MESSER
Gases for Life

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Annual Report of
Messer SE & Co. KGaA 2022

Content

The Management Board and the Supervisory Board of Messer Management SE and of Messer SE & Co. KGaA

Since Messer Group GmbH was founded in 2004, its management has been monitored by a Supervisory Board that assists it in strategic decisions and constantly demands sustainable action in addition to business success. Since the transformation of Messer Group GmbH into Messer SE & Co. KGaA, this has also been true of the Management Board and the Supervisory Board of Messer Management SE as the general partner of Messer SE & Co. KGaA and its Supervisory Board. The members of our Supervisory Board are considered experts for business operations and always contribute their experience constructively. They are therefore dependable partners to the Messer family and to management.

The Supervisory Board of Messer SE & Co. KGaA:

Dr. Jürgen Heraeus, Chairman
Dr. Werner Breuers, Deputy Chairman
Dr. Johannes Fritz
Heike Niehues
Sabine Scheunert
Dr. Karl-Gerhard Seifert
Dr. Nathalie von Siemens
Maureen Messer-Casamayou

The Supervisory Board of Messer Management SE:

Dr. Jürgen Heraeus, Chairman
Marcel Messer, Deputy Chairman
Maureen Messer-Casamayou

The Management Board of Messer Management SE:

Stefan Messer, CEO
Bernd Eulitz, Deputy CEO
Helmut Kaschenz, CFO
Virginia Esly, COO Europe*

* The erstwhile Management Board member Ernst Bode resigned from his post on the Management Board effective as of December 31, 2022. At the Supervisory Board meeting held on November 9, 2022, the Supervisory Board appointed Virginia Esly as a new member to the Management Board effective as of January 01, 2023.

Report of the Supervisory Board members

The Supervisory Board members performed their duties and advised the Management Board in accordance with the statutory regulations and the provisions of the Articles of Association in the reporting period. At its regular meeting on November 9, 2021, the Management Board reported on business developments and the situation of the Company verbally and in writing. The Supervisory Board members were also informed of key transactions and decisions. Transactions requiring their approval were submitted to them for their decision.

The Supervisory Board as a whole of Messer SE & Co. KGaA assured itself that the accounting, the annual financial statements of Messer SE & Co. KGaA, and the consolidated financial statements for the period ended December 31, 2022 and the management report of Messer SE & Co. KGaA and of the national subsidiaries, were audited by KPMG AG Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, and issued with unqualified audit opinions. The audit reports were discussed at the Supervisory Board meeting on April 26, 2023 in consultation with the auditors. The Supervisory Board had no objections and concurred with the auditor's findings.

The Supervisory Board members would like to thank the Management Board and all employees of Messer for their commitment and successful work in fiscal 2022.

On behalf of the Supervisory Board members
Dr. Jürgen Heraeus, Chairman

Group Management Report of Messer SE & Co. KGaA

General Information on the Group

Overview of the Messer Group

Messer SE & Co. KGaA (the "company") is a manufacturer of industrial gases company based in Sulzbach (Taunus) near Frankfurt/Main with a business address in Bad Soden am Taunus. It operates as a management holding company and, together with its subsidiaries, associates and joint ventures, forms the Messer Group (the "Group").

Founded in 1898, Messer is today the world's largest family-operated specialist for industrial, medical and specialty gases. Products and services are offered in Europe, Asia and the Americas under the ‚Messer – Gases for Life' brand. Messer SE & Co. KGaA has subsidiaries in Europe and Asia.

From acetylene to xenon, the Messer Group offers an extensive product portfolio – the Company produces and sells industrial gases such as oxygen, nitrogen, argon, carbon dioxide, hydrogen, helium, welding shielding gases, specialty gases, medical gases and many different gas mixtures.

In its own centers of competence, the Messer Group develops application technologies for using gases in almost all industrial sectors, not to mention food technology, medicine, research and science.

Messer bundles its expertise in the field of application technology at individual locations and also operates a center of competence in Krefeld, Germany. This center of competence tests technologies for gas applications in the areas of food, industrial cryogenic applications, welding and cutting, chemicals and the environment. The primary focus is on a forward-looking alignment of our application technologies, based on the needs of our customers. In Gumpoldskirchen, Austria, near Vienna, development work on high-temperature processes is continuously carried out with customers, cooperation partners and research institutions. New technologies, gas mixtures and applications for welding and cutting are being developed in Hungary and China.

In connection with the merger of Linde AG and Praxair Inc., on July 16, 2018, Messer and the financial enterprise CVC Capital Partners had reached an agreement with Linde AG and Praxair Inc. on the acquisition of the majority of Linde's gas business in the US, Canada, Brazil and Colombia and the takeover of Praxair's activities in Chile. The US Federal Trade Commission (FTC) approved Messer SE & Co. KGaA as a suitable buyer on December 21, 2018. Messer's business in Western Europe and the Americas is managed by Yeti GermanCo 1 GmbH, a joint venture of Messer SE & Co. KGaA and CVC Capital Partners. Effective February 28, 2019, Messer SE & Co. KGaA contributed the Western European operating activities in Spain, Portugal, Switzerland, France, Belgium, the Netherlands, Algeria, Denmark and Germany, as well as a right to use the ‚Messer – Gases for Life' brand free of charge (for a period of 10 years) with a total fair value of € 772 million to the joint venture.

Changes in Group reporting in fiscal 2022

The consolidated group of Messer SE & Co. KGaA developed as follows:

Initial consolidation

The following company was founded in the past fiscal year and commenced operations:

- Zhuzhou Xianggang Messer Gas Products Co., Ltd., China, 55 %

Others

In August 2022, the Chinese company Yunnan Yuntianhua Messer Gas Products Co., Ltd. was renamed Yunnan Dianzhong Messer Gas Products Co., Ltd.

The associate Cryogenic Engineering GmbH, Germany, was liquidated as of November 4, 2022.

Financial performance indicators

The Messer Group uses control parameters derived from operating performance indicators to manage its business. The most significant performance indicators are revenue, EBITDA, capital expenditure, net debt and ROCE. Further explanations and a breakdown of indicators can be found in the sections on financial performance and financial position.

Non-financial performance indicators*

Safety, health, environmental protection and quality (SHEQ) have been firmly embedded in the family-operated Messer's guiding principles since its inception in 1898, and continue to be its top priority today. Messer is aware that well-organized safety and quality guidelines form the basis for handling operational risks safely and for improving operational performance. For this reason, the health and safety of our employees and environmental protection are an integral part of global quality management, which is reflected in various standards of the Messer Group. These have been regularly revised against the backdrop of the COVID-19 pandemic to continue effectively countering it.

The Messer Group has introduced corporate social responsibility management (CSRM) in order to accommodate the growing importance of a sound environment, social justice and good corporate governance. The CSRM adheres to a long-term approach and contributes towards Messer's sustainable development. To this end, the Messer Group also continued to refine its SHEQ indicator system.

995 (previous year: 1,505) SHEQ inspections were carried out in the Messer Group in the past fiscal year (805 of which in Europe), and led to a large number of improvements.

Furthermore, 312 ideas and suggestions for improvements were submitted by our employees in the Messer Group (82 of which in Europe).

Our research and development activities focus on new application technologies for using gases. All research aims to develop and optimize customer processes to maintain and improve our competitive standing. Customer-specific solutions are developed at our centers of competence. Research and development thus plays an important role. Costs are not recognized separately and development costs are not capitalized.

The six material aspects of our CSRM are described in more detail below.

* The content of this section is voluntary and unaudited, but has been read critically by the auditor.

Occupational health and safety

Occupational safety is of great importance to the Messer Group. Messer's safety guidelines reflect our position: "All work-related illnesses, injuries and accidents are avoidable."

Messer uses its global management system to identify and control possible operational risks. The principles of this system are documented in a SHEQ manual and cover all relevant safety-related areas, such as risk management, safety training, safety tests, personal protective equipment, communication safety and accident investigation. The SHEQ manual is a part of compliance management at the Messer Group and is updated and improved regularly.

In order to measure the success of the safety measures and initiatives, the following performance indicators are determined annually: work accidents with lost days and frequency of accidents (number of work-related accidents with lost days per million working hours) and accident severity rate (missing days per million working hours).

17 work accidents with lost days were reported in 2022. The accident frequency rate per million hours worked declined from 2.2 in the previous year to 1.7. The number of days lost (accident severity) per million hours worked also declined from 104.2 in 2021 to 51.9 in 2022.

	2018*	2019	2020	2021	**2022**
Working accidents with lost days	14	16	21	21	**17**
Accident rate	1.3	1.7	2.2	2.2	**1.7**
Accident severity	64.0	52.3	86.7	104.2	**51.9**

*including Western Europe

Messer is an active member of the European Industrial Gas Association (EIGA), the International Oxygen Manufacturers Association (IOMA) and the Asia Industrial Gases Association (AIGA). Our experts regularly share experiences in order to learn from incidents in the industrial gas sector.

Transport safety

The transportation of gases and equipment by road and customer deliveries are activities that have high risk potential in the gas industry. The Messer Group therefore pays special attention to the area of transport safety.

Most of the driving staff who work for Messer in Europe are employed by external transport companies. These companies are responsible for training the drivers in accordance with the ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road). In China, gases are largely transported using the Company's own fleet. To ensure transport security, drivers and support personnel receive training in accordance with the local laws and regulations at regular intervals.

There were no avoidable accidents when transporting cylinder gases in 2022 (previous year: 6). For every million kilometers driven, this corresponds to a decline in the frequency rate from 0.3 in 2021 to 0.0 in 2022. The number of avoidable accidents while transporting liquefied gases was reduced from 11 (2021) to 8, with the frequency rate per million kilometers thus declining from 0.2 in 2021 to 0.1 in 2022. Unavoidable accidents are those caused by external factors beyond the driver's control. All other accidents are considered avoidable.

Accidents are to be reduced further in the future with the help of suitable supplier management, information on defensive driving and load safety. Messer also operates its own modular driver training package. The main issues covered by the training are:

- Statutory regulations (European and national regulations for the transport of dangerous goods by road)
- Technical aspects (hazards arising from product, vehicle and tank technology, vehicle checks, safety technology)
- Accident avoidance
- Defensive, economic driving

In addition, all drivers receive a manual specifically tailored to their work (bulk, cylinder or service vehicles). This ensures that the drivers have all the key information about their work to hand at all times.

IT Security and Digitalization

At Messer, the Group IT Security Officer is responsible for coordinating security measures, creating standards and cultivating the corresponding expertise for all the individual companies. IT security supports the sustainability of our digitization and the physical security of our information, in addition to helping to ensure that our key business processes can be carried out by safeguarding the necessary availability of our systems. IT security services are devised by the IT Security team and its international members.

As part of the IT security campaign, a phishing simulation was also organized for employees this year. Employees were actively trained in the dangers of cybercrime using an awareness platform to improve their knowledge and reduce potential IT risks. As additional preventive measures, employees also took part in an assessment focusing on e-mail security, social engineering and password rules. The aim here too was to raise user awareness of risky or rash behavior and to improve information security proficiency.

IT Security in China is run centrally from Shanghai. also monitors compliance with the IT security guidelines. Each national subsidiary also has its own IT department to guarantee a quick response to attacks, vulnerabilities or emerging threats.

In Europe, the change to the new IT infrastructure was almost completed in the reporting year. A cloud data center provided by Kyndryl Deutschland GmbH has supported central applications in line with current globally established standards since the previous year. The implementation of a standard, centrally administered software-based network technology ("SD-WAN") to link Messer locations in Europe was also completed. In conjunction with this, the previously mixed security infrastructure at the locations and their administration was standardized by Kyndryl Deutschland GmbH. Parallel to this, all client PCs and mobile devices were transferred to a central administration to ensure standard, state-of-the-art software and current security updates. This standardization process will be completed in fiscal 2023 with the full integration of some Messer companies that were not yet fully integrated as of the end of the reporting period. As well as these fundamental measures, there were also many additional local, regional and central digitalization initiatives. These include, for example, implementing a standardized Europe-wide process mining environment to analyze and optimize distribution processes.

Data protection

Messer is committed to compliance with the applicable data protection regulations. Corresponding structures are therefore created to guarantee a high level of data protection at Messer in the long term.

The Messer Group Privacy Officer ("GPO") is responsible for the coordination of the central data protection department at Messer and also oversees implementation of data protection by the national subsidiaries. The GPO also provides a number of templates and processes to ensure a uniform standard of data protection.

Using a list of questions and an audit report developed by the GPO, a total of seven (previous year: five) basic audits to establish the fundamental data protection level in the respective company were implemented in 2022.

Environmental management

Ensuring the highest level of environmental protection is of the utmost importance to Messer. To live up to this, Messer uses its global management system for environmental protection. The internal environmental protection policies are documented in the Messer Group's SHEQ Manual. This and the environmental management systems of all subsidiaries are consistent with the international ISO 14001 standard and the recommendations of the European Industrial Gases Association (e.g. EIGA IGC Doc. 107 – Guidelines on Environmental Management Systems). 19 of our subsidiaries Europe had their environmental management systems externally certified in 2022. 19 also did so in 2021.

The efficient use of energy is in Messer's own interests. Pursuing the main goal of reducing costs and conserving resources, energy management is an ongoing process that also helps to reduce our carbon emissions.

At its production sites, Messer uses atmospheric air and electricity as the main raw materials for producing air gases such as nitrogen, oxygen and argon. Production by air separation units accounts for more than 75 % of total energy consumption. The focus here is on the ongoing enhancement of energy efficiency. Messer has engaged a Global Energy Officer (GEO) specifically to improve the energy efficiency of air separation units.

The continuous monitoring of unit performance means that deviations in energy consumption can be detected and potential for improvement identified. In cooperation with local managers, projects to improve energy efficiency are being initiated on an ongoing basis.

The volume of the gases produced decreased by 4.4 % year-on-year in 2022. Specific energy consumption, measured as the energy consumption per cubic meter of gas sold, was unchanged year on year.

To reduce transport costs for liquefied gas supplies and associated carbon emissions, we commissioned further on-site facilities in 2022 as well. These facilities will enable us to boost on site gas production and at the same time save around 2,000 truck transports and thus 900 tonnes of carbon per year. Local customers benefit from even greater flexibility and security of supply.

Being a member of the European Clean Energy Alliance and the H2BZ-Initiative e.V., Messer can contribute its comprehensive expertise in the field of industrial gases in the interests of the efficient and effective use of clean hydrogen with partners throughout Europe.

Customer satisfaction / quality

Taking the opinions and satisfaction of our customers into account is self-evident for Messer as a responsible company, which is why we measure customer satisfaction in systematic surveys and integrate the results into our management processes. The analysis is repeated every two years at every European national company.

In Europe, we conducted customer satisfaction surveys at our companies in Serbia and Hungary in 2022. We wrote to a total of 4,925 customers, an average of 5.2 % of whom (previous year: 5.8 % in Romania, Poland, Bosnia-Herzegovina, North Macedonia, Bulgaria and Slovakia) completed the questionnaires in full. A total of 255 questionnaires were analyzed.

The results of the various surveys are summarized by region. On a scale from 1 for very dissatisfied to 10 for very satisfied, the Messer Group's overall performance is between 9.3 and 9.4. This puts its overall results at a high level. Potential for improvement was identified in the individual countries and implemented.

Economic Report

General economic conditions

The various industrial gases offered by the Group and the associated services and technologies are used in almost all industrial sectors, not to mention food technology, medicine, research and science. Gross domestic product (GDP), as it applies to all sectors and to the economy at large, is therefore a relevant indicator for the performance of the Messer Group.

Oxford Economics Ltd., an independent economic research and advisory firm[1], stated that global GDP was 3.1 % lower than expected at the start of 2022 (4.1 % - 4.4 %). The International Monetary Fund (IMF) estimates GDP slightly higher at 3.4 %. Despite the war in Ukraine, high inflation, rising financing costs, the ongoing COVID-19 pandemic and supply chain disruption, particularly at the start of the year, the economy proved very stable. This was driven by factors including relatively high consumer spending after COVID-19 restrictions were eased and higher investment. Energy costs rose across the world.

There were considerable regional differences for GDP in 2022, with industrialized nations growing by 2.6 % (previous year: 5.4 %) and emerging markets by 3.7 % (previous year: 7 %). GDP growth within the industrialized nations in the eurozone came to 3.5 % in 2022 (previous year: 5.3 %), higher than the US figure of 2.1 % (previous year: 5.9 %). Higher growth in emerging markets compared to industrialized nations is primarily due to India, which picked up by 6.9 % (previous year: 8.3 %). China and Brazil generated growth of 3 % (previous year: 8.1 % and 5.3 %). Most countries thus proved very resilient despite high levels of uncertainty and exceeded the expectations made during the year[2].

Eurozone GDP grew by 3.5 % in 2022 compared to 5.3 % in the previous year, which was affected by the easing of COVID-19 restrictions. The war in Ukraine had an impact on inflation, which averaged 8.4 % (previous year: 2.6 %). The ECB raised its key interest rate to 2.5 % at the end of the year. Nevertheless, the economy was surprisingly resilient. This was bolstered chiefly by consumer spending, which picked up by 4.0 % (previous year: 3.7 %), and by capital investment (3.4 %). Energy prices experienced a sharper drop towards the end of the year than expected after peaking halfway through the year. In this environment, eurozone growth was far stronger and more rapid than expected, with Germany up 1.9 % (previous year: 2.6 %), France up 2.5 %, (previous year: 6.8 %), Spain up 5.5 %, (previous year: 5.5 %) and Italy up 3.8 %,(previous year: 6.7 %).[3]

Economic growth in eastern European countries slowed markedly as a result of the war in Ukraine and the impact of this conflict, especially on energy and consumer prices. Nonetheless, GDP growth in eastern European countries in 2022 was between 2.5 % (Czechia) and 5.0 % (Hungary). Consumer spending increased in Poland (3.0 %), Romania (6.4 %) and Hungary (7.2 %) and declined year on year in Czechia (0.5 %).[4]

[1] Oxford Economics Inc. – World Economic Prospects, February 2023
[2] Oxford Economics Inc. – World Economic Prospects, February 2023
[3] Oxford Economics Inc. – World Economic Prospects, February 2023
[4] Oxford Economics Inc. – Country Economic Forecast, January 2023

China's economic growth in 2022 was hit hard by numerous lockdowns due to outbreaks of COVID-19. The number of COVID-19 cases climbed rapidly in December after strict measures to contain the pandemic were lifted. Investment in the Chinese real estate market continued to fall, with restructuring making only slow progress. Consumer spending declined by 0.1 % year on year in 2022. Consumer confidence and future income expectations were far lower than they have been for the last decade.[5]

In the USA, GDP picked up by 2.1 % despite the challenging environment (previous year: 5.9 %), but still fell short of expectations. This reflected higher inflation of 8.0 % (previous year: 4.7 %) and the resulting increase in financing costs to 4.4 % (previous year: 0.1 %), which rose to the highest level seen since the first quarter of 2001. At 2.8 %, consumer spending was down on the previous year's figure of 8.3 %, partly due to lower private savings on account of high inflation. Investment in housing construction also slumped by a considerable 26.7 % on the previous year.[6]

Brazil boosted its GDP by 3.0 %, compared to growth of 5.3 % in 2021. Consumer spending in the country rose by 4.1 % (previous year: 3.7 %).[7]

Business performance

Industrial gases business is defined by a pronounced and highly varied diversification across economic sectors, customer segments and national activities. Furthermore, industrial gases business is locally structured, which means that it is not directly dependent on global supply chains. The economic recovery that continued in 2022 thanks to the easing of pandemic restrictions resulted in rising demand for industrial gases on many of our relevant markets, especially in Europe.

Business performance in Europe was primarily determined by the rise in energy prices, which began in the second half of 2021 but accelerated in 2022 after Russia's invasion of Ukraine. High inflation caused economic activity in the region to slow, negatively impacting demand for industrial gases. On the other hand, revenue picked up thanks largely to passing on the far higher energy costs.

In China, stricter Covid-19 restrictions and problems in the real estate sector, which puts strain on steel production, depressed demand for industrial gases. This was offset by growth in business with specialty gases, driven primarily by prices. Favorable CNY exchange rate effects also had a positive effect.

In ASEAN, negative demand effects due to a weak steel market were offset by higher demand for liquefied gases, driven mainly by business performance in Vietnam. There were also positive VND exchange rate effects.

In challenging economic circumstances overall in our relevant economic areas, the Messer Group's business proved resilient in 2022, outperforming the forecast of a slight revenue decline as against fiscal 2021. In the end, significant revenue growth of around 15.6 % to € 1,574 million was achieved, partially the result of positive exchange rate effects. EBITDA at the Messer Group was also far better than expected. While a moderate decline in EBITDA had been forecast for 2022, in reality it was increased by a good 9.4 % to € 418 million again as against the previous year (€ 382 million). Revenue growth was stronger than EBITDA growth on account of passing on high energy costs in Europe.

[5] Oxford Economics Inc. – Country Economic Forecast, February 2023
[6] Oxford Economics Inc. – World Economic Prospects, February 2023
[7] Oxford Economics Inc. – Country Economic Forecast, January 2023

Investment in property, plant and equipment and intangible assets were in line with our forecasts (strong increase) at around € 265 million. Contrary to what we had projected (strong increase), the net debt of the Messer Group was reduced again to € 56 million in 2022 (previous year: € 83 million) as a result primarily of our strong earnings for the fiscal year. Good business development and the fact that investment was as anticipated meant that our forecast for ROCE (sharp decline) was handily outperformed at 18.07 %.

Overall situation of the Group

Results of operations

In fiscal 2022, the Group generated global revenue of K€ 1,573,676 (previous year: K€ 1,361,721), which breaks down among the individual regions as follows:

Revenue	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021	Change in 2022
China	712,171	645,151	10.4 %
Central Europe	331,124	251,627	31.6 %
Southeast Europe	322,013	280,503	14.8 %
ASEAN	136,036	106,580	27.6 %
Western Europe	72,332	77,860	(7.1 %)
	1,573,676	**1,361,721**	**15.6 %**

Revenue increased by 15.6 % year-on-year in fiscal 2022. Business activities in the various regions developed as follows:

China
Strict pandemic restrictions in China and problems in the real estate sector weighed heavily on demand in the steel industry and delayed the construction of various new plants. This was countered by improved business with on site customers in other sectors and business with specialty gases. The revenue upturn in China was driven chiefly by a favorable currency effect. Adjusted for currency effects, revenue was up slightly on the previous year despite the tough economic environment.

Central Europe
Revenue in the Central Europe region increased by 31.6 % as against the previous year. This was driven by the sharp hike in energy prices, which was passed on to customers in the form of price increases. Revenue was also boosted by the commissioning of a new air separation unit in Czechia and a condenser in Poland.

Southeast Europe
The Southern Europe region increased revenue by 14.8 % year on year. This resulted primarily from passing on far higher energy costs to customers. It was offset in particular by the return to normal levels of demand for medical gases, which had been very high in the previous year on account of the COVID-19 pandemic. Weaker economic activity in the region stemming from inflation also caused demand for industrial gases to fall.

ASEAN

With the pandemic situation returning to normal, we saw increased demand for our liquefied and specialty gases and higher sales at our on site customer Hoa Phat. In Vietnam, this prompted a 15.6 % jump in revenue compared to the previous year after adjusting for currency effects.

Our other activities in the ASEAN region, with companies in Malaysia and Thailand, contributed € 9.5 million to total revenue (previous year: € 7.0 million).

Western Europe

Following the spin-off of the operating companies to form the Yeti GermanCo 1 Group in 2019, this region now comprises merely the industrial gas activities of ASCO Kohlensäure AG and the business activities of the service company Messer GasPack GmbH as well as Messer SE & Co. KGaA. The revenue of these companies decreased by 7.1 % compared to the previous year. It should be noted here that prior year revenue benefited from the conclusion of a major hardware sale by Messer SE & Co. KGaA.

The Group generated global EBITDA of K€ 418,391 in fiscal 2022 (previous year: K€ 382,456).

EBITDA	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Operating profit/EBIT	272,099	248,115
Depreciation of property, plant and equipment, amortization of intangible assets and impairment	145,590	134,341
Dividend income[1]	702	–
EBITDA	**418,391**	**382,456**
Revenue	1,573,676	1,361,721
Margin	**26.6 %**	**28.1 %**

[1] Dividend income from non-consolidated companies

EBIT increased by 9.7 % last year despite higher energy costs. Currency effects and successes in passing on high energy costs in Europe had a positive impact on this, while weak economic performance in China had an adverse effect. The EBITDA margin declined by 1.5 % on the previous year.

Net investment income improved by K€ 57,714 compared to the previous year. This essentially includes the pro rata results of the Yeti GermanCo 1 Group, which is accounted for using the equity method, of K€ 124,299 (previous year: K€ 79,915).

Net finance income and expenses of K€ -5,298 (previous year: K€ -795) were shaped primarily by foreign currency gains and losses, with losses exceeding gains (K€ -31,954 compared to K€ 28,635 in the reporting year, K€ -12,778 compared to K€ 15,683 in the previous year). Net interest income of K€ -6,671 improved on the previous year's figure of K€ -7,804. One factor here was lower interest expenses due to the repayment of USPP III in 2022 and USPP II in the previous year. Financial liabilities declined by 18.16 % year on year to K€ 316,620. Further information on this can be found under "Financial position".

In total, consolidated net income including non-controlling interests of K€ 345,851 (previous year: K€ 278,077) was generated in fiscal 2022. K€ 298,013 (previous year: K€ 235,651) of this relates to the shareholders of the parent company.

Financial position

Messer's Group Treasury is responsible for overall liquidity, interest rate and currency management. The most important objective for Group Treasury is to ensure that the Group has a minimum level of liquidity to guarantee solvency at all times. High levels of cash funds improve our flexibility, security and independence. We can generate additional liquidity as necessary through various other unutilized credit facilities amounting to € 67.9 million.

Financing

A new term and revolving facilities agreement (RFA II) was agreed with our banks on February 26, 2019. The lenders are still UniCredit Bank AG, Bayerische Landesbank, ING Bank a Branch of ING-DiBa AG and Landesbank Hessen-Thüringen Girozentrale. RFA II originally consisted of a Tranche A of € 40 million (term loan), a Tranche B of € 100 million (revolving credit) and a USPP backstop facility (BSF) of € 380 million. Tranche A was repaid on July 17, 2019 and is therefore no longer available. The purpose of the BSF was to cover any repayment of the financial liabilities financed by the US private placements (USPPs). The BSF was not needed and is therefore also no longer available.

On May 21, 2021, Tranche B was increased by € 100 million to € 200 million. RFA II, now solely consisting of Tranche B in the amount of € 200 million (revolving credit), matures on December 18, 2023 and can be extended by one or two years. The respective interest rate for RFA II consists of the Interbank Offered Rate (IBOR) in the currency of utilization plus the margin. This is dependent on the ratio of net debt/EBITDA.

The Messer Group is financed by a US private placement (USPP) provided by an insurance company. This is USPP III from January 29, 2019 (USPP II) between Pricoa (€ 87.8 million at 1.49 % p.a.) on the one hand and Messer SE & Co. KGaA on the other. This portion of USPP III had an original term of five years with bullet maturity.

Furthermore, the Group has financing in the form of various local loans with a volume of € 79 million as of December 31, 2022 (previous year: € 101 million).

USPP III of June 12, 2012 (USPP III) with Pricoa (€ 46.3 million at 3.68 % p.a.) had a term of 10 years with bullet maturity. It was repaid on August 2, 2022 from cash and a drawdown under the revolving credit facility.

The collateral for the full amount of the financing arrangements takes the form of guarantees provided by individual Group companies and the pledging of shares in Messer Griesheim China Holding GmbH. This is the German holding company for our Chinese activities.

Net debt amounted to K€ 56,166 (previous year: K€ 82,647) as of December 31, 2022 and is calculated as follows:

	Dec. 31, 2022	Dec. 31, 2021	Change in 2022
Financial Liabilities	316,620	386,862	(18.2 %)
Cash and cash equivalents	(260,454)	(304,215)	(14.4 %)
Net debt	**56,166**	**82,647**	**(32.0 %)**

The net debt of the Messer Group was reduced by K€ 26,481 year-on-year in 2022. The ratio of existing financial liabilities (K€ 316,620) to total assets (K€ 3,453,950) was 9.2 % in 2022 (previous year: 12.4 %).

The change in financial liabilities is shown below:

Financial liabilities as of Jan. 1, 2022	**386,862**
Cash changes:	
New debt raised	143,684
Payments of principal	(217,162)
Non-cash changes:	
Additions to lease liabilities	6,872
Changes due to currency translation	(4,131)
Other non-cash changes	495
Financial liabilities as of Dec. 31, 2022	**316,620**

Statement of cash flows

The statement of cash flows is as follows:

Condensed version in K€	**Jan. 1 – Dec. 31, 2022**	Jan. 1 – Dec. 31, 2021
Profit before tax	413,730	336,535
Cash flow from operating activities	359,453	310,928
Cash flow from investing activities	(254,932)	(215,953)
Cash flow from financing activities	(145,929)	(80,940)
Changes in cash and cash equivalents	**(41,408)**	**14,035**
Cash and cash equivalents		
at the beginning of the period	**304,215**	**253,686**
Currency translation effect on cash and cash equivalents	(2,353)	36,494
at the end of the period	**260,454**	**304,215**

Profit before tax, adjusted for the net investment income of the companies accounted for using the equity method, rose by K€ 20,100 on the previous year. Cash flow from operating activities was K€ 359,453 and therefore K€ 48,525 higher than the previous year's level. This reflected factors including cash generated from operating assets in connection with higher trade payables and higher depreciation of property, plant and equipment.

The development in cash flow from investing activities was again defined by the Messer Group's ongoing investment activity. Most of the capital expenditure again related to property, plant and equipment in 2022.

The cash used in financing activities is K€ 64,989 higher than in the previous year at K€ -145,929. This was the result of a K€ 35,929 increase in repayments of financial liabilities and a dividend of € 30 million (previous year: € 10 million). There were cash outflows of K€ 9,344 (previous year: K€ 10,098) for interest essentially related to financing.

The cash funds of the Messer Group amounted to K€ 260,454 as of December 31, 2022.

Even though the net debt consolidation of our operating activities outside China is still at the heart of medium-term planning, we will require additional funds in fiscal 2023. This will be used to finance the steady expansion of operating activities, to carry out investments and acquisitions in line with planning, to repay loans and interest as they become due and to distribute dividends. These funds are generated from the cash flow from operating activities, available cash and unutilized credit facilities.

The Group has undertaken to invest in the acquisition, construction and maintenance of various production facilities. Obligations of this kind relate to the future purchase of plant and equipment at market prices. There are also long-term contracts giving rise to obligations. The commitments under orders, investment projects and long-term contracts amounted to K€ 163,952 as of December 31, 2022 (previous year: K€ 138,973).

Capital expenditure

Capital expenditure continues to focus on safeguarding existing business and exploiting profitable growth potential. In line with business principles, we primarily invest in projects that safe-guard our product supply or that offer opportunities for profitable growth. We also regularly invest in the modernization of production systems and distribution channels.

The Messer Group invested around € 265 million in intangible assets and property, plant and equipment in 2022. This essentially related to the construction of air separation and other production facilities in China, Vietnam, Serbia and Czechia.

Capital expenditure broke down by region as follows:

Capital expenditure in K€	**Jan. 1 – Dec. 31, 2022**	Jan. 1 – Dec. 31, 2021
China	125,979	79,868
Southeast Europe	54,041	45,448
Central Europe	42,799	44,999
ASEAN	31,043	43,854
Western Europe	11,393	9,526
	265,255	**223,695**

In China, the focus was mainly on investment projects that further enhance our position on the liquefied gases market and thus promote balanced customer diversification within the existing business model. Other investment projects also drove diversification in the on site and pipeline segment. Systematic customer diversification also includes investment in specialty gases in the Sichuan and Anhui provinces, in particular to supply customers in the electronics industry.

Further investment in Vietnam in the ASEAN region will mainly focus on the expansion of production capacity for air gases to support the growth of our existing customer base and the expansion on the liquefied gases market.

Investing activities in Europe continue to center around distribution channels and selective growth projects. The selected growth projects in 2022 included the building of a new air separation unit to replace an existing unit at an on site customer and the expansion of liquid market capacity in Czechia. Another new air separation unit increases production capacity for air gases for an on site customer in Serbia. Other investments in Poland, Austria, Serbia and Czechia related to carbon dioxide extraction plants to ensure product availability and expand existing capacity.

Net assets

Total assets increased by K€ 322,114 in the reporting year to K€ 3,453,950 as of December 31, 2022. This development is mainly the result of the K€ 210,114 increase in investments accounted for using the equity method and a K€ 110,579 rise in property, plant and equipment due to investment.

At 81.8 %, non-current assets again account for the largest share of total assets (previous year: 80.4 %).

As before, the largest item on the assets side is capital assets (property, plant and equipment, right-of-use assets and intangible assets). At 49.3 %, this item is up by 6.35 % as against the previous year (51.1 %). This change mainly results from investing activities in the current fiscal year, reduced by the effect of depreciation and amortization.

The equity ratio (including non-controlling interests) increased year-on-year to 77.7 %, up slightly on the previous year's 74.7 %. This was essentially thanks to positive net profit of K€ 345,851 (previous year: K€ 278,077).

Financial liabilities declined by K€ 70,242 in the fiscal year and accounted for 9.2 % of total assets. Further information on this can be found under "Financial position".

Return on capital employed

The return on capital employed (ROCE) amounted to 18.07 % in the past fiscal year and is calculated as follows:

ROCE	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Operating income	272,099	248,115
+ Goodwill impairment	–	–
Adjusted operating profit	**272,099**	**248,115**
: Average capital employed	1,505,136	1,367,495
ROCE in %	**18.07 %**	**18.14 %**
Calculation of capital employed from the statement of financial position:		
Right-of-use assets, other intangible assets and property, plant and equipment	1,430,984	1,324,311
Lease receivables	6,422	7,877
Net working capital	126,730	114,648
Capital employed	**1,564,136**	**1,446,836**

Operating assets

Net working capital breaks down as follows:

Operating assets	Dec. 31, 2022	Dec. 31, 2021
Inventories	80,582	66,511
Trade receivables	230,494	188,312
Trade payables	(170,686)	(128,755)
Prepayments received	(13,660)	(11,420)
	126,730	**114,648**

Operating assets increased by 10.5 % year on year. The increase in inventories and trade receivables is partially balanced by the increase in trade payables.

The ratio of inventories (less prepayments received) and trade receivables to trade payables (plus liabilities for outstanding invoices) was unchanged on the previous year at around 2:1. The ratio of operating assets to revenue was 8.1 %, compared to 8.4 % in the previous year.

Overall statement on the economic situation

The revenue of the Messer Group grew by 15.6 % as against the previous year thanks to sustained demand. In Europe, higher energy and commodity prices were passed on to our customers, whereas in China the increased revenue was chiefly attributable to positive exchange rate developments.

The EBITDA margin declined slightly to 26.6 % in fiscal 2022 (previous year: 28.1 %), while the Messer Group's EBITDA increased to around € 418 million as against the previous year's approximately € 382 million.

The return on capital employed (ROCE) was on par with the previous year at 18.07 % (18.14 %). Operating income and average capital employed both rose by around 10 %.

Net debt was reduced by a further € 26 million as against the previous year to around € 56 million in 2022, essentially due to repayments. Further information on this can be found under "Financing".

Investment amounted to € 265 million in fiscal 2022, € 41 million higher than the previous year's level. Expressed as a percentage of total revenue, capital expenditure amounted to 16.9 %, compared to 16.4 % in the previous year.

The highly positive overall business performance is confirmation of the Company's business model, which is geared towards stability and sustainability. The Messer Group has an international presence with its two main regions of China and Europe, and it has regional diversification in a large number of countries and provinces within these two core regions. Weak demand on individual markets or downturns in specific industries can therefore often be compensated.

Forecast Report

General economic development

Oxford Economics assumes that GDP growth will shrink to 1.5 % for 2023, lower than the 3.1 % seen in the previous year. This forecast is more cautious than that of the IMF, which anticipates growth of 2.9 %. Inflation will ease in 2023 as a result of lower commodity prices and weaker growth, especially in the second half of the year. This phase of interest rate hikes by central banks will be completed earlier in the US than in the eurozone. Rates are not expected to decline this year. Supply chain disruptions caused by the COVID-19 pandemic are increasingly stabilizing. However, political crises can create further supply uncertainty at any time. Experts assume that the war in Ukraine will continue in 2023 and, in turn, that political and economic relations between Russia and the west will remain strained. Current global trade barriers between China, the US and Europe will not be reduced. As well as these risks, fragile political situations and natural disasters as a result of climate change can present economic risks[8].

Eurozone economic development in 2023 will be shaped by uncertainty regarding energy prices, the war in Ukraine and the impact of tighter monetary policy by the ECB. Accordingly, Oxford Economics expects eurozone GDP to grow more slowly in 2023 than in the previous year (0.4 % versus 3.5 %). Inflation will abate over the course of the year, averaging 4.9 % in the year as a whole (previous year: 8.5 %). Lower prices for energy, food and industrial goods will cause inflation to trend downwards, especially in the second half of the year. Consumer spending, which is recovering only slowly after a weak Q4 2022, will pick up by 0.3 % in 2023 as a whole. Financing costs will continue to increase in 2023[9].

After the COVID-19 wave at the end of 2022, China is expected to generate growth of 4.5 % in 2023 as a whole (previous year: 3 %). This growth will be driven primarily by higher consumer spending (8.1 %), although it is still lower than average annual growth rates between 2010 and 2019 (9.3 %). Low investment and weak construction activities are still expected on the real estate market in 2023 due to the low number of new buildings completed in 2022.[10]

GDP growth in the US is estimated at 0.1 % (previous year: 2 %). Consumer and energy prices in the US will remain high in the first half of the year before declining sharply, with inflation of 4.4 % expected for 2023. Financing costs will thus likely be increased by another 25 basis points in 2023. Consumer spending will pick up by 0.8 % and will therefore be weaker than in the previous year (2.8 %). One reason for this is that incomes are growing more slowly than consumer prices.

Brazil is expected to see slight GDP growth of 0.4 %, after growth of 3 % in 2022. Public debt will increase as a result of the change in political direction and financing costs will remain high.

In Colombia, GDP will shrink by 1.5 % year on year. Consumer spending will slow on account of high inflation and high financing costs.[11]

8 Oxford Economics Inc. – World Economic Prospect – February 2023
9 Oxford Economics Inc. – Country Economic Forecast – February 2023
10 Oxford Economics Inc. – Country Economic Forecast – February 2023
11 Oxford Economics Inc. – Country Economic Forecast – January 2023

Outlook for the Messer Group

Despite geopolitical challenges and the sharp rise in inflation and interest rates, the Messer Group again exceeded its forecasts for almost all key financial performance indicators as of December 31, 2022. The medium-term planning of the Messer Group is still defined by efforts to boost profitability while at the same time achieving a moderate development in net debt. Through suitable investment, we intend to further increase revenue and the Messer Group's profitability.

The forecast figures were prepared in fall 2022 and are therefore based on forecasts of economic performance in the planning period prepared at this time. In China, these were determined in particular by the effects of pandemic restrictions. Overall, more cautious economic development is assumed for both Europe and Asia in 2023.

Energy prices in Europe are expected to remain high on account of the current energy crisis following Russia's invasion of Ukraine, which will also drive inflation and hold back economic activity in the region. In this environment, the sharp rise in energy prices will also continue to affect our selling prices. Our business activities in Europe will continue to focus on stabilizing profitability and margins, as well as optimized utilization of the new production capacity created in recent years, selected customer projects and targeted capacity expansion.

In the past fiscal year, the China region again generated virtually half of the Messer Group's revenue and almost 60 % of its EBITDA – despite a difficult economic environment due to Covid-19 restrictions and problems in the local real estate sector. Also, the ratio of net debt to EBITDA in the China region is negative. This means that the cash available exceeds the financial liabilities. These figures corroborate the ongoing significance of our Chinese activities for the total revenue, profitability and internal financing of the Messer Group. Despite the difficult overall economic situation in China at present, moving forward we continue to expect strong market growth in the region compared to the rest of the world. We will participate in this thanks to our advanced diversification process across the whole of our sales profile. Policy efforts to achieve an increasingly significant position in the global economy, for example through the infrastructural measures accelerated for this reason, should lead to consistently high production levels in heavy industry and, in particular, the steel industry that matters most to us. However, in conjunction with our forecast, we expect to see an ongoing normalization on the selling side of the liquid market in 2023 with the high market prices seen in recent years continuing. Weaker economic performance is also expected for the next fiscal year.

The developments of the most important financial performance indicators of the Messer Group for 2023 are planned as follows:

	2023 vs. 2022
Revenue	Strong increase
EBITDA	Strong decrease
Capital expenditure	Strong increase
Net debt	Strong increase
ROCE	Strong decrease

The Messer Group anticipates high revenue growth. This is due to the increasing utilization of newly commissioned facilities, especially in Asia, as well as higher selling prices in Europe driven by energy prices. The Group feels it is economically well positioned but is fundamentally cautious in its short-term expectations. The decline in EBITDA forecast in the planning for 2023 is the result in particular of sustained high energy prices in Europe and cautiously planned development in Asia in light of the weak macroeconomic environment expected. The decline in ROCE that is also anticipated will be determined by the drop in EBITDA referred to above and a higher investment level.

We will make future investment decisions in line with an appropriate development in the net debt of the Messer Group. The investment activities appropriate to this objective are carried out to a chosen degree to support the solid, long-term earnings development of the Messer Group. There is currently an elevated level of investment opportunity in China and Vietnam. There are also suitable opportunities for the selective expansion of our production capacity in Eastern Europe.

Forward-looking statements

This forecast contains forward-looking statements based on management’s current appraisal of future developments. The statements should not be interpreted as a guarantee that these expecta-tions will actually occur. The future business performance and earnings of the Messer Group are dependent on a number of risks and uncertainties and can therefore diverge significantly from the forward-looking statements made here.

Report on Opportunities

As an international supplier of industrial gases, opportunities arise for the Messer Group from the versatile applications for industrial gases in the manufacture of products needed in all fields of life and every country of the world. Through our investments, we seize the corresponding opportunities to tap new business potential and to maintain and expand our market position. The additional opportunities generally arising from internationalization and backlog effects from the emerging markets will be leveraged by the expansion of our locations in these countries. One of the results of this will be access to selected new markets with long-term growth potential.

Specifically, the following opportunities in particular could be significant to business development and to financial position and financial performance of the Messer Group. They are listed in the order of importance.

Opportunities through sustainable practices

Sustainability is a complex issue that permeates all areas of an organization – from product development and HR issues to digitalization and climate neutrality. To do justice to the requirements of our stakeholders, sustainability must be reflected in our actions and attitudes. A significant contribution to decarbonization is the use of clean hydrogen, which will be a key area for our capital expenditure over the coming years.

Opportunities through digitalization

Digitalization and networking have to keep progressing in the Company if it is to remain competitive. It is therefore essential to improve employees' understanding of cyber and technology risks on an ongoing basis to create a strong, digital corporate culture. We have laid the groundwork for this with the reorganization of our IT infrastructure to create a multi-cloud environment. We work with IBM and Microsoft here as our technology partners and attach great importance to globally established standards at all our national subsidiaries for the operation of our central IT systems and applications. This also applies to protecting the data and information provided by such systems. Our tools used to support our production, bulk and cylinder gases management are subject to continuous improvement, which has wide-ranging impact on the value-added chain of our company and our customers. New, coordinated digital processes with optimized plant management reduce the use of electrical energy and improve our tour planning. This makes a positive contribution to environmental protection, while at the same time reducing our production and operating costs, which could have a positive effect on our bottom line.

Opportunities through our employees

The COVID-19 pandemic transformed the world of work, with working from home becoming increasingly important and establishing itself as a suitable form of work. The Messer Group is developing concepts which allow not only hybrid but also shared working places. By increasing the number of flexible working models, we also want to bolster employee loyalty and satisfaction. The Messer Group promotes ideas and prospects management throughout the Group, allowing our employees to suggest improvements across all national borders. In addition, we support the active development and use of our employees' potential through systematic personnel development programs and training. We firmly believe that investing in the development of our employees promotes our corporate culture as a whole and can have a positive effect on revenue and results.

Market opportunities

We expect continuing significant market growth in China in particular, though without assuming further market price momentum in the forecast for 2023, which would otherwise have a positive impact on our revenue and results.

Given the Chinese government's unexpectedly early and comprehensive shift away from its strict zero-Covid strategy and the opening-up of the country that followed, China's economy and, in turn, demand for our products, could perform better than assumed at the time of preparing the business plan for 2023.

We are assuming cautious growth momentum in Europe and the US. If the economic performance is more dynamic in individual countries or in general, this could have a positive effect on our revenue and results. A return to normal energy price levels from the current high level, especially in Europe, could benefit industrial production and thus demand for our products.

General economic opportunities

The overall economic environment generally influences our business activities, our financial position and financial performance and our cash flows. Our forecast for 2023 is based on the expectation that the future economic framework will be consistent with the information presented in the forecast section of this management report. If the global economy as a whole or in regions/countries relevant to our business develop better than shown in this forecast, our revenue and earnings could outperform the forecast.

Opportunities through industrial gas applications

Our products are used in a variety of production processes worldwide. In the field of application technology, the Messer Group continuously analyzes processes to enhance production efficiency for our customers through the use of industrial gases. New applications identified in this way could open up corresponding business potential with a positive impact on revenue and earnings.

Risk Report

As an international supplier of industrial gases, we face risks with that are inextricably linked to our entrepreneurial activity. In addition to fluctuating demand for industrial gases and the related products, future earnings development is also dependent on economic trends in individual countries that are beyond the Group's control.

Each of the risks described below can have an adverse impact on our business development and thus on our financial position and financial performance. We present these risks in gross terms, i.e. mitigating factors have not been taken into account.

Geopolitical risks

The geopolitical situation in Central and Eastern Europe (CEE) escalated on February 24, 2022 when Russia invaded Ukraine. In response, the European Union, the United States of America and a number of other states imposed sanctions on the Russian economic and financial system, which put massive constraints on the economy. Russia responded in turn with countermeasures. The direct impact of this conflict is described in the following risk categories. If the conflict escalates further or expands, the Messer Group's involvement at a production facility in Ukraine and/or in the Baltic states could be affected. The risk relates to a short to long-term suspension of operating business and damage to these production facilities. We consider the impact of geopolitical risk on our business as medium.

Economic risks

The Messer Group's business success also depends to a certain extent on economic factors, as an economic downturn can reduce purchasing power in the market in question. The Messer Group supplies a wide range of industries and sectors, including steel production and metal processing, the chemicals industry, petrochemicals industry, food and beverage industry, the glass industry and healthcare. It does so on the basis of long-term supply agreements running from up to 15 years in Europe, up to 20 years in the Americas and up to 30 years in Asia. The Messer Group's strong positioning in China, which accounts for a revenue share of more than 40 % and a large share of its earnings, increases the risk of being unable to fully compensate for the negative effects of economic down phases in China with better performance on other markets. Gross domestic product in China picked up after the COVID-19 pandemic. If the Chinese construction sector continues to contract as a result of overcapacity,[12] demand for construction steel and other products could fall further[13]. However, this can be partially equalized by the positioning of Messer production facilities in the different provinces, which are regionally distinct within China.

[12] World Steel Association, press release December 2022
[13] Oxford Economics, Country Economic Forecast, February 1, 2023

China's population has experienced strict state restrictions (lockdowns) since the start of the COVID-19 pandemic). Beijing's move away from its zero-Covid strategy could prompt a considerable economic upturn in China as a result of pent-up demand among its population[14]. However, the shortage of products and raw materials could further push up inflation, continue to dilute purchasing power and result in higher wage demands in the eurozone. Russia's war in Ukraine prompted a surge in energy costs and rising inflation in the eurozone. Especially in view of high inflation rates at present, we currently rate the economic risks as high.

Market risks

Industrial gases business is subject to fierce competition, which was exacerbated by globalization. The highly competitive landscape could reduce future earnings and cash flows. The Messer Group operates in a large number of countries, and it is therefore exposed to local political, social and economic conditions and the resulting risks. A significant reduction in market demand in any of the Messer Group's key industries or sectors, for example due to production relocation, insolvencies, high energy costs or global surplus capacity in the steel industry at this time, could adversely affect future earnings.

Russia's invasion of Ukraine and the associated rise in energy costs also increases market risks for the Messer Group. This is particularly true for countries where energy supply is dependent on natural gas and for energy-intensive companies that halt or sharply curtail their production. We currently rate market risks as high.

Health risks

The Messer Group supplies a wide range of industries and sectors, most of which run global production operations. Their supply chains can be severely disrupted by a pandemic or by epidemics in major manufacturing countries. The COVID-19 pandemic that broke out in the spring of 2020 not only had serious consequences for health, it also took a toll on the global economy and public life as a result of strict state restrictions and curfews. Almost all COVID-19 restrictions in the euro-zone have now been lifted, with even China taking the same approach by abandoning its zero-Covid strategy. It remains to be seen whether a variant of the virus will result in restrictions being reimposed. COVID-19 precautions for Messer Group employees in place since 2020 have proven effective. We currently rate the risk of prolonged economic disruption as low.

[14] Oxford Economics, China Reopens, February 7, 2023

Cost risks

Regulatory or governmental changes or intervention in the energy sector can lead to rising energy prices in individual countries. Rising energy requirements are causing considerable volatility in oil and energy prices with corresponding implications for the operating materials and precursors required by the Messer Group. As a result of the sharp increase in the price of natural gas, the fuel used to generate electrical energy in Europe, energy prices continued to climb in 2022. The increased global price of coal, which is used in energy generation, led to higher energy prices in China.[15] Overall, demand for energy is rising across the globe, in turn driving energy prices on the international stage. Purchase prices for individual significant products can thus fluctuate considerably. Management is implementing measures to contain these commodity risks, including the electricity price risk arising from electricity purchases for operating activities. The aim is to hedge these risks as far as possible and reasonable.

The Messer Group can pass cost electricity price increases on to its customers through price escalation clauses or mitigate them with long-term procurement contracts. Nevertheless, price increases for energy and external procurement costs can reduce the profitability of the Messer Group and pose an EBITDA risk in the low tens of millions. Higher prices for fuel such as diesel also make it more expensive to transport our products. In view primarily of the halt in the supply of natural gas and fuel from Russia, we currently rate the cost risk as high.

Product procurement risks

The ability of the Messer Group to serve clients with a broad range of products and services depends not only on our own production, but also on the products and services that we obtain from internal and external suppliers. The main objective is to be able to deliver to clients reliably and with appropriate quality at all times. The availability of appropriate quantities of products and services at appropriate prices is the key to achieving this goal. Nevertheless, there is a risk of supply difficulties or breakdowns as a result of product shortages, particularly for helium or raw carbon dioxide, or the loss of individual suppliers. Furthermore, procurement from an alternate source could lead to a cost risk if products and services can only be obtained at higher prices or higher transport costs. This can pose an EBITDA risk in the high single-digit million range.

The Messer Group counters this risk on the basis of a broad supplier network and strict monitoring of product availability. Furthermore, we are always on the lookout for additional alternative suppliers. We currently rate product procurement risks as medium, also on account of the negative impact on various areas of supply chains.

[15] Morgan Stanley, Thermal coal's headwinds, February 7, 2023

Price risks

In individual countries, the highly competitive environment could lead to unexpected, disproportionate price trends that could reduce the Messer Group's future revenue and earnings. In particular, the market environment in China is characterized by intensive competition, which can affect the selling prices of certain product lines. We currently rate price risks as high.

Operational risks

Business interruption due to unexpected infrastructure disruptions caused by accidents, sabotage, criminal activities or climate-related events (such as heat waves, flooding, hurricanes or other natural disasters) and other unpredictable adverse factors may lead to manufacturing and supply disruption at our production facilities. The Messer Group's production facilities are regularly maintained and continuously monitored. In the event of business interruption, we have emergency and contingency plans in addition to other tools to mitigate the financial consequences for our customers. The Messer Group works continuously to improve delivery reliability and flexibility to safe-guard delivery capability for our customers even in the event of an emergency. There has been a shortage of qualified truck drivers in the eurozone since the COVID-19 pandemic. This shortage got worse when Russia invaded Ukraine and may adversely affect our product distribution. The range and quality of our services are also dependent on the availability of required hardware and the production equipment used (e. g. cylinders and tanks), and on the service quality of suppliers and business partners. We currently rate operational risks as medium.

Personnel risks

The Industries Group is highly dependent on the commitment, motivation and skills of its employees. Many countries in which the Messer Group operates are at full employment and so there is a shortage of skilled staff. The lack of skilled workers and managers and lengthy recruitment processes for finding replacement personnel in key positions could strain operating processes and increase hiring costs. In the future, the long-term success of the Messer Group will also depend on its ability to compete with other companies to find and retain qualified employees, regardless of demographic challenges. Country and sector-specific turnover risks are identified and addressed with targeted measures. The Messer Group counters these risks through personnel development and succession processes, annual salary reviews and an inflation compensation payment. Accordingly, we currently consider personnel risks low.

Acquisition risks

The Messer Group is continuing to evolve strategically. In addition to the expansion and strengthening of our existing business, and the constant optimization of sourcing and logistics processes, we are striving to grow both organically and through acquisitions. We enter into new partnerships in the form of joint ventures, consolidate existing markets and divest activities that no longer belong to our core business. However, downstream risks can arise within the Group as a result of the sale of companies or business activities. Provisions are recognized if risks seem probable. Decisions to proceed with acquisitions or to enter into new partnerships are subject to the risk of having incorrectly judged future market potential and the assumptions for project feasibility. An initiative was launched at the end of fiscal 2022 to assess potential options for integrating the Yeti GermanCo 1 Group directly into the Messer Group. There are potential risks associated with financing these options. The Messer Group therefore has internal bodies that analyze the strategic potential of further development prior to approval and prepare the information needed for the decision-making process. In M&A projects, experienced employees in the relevant departments always perform due diligence prior to any acquisition to ensure as much certainty as possible regarding the future development potential of the M&A project. We also reduce the risk with corresponding agreements in purchase contracts. We currently rate acquisition risks as high.

IT risks

The use of state-of-the-art information technology plays a key part in handling and securing business processes within the Messer Group, but also entails corresponding risks.

The outage of critical IT applications or IT system outages at entire locations could considerably disrupt processes within the Messer Group and lead to business interruptions. IT systems can also be vulnerable by the abuse of digital technologies to commit new types of crimes, known as cybercrime (e-crime). As well as disrupting IT systems or causing outages, phishing or cyber attacks can also result in confidential data being leaked to third parties and thus constitute a risk.

The security and compliance of the information systems are key issues in our IT organization. On this basis, we are constantly designing, implementing and reviewing measures to protect data, applications, systems and networks. This process takes both preventive and corrective measures into account.

Third parties regularly carry out checks on central European infrastructure to identify vulnerabilities and prioritize how to address these. These vulnerability scans were supplemented in the reporting year by penetration tests for central European IT infrastructure. Access to key cloud solutions was secured by way of multi-factor authentication. Additional measures to reduce IT risks are being prepared and will be implemented in 2023.

We use a checklist defined by the IT security team to perform self-audits of IT security, thereby mapping the current status, and recommend measures to avoid or reduce risks. The analysis focuses on questions about the IT systems and applications used and also examines infrastructure or network areas. This instrument serves to raise awareness and avoid potential risks in IT operations. We currently rate IT risks as medium, but consider ourselves to be exposed to ever-greater risk, which will result in us having to take increasingly far-reaching measures to avert danger in the future.

Financial risks

We also require debt capital for our growth and investments. We are dependent on a stable and, in particular, liquid financial sector. The Messer Group relies on cash from current business activities to settle the obligations under its borrowing operations, including compliance with covenants. This depends to a large extent on a positive operating cash flow.

The Group has recognized goodwill. Applying IAS 36, i. e. testing for impairment, can lead to impairment losses on goodwill if the market and business prospects of a subsidiary, associate or a cash-generating unit deteriorate significantly compared to their original measurement date. In the event of impairment becoming necessary, this could have a significant impact on earnings and accounting ratios. In conjunction with planning, the discernible uncertainty has been taken into account by corresponding write-downs on receivables and adjusted business assumptions. As a result of the military conflict between Russia and Ukraine and the associated sanctions, the Messer Group initiated the sale of its interest in subsidiaries in Russia.

Global economic collapse or downturns are a recurrent threat in conjunction with financial or debt crises. The Messer Group closely monitors current developments in order to take countermeasures, if necessary, in the form of cost and investment saving programs. The possible deterioration in the credit ratings of our customers entails the risk of bad debts and delays to joint projects.

We must ensure that we maintain the covenants agreed to in conjunction with the USPP and the RFA. In particular, there is the net debt (financial liabilities less cash funds)/EBITDA covenant, which must be upheld both for the Messer Group as a whole and for the Messer Group excluding its subsidiaries in China. Financial risks can also arise in the Messer Group from changes in exchange rates and interest rates. The management of interest rate, currency and liquidity risks is handled by Group Treasury based on the guidelines set out by management. Group Treasury calculates and measures financial risks and hedges against them. The Messer Group currently uses standard currency forwards and interest rate swaps as hedging instruments. The Treasury guidelines contain principles for general risk management required here and individual regulations for specific areas, such as currency and interest rate risks, the use of derivative financial instruments and the investment of surplus cash. The risks are monitored at all times and the extent of protection is adjusted if necessary.

Income and operating cash flow are essentially unaffected by market interest rates, as the Group does not hold any significant interest-bearing assets. We partially hedge variable interest loans using interest rate swaps (cash flow hedges for future interest payments). This effectively converts loans with floating interest rates into loans with fixed interest rates. In conjunction with interest swaps, the difference between fixed contractual interest rates and floating interest rates, in relation to an agreed amount, is calculated and settled at set intervals. At the end of the reporting period, there are exclusively derivative financial instruments entered into with international financial institutes with investment grade ratings.

We currently rate the impact of relevant financial risks as low to medium.

Currency risks

Transaction risks that can arise when exporting products are largely hedged when entering into a contract. As far as the operating activities of the Messer Group are concerned, the individual Group companies predominantly conduct their business locally in their functional currency. The overall currency risk from transaction risks is thus considered low overall. However, a number of Group companies are exposed to foreign currency risks in connection with operational transactions not denominated in their own functional currency. This mainly relates to payments for product or service imports and are hedged as far as possible. Like all market participants, we could unexpectedly encounter appreciation in a functional currency that weakens the country's international competitive capability for exports and our local activities. We see currency risks from translating foreign currency exposures into euro (functional currency) as a standard part of doing business. Exchange rate losses against the euro could lead to lower consolidated net profit and less consolidated equity. We rate currency risks as relatively high at this time.

Legal and contractual risks

Time and again, businesses are confronted with allegations that they have infringed industrial rights or legal obligations, delivered defective products of failed to comply with environmental protection laws. Regardless of their chances of success, such claims can result in very high defense costs. Tax laws and competition regulations can also give rise to business risks. The Messer Group relies on the support of both in-house and external experts to handle such matters.

In a large number of countries, our business activities in many countries are subject to specific environmental laws and regulations, for example on air emissions, groundwater pollution, the use and handling of dangerous substances and soil analysis and detoxification. This can give rise to liability risks in conjunction with either past or current operations. Above all, new environmental requirements – and those updated in line with EU directives – necessitate the adjustment of our standards. This could result in higher production costs and modifications to the production process. However, the recent past shows that the integration of stricter environmental regulations results in a more efficient production process and higher quality product. We currently rate legal and contractual risks as medium.

Compliance risks

The Messer Group's express aim is for all business processes to comply with the law and with internal guidelines and so the Messer Group has established a Compliance Management System (Messer CMS). All employees are informed of the CMS content relevant to them and have confirmed their compliance. Management and employees receive regular information and training on the changes to these guidelines, other policies and rules of conduct.

Legal requirements have increased significantly as a result of sanctions imposed on certain market participants following Russia's invasion of Ukraine. However, training and compliance guidelines cannot guarantee that employees do not breach changing sanctions lists, whether accidentally or due to negligence. Violations of these can disrupt internal business processes and result in high penalties. We currently consider these risks low.

Overall conclusion

The risks set out above show that they can be countered by internal and external measures. We endeavor to actively develop in-house potential and will leverage external potential whenever the opportunity arises. These are not the only risks to which the Group is exposed. Some risks, which have not yet been identified or which are not considered significant today, could possibly have an adverse effect on the Messer Group if the overall conditions were to change.

The assessment of the overall risk situation is the product of consolidated consideration of all individual material risks on the basis of the risk management system in place.

The Messer Group believes that the economic performance of the Chinese market and the political and financial consequences of the Russian invasion of Ukraine represent the greatest challenges to its business activities. However, no risks have been identified for fiscal 2023 that, individually or in aggregate, could significantly influence the Messer Group as a going concern. The main operational risks in the reporting period are in the areas of rising costs, especially changes in energy prices, and the resulting market (price) development.

We have put all organizational requirements in place to identify potential risks early on. Our vigilant, active risk management system, as described below, helps us to limit risk. The current risk situation has increased considerably compared to previous fiscal years, essentially on account of the strong global increase in energy prices.

Risk Management

The Messer Group's risk strategy is outlined in more detail in its principles of risk policy. These are intended to ensure that risks are identified in full and presented and evaluated in a way that is transparent and comparable. They require risk managers to proactively manage and monitor risks. The principles of risk policy are defined by the Messer Management SE Management Board (Management Board) in the Messer Group Guidelines. The Messer risk management manual also sets out all methodological and organizational standards related to risks.

Messer risk management is defined as an ongoing business activity. It is designed to ensure that the Group remains a going concern and to increase its enterprise value. It is therefore a key component of all decision-making and business processes. Messer defines risks as potential future events that may cause negative deviations from anticipated targets. The management structure and the reporting processes in place ensure that not just the events and developments that could threaten the Group as a going concern, but also even developments that could pose a threat to short-term corporate targets (such as EBITDA), are reported to the appropriate persons promptly and regularly. This allows management to initiate measures to mitigate any operating or financial risks early on.

Messer's Group-wide risk management covers Messer SE & Co. KGaA and its companies, as well as companies not included with a shareholding of at least 50 %. Decentralized risk managers who safeguard the local reporting processes have been appointed at the individual subsidiaries. A risk assessment was conducted at the end of the 2022 fiscal year to provide a general overview. The risk assessment reflects events/developments that could occur in fiscal 2023. Based on this and in cooperation with the decentralized risk managers and risk officers, the risk manager of the Messer Group prepares a Group-wide risk report at the start of each year, which is discussed with the Management Board and promptly submitted to the Supervisory Board of Messer SE & Co. KGaA for its acknowledgment. The risks outlined in the risk report are allocated to risk categories and assessed in terms of EBITDA on the basis of their probability of occurrence and potential negative impact on projected financial targets. Risks can be rated low, medium or high.

Risk management at Group level is a function of Group Controlling, Planning and Risk, which reports to the Chief Financial Officer of the Group. This area is responsible for designing and refining the risk management systems, methods and processes for identifying and evaluating risks and for supporting the decentralized risk manager.

The Messer Group has arranged for adequate insurance for potential losses and liability risks, which ensures that the possible financial consequences of risks that occur are largely contained or eliminated entirely. The extent of this insurance cover is continuously optimized based on the specific requirements of the companies in each country.

State-of-the-art technologies are used in IT to minimize risks in this area. Unauthorized access to data and systems, as well as significant data losses, have therefore been ruled out as far as possible. The efficiency, availability and reliability of systems are constantly being monitored and improved. The security concept also comprises detailed contingency planning. All technologies used are regularly tested as to whether they ensure the security of IT-based business processes so as to minimize risks of all kinds. The risk management software "Corporater" from Corporater Inc., a digital tool for the early identification, analysis and management of risks, was launched across the Group in fiscal 2023. Like Messer's risk management system, its structure is based on the guide-lines of the international risk management standard ISO 31000:2018. This also meets the requirement under the revised audit standard IDW PS 340 (as amended) to calculate internal capital adequacy by way of a Monte Carlo simulation.

Half-yearly reports will be prepared in the future with the launch of the risk management software "Corporater". This ensures that the reports are up to date and increases their informative value. However, we cannot say with absolute certainty that all risks will be fully identified and managed.

Tax laws and competition regulations can also give rise to business risks. The Company relies on the advice of both in-house and external experts.

Income and operating cash flow are essentially unaffected by market interest rates, as the Group does not hold any significant interest-bearing assets. Floating-rate loans are partially hedged using interest rate swaps (cash flow hedges for future interest payments). This effectively converts loans with floating interest rates into loans with fixed interest rates. In conjunction with interest swaps, the difference between fixed contractual interest rates and floating interest rates, in relation to an agreed amount, is calculated and settled at set intervals. At the end of the reporting period, there are exclusively derivative financial instruments entered into with international financial institutes with investment grade ratings.

Compliance Management

With the Messer Compliance Management System (Messer CMS), we have implemented an organizational concept which describes our value system and defines its practical implementation and the related responsibilities. The aim of the organizational concept is to prevent breaches of the Messer Code of Conduct before they even arise. It represents a binding framework of action to deal with conflicts of interest as well as complying with applicable laws, regulatory regulations and the local and corporate operating rules in all our business areas. The Messer CMS is supported by a clear commitment from the Management Board, executives and officers, and serves as an instrument for building trust with our customers, partners, employees, competitors, the public and the media.

Messer SE & Co. KGaA has issued binding compliance guidelines for its companies. In particular, these include the Code of Conduct and the Group Guidelines. All employees are informed of the CMS content relevant to them and have confirmed their compliance. Management and employees receive regular information and training on the content and any changes to these guidelines, other policies and rules of conduct.

The Management Board is responsible for monitoring the Messer CMS. This organizational concept is binding for all Messer executives, managers and employees. In line with the applicable statutory regulations, the executives are responsible for implementing this organizational concept in their own national subsidiaries and ensuring that it is complied with. The Management Board appointed a Chief Compliance Officer to support the executives and the supervisory bodies. In addition, compliance officers are appointed for each country by the regional management in coordination with the respective executives for that country. The group of compliance officers is supported by central compliance officers in the Corporate Office. The Management Board has defined the duties, rights and obligations of the compliance officers in a compliance officer policy.

Potential vulnerabilities within Messer have been defined on the basis of a detailed risk analysis incorporating all national subsidiaries and central departments. In addition to classroom training, webinars and e-learning can be held on different areas of the Messer Code of Conduct. The central departments and the local executives and departments determine the content of training and the employees to be trained. They design and carry out training, if necessary with the assistance of external service providers, and ensure the proper documentation. The Management Board can make binding requirements on training and training contents as well as determining the group of employees which should have this training.

Internal Audit monitors the implementation of the Compliance Policy, in particular the Group Guidelines, at all the national subsidiaries. These requirements essentially serve the purpose of risk management on the basis of standards of conduct and reporting, approval regulations and the cross-checking principle for legally binding external declarations.

The Messer Integrity Line is Messer's communication platform for the straightforward reporting of perceived misconduct. Employees can contact defined persons to comment on or report suspected compliance violations – simply, legally and confidentially. Compliance breaches are followed up and dealt with appropriately. They are also taken as an opportunity to consider preventive measures to stop the associated risk from occurring again in the future if possible.

Each year, the Chief Compliance Officer prepares a Compliance Report for the Management Board which is also discussed with the Supervisory Board.

Internal Audit

In fiscal 2022, Messer SE & Co. KGaA's Internal Audit and the central organization of Messer China performed 14 (previous year: 13) status audits in total at companies of the Messer Group (all follow-up audits, seven of which in Europe and five in China and two initial audits in China); there were also follow-ups on all the audits performed in 2021. All Internal Audit audits include advisory activities with the objective of passing on best-practice information and organizing assistance across national borders; this is done in line with the respective current standards of the companies in the individual countries. If necessary, other central functions are also consulted on an advisory basis (including SHEQ, Corporate Logistics, Central Sales functions). Compliance with Corporate Guidelines is audited and documentary spot checks and mass data analyses from the SAP systems are performed within the various processes to monitor the effectiveness and efficiency of these processes as well as the accuracy and reliability of financial reporting. Findings can be investigated and suggestions can be made on how to improve the transparency of business processes. The Audit Committee and Supervisory Board of the Messer Group regularly assess the quality and appropriate intensity of audits.

Bad Soden am Taunus, March 31, 2023

Messer SE & Co. KGaA,
represented by: Messer Management SE, general partner

Consolidated Financial Statements of Messer SE & Co. KGaA

Consolidated Income Statement

of Messer SE & Co. KGaA, Sulzbach (Taunus), for the period from January 1 to December 31, 2022 (in K€)

	Note	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Revenue	4	1,573,676	1,361,721
Cost of sales	5	(936,738)	(801,054)
Gross profit		**636,938**	**560,667**
Selling and distribution expenses	6	(246,576)	(220,697)
Impairment on trade receivables	31	(4,293)	(3,236)
General and administrative expenses	7	(126,399)	(102,584)
Other operating income	8	27,170	28,349
Other operating expenses	9	(14,741)	(14,384)
Operating income		**272,099**	**248,115**
Income from investments accounted for using the equity method	10,16	146,299	89,204
Other investment result, net	10	630	11
Finance income	10	38,257	24,794
Finance costs	10	(43,555)	(25,589)
Financial result, net		**141,631**	**88,420**
Profit from continuing operations before taxes		**413,730**	**336,535**
Income tax expense	11	(67,879)	(58,458)
Consolidated net profit		**345,851**	**278,077**
Attributable to:			
Shareholders of the parent company		298,013	235,651
Non-controlling interests		47,838	42,426

Consolidated Statement of Comprehensive Income

of Messer SE & Co. KGaA, Sulzbach (Taunus), for the period from January 1 to December 31, 2022 (in K€)

	Note	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Consolidated net profit		**345,851**	**278,077**
Items that may be reclassified to profit or loss			
Exchange rate differences			
Exchange differences on translation of foreign subsidiaries	29	(22,600)	82,686
Exchange differences from companies accounted for using the equity method	16, 29	26,302	21,467
Result from net investment in a foreign operation from companies accounted for using the equity method	16, 29	(5,721)	417
Derivative financial instruments			
Share of companies accounted for using the equity method[1]	16, 29	37,143	24,151
		35,124	**128,721**
Items that will not be reclassified to profit or loss			
FVOCI equity investments	31	29	7
Remeasurement of net defined benefit obligation for pension plans and other employee benefits			
Change in remeasurement of the net defined obligation for pension plans	24	13,093	1,751
Change in Group reporting	3	–	(9)
Deferred taxes	11	3,066	(122)
Share of companies accounted for using the equity method	16, 29	5,927	4,525
		22,115	**6,152**
Other comprehensive income		**57,239**	**134,873**
Total comprehensive income		**403,090**	**412,950**
Attributable to:			
Shareholders of the parent company		359,737	349,555
Non-controlling interests		43,353	63,395

[1] Gains/losses on financial instruments in effective hedges

For further information on equity, please refer to the comments on the consolidated statement of changes in equity below and note 29 “Equity” in the notes to the consolidated financial statements.

Consolidated Statement of Financial Position

of Messer SE & Co. KGaA, Sulzbach (Taunus) as of December 31, 2022 (in K€)

Assets	Note	**Dec. 31, 2022**	Dec. 31, 2021
Goodwill	14	272,004	276,926
Right-of-use assets	14	57,456	56,751
Other intangible assets	14	70,982	75,593
Property, plant and equipment	15	1,302,546	1,191,967
Investments accounted for using the equity method	16	1,095,069	884,955
Equity investments and other financial investments	17	2,452	2,485
Deferred tax assets	11	17,266	18,215
Other financial assets	18	7,382	8,726
Non-financial assets	18	806	854
Non-current assets		**2,825,963**	**2,516,472**
Inventories	19	80,582	66,511
Trade receivables	20	230,494	188,312
Current income tax assets		2,299	776
Other current financial assets	22	20,885	23,500
Non-financial assets	22	33,273	32,050
Cash and cash equivalents	23	260,454	304,215
Current assets		**627,987**	**615,364**
Total assets		**3,453,950**	**3,131,836**

Consolidated Statement of Financial Position

of Messer SE & Co. KGaA, Sulzbach (Taunus) as of December 31, 2022 (in K€)

Equity and Liabilities	Note	**Dec. 31, 2022**	Dec. 31, 2021
Issued capital	29	100,000	100,000
Capital reserves	29	536,937	536,937
Other reserves	29	(7,430)	(7,430)
Retained earnings	29	1,779,378	1,489,820
Other components of equity	29	37,982	(2,129)
Equity attributable to share-holders of the parent company		**2,446,867**	**2,117,198**
Non-controlling interests	29	**237,214**	**223,380**
Equity		**2,684,081**	**2,340,578**
Provisions for employee benefits	24	42,955	55,096
Other provisions	25	5,105	5,633
Non-current financial liabilities	26	162,338	158,936
Other non-current financial liabilities	27	100	–
Non-financial liabilities	27	1,645	1,070
Deferred tax liabilities	11	21,511	16,201
Non-current liabilities		**233,654**	**236,936**
Other provisions	25	34,651	31,504
Current financial liabilities	26	154,282	227,926
Trade payables	31	170,686	128,755
Current income tax liabilities		30,066	24,589
Other current financial liabilities	28	33,210	36,732
Non-financial liabilities	28	113,320	104,816
Current liabilities		**536,215**	**554,322**
Total equity and liabilities		**3,453,950**	**3,131,836**

Consolidated Statement of Changes in Equity

of Messer SE & Co. KGaA, Sulzbach (Taunus), for fiscal 2022 (in K€)

		Reserves			Other components of equity					
	Issued capital	Capital reserves	Other reserves	Retained earnings	Currency translation	Hedging reserve	Fair value reserve & result from net investment	Equity attributable to share-holders of the parent company	Non-controlling interests	**Total equity**
As of Jan. 1, 2021	**100,000**	**536,937**	**(7,430)**	**1,258,233**	**(104,054)**	**(6,164)**	**121**	**1,777,643**	**185,090**	**1,962,733**
Consolidated net profit	–	–	–	235,651	–	–	–	235,651	42,426	278,077
Other comprehensive income	–	–	–	5,936	83,393	24,151	424	113,904	20,969	134,873
Total comprehensive income	**–**	**–**	**–**	**241,587**	**83,393**	**24,151**	**424**	**349,555**	**63,395**	**412,950**
Others	–	–	–	–	–	–	–	–	1	1
Reclassifications	–	–	–	–	(4,730)	–	4,730	–	–	–
Dividends	–	–	–	(10,000)	–	–	–	(10,000)	(25,949)	(35,949)
Additions/disposals of non-controlling interests	–	–	–	–	–	–	–	–	843	843
As of Dec. 31, 2021	**100,000**	**536,937**	**(7,430)**	**1,489,820**	**(25,391)**	**17,987**	**5,275**	**2,117,198**	**223,380**	**2,340,578**
As of Jan. 1, 2022	**100,000**	**536,937**	**(7,430)**	**1,489,820**	**(25,391)**	**17,987**	**5,275**	**2,117,198**	**223,380**	**2,340,578**
Consolidated net profit	–	–	–	298,013	–	–	–	298,013	47,838	345,851
Other comprehensive income	–	–	–	21,613	8,660	37,143	(5,692)	61,724	(4,485)	57,239
Total comprehensive income	**–**	**–**	**–**	**319,626**	**8,660**	**37,143**	**(5,692)**	**359,737**	**43,353**	**403,090**
Others	–	–	–	(68)	–	–	–	(68)	–	(68)
Reclassifications	–	–	–	–	–	–	–	–	–	–
Dividends	–	–	–	(30,000)	–	–	–	(30,000)	(29,519)	(59,519)
Additions/disposals of non-controlling interests	–	–	–	–	–	–	–	–	–	–
As of Dec. 31, 2022	**100,000**	**536,937**	**(7,430)**	**1,779,378**	**(16,731)**	**55,130**	**(417)**	**2,446,867**	**237,214**	**2,684,081**

For further information on equity, please refer to the comments under note 29 “Equity” in the notes to the consolidated financial statements.

Consolidated Statement of Cash Flows

of Messer SE & Co. KGaA, Sulzbach (Taunus), for fiscal 2022 (in K€)

	Note	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Consolidated net profit before taxes		**413,730**	**336,535**
Income taxes paid		(54,221)	(52,782)
Depreciation of property, plant and equipment, amortization of intangible assets and impairment	14, 15	145,590	134,341
Income from changes in group reporting		–	2,356
Losses/(gains) on the disposal of fixed assets		(1,251)	(2,967)
Changes in investments in associates	16	(146,299)	(89,204)
Net interest result	10	6,671	7,804
Other non-cash financial result	10	(9,313)	(460)
Changes in assets arising from financing activities		1,455	1,157
Changes in inventories		(14,136)	11,561
Changes in receivables and other assets		(45,820)	(34,862)
Changes in provisions		6,696	(8,177)
Changes in trade payables and other liabilities		56,351	5,626
Cash flow from operating activities		**359,453**	**310,928**
Investments in property, plant and equipment and intangible assets		(262,270)	(219,983)
Investments in equity investments and other non-current assets		(25)	(7)
Payments for the acquisition of subsidiaries and associates		(136)	(2,854)
Changes in capital of associated companies		186	(346)
Proceeds from disposals of property, plant and equipment and intangible assets		4,166	3,864
Proceeds from disposals of subsidiaries and loans		(54)	306
Interest received		3,201	3,067
Cash flow from investing activities		**(254,932)**	**(215,953)**
Dividends to the shareholder of Messer SE & Co. KGaA		(30,000)	(10,000)
Proceeds from non-current financial liabilities	26	29,263	28,775
Proceeds from current financial liabilities	26	114,421	114,802
Repayments of non-current financial liabilities	26	–	(1)
Repayments of current financial liabilities	26	(210,980)	(175,050)
Payments for lease liabilities	26	(6,182)	(6,268)
Distributions to non-controlling interests		(29,519)	(25,948)
Reduction/(increase) of majority holdings without loss of control and acquisition of non-controlling interests		–	–
Payments to/receipts from non-controlling interests		–	843
Interest paid		(9,344)	(10,098)
Other net finance costs		(3,588)	2,005
Cash flow from financing activities		**(145,929)**	**(80,940)**
Changes in cash and cash equivalents		**(41,408)**	**14,035**
Cash and cash equivalents at the beginning of the period		**304,215**	**253,686**
Currency translation effect on cash and cash equivalents		(2,353)	36,494
at the end of the period		**260,454**	**304,215**

Notes to the Consolidated Financial Statements of Messer SE & Co. KGaA

1. General Information

Messer SE & Co. KGaA (the "Company") is a holding company with the business address Messer-Platz 1, 65812 Bad Soden am Taunus, and is based in Sulzbach (Taunus), Germany, registered with the Frankfurt/Main Local Court under the number HRB 123982. It is the parent company of the Messer Group (the "Group"), which produces and sells industrial gases (in particular oxygen, nitrogen, argon, helium, carbon dioxide, hydrogen and rare and high-purity gases), processes for their use and systems located on the customer's property (on site plants) for gas production. The main customers of the Messer Group include important companies from the manufacturing, chemical, steel-producing and pharmaceutical industries, the food industry and waste management.

As of December 31, 2022, Messer Industrie GmbH (Messer Industrie), in which the Messer family has bundled its industrial gases activities, is the sole shareholder of Messer SE & Co. KGaA through its holding in Messer Holding GmbH. Messer Industrie GmbH is the ultimate parent company in the Group and is required to produce consolidated financial statements. Messer SE & Co. KGaA thus prepares sub-group consolidated financial statements. The requirements of section 315e(3) of the Handelsgesetzbuch (HGB – German Commercial Code) for the preparation of the consolidated financial statements of Messer SE & Co. KGaA in accordance with the International Financial Reporting Standards (IFRS), as adopted in the EU, have been satisfied.

The reporting date for Messer SE & Co. KGaA and all the subsidiaries included in the consolidated financial statements is December 31 of the calendar year.

The consolidated financial statements of the Company for the fiscal year ended December 31, 2022 were approved for publication and submitted to the Supervisory Board of Messer SE & Co. KGaA for review by the general partner, Messer Management SE, on March 31, 2023. It is the responsibility of the Supervisory Board to review the consolidated financial statements. The consolidated financial statements are approved by the Annual General Meeting.

Messer GasPack GmbH and Messer Griesheim China Holding GmbH, both consolidated domestic subsidiaries, will use the exemption provisions in accordance with section 264(3) HGB and will therefore mostly not disclose their annual financial statements for 2022, nor will they prepare (HGB) notes or a management report.

2. Accounting Policies

Basis of preparation

The consolidated financial statements are prepared in euro. Unless stated otherwise, all amounts are rounded to thousands (K€). Differences may arise due to rounding.

Statement of compliance with IFRS

The consolidated financial statements for 2022 have been prepared in accordance with International Financial Reporting Standards (IFRS) and the Interpretations of the IFRS Interpretations Committee (IFRS IC), as applicable in the EU. The accounting policies on which the 2022 consolidated financial statements are based have been applied consistently.

The consolidated financial statements have been prepared on the basis of historical cost, amortized cost and the fair value from market measurement of available-for-sale financial assets and financial liabilities (including derivative financial instruments). Estimates are required in order to prepare the consolidated financial statements in accordance with IFRS and the Interpretations issued by the IFRS Interpretations Committee, as applicable in the EU. Moreover, the application of uniform Group accounting policies requires judgments on the part of management.

New financial reporting standards and interpretations

The following new or revised standards and interpretations are effective for the first time for these consolidated financial statements on January 1, 2022:

- Amendments to IFRS 16 COVID-19-Related Rent Concessions after June 30, 2021 (effective from April 1, 2021)
- Amendments to IFRS 3 – References to the Conceptual Framework
- Amendments to IAS 16 Property, Plant and Equipment – Proceeds before Intended Use
- Amendments to IAS 37 – Onerous Contracts – Cost of Fulfilling a Contract
- Annual Improvements to IFRSs 2018-2020 Cycle – Amendments to IFRS 1, IFRS 9, IFRS 16 and IAS 41

Amendments to IFRS 16 Covid-19-Related Rent Concessions beyond 30 June 2021

IFRS 16 specifies how lessees should account for changes in lease payments, including concessions. For each lease, the lessee must assess whether the rent concession is a modification of the lease and thus remeasure the lease liability.

A temporary expedient applied for rent concessions granted in connection with the COVID-19 pandemic. Under the practical expedient, lessees may elect not to assess whether certain COVID-19-related rent concessions are lease modifications and account for these rent concessions as if they were not lease modifications.

In response to the ongoing impact of the COVID-19 pandemic, amendments were made to IFRS 16 Leases on March 31, 2021 to allow for a one-year extension of the practical expedient. The amendments extend the practical expedient to rent concessions that reduce lease payments originally due on or before June 30, 2022. Previously, the practical expedient extended only to rent concessions that reduce lease payments due on or before June 30, 2021.

The changes have no material impact on these consolidated financial statements of Messer SE & Co. KGaA.

Amendments to IFRS 3 – References to the Conceptual Framework

Together with the amended Conceptual Framework, references to the Conceptual Framework were revised in various standards, including in IFRS 3. No changes are made to the content of regulations for acquisitions accounting.

This has no material impact on these consolidated financial statements of Messer SE & Co. KGaA.

Amendments to IAS 16 Property, Plant and Equipment – Proceeds before Intended Use

The amendments clarify that proceeds received by an entity from selling items produced while preparing the asset for its intended use (such as product samples), and the associated costs, are to be recognized in profit or loss. These amounts must not be taken into account when calculating cost.

This has no material impact on these consolidated financial statements of Messer SE & Co. KGaA.

Amendments to IAS 37 – Onerous Contracts – Cost of Fulfilling a Contract

The amendments define which costs an entity should include as the cost of fulfilling a contract when assessing whether a contract is onerous. The cost of fulfilling a contract comprises all costs that directly relate to the contract. This definition also includes incremental costs that would not have been incurred if the contract had not been obtained and other costs directly attributable to the contract.

This has no material impact on these consolidated financial statements of Messer SE & Co. KGaA.

Annual Improvements to IFRS Standards 2018-2020

The following standards were amended as part of the Annual Improvements to IFRS.

In IFRS 1, first-time adopter subsidiaries that apply IFRS 1.D16 (a) can measure cumulative translation differences using the amount reported by the parent.

The amendment to IFRS 9 clarifies which fees an entity includes in the 10% test (IFRS 9.B3.3.6) when assessing whether a financial liability must be derecognized. Only the fees paid or received between the entity as a borrower and the lender are considered.

In IFRS 16, presentation of the reimbursement of leasehold improvements was removed from Illustrative Example 13 on IFRS 16.

In IAS 41, the prohibition on considering tax payments as part of the fair value measurement was removed.

This has no material impact on these consolidated financial statements of Messer SE & Co. KGaA.

New financial reporting standards not yet effective:
The following new standards and amendments to standards were not yet effective for these consolidated financial statements and were therefore not applied, but had already been endorsed by the EU Commission and will be binding from fiscal years starting on January 1, 2023 or later:

- IFRS 17 (including amendments to IFRS 17) – Insurance Contracts (effective from fiscal 2023)
- Amendments to IAS 1 and IFRS Practice Statement 2 – Disclosure of Accounting Policies (effective from fiscal 2023)
- Amendments to IAS 8 – Definition of Accounting Estimates (effective from fiscal 2023)
- Amendments to IAS 12 – Deferred Tax Related to Assets and Liabilities Arising from a Single Transaction (effective from fiscal 2023)

The following new standards and amendments to standards have already been published, but had not yet been endorsed by the EU Commission and were therefore not applied:

- Amendments to IFRS 10 and IAS 28 – Sale or Contribution of Assets between an Investor and its Associate or Joint Venture (effective date deferred indefinitely)
- Amendments to IFRS 16 – Lease Liability in a Sale and Leaseback (effective from fiscal 2024)
- Amendments to IAS 1 – Classification of Liabilities as Current or Non-Current and Non-Current Liabilities with Covenants (effective from fiscal 2024)

The Group is not planning early adoption of the new or amended standards and interpretations that become effective in subsequent fiscal years. Unless stated otherwise, the impact on the consolidated financial statements of Messer SE & Co. KGaA is currently being examined.

Consolidation principles

A complete list of the Group's equity investments can be found in the annex to these notes. Material subsidiaries as of December 31, 2022 are:

Name and registered office of subsidiary	Country	Shareholding in percent Dec. 31, 2022	Shareholding in percent Dec. 31, 2021
Hunan Xianggang Messer Gas Products Co., Ltd., Xiangtan City, Hunan Province	China	55 %	55 %
Messer Haiphong Industrial Gases Co., Ltd., Hai Phong City	Vietnam	100 %	100 %
Messer Polska Sp. z o.o., Chorzów	Poland	99.97 %	99.97 %
Messer Hungarogáz Kft., Budapest	Hungary	100 %	100 %
Messer Tehnogas AD, Belgrade	Serbia	81.94 %	81.94 %
Sichuan Pangang Messer Gas Products Co., Ltd., Panzhihua, Sichuan Province	China	60 %	60 %
Messer Technogas s.r.o., Prague	Czechia	100 %	100 %
Foshan MS Messer Gas Co., Ltd., Foshan City, Guangdong Province	China	85 %	85 %
Sichuan Messer Gas Products Co., Ltd., Chengdu	China	100 %	100 %
Messer Tatragas spol.s.r.o., Bratislava	Slovakia	100 %	100 %
Xichang Pangang Messer Gas Products Co., Ltd., Xichang City	China	60 %	60 %
Messer Gas Products (Zhangjiagang) Co., Ltd., Zhanjiagang City, Jiangsu Province	China	100 %	100 %
Messer Austria GmbH, Gumpoldskirchen	Austria	100 %	100 %
Chongqing Messer Gas Products Co., Ltd., Chongqing, Sichuan Province	China	100 %	100 %
Messer Slovenija d.o.o., Ruse	Slovenia	74.76 %	74.76 %
Messer Romania Gaz S.R.L., Bucharest	Romania	100 %	100 %
Messer Croatia Plin d.o.o., Zapresic	Croatia	99.96 %	99.96 %

The consolidated financial statements comprise the financial statements of Messer SE & Co. KGaA and its subsidiaries as of December 31, 2022. The financial statements of the subsidiaries are prepared using uniform accounting policies and for the same reporting period as the financial statements of the parent company.

In conjunction with the acquisition of the majority of Linde's gas business in the US in 2019, the Linde companies in Canada, Brazil and Colombia and the takeover of Praxair's activities in Chile, the joint venture Yeti GermanCo 1 GmbH was founded by Messer SE & Co. KGaA and CVC Capital Partners for the purpose of assuming the management of Messer's business in Western Europe and the Americas. As of December 31, 2022, Messer SE & Co. KGaA's capital share still amounts to 54.46 %. The Yeti GermanCo 1 Group is jointly managed by Messer SE & Co. KGaA and CVC Capital Partners, and is included in the consolidated financial statements of Messer SE & Co. KGaA as a joint venture using the equity method.

a. Subsidiaries

Messer SE & Co. KGaA and its subsidiaries controlled by Messer SE & Co. KGaA are included in the consolidated financial statements as of December 31, 2022. The parent company controls an entity when it has exposure or rights to variable returns from its involvement with the entity and the ability to utilize its control so as to influence the amount of returns from the entity. Subsidiaries are included in the consolidated financial statements from the date on which control is achieved and until the date on which control ends.

All receivables and liabilities, revenue, income and expenses arising from intra-group transactions are eliminated in the consolidated financial statements. Intra-group transactions are performed on the basis of full cost transfer prices.

Subsidiaries are accounted for using the acquisition method. The cost of the acquisition represents the fair value of the assets transferred, the liabilities incurred or assumed and the equity interests issued by the acquirer at the transaction date. It also includes the fair value of any recognized assets or liabilities resulting from a contingent consideration arrangement. Assets, liabilities and contingent liabilities identifiable in conjunction with a business combination are measured at fair value as of the acquisition date on initial consolidation.

Acquisition-related costs are recognized as an expense in the period in which they are incurred.

Goodwill is measured as the excess of the cost of the acquisition, the amount of any non-controlling interest in the acquiree and the fair value of any previously held equity interest at the date of acquisition over the Group's share of the net assets measured at fair value. The option of accounting for goodwill using the full goodwill method is not exercised. If the cost is less than the fair value of the net assets of the subsidiary acquired, the difference is reassessed and then recognized directly in profit or loss. The results of the subsidiaries acquired or sold during the fiscal year are included in the consolidated income statement from the time control is achieved or until control is lost.

b. Transactions with non-controlling interests without loss of control

Transactions with non-controlling interests without a loss of control are treated in the same way as transactions with the Group's equity owners. Any difference arising from the acquisition of a non-controlling interest between the consideration paid and the relevant share in the carrying amount of the net assets of the subsidiary is recognized in equity. Gains and losses arising from the disposal of non-controlling interests are also recognized in equity.

c. Disposal of subsidiaries

If the Group loses control of an entity, the Group's remaining interest is remeasured at fair value and the resulting difference recognized in profit or loss. Furthermore, all amounts reported in other comprehensive income relating to this entity are accounted for as if the parent company had directly disposed of the related assets or liabilities. This means that any profit or loss previously recognized in other comprehensive income is reclassified either to profit and loss or to retained earnings.

d. Associates and joint ventures

Investments in entities over which the Group has significant influence but without control or joint control over financial and operating policy and joint ventures over which the Group has joint control are accounted for using the equity method (equity investments). These are initially measured at cost, including transaction costs. Significant influence is assumed if the Group holds 20 % or more of the voting power but does not control the investee. The Group's share in earnings of equity investments is shown under "Income from investments accounted for using the equity method". The carrying amounts of equity investments are written down if impaired. The Group's interest in associates and joint ventures includes the goodwill arising on acquisition (net of accumulated impairment losses).

If the ownership interest in an associate or joint venture is reduced but the investment continues to be an associate or joint venture, only a proportionate amount of the gain or loss previously recognized in other comprehensive income is reclassified to profit or loss, if this would also occur on the disposal of the individual assets and liabilities.

The Group's share of the profit or loss of associates and joint ventures is recognized in profit or loss from the acquisition date. Accumulated changes after acquisition are offset against the carrying amount of the investment. If the Group's share of the loss in an associate or joint venture is equal to or exceeds the Group's share in this investee, including other unsecured receivables, the Group recognizes no further losses unless it has entered into commitments for the associate or joint venture or has made payments for the associate or joint venture.

As of the end of each reporting period, the Group determines whether there is objective evidence that the investment in the associate or joint venture is impaired. If this is the case, the difference between the carrying amount and the recoverable amount is recognized as an impairment loss and reported in the income statement under the income from the investment in the associate or joint venture.

To the extent that a Group entity performs transactions with an associate or joint venture, any unrealized gains or losses are eliminated on the basis of the Group's interest in this entity.

Currency translation

a. Functional currency and reporting currency

The consolidated financial statements are presented in euro, the Group's reporting currency. The functional currency of individual foreign operations is determined by the economic environment in which they operate. The items included in the financial statements of the respective company are measured using this functional currency.

b. Transactions and balances

Foreign currency transactions are initially translated using the spot exchange rate between the foreign currency and the functional currency at the transaction date. Monetary assets and liabilities denominated in a foreign currency are translated into the functional currency at the closing rate. All exchange differences are recognized in profit or loss. Non-monetary items that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Non-monetary items that are measured at fair value in a foreign currency are translated using the exchange rates at the date when the fair value was determined.

Foreign currency gains and losses from trade receivables and trade payables denominated in foreign currencies are included in "Other operating income" or "Other operating expenses".

c. Group companies

The functional currency of foreign operations not based within the area of the European Currency Union (ECU) is the respective local currency. As of the end of the reporting period, assets and liabilities of these subsidiaries are translated into the Messer Group's reporting currency using the closing rate. Income and expenses are translated at average rates for the fiscal year. The resulting exchange differences are recognized through other comprehensive income and included in currency translation reserves within equity. They therefore do not affect profit or loss. When a foreign operation is deconsolidated, the cumulative amount recognized in equity for this foreign operation is reversed to profit or loss.

The following table shows an overview of the exchange rates used for the principal currencies:

		Average rates		Closing rates	
Selected currencies	ISO-Code	Jan. 1 – Dec. 31, 2022 EUR 1	Jan. 1 - Dec. 31, 2021 EUR 1	Dec. 31, 2022 EUR 1	Dec. 31, 2021 EUR 1
Chinese renminbi	CNY	7.08	7.64	7.36	7.19
Polish zloty	PLN	4.68	4.57	4.68	4.60
Serbian dinar	RSD	117.46	117.58	117.30	117.58
Czech koruna	CZK	24.56	25.69	24.12	24.86
Hungarian forint	HUF	391.27	359.01	400.87	369.19
US dollar	USD	1.06	1.19	1.07	1.13
Vietnamese dong	VND	24,719.85	27,176.08	25,233.00	25,872.00

Reporting

The reporting of prior-year disclosures for individual items was adjusted to match the presentation in the fiscal year. This affects note 32 "Related Parties".

Intangible assets and goodwill

The differences between the consideration transferred by the Messer Group for acquirees and the fair value of the assets acquired, liabilities assumed and contingent liabilities are recognized in accordance with IFRS 3.32 et seq. The remaining goodwill is tested for impairment in accordance with IAS 36 at least once a year.

The other intangible assets such as brands, patents, licenses, customer bases, software, etc. are initially measured at cost. Patents, licenses, customer bases and software, etc. are amortized on a straight-line basis over their expected useful lives of three to 20 years. The amortization charge on other intangible assets is reported within the related expense item, usually cost of sales or distribution and selling expenses. The brands "Messer" and "ASCO" are established on their markets and will be used in the future as well. For this reason, we assume an indefinite useful life for the brands "Messer" and "ASCO". These brands are tested for impairment in accordance with IAS 36 at least once per year. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at the end of each fiscal year.

Property, plant and equipment

Property, plant and equipment are recognized at cost and depreciated over their expected useful lives. The cost of acquired property, plant and equipment includes all costs directly attributable to their acquisition. The cost of self-constructed items of property, plant and equipment includes all directly attributable direct costs and an appropriate share of overheads, including depreciation, and are therefore measured taking all costs required to construct the assets into account. In the event of a statutory requirement to restore an item to its original condition, the cost also includes the present value of expected future payments for decommissioning and restoration. When each major inspection is performed, in accordance with IAS 16.14, its cost is recognized in the carrying amount of the item of property, plant and equipment as a replacement if the recognition criteria are satisfied.

Subsequent costs are only recognized as part of the cost of the asset or as a separate asset when it is probable that they will result in future economic benefits to the Group and the costs can be measured reliably.

Expenditure for repairs and maintenance, which does not represent a significant replacement investment, is recognized as an expense in the fiscal year in which it is incurred.

Gains and losses on the disposal of property, plant and equipment are calculated as the difference between proceeds from disposal and the carrying amounts of the assets and recognized in the consolidated income statement.

Depreciation is recognized on a straight-line basis over the following useful lives:

Depreciation	Useful life in years
Buildings	10 - 50
Plant and machinery	5 - 20
thereof air separation units	15
Other operating and office equipment	3 - 10

The residual carrying amounts and useful lives are reviewed at the end of each reporting period and adjusted as necessary. If the carrying amount of an item of property, plant and equipment exceeds the estimated recoverable amount, it is written down to that recoverable amount.

Borrowing costs are recognized as an expense in the period in which they are incurred, except when they relate to qualifying assets. Within the Messer Group, these chiefly relate to air separation units. Borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized as part of the cost of that asset up to the date when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are complete. A qualifying asset is an asset that necessarily takes a substantial period of time to get ready for its intended use or sale.

Leases

a. Leases in which the Group is the lessee
The Group leases various offices, warehouses, equipment and vehicles. Leases are generally concluded for fixed periods of one to 20 years for movable assets and for one year to indefinite for immovable assets, but may have extension options.

At the inception of a contract, the Group assesses whether the contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The Group uses the IFRS 16 definition of a lease to assess whether a contract includes the right to control an identifiable asset.

Contracts may contain both lease and non-lease components. The Group allocates the transaction price to these components based on their relative stand-alone prices. However, for leases of real estate for which the Group is a lessee, it has elected not to separate lease and non-lease components and instead accounts for these as a single lease component.

Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. Leased assets may not be used as security for borrowing purposes.

Leases are recognized as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable;
- variable lease payment that are based on an index or a rate, initially measured using the index or rate as of the commencement date;
- amounts expected to be payable by the Group under residual value guarantees;
- the exercise price of a purchase option if the Group is reasonably certain to exercise that option; and
- payments of penalties for terminating the lease, if the lease term reflects the Group exercising that option.

Lease payments to be made under reasonably certain extension options are also included in the measurement of the liability. The lease payments are discounted using the interest rate implicit in the lease. Otherwise, and this is typically the case in the Group, the lessee's respective incremental borrowing rate is used.

To determine the incremental borrowing rate, the Group:

uses recent third-party financing received by the individual lessee as a starting point. Lessees are divided into regions according to geographical segments. The financing is divided into groups based on the remaining terms of the contracts (up to 1 year, up to 2 years, up to 3 years, up to 4 years, up to 5 years and longer than 5 years). The calculated average interest rates for each group and region are used in measuring the right-of-use asset and lease liability.

The Group is exposed to potential future increases in variable lease payments based on an index or rate. These possible changes in lease payments are not taken into account in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

Lease payments are allocated between principal and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of the lease liability;
- any lease payments made at or before the commencement date less any lease incentives received;
- any initial direct costs; and
- estimated costs incurred by the lessee in dismantling or removing the underlying asset, restoring the location where it is to be found or restoring the underlying asset to the condition required in the lease agreement.

Right-of-use assets are generally depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life.

Depreciation is recognized on a straight-line basis over the following useful lives:

Depreciation	Useful life in years
Land	3 - 99
Buildings	1 - 78
Plant and machinery	1 - 24
Other operating and office equipment	1 -10

Payments associated with short-term leases of equipment and vehicles and all leases of low-value assets are recognized as an expense in profit or loss. Short-term leases are leases with a lease term of twelve months or less. These essentially comprise IT equipment and other equipment.

Extension and termination options are included in a number of property and equipment leases across the Group. These are used to maximize operational flexibility in terms of managing the assets used in the Group's operations. These options are taken into account in the measurement of right-of-use assets and lease liabilities when it is reasonably certain that they will be exercised.

The assessments of reasonable certainty are only revised if a significant event or a significant change in circumstances occurs that affects this assessment and that is within the control of the lessee.

b. Leases in which the Group is the lessor

If the Group is the lessor, it classifies each lease as either a finance lease or an operating lease at inception of the lease. At the Messer Group this particularly includes certain gas supply contracts, above all those for the gas generation plants rented on a long-term basis.

Leases in which a significant portion of the risks and rewards of ownership transfers to the lessee are classified as finance leases.

In this case, disposal is assumed at the start of the lease term and revenue is recognized in the amount of the present value of the lease payments attributable to the asset. In return, a claim from the customer that is reduced over the term of the contract is recognized. Interest income earned on finance leases is reported as other financial income.

Leases in which a significant portion of the risks and rewards of ownership remain with the lessor, are classified as operating leases. Payments made in connection with an operating lease are recognized as revenue from other sources in the income statement on a straight-line basis over the term of the lease.

Impairment and reversal of impairment on goodwill, right-of-use assets, other intangible assets and property, plant and equipment

An impairment test for goodwill, right-of-use assets, other intangible assets and property, plant and equipment involves comparing the recoverable amount of the asset against its carrying amount to determine whether it must be written down to recoverable amount. In accordance with IAS 36, goodwill is allocated to the smallest cash-generating unit for which goodwill is monitored by management. The recoverable amount is defined as the higher of the asset's fair value less costs to sell and its value in use. Fair value less costs to sell is defined as the amount obtainable from the sale of an asset or cash-generating unit in an arm's length transaction between knowledgeable, willing parties, less the costs of disposal. Value in use is the present value of future cash flows expected to arise from the continuing use of an asset and from its disposal at the end of its useful life. In the event of impairment, existing goodwill is reduced first. If the impairment loss exceeds the carrying amount of goodwill, the difference is typically distributed among the remaining non-current assets pro rata. With the exception of goodwill, impairment losses are reversed when the reasons for the impairment no longer apply. Impairment losses and required reversals are shown together with depreciation and amortization in the statement of changes in assets under additions to cumulative depreciation and amortization, and are reported and explained separately in the notes.

Inventories

Inventories are measured at the lower of cost or net realizable value at the end of the reporting period using the average cost method. Their production cost includes all directly attributable direct costs, appropriate portions of materials and production overheads and depreciation.

Trade and other receivables

Trade receivables are recognized from the date they arise. Items that do not contain a significant financing component are initially measured at the transaction price. The corresponding impairment loss is measured at an amount equal to lifetime expected credit losses, based on an analysis of historical default data and forecasts of future economic conditions. Expected credit losses are a probability-weighted estimate of credit losses.

Non-current assets and disposal groups held for sale and discontinued operations

In accordance with IFRS 5 "Non-current Assets Held for Sale and Discontinued Operations", the Group classifies non-current assets and disposal groups as held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use. A sale must be planned and practicable with a high probability within the next 12 months.

Immediately before initial classification, the carrying amounts of the asset are measured in accordance with applicable IFRSs. On reclassification, the asset is reported separately in the statement of financial position and measured at the lower of the carrying amount and fair value less costs to sell. Liabilities in connection with assets held for sale are presented separately in the statement of financial position.

In accordance with IFRS 5, a discontinued operation is recognized as such when it is held for sale or has already been sold.

A discontinued operation is a component of the Group's business comprising operations and cash flows that can be clearly distinguished from the rest of the Group and that:
- represents a separate major line of business or geographical area of operations;
- is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations; or
- is a subsidiary acquired exclusively with a view to resale.

If an operation is classified as a discontinued operation, the corresponding assets and liabilities are reported in the statement of financial position under "Assets held for sale" or "Liabilities held for sale". The income statement for the comparative year is restated as if the operation had been discontinued from the start of the comparative year.

A separate amount representing the total of the current profit and the gain or loss on remeasurement/disposal after taxes of the discontinued operation is shown in the income statement. This separate amount must be broken down further and presented, with additional disclosures, in the notes.

In line with standard consolidation procedures, intragroup income is eliminated for the selling/performing operation and the associated expenses are eliminated for the receiving operation. The elimination entries are assigned to the continuing operation in line with the future trade relationships of the Company.

Cash and cash equivalents

Cash and cash equivalents include freely available cash on hand and demand deposits. Cash equivalents also include short-term liquid financial assets with a term of up to three months that can be readily converted into cash. This risk of fluctuations in value is immaterial.

Employee benefits

a. Pension obligations

The Group has both defined benefit and defined contribution pension plans. A defined contribution plan is a pension plan under which the Group pays fixed contributions into a separate non-Group entity (a fund). The Group does not have any legal or constructive obligation to pay any additional amounts if the fund does not have sufficient assets to meet the pension entitlements of all employees for the current and past fiscal years.

Typically, defined benefit plans set out an amount of pension benefits that employees will receive on retirement and that is typically dependent on one or more factors (such as age, length of service and salary).

The Group's obligations from defined benefit pension plans are calculated separately for each defined benefit plan and according to actuarial principles. The benefits earned by employees in the current and prior periods – in return for their service – are initially estimated. The present value of the defined benefit obligation, the gross pension obligation, is calculated by actuaries using the projected unit credit method. Plan assets are deducted from the gross pension obligation at fair value. This results in the net liability or the net asset value to be recognized.

The Group determines the respective net interest expense (net interest income) from the net liability (net asset value) by multiplying the net liability (net asset value) at the beginning of the period by the interest rate with which the defined benefit gross pension obligation is discounted at the beginning of the period.

The interest rate is determined by reference to market yields at the end of the reporting period on high quality corporate bonds. The currency and term of the underlying corporate bonds are consistent with the currency and estimated term of the post-employment obligations.

The calculation of the net liability (net asset) is based on an actuarial report prepared by a qualified actuary as of the end of each reporting period.

If the deduction of plan assets from the defined benefit gross pension obligation results in an excess of plan assets, the amount of the net asset value is limited to the present value of the economic benefits associated with the plan asset surplus, e.g. in the form of reimbursements from the plan or reduced future contribution payments if the Group has control over these economic advantages. Control is assumed to exist if the Group can realize the economic benefit within the term of the pension plan or on settlement of plan liabilities.

The calculation of the present value of the economic benefits of the excess of plan assets takes into account any minimum funding requirements.

The amounts arising on remeasurement comprise actuarial gains and losses arising on the measurement of the defined gross pension obligation on the one hand and the difference between the actual return on plan assets and the rate of return assumed at the beginning of the reporting period on the other. In the event that there is an excess of plan assets, the amounts arising on remeasurement also include the change from applying an asset ceiling, to the extent that this has not been considered as part of the net interest component.

The Group recognizes all amounts arising on remeasurement in other comprehensive income (OCI), while other components of the net pension expense (service cost and net interest component) are recognized in profit or loss. The interest portion of the addition to provisions included in pension expense is reported as interest expense within net finance costs. The cumulative re-measurement effects are reported in retained earnings within equity.

If the present value of a defined benefit obligation changes as a result of a plan amendment or curtailment, the Group recognizes the resulting effect as past service cost in profit or loss. The amounts are recognized when the amendment or curtailment occurs.

Defined benefit plans expose the Group to various risks. In addition to general actuarial risks such as longevity risk and interest rate risk, the Group is exposed to currency risk and capital market/investment risk.

b. Obligations from bonus plans
Obligations for bonus payments are recognized as a liability and as an expense. A provision is recognized in the consolidated financial statements in cases in which there is a contractual obligation or a constructive obligation as a result of past business practices.

Other provisions

Other provisions are recognized for present legal and constructive obligations arising from past events that are likely to result in a future outflow of resources embodying economic benefits, provided that a reliable estimate can be made of the amount of the obligations. If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognized as interest expense.

Government grants

Government grants are recognized where there is reasonable assurance that the grant will be received and all attached conditions will be complied with. When the grant relates to an expense item, it is recognized as income on a systematic basis over the periods that the related costs, for which it is intended to compensate, are expensed. If the grant relates to an asset, it is recognized as deferred income and reversed to profit or loss on a straight-line basis over the expected useful life of the asset.

Financial instruments: principles

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. A distinction is made between derivative and non-derivative financial instruments.

Derivative financial instruments can be embedded in other financial instruments or non-financial instruments. In accordance with IFRS, an embedded derivative must be separated from the host contract and measured separately at its fair value if the economic characteristics of the embedded derivative are not closely related to those of the host contract. The Messer Group had no separable embedded derivatives in the fiscal year. Compound financial instruments issued that contain both an equity and a debt component must be accounted for separately on the basis of the substance of the instruments. The Messer Group was not party to any hybrid or compound financial instruments in the fiscal year. Regular way purchases and sales of financial instruments are typically recognized by the Messer Group as of the settlement date, while derivatives are recognized as of the trade date.

Financial assets and financial liabilities are initially recognized at fair value, including any transaction costs if necessary. The fair value of a financial instrument is the price that would be achieved between market participants on the measurement date for the sale of the financial instrument.

Financial assets are derecognized fully or in part when the contractual rights to receive cash flows have expired or if control over the financial asset and substantially all the risks and rewards of the asset have been transferred to a third party. Financial liabilities are derecognized when the contractual obligations have been settled, canceled or have expired.

The classes to be formed in accordance with IFRS 7 include the measurement categories presented below. Furthermore, receivables and liabilities from leases and hedging derivatives in the context of hedge accounting are included in the classes according to IFRS 7.

Financial assets

Financial assets are classified according to the following IFRS 9 measurement categories:

a. Financial assets at amortized cost (AC)

The Messer Group classifies its financial assets as at amortized cost only if both of the following criteria are met:

- the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- the contractual terms give rise to cash flows that are solely payments of principal and interest.

b. Financial assets at fair value through profit or loss (FVTPL)

The Messer Group classifies the following primary financial assets at fair value through profit or loss:

- debt investments that do not qualify for measurement at either amortized cost or fair value through other comprehensive income;
- equity investments that are held for trading; and
- equity investments for which the entity has not elected to recognize fair value gains and losses through other comprehensive income.

The Group has not designated any primary financial assets at fair value through profit or loss.

c. Financial assets at fair value through other comprehensive income (FVOCI)

Financial assets at fair value through other comprehensive income comprise:

- Equity instruments that are not held for trading, and which the Messer Group has irrevocably elected at initial recognition to recognize in this category. These are strategic investments and the Group considers this classification to be more relevant.
- Debt securities where the contractual cash flows are solely principal and interest and the objective of the Group's business model is achieved both by collecting contractual cash flows and selling financial assets.

The results of measuring such investments in equity instruments are reported in other comprehensive income and remain there even in the event of a sale. On disposal of these debt securities, any related balance within other comprehensive income is reclassified to retained earnings.

Financial liabilities

a. Financial liabilities at amortized cost (AC)
Financial liabilities at amortized cost are non-derivative financial liabilities that are subsequently measured at amortized cost using the effective interest method. Any difference between the amount received and the amount repayable is recognized as income or expense over the term of the instrument. Transaction costs incurred are deducted from the respective financial liabilities and amortized over the term of the underlying liability using the effective interest method. Within the Messer Group, this measurement category includes in particular financial liabilities, trade payables and non-derivative other current and non-current liabilities.

b. Financial liabilities at fair value through profit or loss (FVTPL)
Financial liabilities at fair value are either classified as held for trading or designated upon initial recognition as at fair value through profit or loss. Derivative financial instruments with a negative fair value are also measured at fair value through profit or loss.

These financial liabilities are subsequently measured at fair value, with gains and losses from the financial instruments in this category recognized directly in net finance costs in the income statement.

Derivative financial instruments and hedging

Derivatives are initially recognized at fair value on the date a derivative contract is entered into, and they are subsequently remeasured to their fair value at the end of each reporting period. The instruments are subsequently measured at the fair value determined at the end of the respective reporting period. The accounting for subsequent changes in fair value depends on whether the derivative is designated as a hedging instrument and, if so, the nature of the item being hedged. When entering into a derivative contract, the Messer Group designates it as either:

(1) a hedge of the fair value of recognized assets or liabilities (fair value hedges); or
(2) a hedge of a forecast transaction or firm commitment (cash flow hedge).

The Messer Group exclusively uses derivatives for hedging if this is required by the hedged items. This applies, for example, to risks from exchange rate fluctuations. Hedged items are the obligations contractually entered into to achieve the goals of the Messer Group, receivables and anticipatory transactions. Derivative instruments are thus exclusively used to safeguard the Messer Group's business performance to the extent stipulated in its Articles or Association. Macro hedging, i. e. the consolidation of individual positions in order to merely hedge the net amount, is not practiced.

Most of the transactions for which this type of hedging could be applied are hedged in full in terms of scope or amount, using a variety of financial instruments. The selection of individual instruments is always a management decision, made in line with the risk profile, i. e. the opportunity for return associated with the respective risk.

Certain financial derivatives, which have been entered into in conjunction with the Group's risk management to hedge risks but do not fully satisfy the formal requirements, are therefore not included in hedge accounting, and are instead recognized as stand-alone derivatives in the IFRS 9 "financial assets and liabilities at fair value through profit or loss" category.

When entering into the transaction, the Group documents the relationship between the hedging instrument and the hedged item in addition to the objective of its risk management and its underlying strategy. In addition, at the inception of the hedge and thereafter, the Group documents its assessment of whether the derivatives used in the hedge are highly effective at compensating for the changes in the fair value or cash flow. Hedge accounting is only maintained as long as its effectiveness can be proven. Evidence of this effectiveness is determined by comparing the contract specifics, maturities and volumes (critical terms match) and by means of a regression analysis.

a. Cash flow hedges
Changes in the fair values of derivatives classified as cash flow hedges that are a close match for the hedged item are recognized in equity. If the forecast transaction or firm commitment results in the recognition of a non-financial asset or non-financial liability, the gains and losses previously deferred in equity are removed from equity and included in the measurement of the cost of the asset or liability. In all other cases, the gains or losses previously recognized in equity are transferred to profit or loss in the same period as that in which the hedged forecast transaction or firm commitment is recognized in profit or loss.

Income and operating cash flow are essentially unaffected by market interest rates, as the Group does not hold any significant interest-bearing assets. Variable interest loans are partially hedged using interest rate swaps (cash flow hedge for future interest payments). This effectively converts loans with floating interest rates into loans with fixed interest rates.

When a hedging instrument expires or is sold, or when a hedging instrument no longer meets the criteria for hedge accounting in accordance with IAS 9, any cumulative gains or losses recognized in equity to date remain there and are not removed until the forecast transaction or firm commitment is recognized in profit or loss. However, if the forecast transaction or firm commitment is no longer expected to occur, the cumulative gain or loss that had been recognized directly in equity is recognized in profit or loss.

b. Fair value hedges
The changes in the fair value of derivatives that are designated as a fair value hedge and are a close match for the underlying transaction are recognized in the income statement together with the changes in the fair value of the hedged assets or liabilities attributable to the hedged risk.

The fair values of the various derivative financial instruments are listed under note 31 “Other Financial Instrument Disclosures”.

As of December 31, 2022, none of the derivative financial instruments satisfied the criteria for hedge accounting.

Management of financial risks

In conjunction with its operating activities, the Messer Group is exposed to various financial risks, in particular credit, liquidity, interest and currency risk, which are described in more detail under note “31”. The Group’s risk management system takes into account the fact that financial market developments are not foreseeable and is intended to minimize any potential negative impact on the Group’s financial position. The Group uses derivative financial instruments to hedge against specific risks.

Risk management is handled by Group Treasury in compliance with guidelines approved by management. Group Treasury identifies, assesses and hedges financial risks. The guidelines contain general principles for risk management and detailed rules for specific areas, such as currency and interest rate risks, the use of derivative financial instruments and the investment of surplus cash.

Use of assumptions, estimates and judgments

The preparation of IFRS financial statements requires management to make certain assumptions, estimates and judgments that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities as of the end of the reporting period and the reported amounts of revenue and expenses for the fiscal year. The estimates and assumptions concern the future. Actual results may therefore differ from these estimates.

Estimates and their underlying assumptions are examined on an ongoing basis. Revisions of estimates are recognized prospectively. If a change in an accounting estimate gives rise to changes in assets and liabilities, or relates to an item of equity, the changes in estimates are recognized by adjusting the carrying amounts of the related assets, liabilities or equity items.

Judgments, assumptions concerning the future and sources of estimation uncertainty that could potentially have the greatest impact on these consolidated financial statements were required in particular for:

a. Assessing whether control, joint control or significant influence applies at companies in which the Messer Group holds fewer than 100% of voting rights (note 3)
Judgments can be used in assessing whether control, joint control or significant influence applies at companies in which Messer holds fewer than 100% of the voting rights. It must be assessed whether there are other contractual rights or circumstances that can lead to the Group having decision-making power over the potential subsidiary, or whether it has joint control or significant influence. The assessments are revised whenever the contractual arrangements or circumstances change.

b. Income taxes (note 11)
IFRIC 23 clarifies how to apply the recognition and measurement requirements in IAS 12 when there is uncertainty over income tax treatments and comprises current and deferred tax assets and liabilities. Under IFRIC 23, uncertain tax treatments can be considered separately or together with one or more other uncertain tax treatments. The approach that better predicts the resolution of the uncertainty is to be chosen here. In assessing this, it should be assumed that a taxation authority will examine amounts it has a right to examine and have full knowledge of all related information when making those examinations. If it is considered unlikely that a taxation authority will accept an uncertain tax treatment, either the most likely amount or the expected value is to be applied to each uncertain tax treatment in order to account for the effect of the uncertainty, depending on which approach better predicts the resolution of the uncertainty.

The Group companies are subject to income taxes in a number of countries worldwide. When assessing global income tax claims and liabilities, the interpretation of tax provisions may be subject to particular uncertainty. The possibility that the relevant tax authorities will take a different view concerning the correct interpretation of tax standards cannot be ruled out. Changes to the assumptions underlying the correct interpretation of tax standards, for example as a result of changes in legislation, affect the accounting treatment of uncertain income tax assets and liabilities in the fiscal year in question.

Agreements have been reached at global level to address concerns over unequal profit distribution and tax payments at major multinationals, including an agreement by more than 135 countries to introduce a minimum global tax rate of 15%. The OECD published a draft legal framework in December 2021, followed by detailed rules in March 2022, that are to be used by the individual countries that signed the agreement to make changes to their local tax legislation. The Group may be subject to the minimum tax rate as soon as the changes to tax legislation in the Group's operating countries come into force or are about to come into force. At the time of approving the consolidated financial statements for publication, the tax law in connection with the minimum tax rate was not in force or about to come into force in any of the countries in which the Group operates.

The Group may be subject to the minimum tax rate as it has subsidiaries in Hungary, Bulgaria, North Macedonia, Bosnia-Herzegovina and Vietnam where the local tax rate is below 15 %.

The Management Board closely follows how legislation is progressing in each country in which the Group operates. As of December 31, 2022, the Group did not have sufficient information to determine the potential quantitative effects.

c. Goodwill impairment testing (note 14)
Impairment is tested in accordance with IAS 36 on the basis of the expected future cash flows of these cash-generating units or groups of cash-generating units over the detailed planning period of four years and is subject to estimates made by the Group. Judgments are also required to derive capitalization rates. A change in the factors used when testing goodwill and other intangible assets or property, plant and equipment for impairment may lead to higher, lower or no impairment.

d. Determination of useful lives of property, plant and equipment and when assessing which cost components can be capitalized (note 15)
Group-wide uniform useful lives for items of property, plant and equipment are determined on the basis of past experience and regularly reviewed. As part of the process of assessing whether an item is eligible for recognition as an asset and which components of cost should be taken into account, we make assumptions regarding the expected future usability of the asset.

e. Impairment testing of investments accounted for using the equity method (note 16)
Judgments may be required for the parameters used in testing impairment on investments accounted for using the equity method, such as future earnings prospects.

f. Assessment of the need for and measurement of allowances for doubtful debts (notes 18, 20, 31)
When recognizing allowances for doubtful debts, estimates are made regarding the creditworthiness of individual customers and market segments, and general economic forecasts for the different countries and the history of our bad debts.

g. Measurement of pension obligations (note 24)
Obligations from defined benefit pension commitments are calculated on the basis of actuarial assumptions. These are mainly the discount rate, life expectancy and pension and salary trends. The interest rate is determined by reference to market yields at the end of the reporting period on high quality corporate bonds. Sensitivity analyses with respect to the interest rate used are provided in the notes.

h. Recognition and measurement of other provisions (note 25)
Other provisions are recognized and measured on the basis of an assessment of the probability of a future outflow of benefits, using values based on experience and circumstances known as of the end of the reporting period. The actual outflow of economic resources at a later date could be lower or higher than the amount recognized as a provision. The nature of estimates and judgments used differs for the various categories of provisions.

The recognition and measurement of provisions for legal disputes requires a high degree of judgment as to whether a current obligation exists and whether a future outflow of economic resources is probable and can be reliably estimated. We obtain assessments from in-house and external attorneys to assess these matters. Changes in circumstances may result in adjustments to provisions.

Income taxes

The tax expense comprises current and deferred taxes. Current and deferred taxes are recognized in profit or loss, except to the extent that they are associated with a business combination or with an item recognized directly in equity or other comprehensive income.

The Group has determined that interest and penalties on income taxes, including uncertain tax items, do not meet the definition of income taxes and are therefore accounted for in accordance with IAS 37.

a. Current taxes
Current taxes are the expected tax liability or tax receivable on the taxable income or loss for the fiscal year based on tax rates that are enacted or substantively enacted at the end of the reporting period, plus any adjustments to tax liability for prior years. The amount of the expected tax liability or tax receivable reflects the amount that is the best estimate, taking into account tax uncertainty, if any. Current tax liabilities also include all tax liabilities that arise as a result of dividends being determined. Current tax assets and liabilities are only netted under certain conditions.

b. Deferred taxes
Deferred taxes are recognized, in accordance with the asset and liability method, for all temporary differences at the end of the reporting period between the carrying amounts of assets and liabilities in the statement of financial position and their corresponding tax bases, and on the tax loss and for tax loss carryforwards. In accordance with IAS 12.15 in conjunction with IAS 12.21B, temporary differences arising on the initial recognition of goodwill are not included in the calculation of deferred taxes. Deferred taxes are calculated using currently enacted or substantially enacted tax rates that will apply when the temporary differences are expected to reverse. Deferred tax assets are recognized to the extent that it is probable that future taxable profits will be available against which the unused tax loss carryforwards or asset-side differences between the carrying amounts and the corresponding tax bases can be utilized.

Deferred tax assets and liabilities are only offset if they relate to income taxes levied by the same taxation authority and the entity has a legally enforceable right to offset the tax assets and liabilities.

Income taxes relating to items that are recognized directly in other comprehensive income are also recognized in other comprehensive income and not in profit or loss. Deferred taxes are recognized in other comprehensive income if the underlying transaction is also recognized in other comprehensive income.

Revenue recognition

Revenue includes sales of products (essentially industrial gases) and services as well as rental income, less trade discounts and rebates.

a. Revenue from on site plant and pipeline sales
Customers requiring large volumes of industrial gases (typically oxygen, nitrogen and hydrogen) and with a relatively constant demand are typically supplied by plants adjacent to or on their facilities, the capacity of which frequently also covers the liquid gas requirements of the surrounding market. These plants are legally owned and operated by the Messer Group. The product supply contracts typically have terms of ten to 15 years and generally include agreements on minimum purchase volumes or minimum prices and price escalation clauses. Revenue is recognized when the gas is delivered to the customer, which is the date on which control of the industrial gases is transferred. If the customer does not take delivery of the minimum purchase requirements, revenue is generally recognized in the amount of the contractual minimum. The same conditions and accounting policies apply to sales via pipelines, with the sole difference that customers are supplied via a pipeline. Estimates are not required as of the end of the year as a result of regular billing.

Certain gas supply contracts, in particular those for the gas generation plants rented on a long-term basis, must be examined for the existence of a finance lease in accordance with IFRS 16 and, if necessary, classified as such. In the event of a finance lease in accordance with IFRS 16, disposal is assumed at the start of the lease term and revenue is recognized in the amount of the present value of the lease payments attributable to the asset. Interest income earned on finance leases is reported as other financial income.

b. Revenue from liquefied gases
Liquid products are typically stored in the Group's own tanks, which are rented to customers on their premises. The gases are delivered to customers in tankers, tank trailers or rail cars from which the gases are transferred to the leased tanks. The agreements customary in liquefied products business typically have a term of two to three years. Revenue from liquefied products is recognized on delivery to the tank. Income from the rental of tanks is recognized according to the terms of the lease agreements in accordance with IFRS 16.

c. Revenue from cylinder gases
Customers who need small amounts of gas (especially for most special gases) receive the products in cylinders, which are typically owned by the Group and rented to customers. Cylinder gases are generally sold by individual purchase orders or by contracts, with terms ranging between one and two years in Europe. Revenue from gas sales is realized on delivery to the customer. Income from the rental of cylinders is recognized according to the terms of the lease agreements in accordance with IFRS 16.

d. Construction contracts
Depending on the type of contractual arrangement, revenue from long-term construction contracts in the Engineering division is recognized either at a point in time or over a period of time.
In accordance with IFRS 15, revenue from engineering projects is recognized over a period of time if they satisfy the criteria of IFRS 15.35. In the Messer Group, this typically only applies to air separation units for specific customers. For other engineering projects that do not meet the criteria mentioned, revenue is recognized when the project is completed in accordance with IFRS 15.

3. Consolidated Companies

The consolidated group of Messer SE & Co. KGaA developed as follows:

2022	Germany	Other countries	**Total**
Consolidated	3	58	61
Equity method	4	3	7
As of Jan. 1	**7**	**61**	**68**
Additions			
Acquisitions	–	–	–
Companies founded	–	1	1
Disposals			
Company sales	–	–	–
Liquidations	(1)	–	(1)
As of Dec. 31	**6**	**62**	**68**
Consolidated	3	59	62
Equity method	3	3	6

Initial consolidation

The following company was founded in the past fiscal year and commenced operations:

- Zhuzhou Xianggang Messer Gas Products Co., Ltd., China, 55 %

Others

In August 2022, the Chinese company Yunnan Yuntianhua Messer Gas Products Co., Ltd. was renamed Yunnan Dianzhong Messer Gas Products Co., Ltd.

The associate Cryogenic Engineering GmbH, Germany, was liquidated as of November 4, 2022.

Notes to the Consolidated Income Statement

4. Revenue

	Jan. 1 – Dec. 31, 2022		Jan. 1 – Dec. 31, 2021	
From contracts with customers	1,499,529	95 %	1,295,150	95 %
From other revenue sources	74,147	5 %	66,571	5 %
Total	**1,573,676**	**100 %**	**1,361,721**	**100 %**

Revenue is mainly generated by the sale of liquefied products, cylinder gases and on site and pipeline sales. Revenue breaks down among the individual sales channels as follows:

	Jan. 1 – Dec. 31, 2022		Jan. 1 – Dec. 31, 2021	
Liquefied gases	591,760	38 %	534,033	39 %
Pipeline/on site	546,120	35 %	455,261	34 %
Cylinder gases	274,203	17 %	222,297	16 %
Hardware/other	87,446	5 %	83,559	6 %
From contracts with customers	**1,499,529**	**95 %**	**1,295,150**	**95 %**
From other revenue sources	74,147	5 %	66,571	5 %
Total	**1,573,676**	**100 %**	**1,361,721**	**100 %**

Revenue breaks down among the individual regions as follows:

	Jan. 1 – Dec. 31, 2022		Jan. 1 – Dec. 31, 2021	
China	712,171	45 %	645,151	47 %
Central Europe	331,124	21 %	251,627	18 %
Southeast Europe	322,013	20 %	280,503	21 %
ASEAN	136,036	9 %	106,580	8 %
Western Europe	72,332	5 %	77,860	6 %
Total	**1,573,676**	**100 %**	**1,361,721**	**100 %**

5. Cost of sales

In addition to directly attributable costs, such as materials purchasing, energy and personnel expenses, the cost of sales also includes overheads attributable to the production process, including depreciation on air separation units.

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Goods purchased	133,681	115,934
Production costs		
Energy	518,630	416,352
Depreciation and amortization	93,869	84,303
Personnel expenses	73,558	64,627
Maintenance	16,341	22,580
Taxes and other fees	8,358	8,163
Security and insurance	6,192	4,236
Others		
Hardware	28,713	31,506
Services	11,325	11,789
Raw materials and supplies	23,797	26,033
Other	22,274	15,531
Total	**936,738**	**801,054**

6. Selling and Distribution Expenses

Selling and distribution expenses also include the costs of all sales departments and logistics activities.

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Transportation costs	90,483	79,865
Personnel expenses	62,800	57,961
Depreciation and amortization	42,505	40,441
Maintenance	11,617	8,350
Warehousing costs	8,754	7,729
Advertising	1,777	1,155
Insurance	1,391	1,172
Other	27,249	24,024
Total	**246,576**	**220,697**

7. General and Administrative Expenses

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Personnel expenses	54,331	46,295
IT services	17,742	10,452
Administration expenses of related parties	10,197	–
Depreciation and amortization	9,216	9,597
Legal and consulting expenses	7,356	3,732
Insurance and assurance services	3,614	3,322
Rent	1,395	1,275
Other	22,548	27,911
Total	**126,399**	**102,584**

8. Other Operating Income

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Exchange rate gains from operating activities	4,525	1,564
Insurance claims	4,293	1,230
Income from related parties	3,992	4,079
Other reimbursements	3,684	3,063
Gains on the disposal of non-current assets	2,545	3,310
Derecognition of liabilities	597	1,511
Other prior-period income	390	1,173
Gains on the disposal of current assets	–	4,051
Change in the fair value of derivatives through profit or loss	–	2,758
Other	7,144	5,610
Total	**27,170**	**28,349**

9. Other Operating Expenses

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Exchange rate losses from operating activities	5,029	1,872
Related party expenses	2,491	4,750
Change in the fair value of derivatives through profit or loss	1,835	–
Losses on the disposal of non-current assets	1,216	353
Bank charges	473	407
Prior-period expenses	128	38
Other taxes	18	782
Loss due to changes in Group reporting	–	2,356
Other	3,551	3,826
Total	**14,741**	**14,384**

10. Financial Result, Net

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Income from investments accounted for using the equity method	**146,299**	**89,204**
Other investment result, net	**630**	**11**
Finance income	**38,257**	**24,794**
Interest income from		
Bank balances	2,233	1,980
Leases	297	357
Income in connection with the interest effect of provisions	262	–
Others	443	724
Foreign currency gains	28,635	15,683
Gain or loss from the measurement of derivatives	5,840	5,790
Other finance income	547	260
Finance costs	**(43,555)**	**(25,589)**
Interest expense from		
Liabilities to banks	(8,943)	(10,157)
Leases	(836)	(893)
Expenses for the interest effect of provisions	(440)	(247)
Capitalized borrowing costs	630	783
Others	(317)	(351)
Foreign currency losses	(31,954)	(12,778)
Loss from the measurement of derivatives	–	–
Other finance costs	(1,695)	(1,946)
Total	**141,631**	**88,420**

For more information on interest expenses for our bank financing and derivatives, please refer to note 26 "Financial Liabilities" and note 31 "Other Financial Instrument Disclosures".

11. Income Tax Expense

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Current income taxes	(58,107)	(59,623)
Deferred income taxes	(9,772)	1,165
Total	**(67,879)**	**(58,458)**

Deferred income taxes relating to items charged or credited directly to other comprehensive income:

	Dec. 31, 2022	Dec. 31, 2021
Deferred taxes on results of financial assets held for sale	(22)	(22)
Deferred taxes relating to the remeasurement of net defined benefit obligations	3,719	653
Deferred taxes relating to the initial application of IFRSs	89	157
Deferred tax assets / (liabilities) recognized in other comprehensive income	**3,786**	**788**

The following reconciliation summarizes the individual calculations of deferred taxes for specific companies using the respective tax rates specific to their countries, taking consolidation adjustments into account. The expected tax expense is reconciled to the effective reported tax expense. To calculate the expected tax expense, the income tax rate for the Group in fiscal 2022, based on the tax rate for the parent company of 30 % (previous year: 30 %), is multiplied by the profit before tax.

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Tax rate	30.00 %	30.00 %
Profit before tax	**413,730**	**336,535**
Expected income tax expense	(124,119)	(100,961)
Impairment loss/non-recognition of deferred taxes on temporary differences	(5,747)	(1,838)
Impairment loss/non-recognition of deferred taxes on current losses	(8,112)	(2,912)
Effects of previously unrecognized tax losses	1,043	5,753
Effect of tax credits	3,188	1,140
Non-deductible interest expenses	(410)	(994)
Non-deductible withholding tax/other taxes	(6,281)	(10,078)
Effect of changes in tax rates	(645)	–
Associates accounted for using the equity method	43,938	25,557
Tax expense/(income) for previous years	1,486	334
Non-deductible expenses for tax purposes/tax-free income	(7,759)	(3,512)
Tax rate differences at Group companies	34,637	30,304
Others	902	(1,251)
Effective tax expense from operating activities	**(67,879)**	**(58,458)**
Effective tax rate	**16.41 %**	**17.37 %**

As of December 31, 2022, within the Messer Group there were tax loss carryforwards of K€ 186,291 (previous year: K€ 162,968) and credit for offsetting in the form of interest carryforwards of K€ 46,357 (previous year: K€ 44,984).

The Group's loss carryforwards will expire as follows:

Expiring within	Dec. 31, 2022	Dec. 31, 2021
1 year	5,985	3,095
2 years	2,623	7,342
3 years	5,514	3,339
Indefinite	172,169	149,192
Total	**186,291**	**162,968**

For Group companies that had losses in the current or the previous period, a deferred tax asset of K€ 663 (previous year: K€ 3,317) was capitalized, the realization of which is dependent on future taxable profits that are higher than the effects of the reversal of existing taxable temporary differences. The recognition of deferred tax assets is justified in that their realization is likely on the basis of planning for tax purposes.

Deferred taxes were not recognized for tax loss and interest carryforwards of K€ 193,373 (previous year: K€ 173,428) or temporary differences of K€ 30,539 (previous year: K€ 36,836), as it is assumed – on the basis of planning for tax purposes – that it will not be possible to utilize the tax loss carryforwards or temporary differences. While the interest carryforwards of K€ 46,357 without deferred tax assets and temporary differences of K€ 30,539 are considered indefinite, the loss carryforwards without deferred tax assets will expire as follows:

Expiring within	Dec. 31, 2022	Dec. 31, 2021
1 year	2,544	2,112
2 years	2,096	3,406
3 years	5,095	2,788
Indefinite	137,281	120,138
Total	**147,016**	**128,444**

In accordance with IAS 12.39, deferred taxes on the difference between the pro rata equity of a subsidiary recognized in the consolidated statement of financial position and the carrying amount of the investment in that subsidiary must be included in the parent company's tax accounts (outside basis differences) if they are expected to be realized. These differences essentially relate to the retained earnings of German and foreign subsidiaries. Deferred taxes are not recognized for these retained earnings as they are re-invested indefinitely or are not subject to corresponding taxation. Distributions by subsidiaries would be subject to dividend taxation. Distributions from abroad could also trigger withholding tax. As of December 31, 2022, deferred tax liabilities for outside basis differences were not taken into account for planned dividend payments as their realization is not planned.

Deferred taxes are attributable to the following statement of financial position items as of December 31, 2022:

	Dec. 31, 2022	Dec. 31, 2021	Recognized in the income statement*	Recognized in other comprehensive income
Deferred tax assets				
Tax loss carryforwards and tax credits	9,979	9,293	686	–
Intangible assets and property, plant and equipment	9,098	9,201	(103)	–
Inventories	1,600	1,582	18	–
Trade receivables	2,759	2,697	62	–
Provisions for employee benefits	6,089	10,006	(6,983)	3,066
Non-current financial liabilities	4,010	2,375	1,635	–
Short-term provisions	2,974	3,081	(107)	–
Other current liabilities	7,635	8,263	(628)	–
Miscellaneous	2,469	2,926	(457)	–
Total	**46,613**	**49,424**	**(5,877)**	**3,066**
Offsetting	**(29,347)**	**(31,209)**		
Deferred tax assets, net	**17,266**	**18,215**		
Deferred tax liabilities				
Intangible assets	(25,090)	(25,118)	28	–
Property, plant and equipment	(16,385)	(16,441)	56	–
Other non-current receivables and assets	(1,923)	(1,953)	30	–
Inventories	(358)	(344)	(14)	–
Other current receivables and other assets	(2,666)	(1,675)	(991)	–
Non-current and current financial liabilities	(854)	–	(854)	–
Miscellaneous	(3,582)	(1,879)	(1,703)	–
Total	**(50,858)**	**(47,410)**	**(3,448)**	–
Offsetting	**29,347**	**31,209**		
Deferred tax liabilities, net	**(21,511)**	**(16,201)**		
Total deferred taxes, net	**(4,245)**	**2,014**	**(9,325)**	**3,066**

* of which exchange rate changes recognized in other comprehensive income: K€ 447

Under deferred tax assets, deferred taxes were recognized on lease liabilities of K€ 3,684 and K€ 1,065 in the items "Non-current financial liabilities" and "Miscellaneous". The "Intangible assets" statement of financial position item under deferred tax liabilities includes deferred taxes on right-of-use assets of K€ 4,895.

Deferred tax assets and liabilities, after offsetting at the individual companies, break down as follows:

Deferred taxes	**Dec. 31, 2022**	Dec. 31, 2021
Deferred tax assets	17,266	18,215
Deferred tax liabilities	(21,511)	(16,201)
Deferred tax assets / (liabilities), net	**(4,245)**	**2,014**

Deferred tax assets and liabilities in the statement of financial position and deferred taxes in the income statement are reconciled as follows:

	Dec. 31, 2022	Dec. 31, 2021
Change in deferred tax assets in the statement of financial position	(949)	2,294
Change in deferred tax liabilities in the statement of financial position	(5,310)	(768)
Difference	(6,259)	1,526
of which:		
Through profit and loss	(9,772)	1,165
Offset against other comprehensive income	3,066	(122)
Exchange rate changes	447	483

12. Personnel Expenses

Personnel expenses consist of wages and salaries, social security contributions and other employee benefits (e.g. pensions).

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Personnel expenses	188,258	166,969

The above amount includes wages and salaries of K€ 153,861 (previous year: K€ 136,533), expenses for pensions and other benefits of K€ 3,476 (previous year: K€ 3,047), social security contributions of K€ 29,090 (previous year: K€ 26,692) and other staff costs of K€ 1,831 (previous year: K€ 697). The expenses for defined contribution plans, which essentially relate to statutory pension insurance in Germany, amounted to K€ 2,037 in total for fiscal 2022 (previous year: K€ 1,694).

13. Number of Employees (Annual Average)

The average number of employees breaks down as follows:

By region	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
China	2,407	2,306
Southeast Europe	1,316	1,312
Central Europe	777	767
ASEAN	533	467
Western Europe	267	279
Total number of employees	**5,300**	**5,131**

By function	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Production and filling	2,039	1,942
Logistics	1,040	990
Administration	915	919
Engineering	706	677
Sales and marketing	600	603
Total number of employees	**5,300**	**5,131**

Notes to the Consolidated Statement of Financial Position

14. Intangible Assets

Goodwill

	2022	2021
Cost		
As of Jan. 1	**364,404**	**352,056**
Additions	–	–
Exchange rate changes	(5,178)	12,348
As of Dec. 31	**359,226**	**364,404**
Cumulative amortization		
As of Jan. 1	**(87,478)**	**(86,024)**
Additions	–	–
Exchange rate changes	256	(1,454)
As of Dec. 31	**(87,222)**	**(87,478)**
Net carrying amounts as of Jan. 1	**276,926**	**266,032**
Net carrying amounts as of Dec. 31	**272,004**	**276,926**

Goodwill is tested for impairment as of December 31 each year. In accordance with IAS 36, goodwill is allocated to the smallest cash-generating unit for which goodwill is monitored and tested for impairment at this level by comparing discounted expected future cash flows against the carrying amount of that cash-generating unit. The smallest identifiable group of assets that generate cash inflows from continued use that are largely independent of the cash inflows of other assets or other groups of assets (cash-generating unit) were identified by the companies of the Messer Group operating in the individual countries. If production and distribution companies within a country complement each other economically, they are combined to form a cash-generating unit. These cash-generating units specifically exist for Poland, Serbia and its bordering countries, Czechia, the Foshan and Ningbo regions in China and a unit of companies with a focus on specialty gases, also in China.

The following table shows the breakdown of goodwill as of December 31, 2022:

	Dec. 31, 2022	Dec. 31, 2021
Hunan Xianggang Messer Gas Products Co., Ltd., China	48,987	50,100
Czechia cash-generating unit	42,435	41,168
Messer Hungarogáz Kft., Hungary	42,091	45,703
Poland cash-generating unit	24,633	25,149
Yunnan Messer Gas Products Co., Ltd., China	24,168	24,717
Messer Tatragas spol. s.r.o., Slovakia	22,516	22,516
Serbia cash-generating unit	19,422	19,376
Foshan, China, cash-generating unit	9,970	10,197
Messer Austria GmbH, Austria	9,782	9,782
Messer Croatia Plin d.o.o., Croatia	9,025	9,047
Specialty Gases, China, cash-generating unit	6,632	6,783
Messer Romania Gaz S.R.L., Romania	6,578	6,578
Messer Slovnaft s.r.o., Slovakia	3,200	3,200
Ningbo, China, cash-generating unit,	2,008	2,054
Messer Mostar Plin d.o.o., Bosnia-Herzegovina	345	345
Universal Industrial Gas. Sdn. Bhd., Malaysia	212	211
	272,004	**276,926**

The recoverable amount for an individual operating company is based on calculations of its respective value in use. The value in use is the present value of the estimated future cash flows expected from the continuing operations of each company. The cash flow forecast is based on the most recent financial plans of the respective cash-generating unit that have been approved by management. Starting with the analysis of past results, values in use were calculated on the basis of detailed forecasts of long-term cash flows through 2027. Cash flows for periods after the detailed planning period were based on the final fiscal year of the detailed planning period (using the terminal value model). Forecast cash flows were discounted to their present value at the measurement date using an appropriate capitalization rate specific to that country. The capitalization rate is calculated using the capital asset pricing model (CAPM) after first being broken down into the components of basic interest rate, risk premium and growth discount. The risk-free basic interest rate was derived from yields on long-term government bonds taking into account the respective country rating (Moody's). The risk premium was obtained by multiplying the market risk premium by the beta factor that reflects the relative risk of a given stock compared to the market as a whole. The market risk premium was calculated for each country using the Damodaran model, taking into account the respective country rating (Moody's). The beta factor was calculated on the basis of an analysis of a peer group of listed companies for the Messer Group.

The capitalization rates after tax for the specific countries are as follows:

	Dec. 31, 2022	Dec. 31, 2021
Bosnia and Herzegovina	13.93 %	11.60 %
Serbia	11.34 %	8.23 %
Hungary	10.27 %	7.21 %
Romania	9.75 %	7.46 %
Croatia	9.12 %	7.74 %
China	8.61 %	6.02 %
Slovenia	8.56 %	6.50 %
Slovakia	8.30 %	6.16 %
Poland	8.26 %	6.17 %
Czechia	7.96 %	5.94 %
Austria	7.81 %	5.73 %

The detailed forecasts up to 2027 used to calculate the values in use of the cash-generating units are based primarily on the assumptions for revenue growth, the development of the EBITDA margin and the long-term growth rate after the detailed planning period. These assumptions for the material cash-generating units with a share of goodwill of at least 5 % are as follows:

Cash-generating unit	Goodwill Dec. 31, 2022		Significant planning assumptions		
			Revenue growth (CAGR)	Trend in EBITDA margin(1)	Growth rate(2)
Hunan Xianggang Messer Gas Products Co., Ltd., China	48,987	18 %	Slight increase	Slight decrease	1.0 %
Czechia cash-generating unit	42,435	16 %	Significant increase	Moderate increase	1.0 %
Messer Hungarogáz Kft., Hungary	42,091	15 %	Significant increase	Slight decrease	1.0 %
Poland cash-generating unit	24,633	9 %	Significant increase	Significant increase	1.0 %
Yunnan Messer Gas Products Co., Ltd., China	24,168	9 %	Moderate increase	Significant decrease	1.0 %
Messer Tatragas spol.s.r.o., Slovakia	22,516	8 %	Moderate increase	Moderate increase	1.0 %
Serbia cash-generating unit	19,422	7 %	Significant increase	Moderate decrease	1.0 %
Miscellaneous companies	47,752	18 %			
Messer Group	**272,004**	**100 %**			

(1) End of the detailed planning period compared to the current fiscal year
(2) Growth after the detailed planning period

The growth rate for extrapolating cash flows beyond the planning period is uniformly 1.0 % (previous year: 1.0 %).

Impairment testing did not identify impairment requirements at any operating companies in 2022.

The following three scenarios were simulated in conjunction with a sensitivity analysis:

(a) Increase in the capitalization rates for each country by 1 percentage point.
(b) The long-term growth rate after the detailed planning period is reduced from 1.0 % to 0.0 %.
(c) Planned EBIT of the cash-generating units consistently falls short of forecasts by 10 % throughout the entire planning period and thereafter from fiscal 2027 onwards.

None of these scenarios would result in any goodwill impairment in the cash-generating units with a significant share of goodwill.

Right-of-use assets

Right-of-use assets relate to assets capitalized in conjunction with leases in accordance with IFRS 16. These consist of the following:

2022	Land and buildings	Plant and machinery	Other operating and office equipment	Total
Cost				
As of Jan. 1, 2022	**66,506**	**9,801**	**286**	**76,593**
Additions	5,112	3,677	10	8,799
Reclassification	–	(390)	–	(390)
Disposals	(650)	(1,382)	(15)	(2,047)
Exchange rate changes	(988)	(114)	(3)	(1,105)
As of Dec. 31, 2022	**69,980**	**11,592**	**278**	**81,850**
Cumulative depreciation and amortization				
As of Jan. 1, 2022	**(15,283)**	**(4,411)**	**(148)**	**(19,842)**
Additions	(4,269)	(2,466)	(53)	(6,788)
Reclassification	–	187	–	187
Disposals	510	1,306	15	1,831
Exchange rate changes	181	38	(1)	218
As of Dec. 31, 2022	**(18,861)**	**(5,346)**	**(187)**	**(24,394)**
Net carrying amounts as of Jan. 1, 2022	**51,223**	**5,390**	**138**	**56,751**
Net carrying amounts as of Dec. 31, 2022	**51,119**	**6,246**	**91**	**57,456**

2021	Land and buildings	Plant and machinery	Other operating and office equipment	Total
Cost				
As of Jan. 1, 2021	**56,472**	**8,919**	**1,262**	**66,653**
Additions	6,366	1,985	11	8,362
Reclassification	–	–	–	–
Disposals	(1,231)	(1,459)	(988)	(3,678)
Exchange rate changes	4,899	356	1	5,256
As of Dec. 31, 2021	**66,506**	**9,801**	**286**	**76,593**
Cumulative depreciation				
As of Jan. 1, 2021	**(11,239)**	**(3,242)**	**(453)**	**(14,934)**
Additions	(4,104)	(2,259)	(57)	(6,420)
Reclassification	–	–	–	–
Disposals	1,001	1,203	360	2,564
Exchange rate changes	(941)	(113)	2	(1,052)
As of Dec. 31, 2021	**(15,283)**	**(4,411)**	**(148)**	**(19,842)**
Net carrying amounts as of Jan. 1, 2021	**45,233**	**5,677**	**809**	**51,719**
Net carrying amounts as of Dec. 31, 2021	**51,223**	**5,390**	**138**	**56,751**

Interest expenses of K€ 836 (previous year: K€ 893) were recognized in connection with leases. Furthermore, the following expenses were recognized that were not taken into account in the measurement of right-of-use assets and the corresponding liability:

	2022	2021
Expenses for leases for low-value assets	304	35
Expenses for short-term leases	320	209
Expenses for variable lease payments	438	210
	1,062	**454**

In total, leases resulted in cash outflows of K€ 7,555 (previous year: K€ 6,673) in the year under review. The Messer Group estimates that potential future lease payments, if extension options are exercised, would increase the lease liability by K€ 3,513.

Other intangible assets

2022	Customer bases	Licenses	Miscellaneous intangible assets	Total
Cost				
As of Jan. 1, 2022	**96,139**	**56,027**	**33,837**	**186,003**
Additions	–	–	902	902
Reclassification	–	–	509	509
Disposals	(19)	–	(618)	(637)
Exchange rate changes	(164)	297	(110)	23
As of Dec. 31, 2022	**95,956**	**56,324**	**34,520**	**186,800**
Cumulative amortization				
As of Jan. 1, 2022	**(74,162)**	**(7,694)**	**(28,554)**	**(110,410)**
Additions	(3,672)	–	(2,513)	(6,185)
Reclassification	–	–	(3)	(3)
Disposals	19	–	607	626
Exchange rate changes	345	(297)	106	154
As of Dec. 31, 2022	**(77,470)**	**(7,991)**	**(30,357)**	**(115,818)**
Net carrying amounts as of Jan. 1, 2022	**21,977**	**48,333**	**5,283**	**75,593**
Net carrying amounts as of Dec. 31, 2022	**18,486**	**48,333**	**4,163**	**70,982**

2021	Customer bases	Licenses	Miscellaneous intangible assets	Total
Cost				
As of Jan. 1, 2021	**94,691**	**55,765**	**37,402**	**187,858**
Additions	–	–	1,038	1,038
Reclassification	–	–	152	152
Disposals	(55)	–	(5,641)	(5,696)
Exchange rate changes	1,503	262	886	2,651
As of Dec. 31, 2021	**96,139**	**56,027**	**33,837**	**186,003**
Cumulative amortization				
As of Jan. 1, 2021	**(68,819)**	**(7,432)**	**(30,190)**	**(106,441)**
Additions	(4,528)	–	(2,782)	(7,310)
Reclassification	–	–	–	–
Disposals	55	–	5,134	5,189
Exchange rate changes	(870)	(262)	(716)	(1,848)
As of Dec. 31, 2021	**(74,162)**	**(7,694)**	**(28,554)**	**(110,410)**
Net carrying amounts as of Jan. 1, 2021	**25,872**	**48,333**	**7,212**	**81,417**
Net carrying amounts as of Dec. 31, 2021	**21,977**	**48,333**	**5,283**	**75,593**

The customer bases predominantly result from the purchase price allocations, which were carried out as of May 7, 2004 and in conjunction with the acquisition of the Air Liquide companies in Czechia and Slovakia in 2020. They will be written down on a straight-line basis over the remaining amortization period as of December 31, 2022 of not more than 1 or 17 years. The useful life of the customer bases is not more than 20 years and is higher than the original maximum contract term of 15 years as the respective renewal options are highly likely to be exercised by customers. The amortization expense for the fiscal year is recognized in selling and distribution expenses.

The licenses include the rights to the brand "Messer – Gases for Life" (K€ 48,333, previous year: K€ 48,333). The carrying amount of the "ASCO" brand was written down in full in previous years.

As these are intangible assets with an indefinite useful life as referred to by IAS 38, they are not amortized but rather tested for impairment at least once per year in accordance with IAS 36. The "Messer – Gases for Life" brand is tested for impairment using the relief-from-royalty method applying a specific capitalization rate of 7.32 % (previous year: 5.34 %).

For all companies in the Group, the value in use determined in accordance with the principles described above exceeded the net assets of the cash-generating units. Thus, there were no impairment requirements on other intangible assets in fiscal 2022.

15. Property, Plant and Equipment

2022	Land and buildings	Plant and machinery	Other operating and office equipment	Construction in progress	Total
Cost					
As of Jan. 1, 2022	**274,039**	**1,847,882**	**316,268**	**268,883**	**2,707,072**
Additions	2,753	40,826	15,061	200,936	259,576
Reclassification	30,836	188,923	12,097	(231,975)	(119)
Disposals	(644)	(9,992)	(10,129)	(2,170)	(22,935)
Exchange rate changes	(2,826)	(25,783)	(2,947)	(2,059)	(33,615)
As of Dec. 31, 2022	**304,158**	**2,041,856**	**330,350**	**233,615**	**2,909,979**
Cumulative depreciation					
As of Jan. 1, 2022	**(129,426)**	**(1,160,536)**	**(223,098)**	**(2,045)**	**(1,515,105)**
Additions	(10,331)	(103,585)	(18,547)	(154)	(132,617)
Reclassification	(24)	221	(381)	–	(184)
Disposals	438	9,107	9,392	423	19,360
Exchange rate changes	1,277	18,114	1,688	34	21,113
As of Dec. 31, 2022	**(138,066)**	**(1,236,679)**	**(230,946)**	**(1,742)**	**(1,607,433)**
Net carrying amounts as of Jan. 1, 2022	**144,613**	**687,346**	**93,170**	**266,838**	**1,191,967**
Net carrying amounts as of Dec. 31, 2022	**166,092**	**805,177**	**99,404**	**231,873**	**1,302,546**

2021	Land and buildings	Plant and machinery	Other operating and office equipment	Construction in progress	Total
Cost					
As of Jan. 1, 2021	**252,303**	**1,713,727**	**305,149**	**132,180**	**2,403,359**
Additions	2,671	30,196	11,918	170,367	215,152
Reclassification	8,027	36,329	1,780	(46,288)	(152)
Disposals	(1,094)	(28,459)	(16,159)	(144)	(45,856)
Exchange rate changes	12,132	96,089	13,580	12,768	134,569
As of Dec. 31, 2021	**274,039**	**1,847,882**	**316,268**	**268,883**	**2,707,072**
Cumulative depreciation					
As of Jan. 1, 2021	**(116,404)**	**(1,031,778)**	**(220,348)**	**(290)**	**(1,368,820)**
Additions	(8,446)	(93,566)	(16,878)	(1,721)	(120,611)
Reclassification	–	(7,865)	7,865	–	–
Disposals	961	27,668	14,319	86	43,034
Exchange rate changes	(5,537)	(54,995)	(8,056)	(120)	(68,708)
As of Dec. 31, 2021	**(129,426)**	**(1,160,536)**	**(223,098)**	**(2,045)**	**(1,515,105)**
Net carrying amounts as of Jan. 1, 2021	**135,899**	**681,949**	**84,801**	**131,890**	**1,034,539**
Net carrying amounts as of Dec. 31, 2021	**144,613**	**687,346**	**93,170**	**266,838**	**1,191,967**

Borrowing costs of K€ 630 (previous year: K€ 783) were capitalized for qualifying assets in the fiscal year. The average interest rate was 2.6 % (previous year: 2.0 %).

Impairment on property, plant and equipment in China and Romania of a total of K€ 497 was recognized in fiscal 2022. This is included in the additions to depreciation on “Land and buildings”, “Plant and machinery” and “Construction in progress” for the fiscal year. The impairment is reported under “Cost of sales” in the income statement.

In addition, property, plant and equipment includes technical equipment, including tanks and gas cylinders, from operating leases in which the Messer Group acts is the lessor. The lease payments to be received from customers from such operating leases in the future break down as follows:

	Dec. 31, 2022	Dec. 31, 2021
Due within 1 year	40,453	35,998
Due between 1 and 5 years	128,068	101,364
Due after more than 5 years	86,516	64,459
	255,037	**201,821**

Income of K€ 107 (previous year: K€ 104) from variable lease payments under operating leases was recognized in the reporting period.

16. Investments Accounted for Using the Equity Method

As of December 31, 2022, the following interests in associates and joint ventures were recognized on the basis of the proportionate equity held in the relevant entity:

Name and registered office of the company	Shareholding (%)		Carrying amount	
	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2022	Dec. 31, 2021
Significant companies				
Yeti GermanCo 1 GmbH, Sulzbach (Taunus), Germany	54.46	54.46	1,012,060	824,110
Non-significant companies				
Elme Messer Gaas A.S., Tallinn, Estonia	50.00	50.00	38,112	46,004
Yeti Warehouse GmbH, Sulzbach (Taunus), Germany	58.05	58.05	37,875	8,183
Sichuan Meifeng Messer Gas Products Co., Ltd., Mianyang City, China	50.00	50.00	3,201	3,125
Mahler AGS GmbH, Stuttgart, Germany	25.00	25.00	2,854	2,854
Messer Medica LLC, Obiliq, Kosovo	49.00	49.00	967	476
Cryogenic Engineering GmbH i.L., Sulzbach (Taunus), Germany	–	49.00	–	203
			1,095,069	**884,955**

In conjunction with the acquisition of the majority of Linde's gas business in the US, the Linde companies in Canada, Brazil and Colombia and the takeover of Praxair's activities in Chile in 2019, the joint venture Yeti GermanCo 1 GmbH was founded by Messer SE & Co. KGaA and CVC Capital Partners for the purpose of assuming the management of Messer's business in Western Europe and the Americas.

In the contribution agreement, Messer assumed various guarantees in connection with the contribution of the Western European business in 2019. The liability resulting from these guarantees, depending on the guarantee, is limited to a period of up to five years. They are also limited to cer-tain amounts, the maximum amount being € 772 million. Liability under the guarantees arises when a contractual agreed threshold of € 10 million is exceeded.

The Yeti GermanCo 1 GmbH Employee Participation Program is bundled in the Yeti Warehouse GmbH Group. It is jointly managed by Messer SE & Co. KGaA and CVC Capital Partners.

Elme Messer Gaas A.S. is the parent company of our equity investments in the Baltic states, Ukraine and Russia. The group produces and sells industrial gases in these regions and has its own production facilities.

Interests in associates and joint ventures developed as follows:

	2022	2021
Cost		
As of Jan. 1	**884,955**	**745,601**
Additions	2,814	4,200
Pro rata results	146,460	85,203
Disposals	(203)	(1,000)
Dividends	(3,000)	–
Pro rata changes in statement of comprehensive income	63,651	50,564
Exchange rate changes	392	387
As of Dec. 31	**1,095,069**	**884,955**
Cumulative amortization		
As of Jan. 1	**–**	**(4,000)**
Reversals of write-downs	–	4,000
Disposals	–	–
As of Dec. 31	**–**	**–**
Net carrying amount as of Jan. 1	**884,955**	**741,601**
Net carrying amount as of Dec. 31	**1,095,069**	**884,955**

The reversals of write-downs in the previous year relate to the shares in Elme Messer Gaas A.S., Estonia.

Pro rata gains/(losses) from our equity investment in Ukraine of K€ 132 (previous year: K€ 452) have not been recognized as the pro rata remaining loss exceeds the carrying amount of the equity investments.

The table below shows the combined consolidated financial data in accordance with IFRS, as adopted in the EU, of the significant joint venture Yeti GermanCo 1 GmbH. Yeti GermanCo 1 GmbH is the parent company of our indirect equity investments in Western Europe and North and South America. The group produces and sells industrial gases in these regions and has its own production facilities.

	Yeti GermanCo 1 GmbH	
	2022	2021
Revenue	**2,590,456**	**2,118,710**
Net profit for the year	229,193	147,378
Other comprehensive income	117,060	92,912
Total comprehensive income	**346,253**	**240,290**
Attributable to:		
Shareholders of the parent company	345,116	239,580
Non-controlling interests	1,137	710
Non-current assets	4,056,079	3,880,828
Current assets	1,031,948	994,810
Non-current liabilities	2,563,432	2,698,021
Current liabilities	735,876	734,322
Net assets	**1,788,719**	**1,443,295**
Net assets less non-controlling interests	**1,784,825**	**1,439,709**
Attributable to:		
Messer Group's share of net assets	972,020	784,069
Shares of joint venture partners	812,805	655,640

The additional financial data for significant joint ventures are combined in the following table:

	Yeti GermanCo 1 GmbH	
	2022	2021
Cash and cash equivalents	167,370	274,917
Non-current financial liabilities	1,916,289	2,069,561
Current financial liabilities	35,584	27,877
Depreciation and amortization	(390,486)	(351,807)
Interest income	11,279	4,239
Interest expenses	(70,796)	(68,484)
Income (expense) from income taxes	(78,718)	(52,806)

	Yeti GermanCo 1 GmbH	
	2022	2021
Group's share in net assets as of Jan. 1	**784,069**	**653,593**
Pro rata total comprehensive income	187,951	130,476
Dividends received	–	–
Pro rata equity contributions/reductions	–	–
Write-down on carrying amount	–	–
Group's share in net assets as of Dec. 31	**972,020**	**784,069**
Others	(2)	(1)
Share of assets in excess of shareholding	40,042	40,042
Net carrying amount as of Dec. 31	**1,012,060**	**824,110**

The following table shows the summarized, pro rata financial data of the individually immaterial associates and joint ventures:

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Net profit for the year	24,060	6,446
Other comprehensive income	461	284
Total comprehensive income	**24,521**	**6,730**

17. Equity Investments and Other Financial Investments

Equity investments and other financial investments developed as follows:

2022	Equity investments	Non-current loan receivables	Miscellaneous financial investments	Total
Cost				
As of Jan. 1, 2022	**2,558**	**5,492**	**143**	**8,193**
Additions	136	–	25	161
Change in Group reporting	–	–	–	–
Disposals	–	(24)	–	(24)
Exchange rate changes	(169)	–	–	(169)
As of Dec. 31, 2022	**2,525**	**5,468**	**168**	**8,161**
Cumulative amortization				
As of Jan. 1, 2022	**(221)**	**(5,444)**	**(43)**	**(5,708)**
Additions	–	–	–	–
Disposals	–	–	–	–
Exchange rate changes	(1)	–	–	(1)
As of Dec. 31, 2022	**(222)**	**(5,444)**	**(43)**	**(5,709)**
Net carrying amounts as of Jan. 1, 2022	**2,337**	**48**	**100**	**2,485**
Net carrying amounts as of Dec. 31, 2022	**2,303**	**24**	**125**	**2,452**

"Equity investments" comprises equity investments in various companies that are neither consolidated nor accounted for using the equity method.

Non-current loan receivables include a loan granted to the non-consolidated Messer Hellas S.A. i.L., Greece, that has been written down in full.

2021	Equity investments	Non-current loan receivables	Miscellaneous financial investments	Total
Cost				
As of Jan. 1, 2021	**2,590**	**75**	**135**	**2,800**
Additions	–	–	7	7
Change in Group reporting	–	5,444	–	5,444
Disposals		(27)	–	(31)
Exchange rate changes	(28)	–	1	(27)
As of Dec. 31, 2021	**2,558**	**5,492**	**143**	**8,193**
Cumulative amortization				
As of Jan. 1, 2021	**(221)**	**–**	**(43)**	**(264)**
Additions	–	(5,444)	–	(5,444)
Disposals	–	–	–	–
Exchange rate changes	–	–	–	–
As of Dec. 31, 2021	**(221)**	**(5,444)**	**(43)**	**(5,708)**
Net carrying amounts as of Jan. 1, 2021	**2,369**	**75**	**92**	**2,536**
Net carrying amounts as of Dec. 31, 2021	**2,337**	**48**	**100**	**2,485**

18. Other Non-Current Receivables and Assets

	Dec. 31, 2022	Dec. 31, 2021
Lease receivables	4,960	6,436
Other receivables	1,974	1,874
Trade receivables	438	406
Miscellaneous financial assets	10	10
Financial assets	**7,382**	**8,726**
Miscellaneous non-financial assets	806	854
Non-financial assets	**806**	**854**
Total	**8,188**	**9,580**

The lease receivables relate to the long-term letting of gas generation plants, which are recognized at the present value of the future lease payments. The present value of the lease payments is derived from the lease agreements and is shown in the following table:

	Dec. 31, 2022	Dec. 31, 2021
Gross investment	**6,996**	**8,749**
Due within 1 year	1,693	1,736
Due between 1 and 5 years	5,118	6,305
Due after more than 5 years	185	708
Unearned finance income	(574)	(872)
Net investment	**6,422**	**7,877**
Due within 1 year	1,462	1,441
Due between 1 and 5 years	4,782	5,749
Due after more than 5 years	178	687

19. Inventories

	Dec. 31, 2022	Dec. 31, 2021
Raw materials and supplies	27,993	21,566
Work in progress	7,029	11,919
Finished goods and goods for resale	45,560	33,026
Total	**80,582**	**66,511**

K€ 10,377 (previous year: K€ 11,701) of the inventories recognized on December 31, 2022 were measured at their net realizable value. There are impairment losses of K€ 3,606 (previous year: K€ 4,358) on the net realizable value. The impairment losses were recognized in the cost of sales. The amount of inventories recognized as an expense in the reporting period is K€ 279,149 (previous year: K€ 233,493).

20. Trade Receivables

	Dec. 31, 2022	Dec. 31, 2021
Trade receivables	271,232	229,725
Write-downs on receivables	(40,738)	(41,413)
Total	**230,494**	**188,312**

Please refer to the comments under note 31 "Other Financial Instrument Disclosures" regarding write-downs on receivables.

21. Contract Balances

All work relating to engineering contracts was billed in fiscal 2022 and 2021 and the corresponding amounts were reported in trade receivables.

Performance obligations from contracts with customers

The following table shows the Group's performance obligations from long-term gas supply contracts with customers:

	Dec. 31, 2022	Dec. 31, 2021
Due in 1st year	107,620	80,604
Due in 2nd year	123,515	88,378
Due in 3rd year	144,896	109,456
Due after more than 3 years	510,349	363,879
Total	**886,380**	**642,317**

The amounts shown above essentially relate to contractually agreed fixed payments, known as take-or-pay installments. Variable obligations were not taken into account. Revenue is recognized on delivery of the gases.

22. Other Current Financial and Non-Financial Assets

	Dec. 31, 2022	Dec. 31, 2021
Derivative financial instruments not in hedges	8,163	4,192
Deposits and guarantees	3,890	3,574
Outstanding deposits	2,718	2,780
Financial receivables from related parties	1,766	6,102
Lease receivables	1,462	1,441
Receivables from employees	668	943
Other receivables from operating activities	383	593
Miscellaneous	1,835	3,875
Financial assets	**20,885**	**23,500**
Other tax receivables	14,492	14,843
Deferred expenses	8,786	4,459
Prepayments	7,903	10,150
Non-financial receivables from related parties	57	76
Miscellaneous	2,035	2,522
Non-financial assets	**33,273**	**32,050**
Total	**54,158**	**55,550**

The item “Deposits and guarantees” essentially comprises deposits of the Chinese companies at local banks for the construction of new air separation and on site plants as well as amounts pledged for future benefits to be paid to employees.

The outstanding deposits are based on a contractual right to payment enforceable as of December 31, 2022 and are due on demand.

Please refer to the comments under note 18 “Other Non-Current Receivables and Assets” regarding lease receivables.

23. Cash and Cash Equivalents

	Dec. 31, 2022	Dec. 31, 2021
Cash, bank balances and checks	260,426	304,188
Cash equivalents	28	27
Cash and cash equivalents	**260,454**	**304,215**

The Group holds cash and cash equivalents of K€ 260,454 as of December 31, 2022 (previous year: K€ 304,215). Where possible, cash and cash equivalents are invested with banks and financial institutions with an investment grade rating or better. The ratings are based on a rating from Standard & Poor's or a comparable rating from another respected rating agency.

Based on the external ratings for the banks and financial institutes, it is assumed that cash and cash equivalents have a low risk of default.

Impairment amounts to K€ 0 as of December 31, 2022 (previous year: K€ 0).

24. Provisions for Employee Benefits

	Dec. 31, 2022	Dec. 31, 2021
Pension provisions	39,585	51,915
Provisions for other employee benefits	3,370	3,181
Provisions for employee benefits	**42,955**	**55,096**

Pension benefits are provided to employees in a number of countries through both defined benefit and defined contribution pension plans. The benefits vary according to legal, fiscal and economic circumstances of each country. Plan benefits are based on years of service and the level of employee compensation. Provisions for other employee benefits mainly relate to company or statutory severance benefits and early retirement benefits. Some of the obligations under defined benefit pension plans are covered by plan assets held in independent trust funds. The net assets of these funds are predominantly invested in real estate, fixed-income securities and negotiable equities.

The amount recognized in the statement of financial position is derived as follows:

	Dec. 31, 2022	Dec. 31, 2021
Present value of pension benefits funded by provisions	38,502	49,426
Present value of funded pension benefits	9,767	10,913
Present value of all pension benefits	**48,269**	**60,339**
Fair value of plan assets of all funds	(8,684)	(8,424)
Net liability recognized	**39,585**	**51,915**

The present value of the pension commitments funded by provisions predominantly to pension plans of Messer SE & Co. KGaA in the amount of K€ 35,545 (previous year: K€ 45,999).

Messer SE & Co. KGaA utilizes defined benefit plans designed to pay beneficiaries an annual pension of 42 % of the total contributions paid in at the end of employment. The defined benefit pension plan consists of a basic pension and an additional pension. The basic pension includes the employee's regular remuneration up to the income threshold in the statutory pension scheme. The additional pension is granted for the portion of regular remuneration that exceeds the income threshold and is provided by the Company. Both are paid as a retirement pension once the employee retires after reaching the age of 60. The plans are available to all employees who were with Messer SE & Co. KGaA on May 7, 2004 and previously had a valid employment contract with Messer Griesheim GmbH.

The defined benefit plans are managed by a mutual insurance pension fund that is legally independent from the Group. Defined benefit plans expose the Group to various risks. In addition to general actuarial risks such as longevity risk and interest rate risk, the Group is exposed to currency risk and capital market/investment risk. The risk exposures from the respective plans are not materially different.

The following table shows the reconciliation of the funding of defined benefit plans to the amounts recognized in the consolidated financial statements as of December 31, 2022 and 2021:

	2022		2021	
	Pension commitments funded by provisions	Pension commitments funded by funds	Pension commitments funded by provisions	Pension commitments funded by funds
Change in the present value of the defined benefit pension plans				
Present value of all pension benefits as of Jan. 1	**49,426**	**10,913**	**49,853**	**11,354**
Current service cost	751	234	956	285
Past service cost	454	–	112	–
Interest expense on obligations	431	56	242	31
Employee contributions	–	231	–	219
Actuarial losses (gains)	(11,789)	(1,087)	(1,086)	(577)
Pension payments	(762)	(863)	(644)	(731)
Exchange rate changes	(9)	340	(6)	332
Others	–	(57)	(1)	–
Present value of all pension benefits as of Dec. 31	**38,502**	**9,767**	**49,426**	**10,913**
Change in plan assets of all funds				
Fair value of plan assets of all funds as of Jan. 1	**–**	**8,424**	**–**	**8,313**
Interest income/(losses)	–	47	–	26
Income/(losses) (not including interest income/losses)	–	217	–	88
Contributions paid in – employer	–	378	–	259
Contributions paid in – employees	–	231	–	219
Pension payments	–	(863)	–	(708)
Unrecognized excess of plan assets	–	–	–	–
Exchange rate changes	–	250	–	227
Others	–	–	–	–
Fair value of plan assets of all funds as of Dec. 31	**–**	**8,684**	**–**	**8,424**

The fair value of plan assets breaks down among the individual asset classes as follows. The amounts shown are weighted averages:

	Dec. 31, 2022 Fair value		Dec. 31, 2021 Fair value	
Bonds	1,571	18 %	1,608	19 %
Equities/funds	1,513	17 %	1,511	18 %
Real estate	1,269	15 %	1,083	13 %
Cash funds	222	3 %	206	2 %
Other assets	4,109	47 %	4,016	48 %
Total	**8,684**	**100 %**	**8,424**	**100 %**

There are quoted prices on an active market for all assets in the categories "Equities/funds", "Bonds" and "Cash funds".

Plan assets are held exclusively to fulfill defined benefit obligations. The funding of these obligations constitutes a reserve for future cash outflows. This is based on statutory regulations in some countries and is voluntary in others. Given the diversity of pension benefits within the Group, the interest rate is not hedged using financial instruments. Following guidelines stipulated by local management, the bodies responsible for the various pension funds decide on the best possible investment strategy commensurate with the age of beneficiaries and the timing of future payments, in accordance with applicable legislation. Most of the plans are not intended to maximize profit, but rather to ensure optimal provision for the companies and employees concerned. Our biggest fund in Switzerland adheres to the principle of sustainability. The capital entrusted to it is invested in accordance with ESG criteria. Funds held to pay future benefits are invested responsibly.

Actuarial losses/(gains) arising on the remeasurement of the present value of pension benefits comprise the following:

	Jan. 1 – Dec. 31, 2022		Jan. 1 – Dec. 31, 2021	
	Pension commitments funded by provisions	Pension commitments funded by funds	Pension commitments funded by provisions	Pension commitments funded by funds
Experience adjustments	3,324	336	666	16
Change in financial assumptions	(15,113)	(1,423)	(1,752)	(151)
Change in biometric assumptions	–	–	–	(442)
Actuarial losses / (gains) arising on the remeasurement of the present value of pension benefits	**(11,789)**	**(1,087)**	**(1,086)**	**(577)**

The following expenses (/income) were recognized in profit or loss in the reporting period:

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Current service cost	985	1.241
Past service cost	454	112
Interest expense on obligations	487	273
Expected return on plan assets	(47)	(26)
Total amounts recognized in profit and loss	**1,879**	**1,600**

The calculation of obligations and, in certain cases, the related plan assets is based on the following actuarial parameters (reported as a weighted average):

	Dec. 31, 2022 in percent	31.12.2021 in percent
Discount rate	3.65	0.82
Expected rate of salary increases	3.76	2.94
Expected return on plan assets	2.86	0.56
Expected rate of pension increases	2.19	1.77

The 2018 G Heubeck mortality tables were used to measure the pension obligations for the German Group companies. The pension obligation in Switzerland was measured using the BVG 2020 GT mortality tables. Mortality tables specific to each company were used to measure the pension obligations for other Group companies.

The present value of the defined benefit obligation relates to the following groups of beneficiaries:

	Dec. 31, 2022		Dec. 31, 2021	
Active beneficiaries	34,487	71 %	45,732	76 %
Beneficiaries who have left the company	4,265	9 %	4,175	7 %
Retired employees	9,517	20 %	10,432	17 %
Total	**48,269**	**100 %**	**60,339**	**100 %**

The weighted average term of the defined benefit obligation as of December 31, 2022 is 14.0 years (previous year: 16.1 years).

An increase or decrease in the discount rate by 50 basis points would have the following effect on the present value of pension obligations as of December 31, 2022:

Change in discount rate in basis points	– 50	–/+ 0	+ 50
Present value of all pension benefits	51,598	48,269	45,193

The sensitivity calculations are based on the average term of the pension obligations calculated as of December 31, 2022. The calculation was made for the discount rate, the actuarial parameter classified as material. As the sensitivity analysis is based on the average duration of the expected pension obligations and therefore the expected payment dates are not taken into account, it only produces approximate information or trend statements.

The Group anticipates contributions to the defined benefit plans of K€ 2,601 in 2023.

25. Other Provisions

2022	Litigation	Personnel	Miscellaneous	Total
As of Jan. 1, 2022	3,036	15,891	18,210	**37,137**
Addition	385	15,743	7,199	**23,327**
Utilization	(3)	(12,233)	(1,473)	**(13,709)**
Unused amounts reversed	(219)	(1,570)	(4,649)	**(6,438)**
Interest effect	–	(262)	–	**(262)**
Currency translation	(16)	(85)	(198)	**(299)**
As of Dec. 31, 2022	**3,183**	**17,484**	**19,089**	**39,756**
Non-current	**2,011**	**2,515**	**579**	**5,105**
Current	**1,172**	**14,969**	**18,510**	**34,651**

Contracts for which provisions have been recognized essentially have a broad range of remaining terms of between one and 10 years.

The long-term provisions for staff as of December 31, 2022 primarily comprise anniversary obligations. The short-term provisions for staff predominantly relate to bonus payments and outstanding vacation.

Short-term “miscellaneous” provisions essentially include the provision for litigation risks in Spain. The company in Spain was part of the Western European operating activities that relate to a dis-continued operation in 2019. Please refer to the comments under note 30 “Contingent Liabilities”. The item also includes a provision to an affiliate of K€ 3,300.

26. Financial Liabilities

The contribution of the Western European companies to Yeti GermanCo 1 GmbH in 2019 created contractually defined grounds for termination for the financing of the Messer Group. A new term and revolving facilities agreement (RFA II) was therefore agreed with our banks on February 26, 2019. The lenders are still UniCredit Bank AG, Bayerische Landesbank, ING Bank a Branch of ING-DiBa AG and Landesbank Hessen-Thüringen Girozentrale. RFA II originally consisted of a Tranche A of € 40 million (term loan), a Tranche B of € 100 million (revolving credit) and a USPP backstop facility (BSF) of € 380 million. Tranche A was repaid on July 17, 2019 and is therefore no longer available. The purpose of the BSF was to cover any repayment of the financial liabilities financed by the US private placements (USPPs). The BSF was not needed to replace the USPPs and is therefore also no longer available.

On May 21, 2021, Tranche B was increased by € 100 million to € 200 million. RFA II, now solely consisting of Tranche B in the amount of € 200 million (revolving credit), matures on December 18, 2023 and can be extended by one or two years. The respective interest rate for RFA II consists of the Interbank Offered Rate (IBOR) in the currency of utilization plus the margin. This is dependent on the ratio of net debt to EBITDA.

The Messer Group is still financed by a US private US private placement (USPP III) provided by an insurance company. It has two parts:

- USPP III of July 12, 2012 (USPP II) between Pricoa (€ 46.3 million at 3.68 % p.a.) on the one hand and Messer SE & Co. KGaA on the other. This portion of USPP III had an original term of 10 years with bullet maturity. It was repaid on August 2, 2022 from cash and a drawdown under the revolving credit facility.
- USPP III of January 29, 2019 (USPP II) between Pricoa (€ 87.8 million at 1.49 % p.a.) on the one hand and Messer SE & Co. KGaA on the other. This portion of USPP III had an original term of five years with bullet maturity.

The collateral for the full amount of the financing arrangements takes the form of guarantees provided by individual Group companies and the pledging of shares in Messer Griesheim China Holding GmbH. This is the German holding company for our Chinese activities.

The unutilized credit facilities amount to € 67.9 million as of December 31, 2022 (previous year: € 62.0 million).

The loan balances and maturities are as follows as of December 31, 2022 and December 31, 2021:

2022	Interest rate p. a.	Credit facility	Utilization	Due date
€ 87.8 million, USPP III	1.490 %	87,758	87,758	January 29, 2024
€ 114.3 million, RFA II	2.490 %	114,287	90,000	flexible until December 18, 2023
€ 10.0 million, RFA II ancillary facility[1]	2.330 %	4,858	31	flexible until December 18, 2023
€ 20.0 million, RFA II ancillary facility[2]	11.250 %	20,000	17,732	flexible until December 18, 2023
€ 21.5 million, RFA II ancillary facility	2.390 %	21,500	11,721	flexible until December 18, 2023
€ 14.0 million, RFA III ancillary facility	0.000 %	14,000	–	flexible until December 18, 2023
€ 11.0 million, RFA II ancillary facility[3]	7.496 %	10,580	5,826	flexible until December 18, 2023
€ 8.0 million, RFA II ancillary facility	0.000 %	8,000	–	flexible until December 18, 2023
€ 1.2 million, RFA II ancillary facility[4]	0.000 %	–	–	flexible until December 18, 2023
Other local loans[5]	6.714 %	79,424	79,424	Various
Lease liabilities[5]	3.212 %	n/a	24,616	Various
		360,407	**317,108**	
Transaction costs			(488)	
			316,620	

[1] K€ 5,142 was utilized as a guarantee
[2] Interest rate (PLN) as of December 31, 2022, foreign currencies were translated using the rate as of December 31, 2022
[3] K€ 420 was utilized as a guarantee; weighted interest rate (PLN) as of December 31, 2022, foreign currencies were translated using the rate as of December 31, 2022
[4] K€ 1,218 was utilized as a guarantee; foreign currencies were translated using the rate as of December 31, 2022
[5] Weighted interest rate as of December 31, 2022, foreign currencies were translated using the rate as of December 31, 2022

2021	Interest rate p. a.	Credit facility	Utilization	Due date
€ 46.3 million, USPP III	3.680 %	46,296	46,296	August 2, 2022
€ 87.8 million, USPP III	1.490 %	87,758	87,758	January 29, 2024
€ 114.3 million, RFA II	0.500 %	114,287	100,000	flexible until December 18, 2023
€ 10.0 million, RFA II ancillary facility[1]	0.500 %	2,578	2,124	flexible until December 18, 2023
€ 20.0 million, RFA II ancillary facility[2]	3.750 %	20,000	18,056	flexible until December 18, 2023
€ 21.5 million, RFA II ancillary facility	0.500 %	21,500	7,476	flexible until December 18, 2023
€ 14.0 million, RFA III ancillary facility	0.000 %	14,000	–	flexible until December 18, 2023
€ 11.0 million, RFA II ancillary facility[3]	0.750 %	10,389	1,088	flexible until December 18, 2023
€ 8.0 million, RFA II ancillary facility	0.000 %	8,000	–	flexible until December 18, 2023
€ 1.2 million, RFA II ancillary facility[4]	0.000 %	31	–	flexible until December 18, 2023
Other local loans[5]	1.731 %	100,975	100,975	Various
Lease liabilities[5]	3.495 %	n/a	24,072	Various
		425,814	**387,845**	
Transaction costs			(983)	
			386,862	

[1] K€ 7,422 was utilized as a guarantee
[2] Interest rate (PLN) as of December 31, 2021, foreign currencies were translated using the rate as of December 31, 2021
[3] K€ 611 was utilized as a guarantee; weighted interest rate (PLN) as of December 31, 2021, foreign currencies were translated using the rate as of December 31, 2021
[4] K€ 1,182 was utilized as a guarantee; foreign currencies were translated using the rate as of December 31, 2021
[5] Weighted interest rate as of December 31, 2021, foreign currencies were translated using the rate as of December 31, 2021

Transaction costs relate to the arrangement fees paid to the financing banks and various legal and advisory costs directly attributable to the new financing. These costs are recognized as an expense over the terms of the liabilities using the effective interest method in accordance with IFRS 9.

The following table provides an overview of the Group's financial liabilities, measured on the basis of nominal amounts:

	Dec. 31, 2022	Dec. 31, 2021
Non-current		
Liabilities to banks/insurance companies	140,189	138,082
Lease liabilities	19,336	19,225
Miscellaneous	2,834	2,116
Less transaction costs	(21)	(487)
	162,338	**158,936**
Current		
Liabilities to banks/insurance companies	147,915	213,585
Lease liabilities	5,280	4,847
Miscellaneous	1,554	9,990
Less transaction costs	(467)	(496)
	154,282	**227,926**
Total financial liabilities, net	**316,620**	**386,862**
Liabilities with a fixed interest rate	115,208	170,403
Liabilities with variable interest rates (hedged)	–	51,033
Liabilities with variable interest rates (not hedged)	201,900	166,409
Total financial liabilities, gross	**317,108**	**387,845**
Weighted average nominal interest rates for liabilities:		
To banks/insurance companies including existing interest rate hedges	4.01 % p.a.	2.32 % p.a.
Leases	3.21 % p.a.	3.50 % p.a.
Other loans	0.92 % p.a.	0.14 % p.a.

The average interest rate on financial liabilities was 3.91 % p.a. as of December 31, 2022 (previous year: 2.32 % including interest rate swap agreement).

Financial liabilities (not including transaction costs) are due as follows:

2023	154,749
2024	116,463
2025	26,733
2026	5,621
2027	6,018
After 2027	7,524
	317,108

	2022	2021
Non-current financial liabilities as of Jan. 1	**158,936**	**225,442**
Cash changes		
New debt raised	29,263	28,775
Payments of principal	(27)	(15)
Non-cash changes		
Net change in lease liabilities	6,048	2,617
Changes in maturities	(30,450)	(103,269)
Currency translation	452	4,280
Exchange rate changes	(2,350)	618
Transaction costs	466	488
Non-current financial liabilities as of Dec. 31	**162,338**	**158,936**

	2022	2021
Current financial liabilities as of Jan. 1	**227,926**	**187,524**
Cash changes		
New debt raised	114,421	110,662
Payments of principal	(217,135)	(180,913)
Non-cash changes		
Net change in lease liabilities	824	4,796
Changes in maturities	30,450	103,269
Currency translation	(886)	2,310
Exchange rate changes	(1,347)	207
Transaction costs	29	71
Current financial liabilities as of Dec. 31	**154,282**	**227,926**

The Company must comply with various financial covenants in conjunction with USPP III and RFA II. Thus, the ratio of net debt to EBITDA must not exceed a defined level.

Furthermore, the ratio of EBITDA to consolidated net interest income must not drop below an agreed level. Minimum equity of € 800 million must be maintained.

27. Other Non-Current Liabilities

	Dec. 31, 2022	Dec. 31, 2021
Miscellaneous liabilities	100	–
Financial liabilities	**100**	**–**
Government grants	1,645	1,070
Non-financial liabilities	**1,645**	**1,070**
Total	**1,745**	**1,070**

The item is reversed to "Other operating income" in the income statement.

28. Other Current Financial and Non-Financial Liabilities

	Dec. 31, 2022	Dec. 31, 2021
Deposits received for hardware	5,276	5,450
Liabilities to related companies	3,710	2,772
Derivative financial instruments without an effective hedge	1,550	3,077
Interest payable	1,533	1,975
Other liabilities to customers	329	268
Miscellaneous liabilities	20,812	23,190
Financial liabilities	**33,210**	**36,732**
Deferred income and other deferred liabilities	46,255	44,128
Payroll liabilities	22,927	24,185
Liabilities to social security providers	19,262	18,173
Advance payments received on orders	13,579	8,126
Other taxes liabilities	11,216	6,764
Prepayments received from related parties	81	3,294
Other financial obligations	–	146
Non-financial liabilities	**113,320**	**104,816**
Total	**146,530**	**141,548**

Derivative financial instruments not included in hedge accounting include the negative fair values of currency forwards and the negative fair values of the interest swap.

"Miscellaneous financial liabilities" include K€ 11,366 (previous year: K€ 8,844) for outstanding dividends to Chinese joint venture partners.

The item "Deferred income" includes government grants of K€ 327 (previous year: K€ 423).

29. Equity

Issued capital

The issued capital is unchanged year-on-year and is fully paid in.

Capital reserves

The capital reserves contain contributions from the shareholder and amount to K€ 536,937 as of December 31, 2022.

Other reserves

In fiscal 2005, Messer SE & Co. KGaA acquired further shares in Messer Tehnogas AD, Serbia-Montenegro, amounting to around 14 %, from non-controlling shareholders. In conjunction with the consolidation of these additional shares, there was a notional negative difference of K€ 5,905 that was recognized in other reserves.

In fiscal 2011, we increased our majority interest in Messer Haiphong Industrial Gases Co. Ltd., Vietnam, to 100 %. In conjunction with the consolidation of these additional shares, there was a notional positive difference of K€ 1,798 that was offset against the Group's Other reserves in other comprehensive income.

In fiscal 2013, we increased our majority interest in Messer MOL Gáz Kft., Hungary, to 100 %. In conjunction with the consolidation of these additional shares, there was a notional positive difference of K€ 462 that was offset against the Group's Other reserves in other comprehensive income.

In fiscal 2014, we reduced our 100 % interest in ASCO Kohlensäure AG, Switzerland, to 70 %. In conjunction with the consolidation of these non-controlling interests, there was a notional positive difference of K€ 1,317 that was offset against the Group's Other reserves in other comprehensive income.

In fiscal 2015, Messer SE & Co. KGaA acquired the remaining 50 % of shares in Messer Information Services GmbH, Groß-Umstadt, from MEC Holding GmbH, Bad Soden. As both Messer SE & Co. KGaA and MEC Holding GmbH are ultimately controlled by the same party before and after the acquisition, this was not a business combination as referred to by IFRS 3, but rather a transaction under joint control. In conjunction with the consolidation of these additional shares, there was a notional positive difference of K€ 2,400 that was recognized in other reserves.

In fiscal 2016, Messer Griesheim (China) Investment Co. Ltd., China, increased its majority interests in Shaoxing Messer Gas Products Co., Ltd. ("Shaoxing") and Messer Sunshine (Ningbo) Gas Products Co. Ltd., ("Ningbo") to 100 %. In conjunction with the consolidation of these additional shares, there was a notional negative difference of K€ 474 for Shaoxing and a notional positive difference of K€ 357 for Ningbo, which were offset against the Group's Other reserves in other comprehensive income.

In November 2018, Messer Griesheim (China) Investment Co. Ltd., China, reduced its majority interests in Shaoxing Messer Gas Products Co., Ltd. ("Shaoxing") and Messer Sunshine (Ningbo) Gas Products Co. Ltd., ("Ningbo") by 30 % from 100 % to 70 %. In conjunction with the reduction of majority interests, there was a notional positive difference of K€ 336 for Shaoxing and a notional negative difference of K€ 1,737 for Ningbo, which were offset against the Group's Other reserves in other comprehensive income.

In January 2019, Messer Griesheim (China) Investment Co. Ltd., China, acquired all shares in Chongqing Pangang Messer Gas Products Co., Ltd. from Sichuan Pangang Messer Gas Products Co., Ltd., in which Messer Griesheim (China) Investment Co. Ltd. holds 60 %. In conjunction with the increase in the majority interest, there was a notional positive difference of K€ 7,066 that was offset against the Group's Other reserves in other comprehensive income.

In March 2020, Messer increased its majority interests in Universal Industrial Gas Sdn. Bhd. ("UIG"), Malaysia, and Messer (Thailand) Co., Ltd. ("Thailand"), Thailand, to 75 % and 100 % respectively. The consolidation of these additional shares resulted in a notional positive difference of K€ 286 for UIG and a notional positive difference of K€ 197 for Thailand, which were offset against the Group's Other reserves in other comprehensive income.

In November 2020, Messer Griesheim (China) Investment Co. Ltd., China, increased its majority interests in Shaoxing Messer Gas Products Co., Ltd. ("Shaoxing"), China, and Messer Sunshine (Ningbo) Gas Products Co. Ltd., ("Ningbo"), China, to 100 %. In conjunction with the consolidation of these additional shares, there was a notional positive difference of K€ 150 for Shaoxing and a notional positive difference of K€ 1,158 for Ningbo, which were offset against the Group's Other reserves in other comprehensive income.

In December 2020, Messer Romania Gaz S.R.L., Romania, acquired the minority interests held by the Romanian joint venture partner Energomontaj in Messer Energo Gaz S.R.L. ("Energo"), Romania, and now holds 100 % of its shares. In conjunction with the consolidation of these additional shares, there is a notional positive difference of K€ 19 for Energo that was also offset against the Group's Other reserves in other comprehensive income.

Retained earnings

Retained earnings comprise the undistributed past earnings of consolidated companies and the effects of the remeasurement of the net defined benefit pension liability, net of deferred taxes. In accordance with section 150(2) AktG, K€ 2,357 (previous year: K€ 7,643) of the net income for the year (HGB) was transferred to the legal reserve. The legal reserve of K€ 10,000 is shown in the consolidated financial statements as a component of retained earnings.

Other components of equity

This item is used to report changes in equity in other comprehensive income, to the extent that such changes do not relate to equity transactions with shareholders (e.g. capital increases or distributions). This includes the difference in currency translation (through other comprehensive income) and the hedging reserve reported in the statement of changes in equity, which relates to the investments accounted for using the equity method.

Non-controlling interests

This item comprises the shares held by other shareholders in the equity of consolidated subsidiaries. Key non-controlling interests are held by other shareholders in China and Serbia.

Besides the distributions of prior-year results, the dividend payments to other shareholders include payments to other shareholders under company law in proportion to their interests.

The following companies have material non-controlling interests:

Name and registered office of subsidiary	Country	Shareholding in percent Dec. 31, 2022	Shareholding in percent Dec. 31, 2021
Hunan Xianggang Messer Gas Products Co., Ltd., Xiangtan City, Hunan Province – subgroup	China	45 %	45 %
Sichuan Pangang Messer Gas Products Co., Ltd., Panzhihua, Sichuan Province – subgroup	China	40 %	40 %

The following table shows the summarized financial data of the significant subsidiaries with material non-controlling interests:

	Hunan Xianggang Messer Gas Products Co., Ltd. – subgroup		Sichuan Pangang Messer Gas Products Co., Ltd. – subgroup	
	2022	2021	2022	2021
Revenue	**233,011**	**214,349**	**145,348**	**132,919**
Net profit for the year	45,188	34,607	41,242	33,736
thereof attributable to non-controlling interests	19,125	15,141	17,419	14,379
Other comprehensive income	(6,302)	24,531	(4,220)	18,632
Total comprehensive income	**38,886**	**59,138**	**37,022**	**52,368**
thereof attributable to non-controlling interests	16,629	24,606	15,732	21,831
Non-current assets	197,667	195,116	70,674	80,377
Current assets	153,607	132,198	168,107	151,854
Non-current liabilities	2,867	2,891	2,450	2,969
Current liabilities	60,003	56,458	36,428	30,383
Net assets	**288,404**	**267,965**	**199,903**	**198,879**
thereof attributable to non-controlling interests	81,548	75,851	58,653	59,622
Distributions to non-controlling interests	**(7,623)**	**(5,891)**	**(14,399)**	**(13,091)**
Cash flow from operating activities	44,831	37,045	33,183	13,294
Cash flow from investing activities	(19,779)	(20,089)	2,053	1,758
Cash flow from financing activities	(18,692)	(17,584)	(36,386)	(33,099)
Changes in cash and cash equivalents	**6,360**	**(628)**	**(1,150)**	**(18,047)**

Proposal for the appropriation of profits by the parent company

The Management Board proposes to distribute an amount of K€ 30,000 from net income to the shareholder and to carry the remainder forward to new account.

Capital management

A strong capital base is a key requirement for Messer SE & Co. KGaA for ensuring the continued existence of the Company and the Messer Group as a going concern. The items reported in the statement of financial position are considered equity. Other items with the legal status of equity or other instruments similar in nature to equity are not used.

The owners, the Management Board and the Supervisory Board ensure that the trust of the lending banks and insurance companies, creditors and the market in general in the Messer Group is maintained by a strong capital base. Under USPP III and RFA II, the Group is required to maintain minimum capital of € 800 million. Equity, including non-controlling interests, amounts to K€ 2,684,081 as of December 31, 2022 previous year: K€ 2,340,578). The required minimum capital is therefore comfortably exceeded.

The Management Board and the Supervisory Board regularly review compliance with these and other targets under loan agreements and report on this to the lending banks/insurance companies.

30. Contingent Liabilities

Guarantees

Obligations from issuing guarantees were as follows:

€ million	Dec. 31, 2022		Dec. 31, 2021	
	Maximum potential obligation	Amount reported as a liability	Maximum potential obligation	Amount reported as a liability
Guarantees	16.4	–	19.3	–

Financial guarantees essentially relate to commitments to cover the contractual obligations of the respective principal debtors. Pledges given to secure the liabilities of Group companies were eliminated in consolidation and are thus not included in the above table.

Please refer to the comments under note 16 “Investments Accounted for Using the Equity Method” regarding the guarantees in connection with the contribution of the Western European business.

The Group has undertaken to invest in the acquisition, construction and maintenance of various production facilities. Obligations of this kind relate to the future purchase of plant and equipment at market prices. There are also long-term contracts giving rise to obligations. The commitments under orders, investment projects and long-term contracts amounted to K€ 163,952 as of December 31, 2022 (previous year: K€ 138,973).

Litigation

As of the end of the reporting period it was not aware of any processes exposed to material risks.

Other legal matters

In November 2017, a search was conducted at Messer Ibérica de Gases S.A., Spain, one of the Western European companies that was contributed to the Messer Industries Group later in 2019. In this context, documents were confiscated relating to permits to build and operate our air separation units and a donation for the renovation of a city hall. A decision on whether an action will be filed is still pending.

The Company was searched again in February 2019 in conjunction with a second investigation. The investigations focused on the procurement, consumption and redistribution of electricity to Carburos Metallicos.

A third investigation is pending. The investigative records have not yet been disclosed, hence the subject and target of the investigation are still not yet known.

It is currently assumed that the probability of a criminal conviction is low. Fines might be possible in administrative procedures initiated separately at a later date. As a precaution and without acknowledging any duty to pay compensation, Messer SE & Co. KGaA has recognized a provision for fines and legal costs of € 5 million.

After the Spanish regulator issued the Spanish power utility Endesa with a payment order for its grid usage fee, Endesa invoiced Messer Ibérica de Gases S.A. for an additional charge in the same amount of € 35.6 million for allegedly underpaying its grid usage fee in the period 2008 to February 2020. In the opinion of our local Spanish lawyers, both Endesa and Messer Ibérica de Gases S.A. have strong arguments for successfully defending against the claim for payment made by the Spanish regulator in its initial notice in an appeal, and thus also against the claim made by Endesa against Messer Ibérica de Gases S.A.

Even if a claim to payment were assumed, our local lawyers believe there are good arguments for reducing the amount claimed to less than € 10 million on the basis of the statute of limitations and the only partial redistribution of electricity to Carburos Metallicos.

Messer Ibérica de Gases S.A. has recognized a provision of € 5 million for any fines for applications not made in accordance with the proper formal requirements and thus any permits not formally in place. In accordance with the contribution agreement between Messer SE & Co. KGaA and Messer Industries GmbH, breaches of warranty only become refundable upwards of an amount of € 10 million with a deductible of € 5 million from Messer Group GmbH.

The proceedings are expected to take four to seven years.

Companies of the Messer Group are party to or involved in court and arbitration proceedings in various countries. Appropriate risk provisions have been recognized for these proceedings, provided that the obligation is reasonably certain.

31. Other Financial Instrument Disclosures

The following table shows the carrying amount and fair values of the individual financial assets and financial liabilities for each class of financial instruments as of December 31, 2022. It does not contain any information on the fair value of financial assets and financial liabilities not measured at fair value when carrying amount is a reasonable approximation of fair value.

	Measurement category as per IFRS 9	Carrying amount as of Dec. 31, 2022	Measurement in accordance with IFRS 9			Measurement in accordance with IFRS 16	Fair value as of Dec. 31, 2022
			Amortized cost	Fair value through OCI	Fair value through profit or loss		
Financial assets							
Non-current loan receivables	**AC**	**24**	24	–	–	–	**24**[1]
Miscellaneous financial investments	**FVOCI**	**125**	–	125	–	–	**125**[1]
Other non-current receivables and assets	**AC**	**2,422**	2,422	–	–	–	**2,263**[1]
Non-current lease receivables	**n/a**	**4,960**	–	–	–	4,960	**8,050**[1]
Trade receivables	**AC**	**230,494**	230,494	–	–	–	
Other current receivables and other assets	**AC**	**11,260**	11,260	–	–	–	
Current lease receivables	**n/a**	**1,462**	–	–	–	1,462	
Derivative financial assets							
Derivatives without an effective hedge	**FVTPL**	**8,163**	–	–	8,163	–	**8,163**[1]
Cash and cash equivalents	**AC**	**260,454**	260,454	–	–	–	
Financial liabilities							
Non-current financial liabilities	**AC**	**143,002**	143,002	–	–	–	**138,742**[1]
Non-current lease liabilities	**n/a**	**19,336**	–	–	–	19,336	
Current financial liabilities	**AC**	**149,002**	149,002	–	–	–	
Current lease liabilities	**n/a**	**5,280**	–	–	–	5,280	
Trade payables	**AC**	**170,686**	170,686	–	–	–	
Other current liabilities	**AC**	**31,660**	31,660	–	–	–	
Derivative financial liabilities							
Derivatives without an effective hedge	**FVTPL**	**1,550**	–	–	1,550	–	**1,550**[1]

[1] Hierarchy level 2

The following table shows the carrying amounts and fair values for each class of financial instrument in accordance with IFRS 9 as of December 31, 2021:

	Measurement category as per IFRS 9	Carrying amount as of Dec. 31, 2021	Measurement in accordance with IFRS 9			Measurement in accordance with IFRS 16	Fair value as of Dec. 31, 2021
			Amortized cost	Fair value through OCI	Fair value through profit or loss		
Financial assets							
Non-current loan receivables	**AC**	**48**	48	–	–	–	**48**[1]
Miscellaneous financial investments	**FVOCI**	**100**	–	100	–	–	**100**[1]
Other non-current receivables and assets	**AC**	**2,290**	2,290	–	–	–	**2,429**[1]
Non-current lease receivables	**n/a**	**6,436**	–	–	–	6,436	**9,655**[1]
Trade receivables	**AC**	**188,312**	188,312	–	–	–	
Other current receivables and other assets	**AC**	**17,867**	17,867	–	–	–	
Current lease receivables	**n/a**	**1,441**	–	–	–	1,441	
Derivative financial assets							
Derivatives without an effective hedge	**FVTPL**	**4,192**	–	–	4,192	–	**4,192**[1]
Cash and cash equivalents	**AC**	**304,215**	304,215	–	–	–	
Financial liabilities							
Non-current financial liabilities	**AC**	**139,711**	139,711	–	–	–	**143,632**[1]
Non-current lease liabilities	**n/a**	**19,225**	–	–	–	19,225	
Current financial liabilities	**AC**	**223,079**	223,079	–	–	–	
Current lease liabilities	**n/a**	**4,847**	–	–	–	4,847	
Trade payables	**AC**	**128,755**	128,755	–	–	–	
Other current liabilities	**AC**	**33,655**	33,655	–	–	–	
Derivative financial liabilities							
Derivatives without an effective hedge	**FVTPL**	**3,077**	–	–	3,077	–	**3,077**[1]

[1] Hierarchy level 2

The Messer Group uses the following hierarchy of inputs to measure fair value:

Level 1: Prices quoted in active markets accessible to the entity for identical assets or liabilities on the measurement date
Level 2: Inputs other than the quoted prices listed in Level 1 that can be observed either directly or indirectly for the asset or liability
Level 3: Unobservable inputs for the asset or liability

Non-current receivables, non-current lease receivables, other non-current assets, non-current financial liabilities and trade payables are discounted to present value. For these purposes, the measurement model is based on interest rate curves and exchange rates for the respective maturities applicable as of the end of the reporting period.

Given their short remaining terms, the carrying amounts of current receivables, trade payables and cash funds are approximately their fair value.

The fair value of forward exchange contracts is determined using quoted forward prices as of the end of the reporting period and calculations of net present value, based on yield curves with high ratings in corresponding currencies. The fair value is the difference between the forward rate as of the end of the reporting period and the rate quoted at the time of purchase.

For interest rate swaps, the fair value is calculated as the present value of the estimated future cash flows. Estimates of the future cash flows from variable interest payments are based on quoted swap rates and interbank interest rates. The estimated cash flows are discounted using a yield curve constructed from a similar source that reflects the relevant benchmark interbank interest rate as used by market participants when pricing interest rate swaps. The estimate of the fair value is adjusted for the credit risk reflecting the credit risk of the Group and the counterparty. This is calculated on the basis of credit spreads derived from the credit default swap of bond prices.

Net gains and losses on financial instruments include the effects on earnings of financial instruments. These essentially include gains or losses on remeasurement from currency translation, adjustments to fair value, impairment losses and their reversals.

The following table shows the effects on earnings of financial instruments by IFRS 9 measurement category:

2022	From interest	Net gains and net losses			
		At fair value	Currency translation	Reversal of impairment / (impairment)	From disposals
Financial assets and financial liabilities at fair value through profit or loss	–	4,005	–	–	–
Financial liabilities at amortized cost	(9,430)	–	(2,650)	–	2
Financial assets at amortized cost	1,205	–	(1,142)	(3,751)	–
Financial assets at fair value through OCI	–	–	(228)	–	–

The following table shows the effects on earnings of financial instruments by IFRS 9 measurement category in 2021:

2021	From interest	Net gains and net losses			
		At fair value	Currency translation	Reversal of impairment / (impairment)	From disposals
Financial assets and financial liabilities at fair value through profit or loss	–	8,548	(3,392)	–	–
Financial liabilities at amortized cost	(10,769)	–	2,561	–	34
Financial assets at amortized cost	1,100	–	3,042	(2,983)	–
Financial assets at fair value through OCI	–	–	17	–	–

Derivative financial instruments

The Messer Group essentially uses derivative financial instruments to hedge currency and interest exposures in order to reduce currency and interest risks. Foreign currency risks from posted transactions are largely hedged. The Messer Group currently uses standard currency forwards and interest rate swaps as hedging instruments.

The following table shows the nominal volumes and fair values of the derivatives at the end of the reporting period:

	Nominal amount		Fair value	
	Dec. 31, 2022	Dec. 31, 2021	**Dec. 31, 2022**	Dec. 31, 2021
Not hedge accounting				
Interest hedge (negative fair value)	**–**	51,033	**–**	(985)
Currency hedge (positive fair value)	**92,510**	50,901	**7,891**	3,571
Currency hedge (negative fair value)	**24,981**	47,335	**(1,473)**	(2,092)
Interest and currency hedge (negative fair value)	**1,950**	–	**(77)**	–
Interest and currency hedge (positive fair value)	**18,141**	20,114	**272**	621
	137,582	**169,383**	**6,613**	**1,115**

The nominal volume is the total of all the purchase and sale amounts of derivative financial transactions. The fair values are calculated by measuring the outstanding positions at market price, without taking into account offsetting developments in the value of the hedged items. The transactions are measured in line with the market based on current market data provided by information services.

We are subject to a credit risk for asset OTC derivatives. We minimize the risk by only entering into derivatives with international financial institutes with an investment grade rating.

The remaining terms for the hedges (nominal volume) were as follows as of the end of the reporting period:

	Remaining term up to 1 year	Remaining term more than 1 year	Total Dec. 31, 2022	Remaining term up to 1 year	Remaining term more than 1 year	Total Dec. 31, 2021
Currency forwards	113,975	3,516	**117,491**	61,904	36,332	**98,236**
Interest rate swaps	–	–	**–**	51,033	–	**51,033**
Cross-currency interest rate swap	–	20,091	**20,091**	–	20,114	**20,114**
	113,975	**23,607**	**137,582**	**112,937**	**56,446**	**169,383**

The Messer Group uses derivatives in accordance with the International Swaps and Derivative Association (ISDA) Agreement. This agreement does not meet the criteria for offsetting in the consolidated statement of financial position, as it only provides for offsetting rights for future events, such as default or insolvency of the Group or counterparty. The following table shows the potential financial impact of offsetting the agreement described, regardless of whether the items are offset in the consolidated statement of financial position in accordance with IAS 32.42.

	Dec. 31, 2022			Dec. 31, 2021		
	Gross amounts of derivatives in the Consolidated Statement of Financial Position	Amounts from netting agreements	Net amounts	Gross amounts of derivatives in the Consolidated Statement of Financial Position	Amounts from netting agreements	Net amounts
Derivative assets	4,801	(1,550)	**3,251**	4,192	(3,077)	**1,115**
Derivative liabilities	(1,550)	1,550	**–**	(3,077)	3,077	**–**

Management of financial risks

In conjunction with its operating activities, the Messer Group is exposed to various financial risks, in particular credit, liquidity, interest and currency risk, which are described in more detail below. The Group's risk management system takes into account the fact that financial market developments are not foreseeable and is intended to minimize any potential negative impact on the Group's financial position. The Group uses derivative financial instruments to hedge against specific risks.

Risk management is handled by Group Treasury in compliance with guidelines approved by management. Group Treasury identifies, assesses and hedges financial risks. The guidelines contain general principles for risk management and detailed rules for specific areas, such as currency and interest rate risks, the use of derivative financial instruments and the investment of surplus cash. Further information on risk management can be found in the risk report section of the Group management report.

Credit risk

Credit risk is the risk of financial losses if customers or the counterparty to a financial instrument do not meet their contractual obligations.

There are no impairment losses for other financial assets and financial investments such as bank balances, securities and derivatives that are assets, as the credit risk is classified as remote. Such risks are limited by Group Treasury by selecting counterparties of good credit standing and by limiting the investment amounts. Credit risk in the Messer Group mainly arises from trade receivables.

The corresponding impairment loss is measured at an amount equal to lifetime expected credit losses, based on an analysis of historical default data and forecasts of future economic conditions. Expected credit losses are a probability-weighted estimate of credit losses.

Credit risk in the Messer Group is primarily influenced by customers' individual characteristics.

For risk management purposes, the credit rating of each customer is first analyzed individually before the respective Group company offers its standard delivery and payment terms. Where available, the analysis comprises annual financial statements, information from credit agencies, sector information and, in some cases, credit reports from banks. Specific limits are set individually for each customer. These represent the maximum outstanding amount that can be granted without the approval of the Risk Management Committee. The limits are reviewed at least once a quarter.

Due regard is also given to whether the customer is a natural person or a legal entity. Other factors taken into account are geographical location, market sector, the aging structure of receivables and the occurrence and duration of payment problems.

The expected credit loss over the total term of the respective receivables is taken into account in the measurement of the receivables. The Messer Group uses the simplified impairment model for this.

In order to assess the expected credit risk, receivables are grouped on the basis of the existing credit risk and maturity structure of the receivables concerned. Customers are also divided into groups to monitor the risk of default. The groups of customers with comparable credit risks to be taken into account for the Messer Group result from the business areas and registered office of the respective customers.

If there is objective evidence that the forecast future inflows are impaired, a receivable is classified as impaired. Examples of such evidence include impending insolvency or breach of contract due to default. Default occurs if it is unlikely that a debtor will be able to settle its liabilities in full.

Each company in the Messer Group therefore performs an analysis to determine whether there are objective indications of impairment for customers whose receivables are past due by a certain number of days, indicating an increased credit risk. At the latest, there is an increased credit risk when the amount of the receivable past due is higher than the average turnover. This can vary between 90 and 270 days depending on the company.

The following table provides information on the estimated credit risk and the expected credit losses for trade receivables as of December 31, 2022, calculated according to the default event:

2022	Receivables	Default rate, in %	Expected credit loss
Individually impaired	115,214	30.4 %	35,069
Collectively impaired in accordance with default event			
Days past due:			
Not past due	103,639	0.9 %	953
between 1 and 30 days	33,786	3.0 %	1,007
between 31 and 60 days	11,491	5.5 %	629
between 61 and 90 days	3,054	16.8 %	512
between 91 and 120 days	690	44.3 %	306
between 121 and 180 days	808	56.8 %	459
between 181 and 270 days	577	55.6 %	321
more than 270 days	2,411	61.5 %	1,482
	271,670		**40,738**

Impairment losses on non-current and current trade receivables developed as follows:

	2022	2021
As of Jan. 1	**41,413**	**38,171**
Net change in impairment recognized in profit or loss	4,293	3,236
Amounts written off as uncollectible in the fiscal year	(4,959)	(404)
Change in Group reporting	14	–
Exchange rate changes	(23)	410
As of Dec. 31	**40,738**	**41,413**

The impairment loss relates to trade receivables and was calculated exclusively on the basis of lifetime expected credit losses.

The following table provides information on the estimated credit risk and the expected credit losses for trade receivables as of December 31, 2021:

2021	Receivables	Default rate, in %	Expected credit loss
Individually impaired	100,868	37.1 %	37,380
Collectively impaired in accordance with default event			
Days past due:			
Not past due	90,728	0.8 %	749
between 1 and 30 days	24,436	2.3 %	567
between 31 and 60 days	8,023	4.6 %	369
between 61 and 90 days	1,735	17.7 %	307
between 91 and 120 days	526	43.3 %	228
between 121 and 180 days	764	38.7 %	296
between 181 and 270 days	783	39.5 %	309
more than 270 days	2,268	53.3 %	1,208
	230,131		**41,413**

Liquidity risk

Liquidity risk, i.e. the risk that the Messer Group cannot meet its financial obligations, is limited both by creating the necessary financial flexibility and by effective cash management. In addition to cash funds, the Messer Group also has access to long-term, freely available credit facilities to safeguard its liquidity. There are no indications that any of the credit facilities granted are not fully available. Liquidity risks are monitored regularly and reported to management, in particular regarding compliance with the financial covenants described in note 26 "Financial Liabilities".

Trade payables and other current liabilities have remaining terms of less than one year. Information relating to the maturities of financial liabilities can be found in note 26 "Financial Liabilities". Other non-current liabilities have remaining terms of between one and five years.

The following table shows the expected cash flows for financial liabilities:

Description	Carrying amount as of Dec. 31, 2022	Expected cash flow	Cash flows 2023		Cash flows 2024 - 2027		Cash flows from 2028	
			Interest	Payment of principal	Interest	Payment of principal	Interest	Payment of principal
Financial liabilities at amortized cost	**494,350**	**(512,776)**	**(9,629)**	**(351,815)**	**(8,309)**	**(143,023)**	**–**	**–**
Financial liabilities[1]	292,004	(310,430)	(9,629)	(149,469)	(8,309)	(143,023)	–	–
Trade payables	170,686	(170,686)	–	(170,686)	–	–	–	–
Other current liabilities	31,660	(31,660)	–	(31,660)	–	–	–	–
Financial liabilities at fair value through profit or loss	**1,550**	**(1,611)**	**(47)**	**(1,076)**	**(90)**	**(397)**	**(1)**	**–**
Currency forwards[2]	1,473	(1,473)	–	(1,076)	–	(397)	–	–
Interest rate swaps[2]	77	(138)	(47)	–	(90)	–	(1)	–
Lease liabilities	**24,616**	**(30,372)**	**(722)**	**(5,280)**	**(1,750)**	**(11,812)**	**(3,284)**	**(7,524)**

[1] The transaction costs for financing were already reported as cash outflows and are therefore not a component of future cash flows.
[2] Repayments of principal for financial derivatives are contractual cash flows.

This includes all instruments that were in the portfolio on December 31, 2022 and for which payments were already contractually agreed. Forecast figures for future new liabilities are not included. Foreign currency amounts were translated using the rate as of December 31, 2022. The net interest payments for the interest swap cash flow were calculated using the yield curves provided by the banks.

Description	Carrying amount as of Dec. 31, 2021	Expected cash flow	Cash flows 2022		Cash flows 2023 - 2026		Cash flows from 2027	
			Interest	Payment of principal	Interest	Payment of principal	Interest	Payment of principal
Financial liabilities at amortized cost	**525,200**	**(536,455)**	**(5,445)**	**(385,985)**	**(4,714)**	**(138,392)**	**(113)**	**(1,806)**
Financial liabilities[1]	362,790	(374,045)	(5,445)	(223,575)	(4,714)	(138,392)	(113)	(1,806)
Trade payables	128,755	(128,755)	–	(128,755)	–	–	–	–
Other current liabilities	33,655	(33,655)	–	(33,655)	–	–	–	–
Financial liabilities at fair value through profit or loss	**3,077**	**(3,377)**	**(1,285)**	**(1,772)**	**–**	**(320)**	**–**	**–**
Currency forwards[2]	2,092	(2,092)	–	(1,772)	–	(320)	–	–
Interest rate swaps[2]	985	(1,285)	(1,285)	–	–	–	–	–
Lease liabilities	**24,072**	**(30,227)**	**(753)**	**(4,847)**	**(1,832)**	**(12,037)**	**(3,570)**	**(7,188)**

[1] The transaction costs for financing were already reported as cash outflows and are therefore not a component of future cash flows.
[2] Repayments of principal for financial derivatives are contractual cash flows.

Interest risk

Interest risk can arise when interest-bearing liabilities are not hedged in terms of maturity or amount by either corresponding assets or derivative instruments. The objective is to optimize the net interest result and minimize interest risks. At 36 %, the Company has hedged a material amount of its total financial liabilities against interest rate changes through fixed interest rate agreements and derivatives.

Variable financial instruments are subject to a cash flow risk with regard to the uncertainty of future interest payments. The cash flow risk is measured using a sensitivity analysis. The sensitivity analysis assumes a shift in the yield curves for all currencies by +/- 100 basis points as of December 31, 2022.

The changes in interest rate derivatives are recognized in profit or loss using the current market interest at the end of the reporting period. If market interest rates had been 100 basis points higher (lower) as of December 31, 2022, consolidated net profit would have been K€ 404 (previous year: K€ 306) higher or K€ -401 (previous year: K€ -88) lower.

For variable financial liabilities and our financial investments, an interest rate level 100 basis points higher (lower) as of December 31, 2022 would have produced a result higher (lower) by K€ 586 (previous year: K€ 868). The exposure to interest rate risk was K€-58,552 as of December 31, 2022 (previous year: K€ -86,773).

Currency risk

Currency risk for the Messer Group arises from both financing and operating activities in an international environment. Foreign currency risks are hedged to the extent that they have a significant influence on the Group's cash flows.

Foreign currency risks relating to financing activities result from foreign currency financial liabilities and loans for the financing of Group companies. Group Treasury hedges these risks. Currency derivatives are used to convert financial obligations and intragroup loans denominated in foreign currencies into the functional currency of the Group companies.

As far as operating activities are concerned, the individual Group companies predominantly conduct their business in their own functional currency. The Messer Group's currency risk from operating activities is therefore considered remote overall. However, a number of Group companies are exposed to foreign currency risks in connection with operational transactions not denominated in their own functional currency. This mainly relates to payments in conjunction with a long-term supply agreement and payments in conjunction with investments. The Messer Group also uses currency derivatives to hedge these risks.

Currency risks as referred to by IFRS 7 result from financial instruments that are denominated in a currency other than the functional currency and that are monetary in nature; exchange rate differences arising from the translation of financial statements into the Group currency are not taken into account.

Currency risk is measured on the basis of sensitivity analyses. The currency analysis assumes an appreciation (depreciation) of all currencies by 10 % compared to the euro.

If the euro appreciates (depreciates) by 10 % against the major currencies, this would produce a hypothetical result K€ 13,788 lower (higher) (previous year: K€ 3,237). The net currency risk from statement of financial position exposures was as follows:

K€, as of Dec. 31, 2022	CNY	CZK	HUF	PLN	RSD	USD	VND
Foreign currency risk from statement of financial position exposures	174	(27,068)	9,700	(22,936)	20,498	(42,588)	(581)
Foreign currency risk from forecast transactions	83,304	(11,630)	1,275	(35,920)	126,978	45,143	(6,592)
Transactional foreign currency exposures	**83,478**	**(38,698)**	**10,975**	**(58,856)**	**147,476**	**2,555**	**(7,173)**
Exposures hedged in economic terms by derivatives	(57,364)	–	–	–	–	55,489	–
Unhedged foreign currency exposures	**26,114**	**(38,698)**	**10,975**	**(58,856)**	**147,476**	**58,044**	**(7,173)**
Change in foreign currency exposures as a result of a 10 % appreciation of the euro	(2,611)	3,870	(1,098)	5,886	(14,748)	(5,804)	717

32. Related Parties

Transactions with the following entities and individuals are treated as related party transactions.

Related companies

The ultimate controlling company is Messer Industrie GmbH. The ultimate controlling party is the Messer family. Associated companies, joint ventures and non-consolidated subsidiaries classified as related parties are shown in the list of shareholdings.

The following companies are considered related parties:

- Messer Holding GmbH
  Messer Holding GmbH is the parent company of Messer SE & Co. KGaA and has held all shares in Messer SE & Co. KGaA since January 1, 2016.

- Messer Management SE
  Messer Management SE is the general partner (SE) of Messer SE & Co. KGaA.

- Cultro GmbH
  Cultro GmbH, founded in 2022, is a subsidiary of Messer Industrie GmbH.

- MIG Holding GmbH and Messer Eutectic Castolin Group (MEC Group)
  100 % of the shares in MEC Global GmbH are held by MIG Holding GmbH, an affiliate of Messer Industrie GmbH with the same ownership structure.

- Messer Medical Home Care Holding GmbH (Home Care Group)
  The Messer Group has spun off its home care activities into an independent group since 2011. The parent company of this Group, Messer Medical Home Care Holding GmbH, is wholly owned by MEC Holding GmbH, whose interest is held by MIG Holding GmbH Wages.

- Stefan Messer GmbH, Greenbelt Ltd., British Virgin Islands, and Hardtberg Grundstücks GmbH
  Stefan Messer, Managing Director and co-shareholder of Messer Industrie GmbH, is also a Managing Director and co-shareholder or sole shareholder of these companies. Messer SE & Co. KGaA rents its head office in Bad Soden am Taunus from Hardtberg Grundstücks GmbH. The contract satisfies the lease criteria of IFRS 16 and was reported as a right-of-use asset in the consolidated statement of financial position. The corresponding lease liability amounts to K€ 3,438 as of December 31, 2022.

  Messer SE & Co. KGaA and MEC Holding GmbH are joint owners in the investment in the facilities at the head office in Bad Soden.

- Yeti GermanCo 1 GmbH Group
  Messer SE & Co. KGaA holds 54.4602 % in the joint venture Yeti GermanCo 1 GmbH, which manages Messer's business in Western Europe and the Americas. All companies included in these consolidated financial statements are related parties from the perspective of Messer SE & Co. KGaA.

- Yeti Warehouse GmbH Group
  Messer Group holds 58.05 % in Yeti Warehouse GmbH. The Yeti GermanCo 1 GmbH Employee Participation Program is bundled in the Yeti Warehouse GmbH Group.

The following transactions were performed with related companies:

	Jan. 1 – Dec. 31, 2022	Jan. 1 – Dec. 31, 2021
Revenue and services provided		
Ultimate controlling company	17	18
Parent company	86	93
Associates/joint ventures	59,502	45,929
Non-consolidated subsidiaries	456	363
Other related parties	1,728	1,179
	61,789	**47,582**
Purchased goods and services		
Ultimate controlling company	54	132
Parent company	4,612	3,098
Associates/joint ventures	6,158	5,999
Non-consolidated subsidiaries	–	80
Other related parties	6,579	278
	17,403	**9,587**

	Dec. 31, 2022	Dec. 31, 2021
Trade receivables		
Ultimate controlling company	–	3
Associates/joint ventures	5,904	8,687
Non-consolidated subsidiaries	1,291	1,484
Other related parties	375	164
	7,570	**10,338**
Other financial and non-financial assets		
Ultimate controlling company	608	1,157
Non-consolidated subsidiaries	49	–
Other related parties	383	220
	1,040	**1,377**
Trade payables		
Ultimate controlling company	8	46
Associates/joint ventures	1,639	2,072
Non-consolidated subsidiaries	16	–
Other related parties	341	384
	2,004	**2,502**
Other financial and non-financial liabilities		
Parent company	3,702	1,798
Associates/joint ventures	82	3,294
Other related parties	7	974
	3,791	**6,066**

The receivables from related parties result from service agreements and sales transactions with varying maturities. The receivables are not secured by collateral and do not bear interest.

	Dec. 31, 2022	Dec. 31, 2021
Loans granted to		
Other related parties	–	4,000
Non-consolidated subsidiaries	801	801
	801	**4,801**
Loans received from		
Ultimate controlling company (interest 0.01 % p.a.)	–	4,140
Associates/joint ventures	24	–
Other related parties (interest 0.01 % p.a.)	1,530	4,540
	1,554	**8,680**

Related persons

Members of management in key positions
Management in key positions at Messer SE & Co. KGaA included the following in the fiscal year:

- Stefan Messer, Chief Executive Officer, Bad Soden am Taunus
- Bernd Eulitz, Deputy Chief Executive Officer, Munich (from February 1, 2022)
- Helmut Kaschenz, Chief Financial Officer, Frankfurt am Main (from January 1, 2022)
- Ernst Bode, Chief Operating Officer Europe, Belgrade (until December 31, 2022)

The total remuneration of the members of management in key positions amounted to K€ 6,535 in the fiscal year (previous year: K€ 4,234).

Of this figure, fixed remuneration including benefits in kind and other fringe benefits amounted to K€ 2,771 (previous year: K€ 1,647). The total amount of variable remuneration was to K€ 3,386 (previous year: K€ 2,122) and is linked to the achievement of certain performance indicators. An amount of K€ 378 was added to the pension provisions in the fiscal year (previous year: K€ 465).

Supervisory Board
The members of the Supervisory Board of Messer SE & Co. KGaA in fiscal 2022 were:

- Dr. Jürgen Heraeus, Chairman, business graduate
- Dr. Werner Breuers, Deputy Chairman, chemist, Managing Partner of ICB Deutschland GmbH
- Dr. Karl-Gerhard Seifert, chemist, Managing Director of Cassella GmbH
- Dr. Nathalie von Siemens, philosophy graduate, member of the Supervisory Board of Siemens AG
- Dr. Johannes Fritz, Chairman of the Audit Committee, management consultant
- Heike Niehues, economics graduate, member of the Management Board of Webasto Thermo & Comfort SE
- Maureen Messer-Casamayou, teacher
- Sabine Scheunert-Porth, CIO and economics graduate,
  Vice President of Digital & IT Sales/Marketing Mercedes-Benz AG

The Supervisory Board received total remuneration of K€ 390 for the fiscal year (previous year: K€ 281).

The members of the Supervisory Board of Messer Management SE in the fiscal year were:

- Dr. Jürgen Heraeus, Chairman, business graduate
- Maureen Messer-Casamayou, teacher
- Marcel Messer, Managing Director of MEC Holding GmbH, Messer Industrie GmbH and
  Messer Holding GmbH

33. Events after the Reporting Period

Virginia Esly was appointed to the Management Board of Messer Management SE as Chief Operating Officer Europe as of January 2, 2023.

On January 11, 2023, Messer Griesheim (China) Investment Co. Ltd., Shanghai, reduced its majority interests in Shaoxing Messer Gas Products Co., Ltd. ("Shaoxing") and Messer Sunshine (Ningbo) Gas Products Co. Ltd., ("Ningbo") by 30 % from 100 % to 70 %.

Stefan Messer will be succeeded as Chief Executive Officer of Messer SE & Co. KGaA by the current Deputy Chief Executive Officer, Bernd Eulitz, on April 27, 2023. From April 27, 2023 onwards, Stefan Messer will assume the position of Chairman of the Supervisory Board of Messer SE & Co. KGaA and Messer Management SE from Dr. Jürgen Heraeus, who will also resign from the Supervisory Board at the same time.

34. Prior-Year Financial Statements

The Supervisory Board approved the consolidated financial statements of Messer SE & Co. KGaA as of December 31, 2021 on April 27, 2022.

35. Auditors' Fees

The fee for the auditor of the German Messer companies broke down as follows (in K€):

	2022	2021
Audits of financial statements	286	324
Other assurance services	2	2
Tax advisory services	–	21
Other services	437	470
	725	**817**

Bad Soden am Taunus, March 31, 2023

Appendix

List of shareholdings as of December 31, 2022

Country	Name	Registered office	Equity (in K€)	Direct / Indirect	Share-holding in %	Net result after tax (in K€)
Affiliated companies included in the consolidated financial statements						
Albania	Messer Albagaz SH.P.K	Korça	4,423	I	81.94	448
Austria	Messer Austria GmbH	Gumpoldskirchen	102,768	D	100.00	8,301
Bosnia and Herzegovina	Messer Mostar Plin d.o.o.	Mostar	3,777	D	100.00	867
	Messer Tehnoplin d.o.o.	Sarajevo	25,471	I	97.90	2,559
	Messer BH Gas d.o.o.	Sarajevo	21,809	I	81.94	1,260
Bulgaria	Messer Bulgaria EOOD	Sofia	9,391	D	100.00	929
China	Kunming Messer Gas Products Co., Ltd.	Kunming, Yunnan Province	(2,542)	I	77.16	(50)
	Sichuan Messer Gas Products Co., Ltd.	Chengdu	62,575	I	100.00	9,704
	Mianyang Messer Gas Products Co., Ltd.	Mianyang	4,897	I	100.00	681
	Foshan MS Messer Gas Co., Ltd.	Foshan City, Guangdong Province	103,402	I	85.00	11,292
	Chengdu Chenggang Messer Gas Products Co., Ltd.	Chengdu	(471)	I	60.00	2,359
	Hunan Xianggang Messer Gas Products Co., Ltd.	Xiangtan City, Hunan Province	204,065	I	55.00	40,295
	Sichuan Pangang Messer Gas Products Co., Ltd	Panzhihua, Sichuan Province	174,393	I	60.00	41,782
	Wujiang Messer Industrial Gas Co., Ltd.	Wujiang, Jiangsu Province	9,020	I	100.00	3,567
	Messer Sunshine (Ningbo) Gas Products Co., Ltd.	Ningbo, Zhejiang Province	7,614	I	100.00	792
	Messer Gas Products (Zhangjiagang) Co., Ltd.	Zhangjiang City, Jiangsu Province	69,028	I	100.00	7,434
	Foshan Shunde MS Messer Gas Products Co., Ltd	Foshan City, Guangdong Province	55,964	I	60.00	6,829
	Chongqing Messer Gas Products Co., Ltd.	Chongqing, Sichuan Province	24,953	I	100.00	178
	Messer Griesheim (Kunming) Gas Products Co.Ltd.	Kunming, Yunnan Province	18,052	I	100.00	2,497
	Shaoxing Messer Gas Products Co. Ltd.	Shaoxing City, Zhejiang Province	7,662	I	100.00	824
	Xichang Pangang Messer Gas Products Co. Ltd.	Xichang City	117,188	I	60.00	15,255
	Messer (Wuhu) Gas Products Co., Ltd	Wuhu City, Anhui Province	10,078	I	100.00	–
	Messer Gas Products (Nanjing) Co.,Ltd	Nanjing, Jiangsu Province	7,722	I	100.00	2,730
	Messer Specialty Gases (Suzhou) Co., Ltd.	Suzhou, Jiangsu Province	23,511	I	100.00	7,216
	Hengyang Xianggang Messer Gas Products Co.Ltd	Suzhou, Jiangsu Province	8,297	I	55.00	1,215
	Yunnan Dianzhong Messer Gas Products Co., Ltd. (vormals Yunnan Yuntianhua Messer Gas Products Co., Ltd.)	Suzhou, Jiangsu Province	5,035	I	65.00	(1,029)
	Foshan Sanshui MS Messer Gas Co., Ltd.	Suzhou, Jiangsu Province	12,065	I	85.00	5,848
	Dongguan Moral Strength Messer Gas Co., Ltd.	Dongguan, Guangdong Province	10,873	I	60.00	–

Country	Name	Registered office	Equity (in K€)	Direct / Indirect	Share-holding in %	Net result after tax (in K€)
Affiliated companies included in the consolidated financial statements						
China	Ningxiang Xianggang Messer Gas Products Co., Ltd.	Ningxiang, Hunan Province	14,727	I	55.00	2,521
	Zhuzhou Xianggang Messer Gas Products Co., Ltd.	Zhuzhou City, Hunan Province	4,484	I	55.00	–
	Kunming Anning Messer Gas Products Co.Ltd	Anning, Yunnan Province	8,644	I	100.00	374
	Messer Gas Products (Chengdu) Co., Ltd.	Chengdu City, Sichuan Province	17,322	I	100.00	–
	Messer Specialty Gases (Chuzhou) Co., Ltd.	Chuzhou, Anhui Province	9,289	I	100.00	(2,209)
	Messer Specialty Gases (Meishan) Co., Ltd.	Mianyang City, Sichuan Province	8,796	I	100.00	–
	Liuyang Xianggang Messer Gas Products Co., Ltd.	Liuyang City, Hunan Province	2,990	I	55.00	–
	Yunnan Messer Gas Products Co., Ltd.	Kunming, Yunnan Province	41,250	I	100.00	4,309
	Messer Griesheim (China) Investment Co., Ltd.	Shanghai	375,976	I	100.00	97,063
	Changsha Xianggang Messer Gas Products Co, Ltd.	Changsha, Hunan Province	2,358	I	55.00	175
	Messer Management Consulting (Shanghai) Co., Ltd.	Shanghai	23,680	I	100.00	2,370
Croatia	Messer Croatia Plin d.o.o.	Zapresic	29,402	I	99.96	5,404
Czech Republic	Messer Technogas s.r.o.	Prague	43,108	D	100.00	12,112
	MG Odra Gas spol.s.r.o.	Vratimov	25,660	D	70.00	2,644
Germany	Messer Griesheim China Holding GmbH	Sulzbach	178,322	D	100.00	–
	Messer SE & Co. KGaA	Sulzbach	1,325,695		100.00	72,870
	Messer GasPack GmbH	Krefeld	57,698	D	100.00	–
Hungary	Messer Hungarogáz Kft.	Budapest	69,223	D	100.00	12,927
Malaysia	Universal Industrial Gas Sdn. Bhd.	Senai	2,253	D	75.00	20
North Macedonia	Messer Vardar Tehnogas d.o.o.	Skopje	8,959	D	100.00	1,039
Poland	Messer Polska Sp. z o.o.	Chorzów	43,723	D	99.97	3,738
	Eloros Sp. z o.o.	Chorzów	9,542	I	99.97	2,281
	MP Production Sp. z o.o.	Chorzów	6,362	I	99.97	1,508
Romania	Messer Romania Gaz S.R.L.	Bucharest	22,926	I	100.00	5,902
Serbia	Messer Tehnogas AD	Belgrade	199,407	D	81.94	16,531
Slovakia	Messer Tatragas spol.s.r.o.	Bratislava	23,435	D	100.00	5,594
	Messer Slovnaft s.r.o.	Bratislava	3,950	D	51.00	569
Slovenia	Messer Slovenija d.o.o.	Ruse	46,051	I	74.76	3,721
Switzerland	ASCO Kohlensäure AG	Romanshorn	3,116	D	70.00	134
Thailand	Messer (Thailand) Co., Ltd	Bangkok	4,775	D	100.00	(68)
USA	ASCO Carbon Dioxide Inc.	Jacksonville	612	I	70.00	98
Vietnam	Messer Haiphong Industrial Gases Co., Ltd.	Hai Phong City	106,987	D	100.00	16,308
	Messer Binh Phuoc Industrial Gases Co., Ltd.	Binh Phuoc Province	3,074	D	100.00	(291)
	Messer Vietnam Industrial Gases Co., Ltd.	Binh Duong	9,950	D	100.00	541

Country	Name	Registered office	Equity (in K€)	Direct / Indirect	Share-holding in %	Net result after tax (in K€)	
Companies accounted for using the equity method							
China	Sichuan Meifeng Messer Gas Products Co., Ltd.	Mianyang City, Sichuan Province	5,213	I	50.00	244	
Estonia	Elme Messer Gaas A.S.	Tallinn	44,460	D	50.00	(12,154)	
Germany	Mahler AGS	Stuttgart	4,323	D	25.00	2,724	
	Yeti GermanCo 1 GmbH	Sulzbach	1,379,666	D	54.46	33,996	
	Yeti Warehouse GmbH	Sulzbach	7,110	D	58.05	–	
Kosovo	Messer Medica LLC	Obiliq	1,893	I	49.00	(118)	
Affiliated companies not included in the consolidated financial statements							
Bosnia and Herzegovina	Plin Sarajevo d.d.	Sarajevo	2,723	I	100.00	(11)	[1]
Gibraltar	Messer Primeco FZE Limited (Gibraltar)	Gibraltar	–	D	51.00	–	[1]
Greece	Messer Hellas S.A. i.L.	Athens	–	D	100.00	–	[1]
	Tehnogas-Hellas Ltd.	Athens	–	I	40.97	–	[1]
Kosovo	Messer GTM LLC	Kosovska Mitrovica	265	I	81.94	206	[1]
Malaysia	Excel Gas Solutions Sdn. Bhd	Kuala Lumpur	–	I	25.80	–	[1]

[1] Affiliated companies not included in the consolidated financial statements owing to immateriality for the net assets, financial position and result of operations