrogen, phosphate, potash and calcium fertilizers (Destatis, Domestic sales of fertilisers, Genesis 42321-0003). Business involving fertilizers depends on many factors, such as weather conditions and regulations such as the German Fertiliser Application Ordinance (DüV), as well as the energy price. Producing mineral fertilizers is particularly energy intensive, and the sharp rise in prices on energy markets that began in the final months of 2021 and gained further momentum as a result of the war against Ukraine have made the fabrication of mineral fertilizers so much more expensive that some manufacturers have scaled back their production by a clear margin or have even temporarily halted their activities altogether. That development led to a shortage of mineral fertilizers on the western European market in 2022 (Jahresbericht Agrarwirtschaft 2022, p. 18). In the final months of 2022, prices started to fall again on account of lower gas prices and adequate supply on the market. This trend could result in a slight increase in demand among farmers, especially for nitrogen fertilizers. The German Fertiliser Application Ordinance (DüV) is likely to have the opposite effect. As a consequence of the amendments to the DüV in 2020, Germany's federal states had until November 2022 to update their lists of nitrate-contaminated areas ("red areas") (https://www.bmel.de/DE/themen/

landwirtschaft/pflanzenbau/ackerbau/neuausweisung-belasteter-gebiete.html). The number of red areas is expected to rise, further restricting the use of fertilizers and leading to another drop in fertilizer sales in 2023.

Sales of crop protection products decreased by around 7.7% in 2022 (DRV, Jahresbericht Agrarwirtschaft 2022, pp. 18–19). Strained supply chains led to overall product scarcity on the market. Average crop protection prices increased by around 14%, placing them well above the level seen in the previous year (Destatis, Index of purchase prices of the means of agricultural production, Genesis 61221-0001). The use of crop protection products depends first and foremost on weather conditions and their consequences, such as crop diseases and pest infestations. Assuming largely unchanged conditions such as cultivation structure, weather conditions and prices, the use of crop protection is expected to continue decreasing structurally in 2023 due to social and political factors. The European Commission and the German federal government, for instance, both want to further reduce the use of crop protection products. In mid-2022, the Commission published a proposal for a new EU crop protection use regulation (Sustainable Use Regulation – SUR). The regulation calls for a 50% reduction by 2030 and a total ban in all nature reserves (DRV, Jahresbericht Agrarwirtschaft 2022, p. 19).

The seed market is mainly influenced by the development of land under cultivation for grain, corn and rapeseed. All in all, land available for cultivation in Germany was slightly higher than in the previous year in 2022 (Destatis, Field crops and grassland, acreage, 2022, 23 January 2023). As a result, seed sales in the industry are likely to have also seen stable or slightly rising development in 2022. Seed prices increased by 17.5% year on year in 2022 (Destatis, Index of purchase prices of the means of agricultural production, Genesis 61221-0001). Assuming largely constant areas under cultivation and normal weather conditions, seed sales in 2023 should be on a par with the previous year.

Feedstuff production fell by 4.4% nationwide in the marketing year 2021/22 to 22.86 million tonnes of mixed feed. By animal species, roughly 9.06 million tonnes were attributable to pigfeed, a decrease of 7.7% year on year. The clear rise in agricultural input costs and stricter regulatory requirements stood in contrast to slaughter animal prices that were not fully sufficient to cover costs. The 4.3% decline in cattle feed to 6.84 tonnes is mainly attributable to sufficient levels of basic feedstuff from the 2021 harvest. By contrast, production volumes of poultry feed (6.37 million tonnes) as well as horse feed and other mixed feed (0.59 million tonnes) were roughly on a par with the previous year (DRV, Jahresbericht Agrarwirtschaft 2022, p. 29 et seq.). At the end of 2022, feedstuff prices were 38.1% higher than the previous year's level (Destatis, Index of purchase prices of the means of agricultural production 2022, Genesis 61221-0001). In pig farming, rising agricultural input prices, the persistent spread of animal diseases such as African swine fever and lower consumer demand have started leading to a clear reduction in stocks in the short to medium term. According to the Federal Statistical Office of Germany, the number of pigs fell by 10.2% year on year to 21.3 million animals as at 3 November 2022. Cattle stocks are likely to remain relatively constant in the near future, with a slight increase generally forecast for poultry. However, the latest outbreaks of avian influenza and the associated bans on the reintroduction of poultry have led to a decline in feedstuff sales. Against the backdrop of an overall reduction in animal stocks, slightly negative market development can be expected in 2023 (DRV, Jahresbericht Agrarwirtschaft 2022, p. 31).

Development of agricultural equipment

The economic situation of German farmers saw clear improvement in the marketing year 2021/22 compared to the previous year, especially at crop and dairy farms. On average, earnings were roughly 49% higher year on year at professionally run farms. The increase is primarily attributable to short-term price hikes and therefore higher producer prices on account of global supply shortfalls rather than improved competitiveness. In the current year, 2022/23, producer prices are expected to be more stable for most agricultural products, which is likely to lead to lower earnings year on year in the marketing year 2022/23 that are nevertheless above the long-term average (DBV, Situationsbericht 2022/23, p. 170 et seq.).

At the same time, the economic barometer for agriculture published by the German Farmers' Association (Deutscher Bauernverband – DBV), which measures sentiment in the agricultural sector, indicated clear improvement at the start of the year. The index climbed by 8.8 points year on year to 14.9, a level last seen in mid-2021. However, the sentiment indicator remains a snapshot, according to the DBV, and mainly reflects the previous year's improved earnings (DBV, Konjunktur- und Investitionsbarometer Agrar, January 2023).

Agricultural equipment manufacturers' revenues were robust. According to estimates by the VDMA (German Mechanical Engineering Industry Association), the industry's revenues increased by 18% to €12 billion in 2022, thereby setting a new record. Nevertheless, agricultural machinery trading was tense in 2022 on account of shortages and logistics bottlenecks that are gradually easing (VDMA Agricultural Machinery Association, press release 27 February 2023, Landtechnikindustrie setzt erstmals mehr als 12 Milliarden Euro um).

At 34%, the general propensity of farmers to make investments was slightly lower in the first half of 2023 than in the previous year (37%). However, the planned investment volume for the first six months of 2023, at €5.8 billion, is clearly higher than in the same period of the previous year (first six months of 2022: €5.0 billion). Farmers are focusing on investments in renewable energies and land purchases. By contrast, machinery, equipment and farm buildings are planned less frequently and are generally stagnant in terms of volume (DBV, Konjunktur- und Investitionsbarometer Agrar, first and second quarter of 2023, pp. 5–6).

Business performance

Cefetra Group Segment

In the Cefetra Group Segment, BayWa acts as a supply chain manager for agricultural products – from purchasing and logistics to distribution. The main customer groups are grain and oil mills, producers of starch and feedstuff, malt houses and breweries, as well as makers of baked goods, biofuel and spirits.

In 2022, the Cefetra Group's trading environment was characterised by tremendous supply insecurity. Lower grain availability on account of the war against Ukraine and heat waves in parts of Europe and the US led to uncertainty on commodity exchanges, which caused extreme price increases for nearly all types of grain in some cases, especially in the first half of 2022. Prices of wheat, corn and rapeseed saw increases of between 40% and 60% at times in the first five months of the reporting year. After Ukraine and Russia agreed on a grain export deal, prices began to fall from June onward. Nevertheless, the commodity exchanges remained volatile and posted above-average prices. The Cefetra Group was able to benefit greatly from the trade opportunities resulting from these conditions in the reporting period.

The Cefetra Group Segment's grain and oilseed handling volume fell by around 13% to €16.2 million in the financial year 2022. This development was due to weaker demand for feedstuff, especially in the Benelux countries, and to the limited volume of exports from Ukraine. In addition, trade activities were negatively impacted by higher logistics costs. Despite the tense market situation, the Cefetra Group continued being able to make deliveries thanks to a broad supplier network and access to numerous procurement markets. To strengthen its sales region within the traditional feedstuff and grain trade business, especially in the United Kingdom and Ireland, the Cefetra Group acquired two granaries in Scotland for around €8.3 million in the reporting period. These grain processing and storage facilities – which also dry, clean and analyse grain – give the Cefetra Group access to the infrastructure it needs to be active in the most important grain-growing regions of Scotland, allowing Cefetra to expand its customer portfolio and become a key supplier for whisky producers.

Expansion and product diversification of the portfolio in the higher-margin specialities business have evolved into the primary drivers of earnings in the Cefetra Group Segment in recent years. The subsidiary Royal Ingredients Group B.V. has seen the strongest growth in earnings, thanks in particular to the expansion of sales and distribution activities in the US. The ventures established in 2021 – including the Sedaco trading centre in Dubai and Cefetra Dairy, which extends the range of specialities to include dairy products and alternatives – are developing according to plan. Cefetra Dairy succeeded in already generating a positive earnings contribution in the reporting year. In the second quarter of 2022, the Cefetra Group further expand its specialities business by taking over a majority stake in the nut and dried fruit trader Heinrich Brüning GmbH, registered in Hamburg, Germany.

To support the BayWa Group's sustainability efforts, the transport logistics activities of the subsidiary Cefetra B.V. in the Netherlands were converted to fossil-free diesel fuel with effect from 1 January 2022. As a result, the carbon footprint attributable to logistics at the subsidiary Cefetra B.V. is now 80% to 90% lower, bringing it one giant step closer to achieving the Group's target of being climate neutral by 2030.

Driven by market factors, the Cefetra Group Segment's revenues increased by 22.3% in the reporting year to stand at €6,111.2, following €4,996.3 million in the previous year. EBIT rose by 53.4% from €38.8 million in the previous year to €59.5 million in the reporting period, thanks primarily to the expansion of the higher-margin specialities business and further product diversification in sustainable products, as well as high volatility and price increases in the commodities business.

Agri Trade & Service Segment
The Agri Trade & Service Segment comprises the agricultural input business, the collecting of agricultural products and grain and oilseed trade activities, primarily in Germany and Austria. Aside from the fundamentally tense global food supply situation, the dominant factors in the Agri Trade & Service Segment in the financial year 2022 were rising prices for agricultural products and agricultural inputs alike. The war against Ukraine further strengthened already existing market-driving forces. Nevertheless, it was possible for BayWa to increase EBIT despite a generally difficult market situation overall and outperform its guidance by a clear margin. Product availability was a major factor in the Group's financial success and was able to be ensured through proactive inventory and purchasing management. As grain resources around the world have been scarce for a number of years and supply chains are under strain, the BayWa Group had already been operating on the basis of limited supply and high prices before the war against Ukraine, and was positioned accordingly.

In the agricultural input business, the BayWa Group's sales of fertilizers rose by around 1.1% year on year to stand at 2.3 million tonnes in the reporting period. Agricultural customers' concerns about supply bottlenecks and additional price hikes led in some cases to early stockpiling for the fertilizer season 2023. Forward-looking purchasing and high fertilizer prices on the whole led to above-average trade margins. As in the fertilizer market, agricultural customers found themselves confronted with higher prices and supply issues when it came to crop protection products. Hot and humid weather in southern Germany also led to increased demand for fungicides. Thanks to an extensive supplier network, BayWa was able to keep its customers supplied with crop protection products, expand its market share and increase income by a clear margin. In the seed business, the expansion of the product portfolio to include high-margin exclusive varieties (oleaginous fruits) and private brands is having a positive effect. BayWa's seed sales increased by 1.7%. In terms of feedstuff, BayWa managed to keep its sales volume on a par with the previous year, thanks largely to positive development in complementary ranges, especially private brands.

In trade involving agricultural products (grain and oilseed), trading volume almost matched the previous year, coming in at 8.2 million tonnes in 2022. While grain volume saw a rise of 3.3%, oilseed volume fell by 16.5% due to catch-up effects from 2020 and anticipatory effects from 2022 that manifested themselves in 2021. Harvest collection figures for the grain year 2022/23 at the BayWa Group are roughly on a par with 2021/22, with only corn falling short of the very good previous year. The grain maize harvest saw losses due to heat and dry conditions. Intelligent trading portfolio management in the face of volatile prices that nevertheless increased on the whole enabled the company to participate in market trends and generate above-average margins in product trading. What is more, the optimisation of trade management and distribution processes in domestic grain trading had a positive effect in the reporting period. As a result, the contracts concluded in 2021 were reflected in earnings in the reporting year and made a major contribution to the positive performance.

All in all, revenues in the Agri Trade & Service Segment were up by 37.6% to €5,750.7 million. There was a sharp rise in EBIT compared to the previous year, of €92.4 million to €104.7 million (2021: €12.3 million).

Agricultural Equipment Segment
The Agricultural Equipment Segment performed extremely well in the financial year 2022, exceeding the previous year's earnings. The cautious forecast at the start of the year – especially for new machinery sales – failed to materialise, and the segment succeeded in raising its sales figures.

This positive development was chiefly due to farmers' ongoing willingness to invest due to good harvest yields and the availability of new machinery thanks to manufacturers' successive handling of the production backlog caused by component shortages and the Covid lockdown in 2021. The situation resulted in additional opportunities to serve customers at short notice, particularly in the first half of the year. It was also possible to process and invoice the order backlog from 2021. The Agricultural Equipment Segment sold a total of 5,025 new machines in the reporting period, 52 more than in the financial year 2021. Agricultural machinery price increases announced by manufacturers are additionally likely to have led to anticipatory effects. Likewise, the "Investitionsprogramm Landwirtschaft" (investment programme for agriculture; also known as "Bauernmilliarde" – farmers' billion) had a supportive effect. At 1,724 tractors, sales figures were lower in the used equipment business (2021: 2,119 tractors). In the previous year, the used equipment business had benefited from a short supply of new machinery.

The service business saw brisk demand for servicing and spare parts in the financial year 2022. This positive development was attributable to a variety of factors, including the above-average registration figures in past years. In addition, BayWa succeeded in meeting demand despite the pandemic and largely compensating for higher costs by raising prices. Beyond that, BayWa increased revenues in online trade by just under 25% by expanding product ranges.

Along with its core business in Germany and Austria, BayWa Agricultural Equipment's international business at the Dutch subsidiary Agrimec Group B.V. and CLAAS International (Canada) also reported clear increases in revenues and EBIT. In addition, the subsidiary CLAAS International opened its sixth location – in Medicine Hat, Alberta – in the first quarter of 2022.

One important strategic focal point in the reporting year involved leveraging synergies in the Agri Trade & Service and Agricultural Equipment Segments by building new integrated Service Center Agricultural Equipment and Machinery and consolidating existing ones to provide both segments' customer groups, which are largely identical, with comprehensive service along the value chain. As a result, two new Agricultural Equipment service centres opened in the reporting period: in Gaden (near Abensberg) and in Großostheim (near Aschaffenburg), both in Germany. In Nürtingen, Germany, construction of a new combined location began in June.

Overall, the Agricultural Equipment Segment again surpassed the previous year's record revenues of €1,909.0 million – this time by 8.8% – with a figure of €2,076.5 million. EBIT rose to €70.2 million in the reporting period, up from €48.6 million in the previous year.

Global Produce Segment

The Global Produce Segment, which covers the entire fruit and vegetable marketing value chain, was influenced by difficult overall conditions in the financial year 2022. Key factors included rising inflation, higher energy costs, geopolitical uncertainty and a resulting noticeable decline in consumer spending on fruit and vegetables. At the same time, the availability of goods was high in the market due to remaining stocks from the previous year's harvest. Because this development led to noticeable price pressure, it was not possible to pass the higher energy and logistics costs in the Global Produce Segment onto retailers. As a result, they had an adverse effect on trade margins in the segment.

At the New Zealand subsidiary T&G Global Limited (T&G Global), unfavourable growing conditions due to the La Niña weather pattern, as well as a pandemic-related shortage of harvest workers, acted as a further specific cause of lower marketing volumes. In addition, the export business encountered sluggish demand in target markets such as China, where trade was negatively influenced by the country's zero-Covid policy, along with interruptions in the supply chain.

Europe saw a clear change in consumer behaviour compared to the early days of the coronavius pandemic, with consumers spending less on fruit and vegetables in particular as a result of the sharp rise in energy costs. Against this backdrop, German producers, wholesalers and retailers were forced to offer discounts and focus on less expensive products from local regions.

In addition, the general costs and price increases fuelled a trend towards substituting more affordable regional products for premium fruit varieties on European markets. The trend was mainly apparent with regard to the marketing of exotic fruits and was therefore reflected in the business performance of TFC Holland B.V. (TFC). Moreover, logistics bottlenecks led to higher costs, since it sometimes became necessary to stock up capacities at much higher prices on the spot market.

The above factors resulted in a clear decline in trade margins in the Global Produce Segment, even though apple marketing volumes increased by around 8%. However, it should be noted that part of this high marketing volume was sold at low prices in third countries outside of Europe in order to clear stocks. Furthermore, the segment recorded a nearly 48% drop in soft and stone fruit sales. By contrast, sales of tropical fruit and vegetable fruits rose by just under 3% and roughly 8%, respectively.

The sale of the majority stake in the climate-controlled greenhouse in the United Arab Emirates (UAE) to Pure Harvest Smart Farms, a local fruit and vegetable producer, closed on 31 July 2022, resulting in a positive earnings effect of around €3 million. The climate-controlled greenhouse in Al Ain was designed from the start to be a pilot project with the aim of testing a new business model for a sustainable global system of supplying food. BayWa intends to use the experience it has gained to continue participating in infrastructure projects of this nature going forward.

In December 2022, the modernisation and expansion of the organic packaging station at the German fruit location in Ravensburg was also completed. With a new sorting facility and three additional packaging lines, BayWa is strengthening its organic marketing activities and further expanding its plastic-free packaging capacities.

Overall, the Global Produce Segment generated revenues of €921.3 million in the reporting period, following €960.7 million in the previous year. EBIT decreased by €21.5 million year on year in 2022 to stand at €21.1 million (2021: €42.6 million). The decline was attributable to cost increases throughout the supply chain. The higher procurement costs for exotic fruits had a particularly negative impact here. Since it was not possible to pass the expense on to customers, trade margins were much lower in the reporting period.

Building materials business unit

Market and industry development 2022/23

Development of building materials
The German construction sector faced a difficult environment in 2022. A positive trend in the industry's indicators during the first quarter of the year was followed by a pronounced downturn from April onwards. International supply chain problems, the war in Ukraine, which led to a further hike in already high building materials prices, rising inflation and the upturn in interest rates had an increasingly negative effect on the construction industry in Germany in the reporting period.

Overall, the German construction sector saw a nominal rise in revenues of around 12% year on year. Adjusted for price increases, however, this amounted to a decline of roughly 5%. Along with supply chain problems, advancing energy prices also pushed up the cost of building materials. Although the supply chain situation eased and most producer prices for building materials fell in the second half of the year, producer prices for a large number of building materials were above the previous year's level at the end of 2022 (HDB, press release of 22 December 2022, p. 3). For example, bitumen recorded a year-on-year increase of around 7% in December 2022, while cement was up by almost 27% and asphalt mix by almost 31% (Federal Statistical Office of Germany, Baustatistischer Rundschreibendienst, 20 January 2023). These developments are affecting all three sectors of the construction industry: residential, commercial and public.

Residential construction was hit by a decline of around 4% in real terms in 2022, predominantly due to higher prices for building materials. In addition, the initially unclear rules on future KfW subsidies for energy-efficient new builds and the renovation of housing stock caused significant unease among market players, prompting them to hold back with building contracts. The interest rate turnaround in the course of 2022 has put an end to the historically low mortgage rates that were a key driver of new housing construction in recent years. As a consequence, construction loans have become much more expensive. During the 12 months of 2022, the interest rate for mortgages of ten years or longer more than tripled to over 4% (HDB, press release of 22 December 2022, p. 2).

Commercial construction saw a fall in revenues of around 5% in 2022 (after adjustment for price changes). As in the previous years, there was a drop in the number of permits for new buildings such as factories and workshops. In the commercial segments, soaring gas and oil prices are leading to more investment in sources of green energy than in new construction projects (HDB, press release of 22 December 2022, p. 3).

Revenues from public-sector construction also decreased in 2022 due to higher building costs, falling by 6% in real terms. Planned investments came up against rocketing construction prices, meaning that many projects were not implemented (HDB, press release of 22 December 2022, p. 4). The German federal government failed to achieve its investment targets in areas such as infrastructure (ZDB, press release of 6 December 2022, p. 6).

According to the ifo Institute's economic survey from November 2022, the construction industry is also being held back by the shortage of skilled labour, with 38% of companies citing this factor as a hindrance to their production activities. There is a lack of skilled construction workers and, above all, of construction engineers (HDB, press release of 22 December 2022).

Although the German construction sector began 2023 with a historically high order backlog, its revenues are expected to decline by between 6% and 7% in real terms due to persistently high inflation and the increased cost of construction loans (HDB, www.bauindustrie.de, 18 January 2023; ZDB, press release of 6 December 2022, p. 2). As the year progresses, the capacities built up in recent years will no longer be utilised, which could lead to competitive pressure among companies (ZDB, press release of 6 December 2022, p. 2).

Sustained high inflation, spiralling mortgage rates and the related rise in the cost of construction loans (ZDB, press release of 6 December 2022, pp. 2–3) are likely to thwart investment in new housing projects in 2023. Of the 400,000 new residential units planned by the German government each year, no more than 242,000 are expected to be completed in 2023 (Handelsblatt.de, Mehr Wohnungen ab 2024?, 18 January 2023). Demand for renovation work and the return of special depreciation arrangements for the construction of rental apartments should have a positive effect (ZDB, press release of 6 December 2022, p. 4). However, this will not compensate for the expected fall in investment in new builds (HDB, www.bauindustrie.de, 18 January 2023; ZDB, press release of 6 December 2022, p. 4).

In the commercial sector, revenues are predicted to decrease by between 4% and 6% in real terms in 2023 (HDB, www.bauindustrie.de, 18 January 2023; ZDB, press release of 6 December 2022, p. 5). Although rising investments – including those by Deutsche Bahn – are likely to boost activity, the hike in construction prices caused by factors such as high borrowing costs will have a sustained negative effect on demand in the commercial sector. As a consequence, revenues are forecast to drop in real terms in 2023 (ZDB, press release of 6 December 2022, p. 5).

The outlook for public-sector construction depends on the extent to which the upturn in interest rates and soaring government debt lead to the consolidation of public finances being prioritised and to investments being postponed (HDB, press release of 22 December 2022, p. 4). Revenues in this sector are expected to fall by between 4.5% and 5% in real terms in 2023 (ZDB, press release of 6 December 2022, p. 6; HDB, www.bauindustrie.de, 18 January 2023).

Business performance

Building Materials Segment

BayWa recorded a strong financial year in its Building Materials Segment in 2022. Stable construction activity and favourable weather conditions in the spring allowed an early start to the season in the reporting period, and ensured high demand on the relevant markets in building materials trade activities. Above all, the building construction, roofing, drywall and civil engineering segments reported a substantial rise in revenues thanks mainly to price increases across all product groups and persistently high demand. The German federal government's ambitious climate targets mean that renovation is becoming an increasingly important area, as shown primarily by the growing demand for insulation materials in the reporting period.

BayWa responded to the limited availability of goods due to the energy crisis with efficient use of warehouse infrastructure, good inventory management and a diversified and stable supplier network. As a result, BayWa was able to deliver products almost without interruption and successfully generated higher trade margins thanks to its competitive advantage, despite the temporary low availability of products on the market. The specialisation in civil engineering and broadband that was rolled out in the reporting year also helped make this possible. Thanks to its specialisation and geographical diversity, the Building Materials Segment was able to anticipate market developments at an early stage and secure the availability of products, having previously introduced sale and product range specialisations in wooden construction, formwork equipment, prefabricated components, metal roofing, flat roofing, building components and pallets.

BayWa Bau Projekt GmbH was also able to make a positive contribution to business development. The reporting period saw the completion of two projects: Novum in Burgkirchen and Lanzenhaarer Weg in Sauerlach, both in Germany. It was possible to market all the residential units in the latter development during the reporting year. Fifteen new projects were acquired for the project pipeline in 2022.

Furthermore, BayWa increased its investment in Tjiko GmbH, a manufacturer of industrially prefabricated wood bathroom modules. The new stake of 67% made BayWa the majority shareholder and enabled it to fully consolidate Tjiko GmbH's business with retroactive effect from 1 January 2022.

One of BayWa's private brands, Valut, repositioned itself on the market in 2022 by relaunching its website www.valut.de. The new internet presence of the roofing materials provider makes planning and purchasing roof products easier thanks to the addition of user-friendly special functions that sharpen Valut's brand profile – and once again set BayWa apart from its competitors.

As part of efforts to position the company as an integrated multi-specialist, BayWa has made further progress in linking online and stationary sales channels. Initial customer systems have also been digitally connected to BayWa's inventory management system, which simplifies the wholesale ordering process.

Overall, the Building Materials Segment's revenues increased by 12.6% to €2,346.9 million in 2022, mainly due to price effects. EBIT fell slightly year on year to €70.4 million, primarily as a result of lower sales of building materials and higher investments in the expansion of BayWa's private brands.

Innovation & Digitalisation Segment

Market and industry development 2022/23

Digital applications for smart farming and precision farming, up to and including trading platforms, are playing an ever greater role in supporting day-to-day work processes and in planning and managing operations in agriculture.

According to a representative survey of 500 German farmers in March 2022 by the digital association Bitkom (Branchenverband der deutschen Informations- und Telekommunikationsbranche e. V.), 79% of farms are already using Digital Farming applications. The most common ones are GPS-controlled agricultural machines, which are deployed by more than half of German farms. At the time of the survey, one in six farms also had concrete plans to invest in Digital Farming applications in the next 12 months. The survey identified particularly significant potential in applications for the site-specific distribution of fertilizers and crop protection products, which are currently only used by 30% and 23% of farms respectively. Satellite data and algorithms help calculate figures such as specific fertilizer requirements, thereby promoting the conservation of resources and increasing harvest yields, to name just two benefits. Moreover, most of the farmers questioned believe that digital technologies and processes can make an important contribution to improving efficiency in agricultural production while also protecting the environment and the climate (Bitkom e. V., Die Digitalisierung der Landwirtschaft, May 2022).

The general shift of retail sales to digital channels has continued in recent years. Yet in 2022 online retailers were unable to match the high sales achieved in the previous year. Following a strong start to the year with double-digit growth rates, the online retail sector experienced an abrupt downturn into negative territory when the war against Ukraine broke out. The rest of 2022 was marked by noticeably muted consumer spending. According to Bundesverband E-Commerce und Versandhandel Deutschland e.V. (German e-commerce and distance selling trade association – bevh), revenues from interactive retail declined by 5.2% overall to €102.7 billion (2021: €108.3 billion). bevh expects e-commerce to grow by around 4.8% in the financial year 2023 (bevh, Umsätze im E-Commerce mit Waren und Dienstleistungen erneut über 100 Mrd. Euro, January 2023).

The B2B e-commerce segment, which mainly comprises digital business models of manufacturers and wholesalers, is much larger. This market environment is also seeing the significance of online shops and marketplaces increase every year. According to B2B-Marktmonitor 2022, a joint study by ECC KÖLN (a subsidiary of IFH KÖLN – Institut für Handelsforschung e. V.) in cooperation with Adobe, Creditreform and Intershop, B2B e-commerce revenues in Germany's wholesale sector alone amounted to around €591 billion in 2022 (2021: €493 billion). This total also includes conventional digital platforms that are used to share information, place orders and create invoices. Professional B2B online shops and marketplaces are becoming a more and more prominent feature in the wholesale sector, with revenues on these channels growing by an average of 25.7%

between 2012 and 2021 to roughly €209 billion. An estimated €280 billion was generated through B2B e-commerce in 2022, equating to a 16.5% share of total wholesale revenues. ECC's experts predict that this segment will remain an important growth driver in the years ahead (ECC KÖLN with Adobe, Creditreform and Intershop, B2B-Marktmonitor, October 2022).

Business performance

The Innovation & Digitalisation Segment pools all activities of the BayWa Group in its Digital Farming and eBusiness divisions. Digital Farming mainly includes the NEXT Farming PRO and NEXT Farming LIVE software products, as well as analyses, advisory services and hardware components from FarmFacts GmbH. Added to this are satellite-based products for site-specific cultivation from the Group company VISTA Geowissenschaftliche Fernerkundung GmbH, which are also marketed via FarmFacts GmbH. The eBusiness division covers nearly all of BayWa's online sales activities. Acting as a service provider for the operating segments, it is responsible for the availability and enhancement of the online channels. The costs incurred are not matched against revenues and earnings, since the latter are attributed to the operating segment that is home to the relevant product sold. Starting in 2023, the main costs arising from the eBusiness division will be allocated directly to the corresponding operating segments. In addition, general expenses for the technical advancement of the eBusiness division will be reported under Other Activities in future.

In the financial year 2022, the Digital Farming division was not quite able to match the revenues of the previous year. The volatility and unease on agricultural markets made farmers reluctant to invest in new software. Software licences and software maintenance contracts accounted for 40% of revenues, followed by services (37%) such as soil sampling and satellite-based products for site-specific cultivation, including analyses and advice. Sensors, measurement systems for soil analysis programmes and other hardware contributed just under 23% of revenues.

The eBusiness division benefited from higher demand in B2B business and recorded tremendous growth across almost all ranges. Revenues generated through BayWa's eBusiness channels rose by almost 52% in the reporting year thanks to the continuous expansion of online systems and technical developments, as well as an extended product range.

All in all, revenues in the Innovation & Digitalisation Segment fell to €10.4 million in 2022 (2021: €11.1 million), excluding online revenues through eBusiness channels, which are attributed to the corresponding segment. EBIT amounted to minus €11.4 million in the reporting period, as expected, following the figure of minus €20.2 million posted in the previous year. In 2021, impairments on property, plant and equipment, and intangible assets, such as discontinued IT applications, led to higher negative EBIT, which was not repeated in the reporting year. Cost reduction measures were also successfully implemented in 2022.

Development of Other Activities in 2022

At €12.0 million, the Other Activities Segment's revenues in the reporting year were on a similar level to the previous year (2021: €10.9 million). EBIT resulting from Other Activities consists of the Group's administration costs, as well as consolidation effects; in 2022, it came to minus €103.1 million, following minus €81.1 million in the previous year. The decline in earnings compared to 2021 is primarily due to an increase in D&O insurance premiums, as well as higher personnel costs as a result of the greater number of employees and higher bonus payments. Additional costs were also incurred for the Group-wide renewal of the digital inventory management system, the expansion of IT security and the dismantling of company buildings.

Assets, financial position and earnings position of the BayWa Group

Assets position

Composition of assets

In € million	2018	2019	2020	2021	**2022**	Change 2022/21
Non-current assets	2,476.9	3,090.5	3,538.9	3,771.3	4,390.9	16.4%
thereof: land and buildings	827.2	1,377.1	1,456.4	1,481.3	1,580.4	6.7%
thereof: technical facilities and machinery	342.9	411.3	642.4	753.4	1,102.7	46.4%
thereof: investments	204.5	218.3	194.0	254.9	229.0	- 10.2%
Non-current asset ratio (in %)	33.0	35.2	39.5	32.0	33.8	–
Current assets [1]	5,034.6	5,691.4	5,411.1	8,000.1	8,585.5	7.3%
thereof: inventories	2,909.5	3,286.4	2,939.2	4,213.0	4,756.8	12.9%
thereof: assets from derivatives	220.1	145.7	457.4	1,049.1	611.2	- 41.7%
Current asset ratio (in %)	67.0	64.8	60.5	68.0	66.2	–
Total assets	**7,511.5**	**8,781.9**	**8,950.0**	**11,771.4**	**12,976.4**	**10.2%**

1 Including non-current assets held for sale/disposal groups

The BayWa Group's total assets stood at €12,976.4 million as at 31 December 2022, up by €1,205.0 million, or 10.2%, on the previous year's figure. The increase is attributable to both non-current and current assets, with the main drivers being inventories and property, plant and equipment, along with current receivables and other assets.

Non-current assets rose from €3,771.3 million at the beginning of the financial year to €4,390.9 million as at 31 December 2022. This corresponds to growth of €619.6 million or 16.4%.

The largest increase (€505.5 million in total) was recorded in property, plant and equipment and relates to land (up €99.1 million) and in particular technical facilities and machinery (up €349.3 million). This reflects repair and maintenance investments, as well as the reclassification of wind farms and solar parks from inventories. If these installations are transferred to the IPP business entity in the Renewable Energies Segment after completion, corresponding additions are made to land and technical facilities. There was also a rise in prepayments and assets under construction of €48.1 million.

Other items that saw increases are participating interests recognised at equity (up €36.1 million; due to acquisitions) and intangible assets (up €24.8 million). A key factor here is the goodwill resulting from the companies purchased in the financial year 2022. Finally, deferred tax assets were also up year on year, climbing by €42.3 million.

The opposite trend was shown by investments, which were €25.9 million lower than at the end of the previous year. The decline is attributable in particular to the fair value measurement of the shares in Raiffeisen Bank International, Vienna, Austria (minus €40.5 million), but was partially offset by the rise in the number of shares in affiliated companies and the increase in other loans.

Current assets grew by €590.4 million, or 7.4%, year on year, totalling €8,569.1 million as at 31 December 2022. The first main driver of this growth is inventories (up €543.8 million), and especially the €715.8 million rise in the volume of inventories as a result of price increases in the financial year 2022, which was somewhat compensated for by the €274.3 million decrease in unfinished goods. This decline is due in particular to projects in the Renewable Energies Segment that were still in progress at the end of 2021 and completed in the financial year 2022. The projects in question were either sold or transferred to the IPP business entity. The second main driver is other current receivables and other current financial assets (plus €481.4 million), with the largest increase being recorded in trade receivables – primarily due to the price trends seen on the energy and commodity markets in the reporting year. Other current non-financial assets are also higher than in the previous year (up €152.0 million). The only significant offsetting effects are from cash and cash equivalents (minus €177.3 million) and assets from derivatives (minus €437.9 million); the latter chiefly reflects the offsetting of assets and liabilities in energy trading in the Renewable Energies Segment since the financial year

2022. The decline in cash and cash equivalents is mainly attributable to the use of all cash – where possible – to reduce financial liabilities within the scope of cash management at the BayWa Group.

The BayWa Group places an emphasis on ensuring matching maturities in the financing of assets. Current liabilities of €5,570.3 million in total – consisting of short-term debt, trade payables, financial and non-financial liabilities, tax, other liabilities along with current provisions and liabilities from disposal groups – were offset by current assets and assets held for sale/disposal groups of €8,585.5 million. There was roughly 169% coverage for non-current assets amounting to €4,390.9 million through equity and long-term borrowing of €7,406.1 million. Ensuring matched maturities in financing is an important quality criterion for the financing partners of BayWa in the context of raising funds.

Financial position

Financial management

The aim of financial management within the BayWa Group is to provide the cash and cash equivalents required for the purpose of conducting regular business at all times. This task includes hedging against interest rate risk, currency risk and merchandise-related market risks by using suitable derivative instruments.

Currency futures and swaps are used selectively to hedge receivables and liabilities denominated in a foreign currency. These currency futures and swaps serve exclusively to hedge existing and future receivables and liabilities from underlyings in the purchase and sale of merchandise within the scope of customary business operations. Hedging transactions in the BayWa Group are designed to reduce the risks associated with fluctuating exchange rates. The volume of open positions arising from the respective underlyings and the resulting cash flows forms the basis for FX hedges. Terms reflect those of the underlyings.

Within the BayWa Group, financial management has been set up as a service centre for the operating business sections and not as a profit centre in its own right. In accordance with this conservative approach to providing services, the use of fungible financial products to generate original profit contribution in financial operations has been waived. In particular, there are no speculative risk positions in our financial operations.

Day-to-day financial management is focused on liquidity management through cash pooling within the whole Group for the same-day provision of liquidity. At the same time, incoming payments and bank balances are used to reduce financial liabilities. Corporate Treasury uses suitable IT systems and appropriate treasury management software for this purpose.

The procurement of funds is organised centrally, with the exception of the activities in New Zealand, the Netherlands, Austria and eastern Europe. Corporate Treasury is responsible for the centralised monitoring of Group-wide financial exposures.

Financial management is subject to requirements imposed by an internal control system, which includes the documentation of transactions, a hierarchy of approval and resolution procedures, the principle of dual control as well as the segregation of Treasury front, middle and back offices.

To strengthen its financial profile, the BayWa Group changed its financing strategy in the financial year 2021 and took out a sustainable syndicated loan in the amount of €1.7 billion in September of that year, which was increased to €2.0 billion in 2022. The conditions for the loan are linked to the sustainability rating of the agency MSCI. An increase in the present rating from AA to AAA reduces the current interest margin. A downgrade increases the interest margin. The new credit line must be used by September 2024 and can be extended twice for one year in each instance. The new syndicated loan replaces the bilateral and unsecured credit lines extended by the participating banks that were payable on a daily basis. At all times, lines of financing were available in an amount sufficient to ensure the business operations of the BayWa Group. By contrast, investments in property, plant and equipment, as well as acquisitions, will continue to be financed from equity and from the proceeds of long-term capital market transactions and other long-term loans. These include issued bonded loans (for the terms and conditions, please refer to Note C.14 of the Notes to the Consolidated Financial Statements), a corporate bond issued in June 2019 (coupon of 3.125%, listed on the Luxembourg Stock Exchange, ISIN XS2002496409, denomination per unit of €1,000, term ends 26 June 2024). The hybrid bond with a volume of €300.0 million issued in October 2017 (ISIN XS1695284114) was terminated in due time and repaid in full at the contractually agreed, first possible repayment date in October 2022. The capital market measures therefore diversify the refinancing portfolio.

In addition, the project companies in the Renewable Energies Segment have access to separate non-recourse financing (without the lenders having access to the BayWa Group's assets and cash flows).

The management of working capital is a focal point at BayWa and comprises the optimisation of working capital as a net figure for current assets less current liabilities.

Interest rate risks inherent in short-term debt are covered by BayWa in the context of its risk management through the use of simple derivative instruments. Long-term interest rates were hedged naturally by issuing bonded loans in 2022, 2021, 2018, 2015 and 2014, as both fixed-interest and variable-interest rate tranches were issued and the interest rate risk was reduced as a result. The fixed coupon of the hybrid bond that was issued led to an increase in the hedge ratio by means of natural hedging.

Around 50% of the total borrowing portfolio is to be secured against interest rate risk through the respective hedging instruments. This partial hedging takes account of the strong, seasonally induced fluctuations in financing requirements.

BayWa evolved from the cooperative sector, with which it remains closely connected through its shareholder structure, as well as through the congruent regional interests of the cooperative banking sector and commerce. Along with its integration into the cooperative financial association, the broad transnational diversification of the bank portfolio and the financial instruments, in particular, lower the financing risk within the BayWa Group.

Capital structure

In € million	2018	2019	2020	2021	**2022**	Change 2022/21
Equity	1,389.1	1,339.0	1,153.6	1,816.1	1,909.0	5.1%
Equity ratio (in %)	18.5	15.1	12.9	15.4	14.7	–
Short-term borrowing [1]	4,047.7	4,377.1	4,865.7	5,323.9	5,570.3	4.6%
Long-term borrowing	2,074.7	3,131.5	2,930.7	4,631.4	5,497.1	18.7%
Debt	6,122.4	7,508.6	7,796.4	9,955.3	11,067.4	11.2%
Debt ratio (in %)	81.5	84.9	87.1	84.6	85.3	–
Total capital (equity plus debt)	**7,511.5**	**8,847.6**	**8,950.0**	**11,771.4**	**12,976.4**	**10.2%**

1 Including liabilities from disposal groups

The BayWa Group's total assets stood at €12,976.4 million as at 31 December 2022 and were therefore €1,205.0 million, or 10.2%, higher than the previous year's figure. The main factors behind this growth are long-term and short-term borrowing, which rose by €1,112.1 million year on year. In addition, equity increased by €92.9 million, or 5.1%, on account of several partially contrasting effects. At €293.3 million, the repayment of the hybrid capital lowered the amount of equity, while the consolidated net result for the year of €239.5 million and the €116.8 million decline in the negative measurement effect from pension and severance pay obligations (recognised in equity) as a result of the upturn in the interest environment following years of low rates contributed to an increase in equity. The latter consists of the €116.4 million change in the fair value of pension and severance pay obligations that was recognised in the financial year 2022, as well as consolidation effects of €0.4 million. The profits from power purchase agreements in energy trade activities in the Renewable Energies Segment that were recognised in equity in the financial year 2022 also had a positive effect on equity in the amount of €119.6 million.

Capital management

The capital structure of the Group is made up of debt and equity. The equity ratio was 14.7% (2021: 15.4%) of total equity at the end of the reporting period. In order to provide a relevant metric, BayWa's capital management uses an adjusted equity ratio. The adjustments concern the reserve recognised for actuarial gains and losses from provisions for pensions and severance pay (including minority interests) of minus €167.7 million

(2021: minus €284.5 million). The reason for this is that this reserve results from a change of parameters not within the company's control when calculating personnel provisions. Adjusted for this effect, the adjusted equity ratio stands at 16.0% (2021: 17.8%). The information as defined in Section 160 para. 1 item 2 of the German Stock Corporation Act (AktG) for treasury shares is included in the Notes to the Consolidated Financial Statements.

For trading companies such as the BayWa Group, a fixed equity ratio is only of limited relevance as a key business figure. In particular, the change in current assets with the storage of inventories in the form of agricultural commodities, as well as the acquisition of project licences and the recognition of wind farms and solar parks under construction in the Renewable Energies Segment, has a direct influence on the balance sheet total – and therefore also on the equity ratio – but actually forms the basis for trading activities in the subsequent year. As a result, the BayWa Group uses equity-to-fixed-assets ratio II as a target in its capital management process. Equity and long-term borrowing should cover at least 90% of non-current assets. As at 31 December 2022, the equity-to-fixed-assets ratio was approximately 169% (2021: 171%).

The debt ratio rose to 85.3% in the financial year 2022 (2021: 84.6%). At the BayWa Group, short-term borrowing is used exclusively to finance short-term funds tied up in working capital. The status of short-term borrowing disclosed at year-end regularly reflects the highest level of utilisation on account of the warehousing of commodities in the agricultural division and/or unfinished products in the Renewable Energies Segment. Short-term borrowing was up by €246.4 million year on year to €5,570.3 million. Along with other current provisions (up €96.4 million) and other current financial and non-financial liabilities (up €154.0 million), the increase relates in particular to the €479.4 million rise in trade payables and liabilities from inter-Group business relationships as a result of the price trends seen on the energy and commodity markets in the reporting year. The change in short-term borrowing is also attributable to short-term debt, which climbed by €251.4 million compared to the previous year to stand at €1,718.7 million. By contrast, there was a sharp decline in liabilities from derivatives, especially from commodity futures, FX and interest rate hedging transactions (down €788.1 million to €364.2 million); this chiefly reflects the offsetting of assets and liabilities in energy trading in the Renewable Energies Segment since the financial year 2022.

Long-term borrowing also grew in the financial year 2022, rising by €865.7 million to €5,497.1 million. The main drivers of this growth are long-term debt (up €842.8 million), primarily due to the increased utilisation of the syndicated loan in the total amount of €1,360.0 million (2021: €935.0 million), and the issuing of a further bonded loan of €152.5 million in the financial year 2022. They contrast with a decline in non-current pension provisions by €185.0 million to €519.8 million owing to higher actuarial interest rates.

Gearing

The BayWa Group's management assesses and manages the capital structure in regular intervals via factors such as the key indicators "Adjusted net debt/adjusted equity" and "Adjusted net debt/EBITDA".

Calculating adjusted net debt involves deducting cash and cash equivalents from short-term and long-term debt at banks. Non-recourse financing arrangements are also deducted despite them carrying interest. They pertain to loans extended to project companies in the Renewable Energies Segment that are solely based on project cash flow instead of the BayWa Group's credit rating. Lenders have no access whatsoever to the BayWa Group's assets and cash flows outside each project company. EBITDA generated by the project companies during the reporting year came to €12.4 million (2021: €33.0 million). Grain inventories for immediate use are also deducted. These inventories could be converted into cash and cash equivalents as soon as they are recognised due to their highly liquid and current nature as well as their daily prices listed on international markets and stock exchanges. Any price risk is fully eliminated by a physical asset for sale, either through concluding a sales agreement with a highly solvent business partner or through a forward contract on the stock exchange. On account of the highly liquid nature of these inventories, the BayWa Group deems it to be appropriate to deduct them as cash and cash equivalents when calculating net debt and the related financial key figures.

In € million	31/12/2022	31/12/2021
Long-term and short-term debt at banks	5,278.8	4,184.6
Less cash and cash equivalents	- 221.8	- 399.1
Net debt	**5,057.0**	**3,785.5**
Less non-recourse financing	- 418.2	- 396.2
Less inventories for immediate use	- 1,208.5	- 1,099.1
Adjusted net debt	**3,430.4**	**2,290.1**
EBITDA	858.8	552.8
Adjusted equity	2,076.7	2,100.6
Adjusted net debt/adjusted equity (in %)	**165.2**	**109.0**
Adjusted net debt/EBITDA	**4.0**	**4.1**

Given the different business models between the BayWa Group's primary trading business and project development, which mainly takes place in the area of renewable energies, gearing is subject to differences in recognition, reporting and review, depending on the business activity. The use of the borrowed funds differs in the two fields of business. Furthermore, borrowing as part of project development is accrued over a longer period of time before the corresponding inflows result from the sale of the projects. Both aspects are taken into account in the calculation of adjusted net debt for trade business. The Renewable Energies Segment's financial liabilities, cash and cash equivalents, and EBITDA generated in the financial year are deducted in the process. The value of the key indicator "Adjusted net debt/EBITDA" should lie between 3.0 and 4.5 for the BayWa Group trade activities and is determined using the following approach:

In € million	31/12/2022	31/12/2021
Long-term and short-term debt at banks	3,246.2	2,469.8
Less cash and cash equivalents	- 86.8	- 238.6
Net debt	**3,159.3**	**2,231.2**
Less non-recourse financing	–	–
Less inventories for immediate use	- 1,208.5	- 1,099.1
Adjusted net debt	**1,950.8**	**1,132.1**
EBITDA	**494.5**	**353.8**
Adjusted net debt/EBITDA	**3.9**	**3.2**

Cash flow statement and development of cash and cash equivalents

In € million	2018	2019	2020	2021	2022
Cash flow from operating activities	- 452.2	- 24.9	675.9	- 583.6	- 337.2
Cash flow from investment activities	- 243.0	- 149.4	- 251.5	- 197.2	- 293.2
Cash flow from financing activities	710.8	282.6	- 482.6	1,009.0	451.5
Cash and cash equivalents at the end of the period [1]	120.6	229.7	168.4	399.1	221.8

1 Including inflow/outflow of funds due to changes in the group of consolidated companies and in exchange rates in the amount of €1.6 million

The cash flow from operating activities came to minus €337.2 million in the financial year 2022, a year-on-year increase of €246.4 million. Based on cash earnings that were €204.6 million higher than in the previous year, this rise was mainly due to a much lower year-on-year increase in inventories, trade receivables and other assets not allocable to investment and financing activities in the total amount of €1,086.2 million. Offsetting this is higher cash outflow of €76.2 million as a result of the decrease in trade payables and other liabilities not allocable to investment and financing activities.

Cash flow from investment activities saw a cash outflow of €293.2 million for the reporting year. As a result, cash outflows for investment activities rose year on year by €96.0 million. Payments for company acquisitions came to €91.1 million (2021: €70.8 million). In the financial year 2022, investments of €379.1 million were made in intangible assets, property, plant and equipment, and investments (2021: €239.0 million), which were offset by incoming payments from the disposal of intangible assets, property, plant and equipment, and investments of €106.0 million (2021: €108.6 million).

The cash flow from financing activities came to €451.5 million in the financial year 2022, a year-on-year decrease of €557.5 million. Cash inflows resulted from the raising of loans in the amount of €1,643.5 million. By contrast, interest payments (€188.6 million) and dividend payments at BayWa AG and its subsidiaries (totalling €82.4 million), and in particular repayments of loans (€516.8 million) and the repayment of the hybrid capital in due time (€300.0 million), resulted in cash outflows.

In an overall analysis of the cash flow from operating activities, investment and financing activities, and in consideration of changes to the group of consolidated companies and changes in foreign exchange rates, cash inflow from operating and financing activities was more than compensated for by cash outflow from investment activities. As a result, cash and cash equivalents at the end of the reporting period came to €221.8 million, which was €177.3 million lower than in the previous year.

Financial base and capital requirements

The BayWa Group's financial base is replenished by funds from the short-term debt for working capital and by funds from operating activities. Investment financing and the ongoing financing of operations have a considerable impact on the capital requirements of BayWa AG, as do the repayment of debt and ongoing interest payments. The overall view of liquidity and debt is determined through the calculation of adjusted net liquidity or net debt and used for internal financial management as well as for external communication with financial investors and analysts. Net liquidity and net debt is derived from the sum total of cash and cash equivalents less bank debt and outstanding loans, as reported in the balance sheet.

Along with the syndicated loan and short-term borrowing, the company also finances itself by way of a multicurrency Commercial Paper Programme, which received its most recent top-up of €500.0 million in 2017, taking it to a total volume of €1,000.0 million. At the end of the reporting period, securities had been issued in euros in the amount of €641.7 million (2021: €720.0 million) with an average weighted residual term of 54 days (2021: 86 days). At the end of the reporting period, €145.8 million (2021: €129.7 million) in receivables had been financed at their nominal value from the ongoing Asset-Backed Securitisation (ABS) Programme.

In December 2022, BayWa AG issued a sustainable bonded loan in the amount of €152.5 million. The purpose of this bonded loan was to partly refinance the hybrid loan terminated in October 2022. The conditions for the loan are linked to the sustainability rating of the agency MSCI. An increase in the present rating from AA to AAA reduces the current interest margin. A downgrade increases the interest margin. The bonded loan has an average term of 4.1 years.

Investments

In the financial year 2022, the BayWa Group invested a total of €618.4 million (2021: €375.8 million) in intangible assets (€86.7 million) and property, plant and equipment (€531.7 million), taking into account the acquisitions made. The investments made in the financial year were primarily for the purpose of repair and maintenance of technical facilities and machinery, buildings, facilities (in construction) and office fixtures and fittings, as modern locations and seamlessly operating facilities are a precondition for efficient logistics processes. The investments in property, plant and equipment also include investments in wind farms and solar parks to expand the IPP portfolio in the Renewable Energies Segment.

Real estate no longer used for operations was sold off wherever appropriate in the financial year 2022. The proceeds accruing from these transactions are used to reduce debt or to finance the Group's growth.

Excluding company acquisitions, roughly 28.5% of total investments in non-current assets at the BayWa Group were accounted for by the Renewable Energies segment. In addition, the Agri Trade & Service Segment accounted for 20.2% of the investments, the Global Produce Segment for 18.2% and the Building Materials

Segment for 10.5%. The remaining 22.6% of the investments were distributed among Other Activities and the Agricultural Equipment, Cefetra Group, Energy and Innovation & Digitalisation Segments.

Earnings position

In € million	2018	2019	2020	2021	**2022**	Change 2022/21
Revenues	16,625.7	17,059.0	16,464.7	19,839.1	27,061.8	36.4%
EBITDA	315.3	403.0	464.8	552.8	858.8	55.4%
EBITDA margin (in %)	1.9	2.3	2.8	2.8	3.2	–
EBIT	172.4	188.4	211.6	266.6	504.1	89.1%
EBIT margin (in %)	1.0	1.1	1.3	1.3	1.9	–
EBT	92.6	79.2	107.6	160.6	319.6	99.0%
Consolidated net result for the year	**54.9**	**65.1**	**59.5**	**128.8**	**239.5**	**85.9%**

The revenues of the BayWa Group increased by a clear margin of 36.4%, or €7,222.7 million, to €27,061.8 million in the financial year 2022. This increase is due to the sustained positive development in all operating business units, specifically to higher revenues in the Renewable Energies (up €2,929.2 million to €6,489.2 million), Agri Trade & Service (up €1,572.0 million to €5,750.7 million), Energy (up €1,215.4 million to €3,343.6 million) and Cefetra Group Segments (up €1,114.9 million to €6,111.2 million). Revenues also increased in the Building Materials (up €262.7 million to €2,346.9 million) and Agricultural Equipment Segments (up €167.5 million to €2,076.5 million). On the other hand, revenues in the Global Produce Segment fell by €39.4 million to €921.3 million. In the Innovation & Digitalisation (down €0.7 million to €10.4 million) and Other Activities Segments (up €1.1 million to €12.0 million), revenues were on a par with the previous year.

Other operating income increased year on year by €88.7 million to €492.9 million. This development was mainly due to higher income from the release of provisions in the amount of €66.2 million (2021: €21.0 million) and foreign exchange gains of €212.7 million (2021: €178.9 million), which were offset by foreign exchange losses of €219.8 million (recognised under other operating expenses). Most of the increase in the income from the release of provisions pertained to a project in the United Kingdom in the Renewable Energies Segment. Because the relevant authorities did not issue the necessary building permit, it was not possible to carry out the project as originally planned. Provisions of €30.3 million therefore had to be released. In parallel, capitalised project rights of €29.3 million were written off. At €111.1 million, other income was also higher than the figure of €83.4 million in the previous year.

In the financial year 2022, the BayWa Group reported an increase in inventories of €370.4 million (2021: €928.8 million), which was chiefly attributable to incomplete wind farms and solar parks in the fields of renewable energies.

The BayWa Group's cost of materials increased by €6,124.1 million to €24,581.2 million in the reporting year as a result of the increase in revenues and due to the higher energy and raw material prices, as well as higher prices overall. Taking into account the higher revenues and the increase in the cost of materials, gross profit rose by €645.8 million to €3,377.1 million in the financial year 2022, corresponding to an increase of 23.6%.

Personnel expenses climbed year on year by €189.1 million to €1,509.5 million. This was mainly due to the company acquisitions in the financial year 2022 and the sustained growth in the Renewable Energies Segment.

At €1,072.0 million, other operating expenses were up by €217.0 million on the previous year's figure of €855.0 million in the financial year 2022. Other operating expenses primarily consisted of expenses due to foreign exchange losses of €219.8 million (2021: €182.8 million), fleet maintenance expenses of €88.1 million (2021: €69.1 million); maintenance expenses of €87.4 million (2021: €79.0 million) and other expenses due to general sales and other costs in the amount of €162.9 million (2021: €111.2 million).

Earnings before interest, tax, depreciation and amortisation (EBITDA) rose by €306.0 million, or 55.4%, to €858.8 million in the financial year 2022 (2021: €552.8 million).

At €354.7 million, amortisation and depreciation at the BayWa Group was €68.5 million higher in the financial year 2022 than in the previous year (€286.2 million). This increase was mainly due to the necessary impairment loss recognised on a wind farm in the Renewable Energies Segment. During the construction of the turbine in the US with an output of 95 megawatts (MW), site-related uncertainties led to a halt in construction work and, in turn, to significant delays and cost increases, which resulted in an impairment loss of €55.6 million. All in all, the BayWa Group's earnings before interest and tax (EBIT) rose by €237.5 million, or 89.1%, to €504.1 million in the financial year 2022.

The financial result comprises income from participating interests, which is allocated to EBITDA and EBIT, and net interest. At €63.3 million, income from participating interests was clearly higher in the reporting year than the minus €3.0 million seen in the previous year. This development was due to the €24.5 million increase in the equity result to €14.2 million and to the €41.8 million rise in other income from shareholdings to €49.1 million. The latter is mainly because of the sale of the Bioenergy portfolio in the Renewable Energies Segment. Net interest fell by €78.5 million to minus €184.5 million in the financial year 2022. This decrease was driven by the €80.4 million rise in interest expenses to minus €202.1 million due to higher interest rates in the financial year 2022. By contrast, interest income, at €17.6 million, was on a par with the previous year's figure of €15.7 million.

The BayWa Group's earnings before tax (EBT) increased by €159.0 million year on year, or 99.0%, to €319.6 million thanks to improvements in earnings in the operating segments Agri Trade & Service (up €76.9 million), Renewable Energies (up €66.1 million), Energy (up €35.3 million), Agricultural Equipment (up €16.2 million), Cefetra Group (up €13.1 million) and Innovation & Digitalisation (up €8.6 million). Earnings fell in the operating segments Global Produce (down €22.9 million) and Building Materials (down €10.3 million). The earnings in Other Activities, along with the consolidation effects presented in the transition, also fell by a total of €24.0 million.

Income tax expense for the BayWa Group came to €80.1 million in the financial year 2022 (2021: €31.8 million), which corresponds to a tax rate of 25.1% (2021: 19.8%). After deducting income tax expense, the BayWa Group generated a consolidated net result of €239.5 million for the financial year 2022, corresponding to an increase of €110.7 million, or 85.9%, compared to the previous year.

The share of profit due to shareholders of the parent company stood at €168.1 million (2021: €70.7 million). Earnings per share (EPS), calculated from the portion of the result attributable to the shareholders of the parent company in relation to the average number of shares outstanding of 35,644,609 (dividend-bearing shares less treasury shares), stood at €4.36 in the financial year 2022 and were therefore significantly above the value of €1.63 in the previous year.

At the end of the reporting period, BayWa AG had significant order volumes that had yet to be fulfilled in the Agricultural Equipment Segment, with an order backlog of €625.7 million on 31 December 2022 (2021: 378.0 million). Of this total, €561.4 million (2021: €309.6 million) was attributable to new machinery, and €53.9 million (2021: €56.4 million) to indoor equipment (farm and animal equipment). This strong increase is the result of significantly lower invoices in sales as a result of the tight delivery situation and the expiry of existing manufacturer conditions. The favourable producer prices at the end of the financial year also served as an investment incentive for farmers. Price increases of up to 20% are included in the higher volume as well.

Financial performance indicators

BayWa orients the short-term management of its corporate divisions with the development of key earnings indicators EBITDA, EBIT and EBT. EBIT acts as the most important financial performance indicator. Key earnings indicators for the segments of the BayWa Group developed as follows in the financial year 2022:

Key financial earnings figures

In € million 2022	Earnings before interest, tax, depreciation and amortisation (EBITDA)	change (absolute)	change (in %)	Earnings before interest and tax (EBIT)	change (absolute)	change (in %)	Earnings before tax (EBT)	change (absolute)	change (in %)
Renewable Energies	364.3	165.4	83.2	239.1	104.1	77.1	161.2	66.1	69.5
Energy	71.3	38.4	> 100.0	53.6	36.2	> 100.0	51.9	35.3	> 100.0
Cefetra Group	81.0	32.5	67.0	59.5	20.7	53.4	46.8	13.1	38.9
Agri Trade & Service	156.2	96.9	> 100.0	104.7	92.4	> 100.0	72.0	76.9	> 100.0
Agricultural Equipment	93.8	21.6	29.9	70.2	21.6	44.4	54.5	16.2	42.3
Global Produce	56.4	- 20.1	- 26.3	21.1	- 21.5	- 50.5	10.4	- 22.9	- 68.8
Building Materials	105.7	1.7	1.6	70.4	- 2.8	- 3.8	49.0	- 10.3	- 17.4
Innovation & Digitalisation	- 5.6	- 2.2	- 64.7	- 11.4	8.8	- 43.6	- 12.3	8.6	41.1

The difference in the contributions from each segment to the total earnings of the BayWa Group in all three key earnings indicators, EBITDA, EBIT and EBT, is calculated from the earnings contribution of the Other Activities Segment as well as on the basis of economic influence factors at Group level. BayWa does not perform any entrepreneurial management in the Other Activities Segment, as this segment encompasses peripheral activities that are of secondary importance in the BayWa Group. Group-wide economic influence factors are circumstances not attributable to the operational management of the segments.

Medium- to long-term portfolio optimisation of the BayWa Group is carried out through value-oriented management. Using economic profit as a basis, this system calculates the surplus return on invested capital (ROIC) of the business units or segments by means of their risk-weighted costs of capital.

Economic profit

In € million 2022	Renewable Energies	Energy	Cefetra Group	Agri Trade & Service	Agricultural Equipment	Global Produce	Building Materials
Net operating profit	239.1	53.6	59.5	104.7	70.2	21.1	70.4
Average invested capital [1]	2,820.7	115.6	711.9	1,581.0	699.0	444.3	802.9
ROIC (in %)	8.48	46.4	8.36	6.62	10.04	4.74	8.77
Weighted average cost of capital (WACC) (in %)	6.63	7.20	6.30	5.90	7.80	6.20	7.00
Difference (ROIC less WACC) (in %)	2.85	39.20	2.06	0.72	2.24	- 1.46	1.77
Economic profit by segment	**52.0**	**45.3**	**14.6**	**11.4**	**15.6**	**- 6.5**	**14.2**

1 Intangible assets + property, plant and equipment + net working capital

In the financial year 2022, the Renewable Energies, Energy, Cefetra Group, Agri Trade & Service, Agricultural Equipment and Building Materials Segments generated a positive economic profit despite a rising costs of capital (in other words, a positive net result after respective capital costs). Thanks to ongoing positive business development and the strong international project business, the Renewable Energies Segment was able to significantly increase its economic profit to €52.0 million in the financial year 2022 (2021: €28.5 million). The Energy (€45.3 million, 2021: €13.0 million) and the Agri Trade & Service Segments (€11.4 million, 2021: minus €43.9 million) also recorded a clear increase in economic profit on account of rising prices for fossil energy carriers and agricultural products. The Agricultural Equipment (€15.6 million, 2021: €6.1 million) and Cefetra Group Segments (€14.6 million, 2021: €12.0 million) likewise succeeded in increasing their economic profit in the financial year 2022. By contrast, the Global Produce (minus €6.5 million, 2021: €19.1 million) and Building Materials Segments (€14.2 million, 2021: €38.9 million) reported a decline in economic profit. In the Building Materials Segment, the decrease was due to weaker earnings, adjusted for price changes, in the wake of macroeconomic supply chain problems and higher energy prices.

Comparison of forecast business development with actual business development

Segment	Indicator	Forecast [1]	Actual [1]
Renewable Energies	EBIT	significant increase	sharp increase
Energy	EBIT	clear decrease	sharp increase
Cefetra Group	EBIT	significant increase	sharp increase
Agri Trade & Service	EBIT	significant increase	sharp increase
Agricultural Equipment	EBIT	significant decrease	significant increase
Global Produce	EBIT	clear decrease	sharp decrease
Building Materials	EBIT	substantial decrease	slight decrease
Group	**EBIT**	**substantial increase**	**sharp increase**

1 **Explanation of the qualitative and comparative statements:**
slight, moderate, low ≙ 1–5%; noticeable, clear ≙ 5–10%; substantial, considerable ≙ 10–20%; significant ≙ 20–50%; sharp, steep, strong ≙ > 50%

General statement on the business situation of the Group and explanation of projections/deviation from planned targets

The BayWa Group recorded excellent development in the financial year 2022. All three business units and almost all segments developed much better than originally assumed. BayWa benefited from its diversified business model with a broad range of products and solutions for meeting basic human needs. Growth in BayWa's international markets, especially in the Renewable Energies Segment, continued to accelerate. BayWa mitigated high, volatile prices and supply shortfalls on commodities and energy markets – which were further exacerbated by the war against Ukraine – through active, forward-looking inventory management and its high-performance supply and logistics chain, which also opened up additional trading opportunities to the company.

The Renewable Energies, Energy, Cefetra Group and Agri Trade & Service Segments consistently recorded strong EBIT growth, in part far above 50%, thereby developing better than expected. This performance was primarily driven by dynamic development on international commodities exchanges and the accelerated energy transition, which received a further boost from the war against Ukraine. Business in the Building Materials Segment was also positive and exceeded the expectations at the beginning of 2022. Earnings only fell slightly below the high level of the previous year. Only the Global Produce Segment fell short of the original projection for 2022 overall. Rising inflation rates, higher energy costs and geopolitical uncertainties led to noticeable reluctance to buy here. Because vegetable and fruit prices were below average, trade margins decreased year on year, which led to a sharper decline in earnings before interest and tax than initially expected.

At Group level, the aforementioned developments resulted in clear outperformance of the Group forecast that had been prepared for the 2022 reporting year. In the consolidated financial statements for the financial year 2021, the management of BayWa AG had predicted a substantial increase (10–20%) in earnings before interest and tax compared to the previous year (€266.6 million). Given the positive developments in the first half of 2022 (see ad hoc release dated 25 July 2022), the Board of Management raised the Group forecast to full-year earnings before interest and tax (EBIT) in the range of €400 million to €450 million. Based on continued above-average developments in the third quarter of 2022, the Board of Management raised expectations again to full-year earnings before interest and tax (EBIT) in the range of €475 million to €525 million (see ad hoc release dated 25 October 2022). Overall, BayWa generated earnings before interest and tax of €504.1 million, a sharp increase of 89.1%.