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RHI Magnesita N.V.
27 February 2023

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RHI Magnesita N.V.

("RHI Magnesita" or the "Company" or "Group")

2022 Full Year Results

"Market share gains and price increases deliver strong revenue and EBITA growth"

RHI Magnesita, the leading global supplier of high-grade refractory products, systems and solutions, today announces its final results for the year ended 31 December 2022 ("2022" or the "Year").

Financial results (€m unless stated otherwise)	**2022**	2021	Change	2021 constant currency adjusted	Change Constant currency adjusted
Revenue	3,317	2,551	30%	2,729	22%
Adjusted EBITA	384	280	37%	318	21%
Adjusted EBITA margin	11.6%	11.0%	60bps	11.7%	(10)bps
Adjusted EPS (€/per share)	4.82	4.52	7%		
Net debt[2]	1,168	1,014	15%		
Net debt to adjusted EBITDA[2]	2.3x	2.6x	(0.3)x		

(€m unless stated otherwise)	**2022 Reported**	2021 Reported
Revenue	3,317	2,551
EBITA	372	236
Profit before tax	270	289
EPS (€/per share)	3.31	5.10
Dividend[3] (€/per share)	1.60	1.50

1. Adjusted figures are alternative performance measures "APMs" excluding impairments, amortisation of intangibles and exceptional items to enable an understanding of the underlying performance of the business. Full details are shown in the APM section.
2. 2022 net debt includes the impact of IFRS 16 of €64 million. 2022 adjusted net debt figures are shown including the impact of IFRS 16 (€56 million) to facilitate comparison between reporting periods.
3. Recommended final dividend of €1.10 per share, subject to AGM approval on 24 May 2023. Full year dividend of €1.60 per share includes the interim dividend of €0.50 per share paid to shareholders on 23 September 2022.

Highlights

- **Market share gains and €600 million price increase programme support strong financial results**
    - Revenue increased 30% to €3,317 million (2021: €2,551 million), and by 22% adjusted for constant currency (2021: €2,729 million)
        - Higher costs fully offset through €600 million price increase programme
    - Increased sales volumes and market share gains in both steel and industrial segments, benefitting from higher inventory levels providing security of supply
        - Shipped refractory volumes for steel (1)%, outperforming world steel association production volumes

ex-China (7)%

    - Adjusted EBITA increased 37% to €384 million (2021: €280 million) and 21% in constant currency terms, with margins stable at 11.6% (2021: 11.7%) despite significant cost increases in energy, raw materials and freight with margin resilience supported by benefits from the Production Optimisation Plan
    - Net debt to Adjusted EBITDA moderately decreased to 2.3x, ahead of 2.4x target due to stronger profitability and deliberately higher inventories
        - Available liquidity €1,121 million (2021: €1,181 million)
        - Long dated debt amortisation profile with competitive cost of debt

- **Significant strategic progress in target geographies and product segments led significantly by M&A and organic growth in India; M&A will contribute €25-30 million EBITDA in 2023**
    - Acquisition of SÖRMAŞ (87% shareholding) in Türkiye and establishment of new MIRECO recycling joint venture with Horn & Co. in Germany completed in 2022
    - Acquisition of the Indian refractory business of Dalmia Bharat Refractories Limited ("DBRL") and Hi-Tech Chemicals Limited ("Hi-Tech") completed in January 2023, will strengthen industrials business and flow control offering in India
    - Agreed acquisition of 65% stake in Jinan New Emei, flow control business based in China in January 2023
    - Revenue growth of 10% in China and 35% in India

- **Refractory market leader in sustainability and innovation**
    - Secondary raw materials recycling rate now at 10.5% (2021: 6.8%), supporting 8% reduction in CO_2 intensity compared to 2018 baseline
    - Awarded 'A-' from the Carbon Disclosure Project and sector leader status from Sustainalytics
    - New product sales represented 19% of revenue in 2022 (2021: 16%) and sales and solutions contracts increased to 32% of revenue (2021: 29%)

- **Additional refinancing was conducted in 2022 to maintain liquidity levels, extend debt maturities and establish links to the Group's sustainability performance.**

- **Final dividend of €1.10 per share recommended, total full year dividend in respect of 2022 €1.60 per share**

Outlook and guidance

Volatility and uncertainty are expected to persist across all markets except India in 2023. The subdued volumes in Q4 2022 are expected to continue into H1 2023, as a contraction in construction activity will affect steel, cement and lime, non-ferrous metals and glass demand globally. However, demand softness will be offset by continued strong growth in India and the Group will also benefit from additional earnings from new acquisitions and cost savings from its strategic initiatives.

The Group's outlook for revenue, EBITDA and EBITA in 2023 is broadly in line with current analyst consensus, with up to a 5% reduction in sales volumes and lower refractory pricing expected to lead to lower revenues, before contribution from new acquisitions. Costs are expected to remain flat or increase as higher energy and labour costs offset lower sea freight and purchased raw materials, resulting in a Group EBITA margin of around 10% in 2023 (2022: 11.6%).

Gearing levels may increase from the 2.3x recorded on 31 December 2022 due to €200 million of cash outflow from M&A (DBRL, Hi-Tech and Jinan New Emei) and lower profitability in 2023 caused by lower demand.

Commenting on the results, Chief Executive Officer, Stefan Borgas said:

"In 2022 we demonstrated the benefits of focusing on our customers, as the investment we made in higher working capital enabled us to both gain market share and increase prices, adding around €600 million to revenues as higher costs were passed on. I am pleased to report growing progress on our M&A strategy with acquisitions in India, China, Türkiye and Europe agreed or completed during the year. Whilst the outlook for 2023 is more uncertain than prior years due to slowing demand for refractories and softer pricing in certain regions, RHI Magnesita is able to face these challenges in a much stronger condition as a result of the implementation of its strategic cost savings and sales strategies over the past four years. "

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Conference call

The presentation will be broadcast live at the Hudson Sandler offices at 25 Charterhouse Square, London EC1M 6AE and will also be broadcast live via webcast and conference call at 9.30am UK time, 27 February 2023. The webcast can be accessed using the following link: https://www.investis-live.com/rhimagnesita/63ea5f694aa86d15007b31ad/pqqkk . A replay will be available on the same link shortly after event.

About RHI Magnesita

RHI Magnesita is the leading global supplier of high-grade refractory products, systems and solutions which are critical for high-temperature processes exceeding 1,200°C in a wide range of industries, including steel, cement, non-ferrous metals and glass. With a vertically integrated value chain, from raw materials to refractory products and full performance-based solutions, RHI Magnesita serves customers around the world, with around 13,500 employees in 33 main production sites and more than 70 sales offices. RHI Magnesita intends to leverage its leadership in terms of revenue, scale, product portfolio and diversified geographic presence to target strategically those countries and regions benefitting from more dynamic economic growth prospects.

The Group maintains a premium listing on the Official list of the London Stock Exchange (symbol: RHIM) and is a constituent of the FTSE 250 index, with a secondary listing on the prime segment of the Vienna Stock Exchange (Wiener Börse). For more information please visit: www.rhimagnesita.com

CEO REVIEW

RHI Magnesita is a resilient business with a proven track record of profitability throughout economic cycles. This year we have maintained margins and gained market share, in large part through the prioritisation of local product availability, against a backdrop of unprecedented inflation in our key input costs. Given the highly volatile supply chain environment in 2022, we prioritised security of supply for customers by maintaining elevated levels of inventory. As supply chains started to normalise towards the end of the year, we were able to release some of this inventory, reducing our average finished goods coverage ratio to 1.8 months against our target of 1.9 months. Refractories are essential for our customers to operate and I am pleased that we were able to respond to changing market dynamics during the year in a way that enhanced our value proposition and market position.

We have also been focused on extending our sustainability leadership within the refractory industry, both as a partner for our customers through the continued industrial transition to a low-carbon economy and through the work we are doing to reduce our own CO_2 emissions.

Health & Safety

The health and safety of our employees in the workplace is our first priority. I am pleased to report that the Group's lost time injury frequency rate remained well below our target of 0.50 per 200,000 hours, at 0.20 (2021: 0.19). We attained ISO 45001 certifications at three further plants and work is ongoing to roll this out further across the network.

Operational and financial performance

The Group delivered adjusted EBITA of €384 million in 2022, an outperformance against analyst consensus expectations for the year, and an EBITA margin of 11.6%. Reported 2022 revenues of €3.3 billion compares to analyst consensus forecast at the start of 2022 for revenues of €2.6 billion, an increase of €700 million in revenue with no change to sales volumes. Refractories are a small part of our customers' cost base at between 1% and 3% of operating costs, but they are essential for all high temperature production processes. The non-discretionary nature of our products combined with our low costs of production are the driving factors behind our long-term track record of profitability, throughout numerous downturns and challenging periods.

Gearing, measured as the ratio of Net Debt to EBITDA, reduced to 2.3x at the year end from 2.7x at 30 June 2022, slightly better than guided in November 2022 due to a stronger than forecast EBITDA performance in Q4.

Inventory monthly demand coverage ratios have gradually reduced to target levels as supply chains normalise, balancing the need to keep plants running at a high enough capacity utilisation to avoid loss of margin due to a lower fixed cost absorption.

Prioritising high levels of local product availability meant that we were able to seamlessly supply our customers, leading directly to market share gains. As a result, RHIM's overall steel volumes outperformed the wider market in contracting by only 1% compared to steel production globally (World Steel Association), which recorded a 4% contraction, or 7% excluding China.

A key risk to our operations during the year was energy security in Europe. This region is an important source of specialist products that are shipped globally to other regions as well as supplying our European customers. I am proud that we moved quickly in Q1 2022, as we saw the crisis emerging, and we were prudent in our approach to commit €7 million of capital investments towards installing alternative fuel infrastructure to reduce our reliance on natural gas. This is just one example of how we effectively responded to high levels of supply chain volatility this year.

Strategic delivery

Two key pillars of our long-term strategy are to increase our competitive position by investing in the rationalisation and modernisation of our production footprint and to grow in new markets through consolidation. I am pleased to report that we have demonstrated good progress in both areas in 2022.

We have transformed our production network through major investments in our refractory plants and raw material assets. We have achieved economies of scale through various initiatives including plant expansions and a higher degree of automation and digitalisation. The cost-saving benefits of our Production Optimisation Plan, together with substantial price increases to reflect higher input costs, have enabled us to maintain margins even though costs increased by 30% in 2022. Whilst these efficiency gains are currently being offset by higher production and distribution costs, they will enable us to sustainably grow margins in the longer term.

M&A progress

During 2022 we completed the acquisitions of Söğüt Refrakter Malzemeleri Anonim Şirketi ("SÖRMAŞ") in Türkiye for €46 million and entered into a recycling joint venture with Horn & Co Minerals Recovery GmbH & Co KG ("Horn & Co") in Germany for €13 million in exchange for a 51% ownership stake and we have since formed the new entity Horn & Co RHIM Minerals Recovery GmbH ("MIRECO"). We also progressed construction of a new non-basic shaped refractory plant in Chongqing, China, together with our joint venture partner Liangyou following our acquisition of the existing mixed operations there in Q4 2021. The new plant is on track to start production in H2 2023.

During January 2023, we completed two important strategic acquisitions in India, including the €78 million acquisition of the refractory business of Hi-Tech Chemicals Limited ("Hi-Tech") in Jamshedpur, Jharkhand. Hi-Tech is a specialised flow control refractory business and will thus strengthen and enlarge RHI Magnesita's position in the domestic and international flow control markets.

Secondly, we acquired the Indian refractory business of Dalmia Bharat Refractories Limited ("DBRL"), in exchange for 27 million shares in RHI Magnesita India Limited, the Group's 70% owned locally listed subsidiary (reduced to 60% post completion). With the production footprint and the product offering being highly complementary, the DBRL acquisition will greatly benefit our position within the industrials sector, especially in cement. At the same time, we will be able to increasingly serve customers with a 'local for local' approach and supply them with the broadest range of products and services, more so than any other player in the region.

These transactions strengthen our market position within the fast-growing Indian market, with steel production growth in India of 6% in 2022 and a 7-8% CAGR forecast until 2030. We were able to utilise highly valued equity in our listed Indian subsidiary to fund this acquisition, reducing the impact of the transaction on the Group's balance sheet.

In January 2023, we agreed to acquire a 65% shareholding in Jinan New EmeiIndustries Co. Ltd. ("Jinan New Emei"), for €40 million. Jinan New Emei, based in Shandong, China, is a well-established producer for refractory slide gates, nozzles and mixes. This acquisition will further strengthen our presence in both China and in flow control.

Taken together, these acquisitions are expected to contribute between €25-30 million of incremental EBITDA in 2023, with further upside from synergies of between 30% and 50% of target EBITDA to be delivered over the next two to three years.

Given the substantial completion of the Production Optimisation Plan, we have built a strong platform from which to embark on the next stage of our strategy, which is to accelerate inorganic growth in geographies and product segments where we continue to be under-represented.

Our people

The strategic progress and financial performance we have delivered this year is founded on the dedication and professionalism of our employees. I would like to highlight the contribution of our operations, sales, procurement and special project teams who have worked tirelessly to navigate volatile and unpredictable markets whilst achieving production targets and making necessary upgrades to our planning and logistics processes. A special mention must also go to our M&A and technical teams for whom the transactions agreed and completed in 2022 represent multiple years of sourcing, engagement, diligence and negotiations with target companies. We now look to the experience and knowledge of our integration teams to realise the benefits of these new additions to the Group as quickly as possible.

Our markets and outlook

Volatility and uncertainty are expected to persist across all markets except India in 2023. The subdued volumes in Q4 2022 are expected to continue into H1 2023, as a contraction in construction activity will affect steel, cement and lime, non-ferrous metals and glass demand globally. However, demand softness will be offset by continued strong growth in India and the Group will also benefit from additional earnings from new acquisitions and cost savings from its strategic initiatives.

The Group's outlook for revenue, EBITDA and EBITA in 2023 is broadly in line with current analyst consensus, withup to a 5% reduction in sales volumes and lower refractory pricing expected to lead to lower revenues, before contribution from new acquisitions. Costs are expected to remain flat or increase as higher energy and labour costs offset lower sea freight and purchased raw materials, resulting in a Group EBITA margin of around 10% in 2023 (2022: 11.6%).

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FINANCIAL REVIEW

Reporting approach

The Company uses a number of alternative performance measures ("APMs"), in addition to those reported in accordance with International Financial Reporting Standards ("IFRS"), which reflect the way in which the Board and the Executive Management Team assesses the underlying performance of the business. The Group's results are presented on an "adjusted" basis, using APMs that are not defined or specified under the requirements of IFRS, but are derived from the IFRS financial statements. The APMs are used to improve the comparability of information between reporting periods and to address investors' requirements for clarity and transparency of the Group's underlying financial performance. The APMs are used internally in the management of our business performance, budgeting and forecasting. A reconciliation of key metrics to the reported financials is presented in the section titled APMs.

All references to comparative 2021 numbers in this review are on a reported basis, unless stated otherwise. Figures presented at constant currency represent 2021 translated to average 2022 exchange rates as disclosed in Note 3 to the Financial Statements.

All reported volume changes year-on-year are excluding mineral sales. Revenue for mineral sales is reported under the industrials division.

Revenue

The Group recorded revenue of €3,317 million, 22% higher than 2021 (€2,729 million) on a constant currency basis and by 30% on a reported revenue basis (€2,551 million). The FX revenue tailwind was largely due to a significant appreciation of key currencies against the euro including: 11% appreciation of US dollar (39% of Group revenues), appreciation of Brazilian real by 14% (6% of Group revenues), appreciation of Indian rupee by 6% (7% of Group revenue) and appreciation of Chinese Yuan by 8% (6% of Group revenues). The Turkish lira depreciated by 66% against the euro (1% of Group revenues). The Group benefited from a material increase in product price increases throughout 2022 of €600 million to offset a significant rise in input costs including labour, raw materials and energy.

Raw material prices

The price of high grade dead burned magnesia ("DBM") from China was on average 2.2% higher in 2022 compared to 2021, and medium grade DBM was on average 7.7% higher.

During 2022 raw material prices softened following a sharp increase in prices during Q4 2021, with high grade Chinese DBM declining by 14% in 2022 and medium grade DBM from China declining by 22%. The price of Chinese electrofused magnesia declined by 25% given weak demand and overcapacity. Chinese raw materials prices softened during 2022 given stable energy markets and subsidies in China, keeping local production costs low. Prices are likely to remain at current levels through H1 2023.

Steel Division

The Group's Steel Division delivered revenue of €2,371 million, an increase of 30% on a reported basis (2021: €1,823 million) and 21% on a constant currency basis (2021: €1,961 million) and represents 71% of Group revenue. Revenue from South America increased by 40% on a reported basis and by 22% on a constant currency basis. Reported revenue from North America increased by 38%, and 22% on a constant currency basis. Volumes in South America decreased by 5% and in North America also decreased by 2%; however the Group was successfully able to implement price increases across these regions which was coupled with a strong FX tailwind from the strength of the US dollar and Brazilian real. Revenue in India & West Asia increased by 35%, and by 27% on a constant currency basis, as it benefited from significant steel market growth reflected in shipped volumes, which increased by 9%. Revenue in Europe and Türkiye increased by 20%, or by 22% on a constant currency basis, given small market share gains and the implementation of price increases in the region to off-set high inflationary pressures, notably energy. Volumes in the Europe & Türkiye region decreased by 8%. Revenue in China and East Asia increased by 12%, or 3% on a constant currency basis, with regional steel volumes flat despite the slowdown in China and steel production contraction.

Industrial Division

The Industrial Division recorded revenues of €946 million, 30% higher on a reported basis (2021: €729 million) and 23% higher than 2021 (2021: €767 million) on a constant currency basis. Cement and lime represents 11% of Group revenues, and in 2022 grew by 18% to €378 million, from €322 million in 2021. Pricing for cement and lime recovered in 2022 following softer pricing in 2021 given the lower raw material pricing environment in 2020. Non-ferrous metal revenues increased by 51% in 2022 to €219 million (2021: €145 million), largely due to significant price increases during 2022, where implementation was delayed in 2021 due to later cycle contracts, and also from increased demand, especially for copper and nickel. Revenue in the glass division increased by 47% to €154 million from €105 million in 2021, benefiting from increased demand from China and from the solar panel market. Industrial applications increased by 9% to €102 million (2021: €94 million). Mineral sales recorded revenue of €92 million (2021: €63 million).

Cost of goods sold

Cost of goods sold increased by 30% to €2,554 million in 2022, from €1,968 million and by 22% from €2,097 million on a constant currency basis.

Cost inflation was especially high compared to 2021 across purchased raw materials, energy, plant personnel costs, freight and supplies. Cost of production was also higher due to fixed cost under absorption as production was reduced to lower inventory levels, an impact of €63 million.

Externally purchased raw materials costs increased by €197 million to €1,173, an increase of 20% on the prior year on constant currency (2021: €976 million).

Energy markets became extremely volatile in 2022 following a significant increase in costs starting in H2 2021 as post pandemic demand returned, coupled by the Russia/Ukraine conflict which caused a shortage of natural gas globally and especially in Europe. Energy costs during the year increased by 41% on constant currency to €285 million from €202 million in 2021. The Group had pre-purchased 53% of its energy contracts (including European natural gas and power contracts), mitigating some of this volatility.

The cost of ocean freight lanes, which substantially increased during 2021, started to normalise in 2022 as represented by the Shanghai Containerised Freight Index, which was on average 12% lower in 2022 than 2021, reflective of overall Asia outbound freight rates returning back to pre-pandemic levels. However, the cost of some commonly used freight lanes by the Group such as inbound to North America (East Coast) and South America from Europe remained very high and significantly above pre-pandemic levels. Port congestion decreased significantly however, which has improved planning accuracy. Land freight and transport costs increased during 2022, mostly due to fuel and labour costs. Compared to 2021, freight costs increased by 17% on constant currency to €285 million in 2022 (2021: €244 million).

General supplies such as pallets, packaging and spare parts increased to €171 million, an increase of 18% on constant currency (2021: €145 million).

Gross profit

The Group recorded gross profit of €763 million in 2022, an increase of 31% (2021: €584 million) and 21% on a constant currency basis (2021: €632 million). Gross margin was 23.0%, 10bps higher than 2021 (2021: 22.9%), however 20bps lower on a constant currency basis (2021: 23.2%). Strength of major currencies against the euro such as the US dollar, Indian rupee and Brazilian real were an FX tailwind to gross profit.

Broadly stable gross margin on an FX adjusted basis reflects how effectively the price increase programme offset the inflationary cost pressures of raw material, energy, freight and labour.

On a divisional basis, gross profit in the Steel Division of €521 million represented an increase of 32% against the previous year (2021: €394 million), while gross margin increased by 40bps to 22.0%, (2021: 21.6%). Gross profit in the Industrial Division amounted to €242 million (2021: €190 million), up by 27% against the prior year, and gross margin declined by 50bps to 25.6% (2021: 26.1%).

Steel	**2022**	2021 reported	Change
Revenue (€m)	**2,371**	1,823	30%
Gross profit (€m)	**521**	394	32%
Gross margin	**22.0%**	21.6%	40bps

Industrial	**2022**	2021 reported	Change
Revenue (€m)	**946**	729	30%
Gross profit (€m)	**242**	190	27%
Gross margin	**25.6%**	26.1%	(50)bps

SG&A

Total selling, general and administrative expenses, before R&D related expenses, were €375 million, representing a 26% increase against the prior year (2021: €297 million) given inflationary costs. Personnel and personnel-related expenses increased by €32 million. FX impacted SG&A by a further €14 million. The Group also incurred bad debts of €4 million. Additional expenditure in the year related to supply chain management initiatives, digitalisation and sustainability.

Depreciation and amortisation

Depreciation for 2022 amounted to €116 million (2021: €109 million), 6% higher than 2021. Depreciation was flat on a constant currency basis (2021: €117 million). Depreciation in 2023 is expected to be around €120 million, excluding depreciation of the assets of DBRL, Hi-Tech and Jinan New Emei. These will contribute a further c.€10 million in depreciation in 2023.

Amortisation of intangible assets amounted to €29 million in 2022 (2021: €22 million).

Adjusted EBITDA

Adjusted EBITDA amounted to €500 million, up by 28% compared to 2021 (2021: €389 million). The adjusted EBITDA margin for 2022 was 15.1%, compared to 15.2% in the prior year, a decrease of 10bps. At constant currency, EBITDA margin was 80bps lower (2021: 15.9%)

Adjusted EBITA

The Group delivered adjusted EBITA in 2022 of €384 million, an increase of 37% compared to 2021 (2021: €280 million), as the €600 million increase in revenues more than offset the €542 million of supply chain, raw material and energy related cost headwinds and slightly softer sales volumes of €16 million. The Group realised an incremental €24 million in 2021 from its strategic initiative programmes, with cost-saving initiatives contributing €10 million and sales strategies €14 million.

Given the success of the price increases over the year, revenue grew by 30% in line with cost of sales which also increased by 30%, and the Group adjusted EBITA margin increased by 60bps to 11.6% (2021: 11.0%). On a constant currency basis it remained broadly flat at 11.6% (2021: 11.7%).

The Group's vertical integration margin was impacted by higher cost of production of raw materials for internal consumption given higher energy and labour costs, and it consequently decreased by 70bps to 2.5% (2021: 3.2%). The Group's refractory margin improved by 130bps to 9.1%, as the Group recovered its supply chain headwind costs through price increases compared to 2021 where there was a delay in implementing price increases to cover the higher cost environment. The EBITA contribution of the Group's raw material assets was €81 million, unchanged from 2021 (2021: €81 million), based on external market price benchmarks for the raw materials produced.

(€m)	2022	2021 reported	2021 at constant currency	% change reported	% change at constant currency
Revenue	3,317	2,551	2,729	30%	22%
Cost of sales	(2,554)	(1,968)	(2,097)	30%	22%
Gross profit	763	584	632	31%	21%
SG&A	(375)	(297)	(308)	26%	22%
R&D expenses	(33)	(28)	(29)	17%	13%
OIE	(11)	(44)	(42)	(74)%	(73)%
EBIT	344	214	252	61%	36%
Amortisation	29	22	24	29%	21%
EBITA	372	236	276	58%	35%
Adjusted items	11	44	42	(74)%	(73)%
Adjusted EBITA[1]	384	280	318	37%	21%
Refractory EBITA	303	199	-	52%	
Vertical integration EBITA	81	81	-	-	

1.Adjusted EBITA is an APM used by the Group. Refer to the APMs section for definitions.

Net finance costs

Net finance costs in 2022, including gains and losses relating to foreign exchange, amounted to €73 million (2021: €25 million).

Net interest expense amounted to €19 million in 2022 (2021: €7 million), with interest expenses on borrowings of €27 million (2021: €21 million) and interest income of €8 million (2021: €14 million). Interest income in 2021 benefited from a one-off gain of €11 million relating to a favourable indirect tax ruling in Brazil. Interest income in 2022 benefited from a higher interest rate environment. Interest expenses on borrowings increased due to higher benchmark interest rates on floating debt, and the average cost of borrowing increased from 1.4% to 1.9% (including swaps), as well as higher average gross debt.

Foreign exchange losses of €23 million were incurred including losses on embedded currency derivatives in sales contracts of €13 million and net exchange losses on translation of monetary assets and liabilities of €10 million. This given the considerably more volatile foreign exchange movements in 2022. Comparatively, a foreign exchange gain of €3 million was incurred in 2021.

Other net financial expenses amounted to €31 million in 2022 (2021: €21 million). This was mostly due to the recurring non-cash impact of the onerous raw material supply contract, imposed as an EU remedy upon the merger of RHI and Magnesita of €9 million (2021: €6 million), factoring costs of €7 million (2021: €5 million), interest costs and fair value adjustments on puttable or fixed term non-controlling interest liabilities of €1 million (2021: €4 million) and pension charges of €6 million (2021: €5 million). Other mainly includes transaction costs and interest on finance leases.

(€m)	2022	2021
Net interest expenses	**(19)**	**(7)**
Interest income	8	14
Interest expenses	(27)	(21)
FX effects	**(23)**	**3**
Balance sheet translation	(10)	(2)
Derivatives	(13)	5
Other net financial expenses	**(31)**	**(21)**
Present value adjustment	(9)	(6)
Factoring costs	(7)	(5)
Pension charges	(6)	(5)
Non-controlling interest expenses	(1)	(4)
Other	(8)	(1)
Total	(73)	(25)

Adjusted net financial expenses of c.€65 million are guided for 2023, comprising net interest expenses on debt facilities and cash balances of c.€40 million (2022: €19 million) and other financial expenses of c.€25 million including above others, present value adjustments, pensions charges, factoring and transactions costs.

The expected increase in net interest expenses is driven by higher interest costs on floating debt facilities and newly refinanced facilities as well as additional borrowings to fund acquisitions during the period.

Other expenses that are excluded from the adjusted net financial expenses guidance given above include the potential impact of foreign exchange rates on balance sheet translations and the value of embedded derivatives in sales contracts, which amounted to expenses of €23 million in 2022.

Items excluded from adjusted performance

In order to accurately assess the performance of the business, the Group excludes certain items from its adjusted figures, to better understand underlying performance. In 2022, these adjustments comprise:

- €11 million recorded in "restructurings, other income and expenses", relating to the reversal of the impairment of the Mainzlar plant, Germany and Russia bad debts and inventory write downs, land sales, termination of a sales agent contract, one-off project expenses, acquisitions and internal business restructurings;

- €29 million amortisation of intangible assets;

- €7 million non-cash other net financial expenses, these include €6 million non-cash present value adjustment of the provision for the unfavourable contract required to satisfy EU remedies at the time of the combination of RHI and Magnesita to form RHI Magnesita; and

- €24 million income tax adjustments mainly from non-cash one-off (i) restructuring, (ii) charges following agreements with tax authorities on the allocation of group functions and responsibilities, (iii) adjustments to prior year tax provisions.

Taxation

Total tax for 2022 in the income statement amounted to €104 million (2021: €39 million), representing a 38% reported effective tax rate (2021: 14%). The effective tax rate in 2022 increased mainly from non-cash one-off items including (i) restructuring, (ii) charges following agreements with tax authorities on the allocation of group functions and responsibilities, and (iii) reduction in the deferred tax asset valuation following the reduction in the Austrian tax rate. See note 14.

Reported profit before tax amounted to €270 million (2021: €289 million). Adjusted profit before tax amounted to €318 million (2021: €270 million), with an adjusted effective tax rate of 25% (2021: 18%). Adjusted items include tax expenses related to one-off restructuring or unrelated business items.

The adjusted effective tax rate guidance is between 23-25% for 2023.

Profit after tax

On a reported basis, the Group recorded a profit after tax of €167 million (2021: €250 million) and earnings per share of €3.31 per share in 2022 (2021: €5.10 per share). Adjusted profit after tax was €237 million (2021: €222 million) and adjusted earnings per share for 2022 was €4.82 per share (2021: €4.52 per share).

A full reconciliation of EBITA to EPS and adjusted EBITA to adjusted EPS can be found on the table below.

(€m)	2022 reported	Items excluded from adjusted performance	2022 adjusted	2021 reported	Items excluded from adjusted performance	2021 adjusted
EBITA	**372**	**11**	**384**	**236**	**44**	**280**
Amortisation	(29)	29	-	(22)	22	-
Net financial expenses	(73)	7	(66)	(25)	6	(19)
Result of profit in joint ventures	0	-	0	100	(91)	9
Profit before tax	**270**	**47**	**318**	**289**	**(19)**	**270**
Income tax	(104)	24	(80)	(39)	(10)	(49)
Profit after tax	**167**	**70**	**237**	**250**	**(28)**	**222**
Non-controlling interest	11	-	11	7	-	7
Profit attributable to shareholders	156	70	226	243	(28)	215
Shares outstanding[1]	47.0	-	47.0	47.6	-	47.6
Earnings per share (€ per share)	3.31	1.51	4.82	5.10	(0.58)	4.52

1. Total issued and outstanding share capital as at 31 December 2022 was 47,017,695. The Company held 2,460,010 ordinary shares in treasury. Weighted average number of shares used for basic earnings per share 47,000,708.
2. EBITA reconciled to revenue above under the Adjusted EBITA section of the financial review.
3. Numbers may not cast due to rounding.

Earnings guidance

The Group's outlook for revenue, EBITDA and EBITA in 2023 is broadly in line with current analyst consensus.

Refractory sales volumes are expected to be up to 5% lower in 2023, reflecting lower steel demand from customers in China and South America, and a contraction in construction activity which will affect steel, cement and lime, non-ferrous metals and glass demand globally.

Finished goods pricing is forecast to be softer compared to 2022 as lower raw material prices and normalisation of sea freight rates are only partially offset by higher energy and labour costs for non-vertically integrated competitors.

Reduced costs from lower prices for externally purchased raw materials and normalised sea freight rates are expected to be offset by higher year on year energy costs and labour inflation. Whilst spot energy prices in certain geographies and benchmarks have returned to lower levels, oil prices remain elevated and the Group's overall hedged position for energy prices in 2023 is an increase on 2022 actual costs. Broadly flat unit costs are therefore expected to lead to a direct pass through of lower pricing to profitability.

The low vertical integration EBITA margin contribution of 1.7% recorded in the second half of 2022 is expected to persist into 2023 due to lower global prices for magnesite and dolomite based raw materials, combined with higher energy and labour costs at the Group's raw material production sites. Refractory margins may also be impacted by lower refractory pricing, resulting in a total Group EBITA margin of around 10% in 2023 (2022: 11.6%).

Working capital

Working capital increased by €241 million to €918 million (2021: €677 million), which represented 25.4% in working capital intensity (2021: 23.3%), measured as a percentage of the last three months' annualised revenue of €3,615 million.

Working capital comprised; €1,049 million of inventory (2021: €977 million) and inventory intensity of 29.0% (2021: 33.6%), accounts receivable of €375 million (2021: €349 million) and accounts receivable intensity of 10.4% (2021: 12.0%) and accounts payable of €507 million (2021: €649 million) and accounts payable intensity of 14.0% (2021: 22.3%).

Inventories increased by €72 million during 2022 to €1,049 million (2021: €977 million), given inflationary costs and foreign exchange impacts. Non-cash foreign exchange translation differences amounted to €23 million, given the volatile foreign exchange movements during 2022. Cost inflation of finished goods and raw material increased the inventory value by a further €195 million. The inventory balance increased by an additional €19 million from M&A. These headwinds more than off-set the reduced inventory volumes to 607 kilotonnes, 182 kilotonnes lower than at year-end 2021 (2021: 789 kilotonnes). The volume reduction had a positive impact on the inventory balance of €(165) million.

A decision was taken in 2021 to pro-actively increase inventory of raw materials and finished products given disruption across ocean freight lanes and supply bottlenecks, as economies re-opened. As these have improved in recent months, the finished goods coverage ratio has been reduced from 2.5x months at 31 December 2021 to 1.8x months at 31 December 2022, and raw materials coverage ratio from 2.4x months at 31 December 2021 to 2.3x months at 31 December 2022.

Accounts receivable increased by €26 million at the end of 2022 reflective of higher product pricing and including an additional €10 million of accounts receivable from the integration of SÖRMAŞ and Horn & Co. Accounts receivable is calculated as trade receivables plus contract assets less contract liabilities, and a full reconciliation can be found in the APMs section.

Accounts payable decreased by €143 million to €507 million (2021: €649 million), due to a lower volume of externally purchased raw materials than in 2021. Accounts payable refers to trade payables as per the financial statements on note 32.

Working capital financing, used to provide low-cost liquidity and support the Group's commercial offering to customers, stood at €314 million at the end of the year (31 December 2021: €320 million). This comprised €245 million of accounts receivable financing (factoring) (2021: €178 million) and €69 million of accounts payable financing (forfeiting) (2021: €142 million). Working capital financing levels vary according to business activity, and the Group targets an upper limit of €320 million.

Working capital cash outflow amounted to €195 million. Non-cash negative impact from working capital on the balance sheet amounted to €46 million, with €24 million relating to consolidation of M&A and €22 million relating to currency translation.

The Group made good progress in reducing its inventory volumes by 23% in 2022, with a weighting towards H2. In 2023 the Group plans to keep production volumes broadly in line with demand. The Group is running at higher levels of inventory compared to before the pandemic in 2019, as it prioritises security of supply for its customers. This delivered material benefits in the form of market share gains and price increases in 2022. Given the value creation from higher inventory levels in 2022, the Group is now targeting for working capital intensity to remain at around 25% during 2023.

Other assets and liabilities

Cash flows from other assets and liabilities amounted to €(2) million (2021: €(115) million) mainly relating to; indirect and other tax of €29 million (2021: €(53) million), employee pension pay outs and pension provision movements of €(25) million (2021: €(19) million), employee variable remuneration and employee related provisions of €16 million (2021: €(17) million) and other of €(21) million (2021: €(25) million).

Capital expenditure

Capital expenditure ("capex") in 2022 was €157 million (2021: €252 million), comprising €77 million of maintenance capex (2021: €75 million) and €79 million of project capex including €13 million from businesses acquired (2021: €177 million). Capex has started to return to lower levels in 2022, following the peak capex year for the Group in 2021 as it invested in its production optimisation plan. In 2022, the Group invested €37 million (2021: €61 million) towards its raw material assets, including maintenance capex of €13 million (2021: €13 million) and project capex of €24 million (2021: €48 million).

The project capex of €79 million spent in 2022 was below prior guidance of €115 million given delayed projects and the Group's decision to temporarily suspend the project at Contagem, Brazil. Project capex amounting to €20 million has moved into 2023 from 2022, to complete the Brumado tunnel kiln, the Alumina plant expansion at Chongqing, China and the manufacturing execution systems ("MES") project at Radenthein, Austria.

Capital expenditure in 2023 is expected to be around €200 million. This comprises €85 million of maintenance capex and €75 million of expansionary capex, both as previously guided. In addition, there is €20 million of maintenance and integration capex at new acquisitions in India and China and €20 million of expansionary capex previously guided to be incurred in 2022 carried forward into 2023 due to the timing of payments on capital projects.

Cash flow

The Group generated adjusted operating cash flow of €155 million in 2022 (2021: €(254) million outflow), representing cash flow conversion from adjusted EBITA of 40% (2021: (91)%). Adjusted operating cash flow was materially higher in 2022 compared to 2021, given lower expansionary capex, following the peak investment on the Production Optimisation

Plan in 2021. Despite the inflationary environment, the inventory volume reduction helped to lower working capital cash outflow in 2022 compared to 2021. Lower cash outflows were coupled with higher EBITDA by 28%.

Free cash flow was €43 million (2021: €(347) million). Income taxes paid €54 million (2021: €39 million) and net interest paid were €36 million (2021: €25 million).

Cash change in net debt was an increase of €82 million (2021: €416 million). Investment in subsidiaries including the acquisitions of Horn and SÖRMAŞ amounted to €65 million (2021: €3 million - inflow). Dividend payments were flat €71 million (2021: €71 million).

Cash flow €m[1,2]	2022	2021
Adjusted EBITDA	500	389
Share based payments - gross non-cash	8	6
Working capital changes	(195)	(283)
Changes in other assets and liabilities	(2)	(115)
Investments in PPE, IA	(157)	(252)
Adjusted operating cash flow[3]	**155**	**(254)**
Income taxes paid	(54)	(39)
Cash effects of other income/expenses and restructuring	(24)	(51)
Cash inflows from the sale of PPE, IA	2	12
Cash inflows from the sale of financial assets	3	0
Investment subsidies received	1	2
Cash inflow from joint ventures and associates	0	8
Net interest paid/received	(36)	(25)
Net derivative cash inflow/outflow	(2)	1
Dividend payments to NCI	(2)	(1)
Free cash flow	**43**	**(347)**
Investment in subsidiaries net of cash (SÖRMAŞ, Horn, Chongqing)	(65)	3
Cash in from sales of subsidiaries net of cash	9	95
Treasury stock	0	(96)
Dividend payments	(71)	(71)
Change financial receivables from joint ventures & associates	2	0
Cash change in net debt	**(82)**	**(416)**
Debt from acquisitions (Horn/SÖRMAŞ)	(19)	-
New lease obligations	(20)	(13)
Exchange effects	(33)	(3)
Actual change in net debt	**(154)**	**(432)**

1. The cash flow reconciliation to net debt has been restated to reflect a change in definitions of adjusted operating cash flow, free cash flow and cash change in net debt.

2. A full reconciliation to the change in cash and cash equivalents can be found in the APMs section.

3. Adjusted operating cash flow is an APM. A definition and reconciliation can be found in the APMs section.

Net debt[1]

Net debt at the end of 2022 was €1,168 million (2022: €1,014 million), comprising total borrowing of €1,624 million, IFRS 16 leases of €64 million, cash and cash equivalents of €521 million.

Net debt to Adjusted EBITDA at the year-end was 2.3x (2021: 2.6x) and as such an outperformance against most recent guidance in November 2022 that leverage at the end of the year would be around 2.4x.

Additional refinancing was conducted in 2022 to maintain liquidity levels, extend debt maturities and establish links to the Group's sustainability performance.

In May 2022, RHIM refinanced the outstanding principal of €260m of the €305 million OeKB Term Loan maturing in June 2023 and increased the overall facility amount by signing an additional OeKB-backed tranche of €90 million. The total outstanding loan balance as of 31 December 2022 is €350 million and the refinanced loan now has a final maturity in May 2027. In July 2022, the Group secured a new environmental, social and governance ("ESG") linked €250 million term loan maturing in 2027 of which proceeds were used to refinance the $200 million term loan maturing in 2023 at very competitive interest rates. Additionally, the maturity of the Group's €600 million Syndicated RCF was extended by one year to 2028 through the execution of the third extension option.

Out of the total gross debt of €1,624 million, 96% is denominated in euro. The floating to fixed ratio of the gross debt is 24% to 76% and the average interest rate is 1.9% (including swaps).

Total liquidity for the Group at year end was €1,121 million, including undrawn committed facilities of €600 million and a cash balance of €521 million.

The Group will have debt maturities of €215 million in 2023, of which €79 million are rollable facilities.

Gearing levels may increase from the 2.3x recorded on 31 December 2022 due to €200 million of cash outflow from M&A (DBRL, Hi-Tech and Jinan New Emei) and lower profitability in 2023 caused by lower demand.

RHI Magnesita India Limited ("RHIM India"), the Group's 60% owned subsidiary which is listed on the National Stock Exchange of India and the Bombay Stock Exchange, has requested authority from its shareholders to raise funds from the issuance of new equity up to an amount of ₹1,500 crore (c.€170 million). The proceeds from any potential equity raise would be used for the repayment or partial repayment of ₹1,300 crore (c.€147 million) of loans used to finance the acquisitions of DBRL and Hi-Tech, which completed in January 2023, and for general corporate purposes. If approved, the shareholder authority would remain in place for 12 months. Any equity raise carried out under this authority is subject to market conditions. The Group will retain its majority shareholding in RHIM India and possibly participate in the equity raise.

1. Net debt is an APM. The definitions and calculations thereof can be found in the APMs section.

Change to target gearing range

As part of its stated capital allocation policy, the Group has previously sought to maintain a net debt to EBITDA ratio of 0.5 to 1.5x, with potential to increase to over 2.0x in the case of M&A. The Board believes it is appropriate to revise the targeted gearing range, considering:

(i) the Group's current and forecast level of gearing in the medium term;

(ii) the resilience of margins and profitability throughout economic cycles;

(iii) the improved reliability for customers resulting from higher levels of working capital in 2022; and

(iv) the strength of the current M&A pipeline.

For the duration of the expected phase of consolidation in the refractory industry, the Group will now target a net debt to EBITDA ratio of 1.0 to 2.0x, with flexibility to increase to over 2.5x in the case of compelling M&A opportunities. The Board believes that it is in the interests of shareholders to seek this increased flexibility due to the acquisition opportunities that are available and the demonstrated stability of the Group's earnings.

Return on invested capital[1]

Return on invested capital (ROIC) is used to assess the Group's efficiency in executing its capital allocation strategy, which is aimed at enabling organic growth, disciplined M&A and shareholder returns.

The Group ROIC in 2022 was 11.6% (2021: 9.6%), from a total of €2,587 million of invested capital (2021: €2,291 million) and €301 million net operating profit after tax (NOPAT) (2021: €219 million). Raw material ROIC was 12.3% (2021: 16.2%), from a total of €466 million of invested capital (2021: €377 million) and €57 million NOPAT (2021: €61 million).

1. ROIC is an APM used by the Group. The definitions and calculations thereof can be found in the APMs section.

Strategic initiatives

The Group is progressing two significant strategic programmes to sustainably increase earnings:

The Production Optimisation Plan seeks to rationalise the Group's global production footprint through the closure of up to ten sites (with a focus on Europe and South America) and investments in remaining facilities to increase plant scale and specialisation, reduce raw material costs and implement new technologies.

The Group has completed all plant closures and projects across North America, Germany, India and China during 2022. The Group completed its project to create the leading Dolomite Resource Centre in Europe through the investment in a new mine and installation of a tunnel kiln at Hochfilzen, Austria. It also made substantial progress at its Radenthein plant, Austria.

In 2022, the cost reduction initiatives delivered EBITA benefit of €76 million, representing an incremental increase of €10 million on 2021.

The cumulative targeted benefits from sales strategies in 2023 remains €40-60 million. However, total savings to be derived from the cost optimisation plan are now expected to be in the region of €85 million in 2023 compared to the previously guided figure of €110 million, due to the suspension of the second stage of the Contagem plant upgrade in Brazil and the decision not to close the Mainzlar plant in Germany. The full benefits of the strategic cost savings are now expected to be realised from the start of 2024 due to construction delays at the rotary kiln in Brumado. The Mainzlar plant will operate more competitively in the future following the launch of a new line of doloma products to serve new customers, with raw material sourced from Hochfilzen, Austria.

The Group's sales strategies seek to grow RHI Magnesita's presence in new markets including India and China, increase market share in the flow control product range and expand the solutions business targeting 40% of revenue by 2025, supported by investment in digitalisation.

Sales strategies delivered €32 million of cumulative EBITA in 2022. The Group is targeting to achieve the lower end of €40 - 60 million in 2023 but exceeded its target of €30 million in 2022. The Group increased the percentage of Group revenue from solutions contracts to 32% in 2022 (2021: 29%).

The Group benefitted from strong organic and inorganic revenue contribution from new markets, and the JV with Chongqing in China and acquisition of SÖRMAŞ in Türkiye. It will benefit further in 2023 from the acquisitions of the refractory business of Hi-Tech and the Indian refractory business of DBRL, both based in India. Increased flow control sales are expected in 2023 following successful trials during 2022. Flow Control is a target product group given its higher margins, higher return on capital and complimentary cross-selling to customers.

Flow Control pricing increased at a lower rate than refractory linings, especially in the tundish product segment, and percentage of revenue decreased to 15.8% (2021: 17.0%). 2021 Flow Control revenue was restated to €433 million (from €430 million) due to a re-classification internally).

For more information on the strategic initiatives, read pages 14 and 25 of the strategic review in the 2022 Annual Report.

M&A

The Group targets acquisition opportunities in new markets in which it is underrepresented such as India, China and Türkiye and complementary to its existing plant footprint. It also targets new product segments, such as the non-basic segment (e.g. Alumina). The Group seeks to achieve synergies in excess of 30% EBITDA upon integration, and integration would usually complete within two years.

In December 2021, the Group completed the acquisition of a 51% ownership stake in Chongqing Boliang Refractory Materials in return for an initial consideration of €5 million and is currently investing €15 million into a new production capacity to build a state-of-the-art Alumina fired bricks plant to serve the Cement market. The new plant is on-track to start production in Q3 2023.

In May 2022, the Group acquired a 51% stake in Horn & Co Minerals Recovery GmbH & Co KG to combine its recycling activities in Europe to create a newly formed entity, MIRECO Horn & Co. RHIM Minerals Recovery GmbH. The Group increased its recycling rate to 10.5% in 2022 and benefited from increased availability of raw material supply.

In September 2022, the Group completed its acquisition of an 87% ownership stake in Söğüt Refrakter Malzemeleri Anonim Şirketi (SÖRMAŞ), a producer of refractories for the cement, steel, glass and other industries in Türkiye, for a consideration €45 million in cash.

On 5 January 2023, the Group closed the acquisition of the Indian refractory business Dalmia Bharat Refractories Limited (DBRL) via a Share Swap Agreement, in exchange for 27 million shares in RHI Magnesita India Limited, a 60% owned subsidiary of the Group which is listed on the Bombay Stock Exchange and National Stock Exchange of India. DBRL is one of the leading refractory producers in India with production capacity of over 300 ktpa from five refractory plants, inclusive of a 51% joint venture in Katni, India. Following the acquisition, the Group's shareholding in RHI Magnesita Limited reduced from 70% to 60% and the Dalmia Bharat Group and minority shareholders in DBRL now hold a combined 14% stake in RHI Magnesita India Limited. Based on the closing share price of RHI Magnesita India Limited on 18 November 2022 of ₹645 per share, the Consideration Shares had a value of approximately ₹17,424 million (€212 million). DBRL recorded adjusted

EBITDA of ₹945 million (€12 million) in the year to 31 March 2022 and had Gross Assets of ₹13,925 million (€170 million) at 31 March 2022. The Group will consolidate its earnings and approximately €54 million of net debt through its majority shareholding in RHI Magnesita India Limited, resulting in a marginal increase in gearing at Group level. The acquisition is expected to be accretive to Group earnings per share.

As announced on 13 January 2023, the Group entered into an agreement to acquire a 65% shareholding in Jinan New Emei Industries Co. Ltd, a company registered in China. Jinan New Emei is a well-established producer of refractory slide gate plates and systems, nozzles and mixes for use in steel flow control, employing over 1,300 people and headquartered in Shandong province, China. The Group will acquire the initial 65% shareholding for a total cash consideration of around €40 million (CNY 293 million).

On 31 January 2023, the Group, through its listed subsidiary in India, RHI Magnesita India Limited, completed the acquisition of the flow control refractory business of Hi-Tech Chemicals Limited (Hi-Tech) for a total consideration of c.€78 million. The refractory business recorded profit before tax of €8.2 million in the year to 31 March 2022. The acquisition will further strengthen the Group's position in the high-growth market of India, as well as its target market flow control. The acquisition will be funded through a combination of intercompany loans from the Group and local bank lending.

The Group spent €65 million in cash on transactions in 2022 and expects to spend a further c.€200 million in cash in 2023 from the transactions announced in late 2022 and early 2023.

The aggregate incremental EBITDA contribution from MIRECO, SÖRMAŞ, Hi-Tech, DBRL and Jinan New Emei is expected to be €25-30 million in 2023. EBITDA synergies of between 30 and 50% of trailing EBITDA are targeted following the full integration of each business into the Group's global network over the next two to three years.

Returns to shareholders

The Board's capital allocation policy remains to support the long-term Group strategy, providing flexibility for both organic and inorganic investment opportunities and delivering attractive shareholder returns over the midterm. These opportunities will be considered against a framework of strategic fit, risk profile, rates of return, synergy potential and balance sheet strength.

The Group spent €79 million on project capital expenditure in 2022, which includes investment towards the Production Optimisation Plan and M&A. In 2022 the Group incurred total capital expenditure of €157 million.

Given the resilient performance of the business in 2022, the Board has recommended a final dividend of €1.10 per share for the full financial year, and €52 million in aggregate. This represents a dividend cover of 3.0x adjusted earnings per share. Subject to approval at the AGM on 24 May 2023, the final dividend will be payable on 6 July 2023 to shareholders on the register at the close of trading on 9 June 2023. The ex-dividend date is 8 June 2023. This represents a full year dividend of €1.60 per share.

The Board's dividend policy remains to target a dividend cover of below 3.0x adjusted earnings over the medium term. Dividends will be paid on a semi-annual basis with one third of the prior year's full year dividend being paid at the interim.

OPERATIONAL REVIEW

Revenue	2022	2021 reported	2021 (constant currency)	% change (reported)	% change (constant currency)
Europe & Türkiye	866	701	696	24%	24%
Steel	571	474	468	20%	22%
Industrial	295	227	228	30%	29%
North America	890	659	740	35%	20%
Steel	694	505	569	38%	22%
Industrial	196	154	172	27%	14%
South America	515	359	409	43%	26%
Steel	389	279	319	40%	22%
Industrial	125	80	90	56%	39%

China & East Asia	420	376	405	12%	4%
Steel	231	206	225	12%	3%
Industrial	189	171	180	11%	5%
India/West Asia/Africa	627	455	478	38%	31%
Steel	486	359	381	35%	27%
Industrial	141	96	97	47%	45%
Total	3,317	2,551	2,729	30%	22%
Total steel	2,371	1,822	1,961	30%	21%
Total industrial	946	729	767	30%	23%

Steel overview

Supplying the steel market with refractory products and services accounts for c.70% of RHI Magnesita revenues and the Group retains its position as the market leader globally with a c.15% market share (c.30% excl. China and East Asia). Refractory products line all steel making applications, protecting equipment from extremely high temperatures of up to around 1,800°C, chemical reactions, and abrasion of molten steel. Refractory product applications include iron making (blast furnace 'BF' or direct reduction of iron 'DRI'), the primary steel making process (basic oxygen furnace 'BOF' or electric arc furnace 'EAF') as well as ingot and continuous casting. RHI Magnesita offers a complete set of products and solutions for the entire steel making process. The shortest lifespan of a refractory product in the steel-making process is c.4 hours (the refractory part of a slide gate), whilst the longest lifespan of a refractory product for the steel making process is c.6 months (the lifetime of the working inner lining of the primary steel making application (BOF or EAF)). Refractories used in the steel-making processes are therefore classified as an operating expense by steel producers, accounting for around 2-3% of the cost of steel production, on average.

Steel Division revenues increased by 30% to €2,371 million (2021: €1,823 million), and by 21% in constant currency (2021: €1,961 million), largely as a result of the price increases across the product range introduced in order to mitigate inflationary cost pressures.

Compared to a contraction of global steel production of 4% (7% ex-China), according to World Steel Association data, the Group's steel volumes decreased by just 1%. Therefore, volumes outperformed local steel production, demonstrating market share gains despite price increases.

In 2022, steel demand slowed, following a strong rebound in 2021 as markets recovered after COVID-19 lockdowns. Economies globally were softer, as a result of sharp increases in inflation, high supply chain volatility, monetary tightening with rising interest rates and China's slow down. The Russia/Ukraine conflict had a profound impact on energy markets globally, especially in Europe. The appreciation of the US dollar on major global currencies presented another headwind globally, impacting US denominated debt in some economies, which reduced capacity for fiscal and private spending and debt roll-over. However, the India steel market, the second largest steel market globally, grew significantly in 2022, with steel production in India increasing by 6%.

Freight availability and costs started to ease during 2022, following significant disruption in the prior year. Supply chains were further disrupted by supernormal energy costs and labour market tightness, which had an adverse impact on production costs, specifically raw material production. Ocean freight rates on lanes inbound to North America from South America and Europe remained stubbornly high with poor reliability.

Industrial overview

In addition to its Steel Division, RHI Magnesita supplies refractory products to customers in the cement and lime, non-ferrous metals, glass, energy, environmental and chemicals industries. Overall, the Industrial Division makes up c.30% of Group revenues. These customer applications have longer replacement cycles, on average between 1 - 20 years, and are classified as capital expenditure projects. Given the longer replacement cycles, refractory products account for only between 0.2% - 1.5% of the customer cost base. RHI Magnesita has a significant market share globally of c.30% in the cement and lime business, c.30% market share in the non-ferrous metals business, c.20% in glass, and c.5% across industrial applications (energy, environment, chemicals, foundry and aluminium).

The Industrial Division recorded revenue of €946 million in 2022, an increase of 30% compared to 2021 (2021: €729 million), or 23% in constant currency (2021: €767 million). This was significantly higher given successful cost increases passed on to customers from energy surcharges, in addition to favourable foreign exchange movements.

The cement and lime business makes up 11% of Group revenues and in 2022 recorded revenue of €378 million (2021: €339 million in constant currency). Cement and lime volumes were lower across all regions other than North America, and globally volumes were 4% lower compared to 2021. This was due to lower construction activity in most geographies, with China impacted by COVID-19 lockdowns and Europe by the Russia/Ukraine conflict.

Demand for non-ferrous metal refractory products was very strong in 2022, given higher volumes of shipments to complex projects for base metals producers, and the delivery of some delayed projects from 2021. The Group recorded 44% higher revenue than the prior year in constant currency to €219 million (2021: €152 million). This was largely due to the effect of price increases, but also a significant increase in volumes by 22%, globally. The non-ferrous metals business is the most profitable customer segment for RHI Magnesita, and the gross margin was 37% in 2022 (2021: 41%). Markets related to decarbonisation industries such as electric vehicles and batteries, including the copper, nickel, lead and zinc markets, reached pre-COVID-19 level volumes in 2022. However, ferro-alloy markets have not yet recovered to pre-COVID-19 volumes. Two new greenfield copper projects have been contracted in Asia.

The Group's glass business was very strong in 2022 and recorded 41% higher revenue in constant currency of €154 million (2021: €109 million). Higher volumes of 9% were supported by demand from China and an increase in demand from container and bottle production, as well as solar panels. Demand for insulating materials such as glass and mineral wool also increased in the year, from rising energy costs and an increased focus on CO2 reduction measures.

Industrial applications of refractory products include environment, energy, chemicals, aluminium and foundry businesses. Revenue relating to these applications increased by 4% in constant currency to €102 million (2021: €99 million). Volumes increased by 5%, and increased demand was mostly from the waste incineration sector and the aluminium industry. However, there was some pressure on the energy-intensive industries like petrochemicals, given higher energy costs.

The minerals business recorded revenue of €92 million, 47% higher than in 2021 (2021: €63 million) and 36% higher in constant currency (2021: €68 million).

Europe & Türkiye

In Europe & Türkiye, revenues increased by 24% to €866 million (2021: €701 million) and by 24% in constant currency €696 million), despite lower volumes compared to 2021 as business was lost from sanctioned customers in Russia. The steel market was softer in the second half of the year given high inflation and energy costs. High inflation and consequently higher interest rates across Europe resulted in higher financing costs, which reduced end market demand (specifically relating to construction). High energy costs led to some EAF shutdowns regionally, as the cost of production became too high. Demand for white goods slowed following an initial boom after the supply chain constraints started in 2021, whilst automotive demand remained soft, due to supply chain bottlenecks for semiconductors persisting.

However, the Group expanded market share across steel and industrial industries across the region by c.2 ppts to c.22%, whilst successfully implementing price increases to cover inflationary input costs, especially relating to energy. Steel revenue in the region increased by 22% in constant currency to €571 million (2021: €468 million). According to the World Steel Association, steel production in the region contracted by 14%, where high energy prices forced some steel mills to close. However, the Group shipped volumes exceeded regional steel production materially, and the region recorded 8% lower steel volumes compared to the prior year, a decline mainly attributable to business lost in Russia. Steel demand is expected to continue to contract in 2023 with energy availability remaining tight, exacerbated by lower demand from a slowdown in China.

Industrial Division revenues increased by 29% in constant currency to €295 million (2021: €228 million), given price increases across all segments. However, European customers in the Industrial Division were more sensitive to price increases towards the end of the year, as input cost increases started to flatten. The Group's end markets of construction and machinery have been especially impacted by the slowdown in the European market, driving a reduction in demand for steel and cement, whereas demand for glass and non-ferrous metals remained strong and is characteristically affected later in the economic cycle.

The supply chain issues in the region started to ease towards the end of 2022, including stabilisation of major ocean freight lanes to China. As supply chains slowly started to normalise, the region was able to reduce inventory coverage ratio to 1.4, from 1.7 at the end of 2021. RHI Magnesita was able to seamlessly serve its customers with considerably reduced lead times compared to 2021.

The Russia/Ukraine conflict had an unprecedented impact on the global energy markets, and more specifically on the availability and cost of natural gas. The European plant network, made up of 12 refractory production plants and four raw material plants (excluding recycling facilities), relies heavily on natural gas. In order to mitigate the impact of a natural gas supply shortage on production, €7 million on capex was invested during the year to install the necessary infrastructure in the plants to substitute natural gas with liquefied petroleum gas (LPG).

In the region, the Group continued to strengthen its flow control product line and secured new business for isostatic pressed products and tundish slide gate systems.

A customer in Slovenia expanded its solutions contract to cover connected machinery and refractory optimisation, and another contract was won with a customer in Eastern Europe which included digitalisation tools and a stock management system.

Digitalisation at the customer site continues to be a major focus, used as a tool to cement and win market share in the region. A contract was secured to supply a large French customer with the AGELLIS system, enabling visibility of the steel bath level in the tundish, and allowing for increased steel yield and lower costs. Another major customer in Eastern Europe implemented a suite of RHI Magnesita digital tools, including stock management, connected machines, a refractory consumption dashboard and the customer portal.

It is becoming increasingly common for customers to request products with a lower carbon footprint. The technical datasheets of RHI Magnesita's entire refractory portfolio provide full transparency of the carbon footprint and are unique within the refractory industry. In the UK, a major steel customer has converted to the tundish lining solution, which is 100% free of natural gas consumption. A customer in Austria implemented basic gunning mixes with an ultra-lower CO_2 footprint. The sustainability agenda in the region was significantly supported by the joint venture with Horn & Co., creating 'MIRECO', to increase use of secondary raw material.

North America

Revenues for the year totalled €890 million in North America, an increase of 35% compared to 2021 (2021: €659 million) or by 20% on a constant currency basis (2021: €740 million). The US dollar appreciated against the euro on average by c.11% over the year. Growth in revenue was reflective of the price increases implemented over the first half of the year. Prices stabilised in the second half of the year given softer raw material costs and lower inbound freight costs to North America from China.

Revenue for steel in North America was €694 million, an increase of 22% versus 2021 in constant currency (2021: €569 million). Steel production in the region contracted by 6%, according to World Steel Association data. Shipped refractory volumes were stronger than regional steel production and contracted by just 2%. The steel market started to soften in H2 2022, and by the end of the year average steel prices and lead times for domestic producers had reverted to near pre-pandemic levels, as the strong recovery of the US economy slowed. Sharp interest rate increases by the Federal Reserve to cool inflation has led to a slowdown of manufacturing activities and construction. the Biden government's $1 trillion infrastructure spend is expected to bolster demand despite the deteriorating economic environment. Meanwhile, vehicle production in North America is expected to remain strong provided supply chain bottlenecks ease, such as semiconductor availability.

Industrial Division revenues increased by 14% in constant currency to €196 million compared to 2021 (2021: €172 million) thanks to price increases and a 4% increase in volumes. Within the industrial product range, non-ferrous metals increased by 20% on a constant currency basis whilst volumes increased by 7% and cement and lime adjusted revenue increased by 17% with volume increase of 6%.

Despite headwinds impacting North America, operational execution continued to be a priority and high inventory volume levels allowed for shorter lead times for customers. Inventory coverage ratios reached 3.0x at the end of 2022 from 4.3x at the beginning of the year, given an increased focus on reducing inventory following a peak in H2 2022, as supply chains stabilised.

The region made good progress in flow control, completing customer trials in new tundish mix product lines, which benefit the customer through increased productivity and efficiency in shorter re-lining and pre-heating times. The region has also run successful trials with its customers across the ISO and slide gate product lines.

The solutions business model is prominent in the North American market, and accounts for over 40% of revenues. In 2022, a contract was secured for nine years, worth $150 million, for a steel customer based in the US. Another major steel customer has renewed solutions contracts across eight sites in the US, varying between one to five years tenure.

Across technology and digitalisation, new contracts were secured for the Terminator XL (laser scanner for residual refractory lining measurement with Automatic Guided Gunning) and Hot Vision EAF (visualisation camera at high-temperature environment) with major American steel customers. Across the industrial space, digital refractory profile mapping was extended to cement and lime customers. In 2022, 17 steel customers in North America implemented the SAR+ (Refractory Application System) to collect data to control refractory consumption and this will soon be rolled out across non-ferrous metals too.

The Group implemented new R&D projects in 2022, which will increase recycled refractory volume by c.40%, increasing the rate in the region from 4% to 7%. Secondary raw material was converted into other new sustainable products such as ladle backfill, increasing recovery rates further. New K-binder technology (a new type of organic binder used in refractory recipes) was introduced for some steel applications, which is also a cost-competitive way to reduce Scope 1 and 2 emissions since it substitutes the firing process with lower temperature tempering.

South America

South America recorded revenue of €515 million, a significant increase of 43% on 2021 (2021: €359 million), or by 26% in constant currency (2021: €409 million). This was due to the successful management of price increases as inflationary costs and surcharges were passed through to customers in the Steel and Industrial Divisions. The demand in Q4 2022 started to soften, given a highly competitive cost environment. Steel revenue increased by 22% in constant currency to €389 million (2021: €319 million). Shipped refractory volumes in the Steel Division were 5% lower than in 2021, compared to steel production in the region which was also 5% lower, according to World Steel Association data.

Industrial revenues in constant currency increased by 39% over the period to €125 million (2021: €90 million), almost entirely driven by the price increases as industrial volumes increased by 2%.

Steel demand in many countries in South America experienced a contraction in 2022, driven by challenges from a high inflationary environment leading to customer destocking and slowing construction, and lower export demand. Tighter fiscal policy, inflation and higher interest rates could also reduce GDP growth in the region in 2023, coupled with lower commodity prices reducing demand. The automotive sector in the region has also been affected by the scarcity of semiconductors produced in Asia. The manufacturing sector, mainly in Brazil, was impacted by delays to imports of inputs, shortage of raw materials and high costs.

Inventory coverage ratio reached 1.7x months in the region from 2.3x months at the end of 2021, owing to a more regionalised business model and supply chains started to normalise towards the end of the year.

A new solutions package for value-added services for the cement industry is being piloted in North and South America, which will be available in three tiers of service levels.

Currently, the Group provides over 100 digital solutions to all the industries it serves. The Group's leading research and development expertise combined with cutting-edge technologies like image recognition, Artificial Intelligence, and Blockchain have produced solutions like RefracChain (a platform which hosts smart contracts), LES (Lining Evaluation Scan), APO (Automated Process Optimisation), ARO (Automated Refractory Optimisation) and Connected Machines.

Circular economy agreements were made with two major cement and lime customers based on a bundled offer of refractory sales and returned material, allowing for a record level of use of secondary raw material to be reached in the region. Over 200 tonnes of secondary raw material per month will be used for cement products, following investment in patented washed material technology. South America achieved over a 10% recycling rate during 2022 due to combined sourcing, processing, consumption and sales efforts. Over the year, spent refractories also from the paper, cellulose and aluminium industries were collected, supporting customers across all markets with their recycling efforts. In Argentina, the Group focused on supplying a full range of high-quality recycled products to the regional market, in a closed loop approach with steel customers.

India, West Asia & Africa

The India, West Asia & Africa region recorded revenue of €627 million in 2022, a significant increase of 31% in constant currency compared to 2021 (€478 million). This increase was mostly due to price increases, supported by 8% higher sales volumes. On a reported basis, revenue increased by 38% (2021: €455 million). The steel market in India continued to grow in 2022, given higher levels of urban consumption and infrastructure spending, driving demand for capital goods, automobiles and materials for roads and metro projects. India's demand outlook remains strong, led by an increase in India's steel consumption per capita and supported by the government's target to double India steel production capacity by 2030. In West Asia and Africa, higher oil prices are expected to bolster demand for construction activities in the medium term as well as from large infrastructure projects in Egypt.

Steel revenue grew by 27% in the region in constant currency to €486 million (2021: €381 million), with a 9% increase in volumes. This is against a 5% increase in steel production in the region, according to World Steel Association data, which demonstrated significant market share gains. Steel production in India is expected to be stronger than previously anticipated in 2023 given the reversal of a policy to impose an export duty of 15% on steel, although this is expected to be somewhat offset by the imposition of import duties on raw materials.

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In West Asia and Africa, further price increases will be implemented in 2023, as some contracts do not yet fully reflect the higher cost environment. There has been a strong focus on increasing the number of solutions contracts in West Asia and Africa, to protect customers from supply chain volatility.

Industrial revenue increased by 47% in constant currency to €141 million compared to 2021 (€96 million). This was driven by price increases and through the sale of more profitable products such as non-ferrous metals. Industrials volumes increased by 3%.

Adjusted revenue in the cement business increased by 31% however cement volumes in the India/West Asia/Africa region decreased by 3%. Some market share in the cement business was selectively lost in India, given tight plant capacity. However, the Group's market share in cement grew in West Asia and Africa, coupled with higher margins. A dynamic pricing approach has been taken across the region for industrial customers, offsetting cost volatility.

High inventory levels ensured seamless supply for customers and reduced supply chain volatility. A concerted effort was made to create a more localised supply chain and allow for a reduction in inventory. Shifting some production to India from Europe reduced inventory at sea, and the inventory coverage ratio in the region reduced to 1.5x at year end (2021: 2.4x).

Digitalisation in the region has gained traction and in 2022 the SAR+ was implemented to two customers in West Asia and Africa, and there was increased utilisation of the customer portal for solutions contracts. The EMLI (Electromagnetic Level Indicator) was installed at the tundish of a major steel customer in India, the first of its kind in the region. The APO was installed at two major customer sites in India on steel applications, and a further two were implemented in West Asia.

Within flow control, successful trials were executed in the isostatic thin slab segment, tundish cold setting mixes, slide gates and purge beams which either led to customer orders in the region or are expected to convert into orders in 2023. Lastly, a major steel customer in the region made a new order for billet caster refractories.

China & East Asia

The China & East Asia region recorded a revenue increase of 12% compared to 2021, to €420 million (€376 million) on a reported basis and by 4% on a constant currency basis (2021: €405 million) given the depreciation of the euro against the Chinese Yuan and US dollar. Volumes increased by 2% and the Group was able to pass through some inflationary costs. Steel revenues in the region increased by 3% in constant currency to €231 million (2021: €225 million), whilst volumes were flat. Comparatively, World Steel Association data reported a contraction of steel production in China of 2% and a 3% contraction in the region of China and East Asia.

The Chinese economy cooled in 2022, impacted by strict COVID-19 lockdowns aligned to its zero COVID-19 policy, which was abolished in December 2022. The Chinese real estate market, and therefore construction, was especially weak during the year. Infrastructure investment from government measures is expected to support this end market in 2023. Given the Group has a steel market share of just 1% in the largest steel market globally, China still presents a compelling growth opportunity. Outside of China, developed markets Japan and South Korea weakened towards the end of 2022, impacted by rising material costs and labour shortages causing construction delays. The region was also impacted by currency devaluation and lower demand. Recovery is expected in 2023 led by the automotive end market, as supply chain issues ease, and yet downside risks remain, given the region is a net exporter of steel against a weakening global economic backdrop.

Industrial revenue increased by 5% in 2022 compared to the prior year in constant currency to €189 million (2021: €180 million), driven by volumes increasing by 4%. This is reflective of progress to regionalise the cement market, new technology in glass and winning contracts in non-ferrous metals with key customers.

Supply of refractories into the Chinese and Eastern Asian cement market is expected to strengthen in 2023, with the opening of the new Alumina fired bricks plant in Chongqing, China.

Given higher input costs in the western hemisphere, sourcing of some raw materials and finished products was moved to Asia, which helped to reduce lead time and this ensured products could be priced more competitively. Inventory coverage ratios decreased to 1.5x at 31 December 2022, from 1.6x at 31 December 2021.

The Group targets the high-quality steel segment in the region. Here the Group's leading capabilities in R&D will benefit sales in 2023 as customers opt for more sophisticated products and services, especially in flow control, such as isostatic products and slide gates. Successful trials of isostatic products have been initiated in Japan and Korea. Given China's cost competitive position, new tundish mixes have been developed in China as an alternative to Eskişehir, Türkiye, given the inflationary environment in Türkiye.

The solutions business model continues to be an effective way of winning and retaining market share. The Group was selected to be the complete solutions provider of refractories for future projects with the largest steel producer in the world, based in China. A major contract with the largest steel producer in Vietnam was successfully renegotiated for three years at a price of €65 million, where RHI Magnesita manage their working capital, helping to drive efficiency gains against volatile supply chains. The Group have agreed to partner with a major customer based in South Korea on the design and development of refractories for the DRI smelting unit, as the sustainable partner of choice, as customers start to decarbonise their processes.

Alternative performance measures ("APMs")

Definitions of APMs used by the Group are set out below, including the purpose and usefulness of each APM and a reconciliation to the nearest IFRS equivalent measure, or a reference to a reconciliation appearing elsewhere in this document. In general, APMs are presented externally to meet investor and analyst requirements for clarity and transparency of the Group's underlying financial performance. APMs are also used internally in the management of the Group's business performance, budgeting and forecasting. APMs are non-IFRS measures which enable investors and other readers to review alternative measurements of financial performance but they should not be used in isolation from the main financial statements. Commentary within the Annual Report, including the Financial Review, as well as the Consolidated Financial Statements and the accompanying notes, should be referred to in order to fully appreciate all the factors and context affecting the Group's financial performance. Readers are strongly encouraged not to rely on any single financial measure and to carefully review the Group's reporting in its entirety.

Performance APMs

Adjusted EBITDA

Adjusted EBITDA is a key non-IFRS measure that the CEO, EMT and Directors use internally to assess the underlying financial performance of the Group and is viewed as relevant to capital intensive industries. The ratio of Net Debt to Adjusted EBITDA is used as a measure of financial gearing.

Adjusted EBITDA is defined as EBIT, as presented in the Consolidated Statement of Profit or Loss, before amortisation, depreciation, and Excluded items (see definition below).

Adjusted EBITA

Adjusted EBITA is a key non-IFRS measure that the CEO, EMT and Directors use internally to assess the underlying performance of the Group.

It is determined consistently with Adjusted EBITDA, but includes depreciation expense of property, plant and equipment to reflect the wear and tear cost and future replacement of productive assets on the Group.

Adjusted EPS

Adjusted EPS is a key non-IFRS measure and one of the Group's KPIs. It is used to assess the Group's underlying operational performance, post tax and non-controlling interests on a per share basis.

This measure is based on Adjusted EBITA after finance income and expenses, taxes, share of profit or loss from associates and joint ventures and non-controlling interest. Share of profit or loss from associates and joint ventures is adjusted to exclude impairments and gains or losses recognised on disposals.

It excludes finance income and expenses, including foreign exchange, that are not directly related to operational performance. This includes the non-cash present value adjustments for the unfavourable contract that was required to satisfy EU remedies put in place at the time of the RHI and Magnesita merger in 2017.

Taxes are adjusted to remove the impacts of items already excluded as well as certain tax impacts that do not affect the underlying performance of the business.

Excluded items

Items that are excluded (Excluded items) in arriving at the Group's Adjusted measures of Adjusted EBITA, EBITDA and EPS include:

Other income, other expenses and Restructuring expenses as reflected on the Statement of Consolidated Profit and Loss as well as gains and losses within Interest income, interest expenses and other net financial expenses that are regarded as one off in nature and not reflective of the underlying operational performance of the business. Excluded items includes impairments of property, plant and equipment, goodwill, intangibles and investments in equity accounted units, restructuring related provisions, gains/losses from the disposal of assets, subsidiaries, associates and joint ventures. The tax impacts of the above Excluded Items as well as one off tax income/expenses not affecting pre-tax profit, such as the accounting one-off impacts of changes in tax rates, are also adjusted for.

Cash flow performance measures

Operating Cash flow and Free cash flow

Adjusted operating cash flow is a key non-IFRS measure used by management and the directors to reflect the operational cash generation capacity of the Group before the cash impacts of Excluded Items (see definition above).

It is defined as Adjusted EBITDA adjusted for working capital items, changes in other assets and liabilities and capital expenditure and other non-cash items, such as share based payments. This APM is reconciled to Net Cash flow from operating activities as follows:

€m	2022	2021
Adjusted operating cash flow (APM)	154.7	(254.4)
Add: Capital expenditure (1)	156.7	252.1
Less: Income Taxes paid (1)	(53.7)	(38.6)
Other income/expenses and restructuring items (1)	(23.8)	(51.0)
Net cash flow from operating activities (1)	233.9	(91.9)

(1) As reflected in the Consolidated Statement of Cash Flows

Free cash flow is determined from the IFRS measures of Net cash flow from operating activities, net cash used In investing activities and net cash (used in)/provided by financing activities and excludes the cash impacts of purchases and disposals of business and subsidiaries, dividends paid to equity shareholders of the Group, share capital transactions with shareholders, proceeds and repayment of borrowings and current borrowings and repayment of leases.

Free cash flow is reconciled to Cash changes in net debt in the table in the cash flow section of the Financial Review and then to Change in cash and cash equivalents, in the Net Debt APM.

Balance sheet

Liquidity

Liquidity comprises cash and cash equivalents, short term marketable securities and undrawn committed credit facilities.

€m	2022	2021
Cash and cash equivalents (1)	520.7	580.8
Add: Revolving credit facility (RCF)	600.0	600.0
Liquidity (APM)	1120.7	1180.8

(1) As reflected in the Consolidated Statement of Financial Position

Net Debt

Net Debt is the excess of current and non-current borrowings, associated debt derivatives for which hedge accounting is applied and lease liabilities over cash and cash equivalents and short-term marketable securities. The Board uses this measure for the purposes of capital management. A reconciliation of Net Debt is included in note 34.

€m	2022	2021
Cash changes in net debt	(81.7)	(415.5)
Proceeds from borrowings (1)	344.4	516.1
Repayment of borrowings (1)	(278.0)	(112.7)
Change in current borrowings (1)	(13.9)	5.5
Repayment of lease obligations (1)	(20.6)	(16.3)
Change in cash and cash equivalents (1)	(49.8)	(22.9)

(1) As reflected in the Consolidated Statement of Cash Flows

Working capital

Working capital consists of inventories less trade receivables and other receivables plus trade payables and other payables. Working capital intensity provides a measure of how efficient the Company is in managing operating cash conversion cycles. It is measured as Working capital divided by trailing three-month revenues (annualised) and is expressed as a percentage.

€m	2022	2021
Inventories (Note 21)	1,049.2	976.5
Trade receivables (Note 22)	433.4	403.7
Contract assets (Note 22)	3.5	3.6
Contract liabilities (Note 32)	(61.8)	(57.9)
Accounts receivable	375.0	349.4
Trade payables (Note 32)	(506.5)	(649.2)
Total working capital	917.7	676.7

Return on invested capital (ROIC)

ROIC reflects the annualised return on invested capital of the Group. It is calculated as NOPAT (net operating profit after tax) divided by total invested capital at the balance sheet date.

€m	2022	2021
Revenue (1)	3,317.2	2,551.4
Cost of sales (1)	(2,553.8)	(1,967.9)
Selling and marketing expenses (1)	(131.3)	(108.1)
General and administrative expenses (1)	(277.2)	(217.4)
Income taxes paid (2)	(53.7)	(38.5)
NOPAT	301.2	219.5

(1) As reflected in the Consolidated Statement of Profit and Loss

(2) As reflected in the Consolidated Statement of Cash Flows

€m	2022	2021
Goodwill (3)	136.9	114.4
Other intangible assets (3)	316.6	282.6
Property, plant and equipment (3)	1,203.7	1089.7
Investments in joint ventures and associates (3)	5.7	5.7
Other non-current assets (3)	40.0	41.2
Deferred tax assets (3)	128.2	202.4
Inventories (3)	1,049.1	976.5
Trade and other receivables (3)	578.9	568.2
Income tax receivables (3)	38.7	35.1
Deferred tax liabilities (3)	(62.0)	(48.4)
Trade and other current liabilities (3)	(780.3)	(883.2)
Income tax liabilities (3)	(38.3)	(38.2)
Current provisions (3)	(30.1)	(55.0)
Invested capital	2,587.1	2,291.0
Return on invested capital (2)	11.6%	9.6%

(3) As reflected in the Consolidated Statement of Financial Position

FORWARD LOOKING STATEMENTS

This announcement contains (or may contain) certain forward-looking statements with respect to certain of the Company's current expectations and projections about future events. These statements, which sometimes use words such as "aim", "anticipate", "believe", "intend", "plan", "estimate", "expect" and words of similar meaning, reflect the directors' beliefs and expectations and involve a number of risks, uncertainties and assumptions which could cause actual results and performance to differ materially from any expected future results or performance expressed or implied by the forward-looking statement. Statements contained in this announcement regarding past trends or activities should not be taken as a representation that such trends or activities will continue in the future. The information contained in this announcement is subject to change without notice and, except as required by applicable law, the Company does not assume any responsibility or obligation to update publicly or review any of the forward-looking statements contained in it and nor does it intend to. You should not place undue reliance on forward looking statements, which apply only as of the date of this announcement. No statement in this announcement is or is intended to be a profit forecast or profit estimate or to imply that the earnings of the Company for the current or future financial years will necessarily match or exceed the historical or published earnings of the Company. As a result of these risks, uncertainties and assumptions, the recipient should not place undue reliance on these forward looking statements as a prediction of actual results or otherwise. The Company has no obligation or undertaking to update or revise the forward-looking statements contained in this announcement to reflect any change in its expectations or any change in events, conditions, or circumstances on which such statements are based unless required to do so by applicable regulations.

Consolidated Financial Statements 2022

Consolidated Statement of Profit or Loss

for the year ended 31 December 2022

in € million	Note	2022	2021
Revenue	(5)	3,317.2	2,551.4
Cost of sales	(5)	(2,553.8)	(1,967.9)
Gross profit		763.4	583.5
Selling and marketing expenses		(131.3)	(108.1)
General and administrative expenses		(277.2)	(217.4)
Result from operating joint ventures and associates		0.1	0.0
Restructuring	(6)	6.8	(58.8)
Other income	(7)	4.8	29.1
Other expenses	(8)	(23.0)	(14.5)
EBIT		343.6	213.8
Interest income	(11)	8.3	14.2
Interest expenses on borrowings		(27.4)	(20.7)
Net (expense)/income on foreign exchange effects and related derivatives	(12)	(23.3)	2.8
Other net financial expenses	(13)	(30.7)	(21.2)
Net finance costs		(73.1)	(24.9)
Result from joint ventures and associates		0.0	100.2
Profit before income tax		270.5	289.1
Income tax	(14)	(103.7)	(39.4)
Profit after income tax		166.8	249.7
RHI Magnesita N.V. shareholders		155.7	243.1
Non-controlling interests	(26)	11.1	6.6

in €			
Earnings per share - basic	(15)	3.31	5.10
Earnings per share - diluted	(15)	3.26	5.05

Consolidated Statement of Comprehensive Income

for the year ended 31 December 2022

in € million	Note	2022	2021
Profit after income tax		166.8	249.7
Currency translation differences			
Unrealised results from currency translation		49.9	66.6
Unrealised results from net investment hedge and foreign operations	(37)	(5.4)	(10.2)
Deferred taxes thereon	(14)	(3.2)	4.1
Current taxes thereon	(14)	4.1	0.1
Reclassification to profit or loss - Disposal subsidiaries		0.7	(7.9)
Cash flow hedges			
Unrealised fair value changes	(36)	58.0	8.7
Reclassification to profit or loss		(7.2)	0.0
Deferred taxes thereon	(14)	(11.9)	(2.1)
Items that will be reclassified subsequently to profit or loss, if necessary		85.0	59.3
Remeasurement of defined benefit plans			

Remeasurement of defined benefit plans	(29)	58.0	25.3
Deferred taxes thereon	(14)	(18.5)	(5.2)
Share of other comprehensive income of joint ventures and associates		0.0	0.6
Reclassification to other reserves due to disposal of joint ventures and associates		0.0	(0.5)
Items that will not be reclassified to profit or loss		39.5	20.2
Other comprehensive income after income tax		124.5	79.5
Total comprehensive income		291.3	329.2
RHI Magnesita N.V. shareholders		282.7	320.5
Non-controlling interests	(26)	8.6	8.7

Consolidated Statement of Financial Position

as at 31 December 2022

in € million	Note	31.12.2022	31.12.2021
ASSETS			
Non-current assets			
Goodwill	(17)	136.9	114.4
Other intangible assets	(18)	316.6	282.6
Property, plant and equipment	(19)	1,203.7	1,089.7
Investments in joint ventures and associates		5.7	5.7
Other non-current financial assets	(35)	55.1	14.6
Other non-current assets	(20)	40.0	41.2
Deferred tax assets	(14)	128.2	202.4
		1,886.2	1,750.6
Current assets			
Inventories	(21)	1,049.1	976.5
Trade and other current receivables	(22)	578.9	568.2
Income tax receivables	(14)	38.7	35.1
Other current financial assets	(35)	1.3	2.9
Cash and cash equivalents	(23)	520.7	580.8
		2,188.7	2,163.5
		4,074.9	3,914.1

EQUITY AND LIABILITIES			
Equity			
Share capital	(24)	49.5	49.5
Group reserves	(25)	951.7	736.4
Equity attributable to shareholders of RHI Magnesita N.V.		1,001.2	785.9
Non-controlling interests	(26)	47.4	36.3
		1,048.6	822.2
Non-current liabilities			
Borrowings	(27)	1,404.9	1,321.0
Other non-current financial liabilities	(28)	92.8	106.0
Deferred tax liabilities	(14)	62.0	48.4
Provisions for pensions	(29)	214.7	269.0
Other personnel provisions	(30)	51.7	68.7
Other non-current provisions	(31)	80.0	63.6
Other non-current liabilities		6.3	5.9
		1,912.4	1,882.6
Current liabilities			
Borrowings	(27)	215.1	213.7
Other current financial liabilities	(28)	50.1	19.2
Trade payables and other current liabilities	(32)	780.3	883.2
Income tax liabilities	(14)	38.3	38.2
Current provisions	(31)	30.1	55.0
		1,113.9	1,209.3
		4,074.9	3,914.1

Consolidated Statement of Cash Flows

for the year ended 31 December 2022

in € million	Note	2022	2021
Cash generated from/(used in) operations	(33)	287.5	(53.3)
Income tax paid less refunds		(53.7)	(38.5)
Net cashflow from operating activities		233.8	(91.8)
Investments in property, plant and equipment and intangible assets		(156.7)	(252.1)
Investments in subsidiaries net of cash acquired		(63.2)	3.2
Cash flows from sale of subsidiaries net of cash disposed of		0.0	(4.8)
Cash receipts from the sale of equity instruments of interests in joint ventures		8.7	100.0
Cash inflows from the sale of property, plant and equipment		1.8	12.2
Cash inflows from the sale of financial assets		2.8	0.0
Dividends received from joint ventures and associates		0.0	7.6
Investment subsidies received		0.7	2.4
Interest received		6.1	2.7
Cash inflows/outflows from non-current receivables		0.1	(0.1)

Cash inflows/outflows from non-current receivables		0.1	(0.1)
Net cash used in investing activities		(199.7)	(128.9)
Repurchase of treasury shares		0.0	(95.5)
Acquisition of non-controlling interests		(1.4)	0.0
Dividends paid to RHI Magnesita shareholders		(70.5)	(71.2)
Dividend paid to non-controlling interests		(1.5)	(1.4)
Proceeds from long-term financing		344.4	516.1
Repayments of long-term financing		(278.0)	(112.7)
Changes in current borrowings		(12.2)	5.5
Interest payments		(41.0)	(26.6)
Repayment of lease obligations		(20.6)	(16.3)
Interest payments from lease obligations		(1.3)	(1.1)
Cash flows from derivatives		(1.8)	0.9
Net cash (used in)/provided by financing activities	(34)	(83.9)	197.7
Total cash flow		(49.8)	(23.0)
Change in cash and cash equivalents		(49.8)	(23.0)
Cash and cash equivalents at beginning of period		580.8	589.2
Foreign exchange impact		(10.3)	14.6
Cash and cash equivalents at end of period	(23)	520.7	580.8

Consolidated Statement of Changes in Equity

for the year ended 31 December 2022

		Group reserves						
						Accumulated other comprehensive income		
in € million	Share capital	Treasury shares	Additional paid-in capital	Mandatory reserve	Retained earnings	Cash flow hedges	Defined benefit plans	Currency translation
Note	(24)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
31.12.2021	49.5	(117.0)	361.3	288.7	532.8	(7.1)	(125.1)	(197.2)
Profit after income tax	-	-	-	-	155.7	-	-	-
Currency translation differences	-	-	-	-	-	-	-	48.6
Cash flow hedges	-	-	-	-	-	38.9	-	-
Defined benefit plans	-	-	-	-	-	-	39.5	-
Other comprehensive income after income tax	-	-	-	-	-	38.9	39.5	48.6
Total comprehensive income	-	-	-	-	155.7	38.9	39.5	48.6
Transactions with shareholders								
Dividends	-	-	-	-	(70.5)	-	-	-
Share transfer/vested LTIP	-	0.9	-	-	(0.9)	-	-	-
Change in non-controlling interests due to addition to consolidated companies [1]	-	-	-	-	-	-	-	-
Reclassification of puttable non-controlling interests without a change of control [1]	-	-	-	-	(4.8)	-	-	-
Change in non-controlling interests due to addition to consolidated companies [2]	-	-	-	-	-	-	-	-
Change in non-controlling interests without a change of control [2]	-	-	-	-	(0.4)	-	-	-
Share-based payment expenses	-	-	-	-	8.3	-	-	-
Transactions with shareholders	-	0.9	-	-	(68.3)	-	-	-
31.12.2022	49.5	(116.1)	361.3	288.7	620.2	31.8	(85.6)	(148.6)

1) Further information is provided under Note (35) and Note (42).
2) Further information is provided under Note (42).

Group reserves

Accumulated other comprehensive income

Accumulated other

in € million	Share capital	Treasury shares	Additional paid-in capital	Mandatory reserve	Retained earnings	Cash flow hedges	Defined benefit plans	Currency translation	comprehensive income/expenses relating to disposal groups
Note	(24)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	
31.12.2020	49.5	(21.5)	361.3	288.7	376.8	(13.7)	(145.7)	(257.1)	7.8
Profit after income tax	-	-	-	-	243.1	-	-	-	-
Currency translation differences	-	-	-	-	-	-	-	58.5	(7.9)
Cash flow hedges	-	-	-	-	-	6.6	-	-	-
Defined benefit plans	-	-	-	-	-	-	20.0	-	0.1
Share of other comprehensive income of joint ventures and associates	-	-	-	-	(0.5)	-	0.6	-	-
Other comprehensive income after income tax	-	-	-	-	(0.5)	6.6	20.6	58.5	(7.8)
Total comprehensive income	-	-	-	-	242.6	6.6	20.6	58.5	(7.8)
Dividends	-	-	-	-	(71.2)	-	-	-	-
Shares repurchased [1)]	-	(95.5)	-	-	-	-	-	-	-
Reclassification of puttable non-controlling interests without change of control	-	-	-	-	(1.6)	-	-	1.4	-
Change in non-controlling interests due to addition to consolidated companies	-	-	-	-	-	-	-	-	-
Reclassification of puttable non-controlling interests without a change of control	-	-	-	-	(20.0)	-	-	-	-
Share-based payment expenses	-	-	-	-	6.2	-	-	-	-
Transactions with shareholders	-	(95.5)	-	-	(86.6)	-	-	1.4	-
31.12.2021	49.5	(117.0)	361.3	288.7	532.8	(7.1)	(125.1)	(197.2)	0.0

1) The share buyback programme initiated in December 2020 has been completed in April 2021. The share buyback program was subsequently extended in May 2021 and completed in August 2021.

Notes

to the Consolidated Financial Statements 2022

1.

Authorisation of Financial Statements and Statement of Compliance with International Financial Reporting Standards

The Consolidated Financial Statements of RHI Magnesita N.V. and its subsidiaries (collectively referred to as RHIM or the Group) for the year ended 31 December 2022 were approved and authorised for issue by the board of directors on 26 February 2023 and will be submitted for adoption to the Annual General Meeting of shareholders on 24 May 2023. RHIM a public limited company under Dutch law, is registered with the Dutch Trade Register of the Chamber of Commerce under the number 68991665 and has its corporate seat in Arnhem, Netherlands. The administrative seat and registered office is located at Kranichberggasse 6, 1120 Vienna, Austria.

The Group is a global industrial group whose core activities include the development and production, sale, installation and maintenance of high-grade refractory products and systems used in industrial high-temperature processes exceeding 1,200°C.

Basis for preparation

The Consolidated Financial Statements of the Group have been prepared on a going concern basis and in accordance with IFRSs as issued by the IASB and interpretations issued by the IFRIC, as endorsed by the European Union (EU).

The accounting policies that follow have been consistently applied to all years presented, except where otherwise indicated. With the exception of specific items such as derivative financial instruments and plan assets for defined benefit obligations, the Consolidated Financial Statements are prepared on a historical cost basis.

The financial year of RHI Magnesita N.V. and the Group corresponds to the calendar year. Subsidiaries with a financial year different to the Group, due to local legal requirements, provide financial information to allow consolidation consistent with the Group's financial year. The Consolidated Financial Statements are presented in Euros and all values are rounded to the nearest € million, except where otherwise indicated. The Group has availed the exemption provided by section 264 paragraph 3 HGB of the German commercial Code for the following entities: RHI Urmitz AG & Co. KG (Koblenz), Magnesita Refractories GmbH (Wiesbaden), RHI GLAS GmbH (Wiesbaden), RHI Refractories Site Services GmbH (Wiesbaden), RHI Magnesita Deutschland AG (Wiesbaden). The exemption permits these entities, which are consolidated, to not prepare their stand-alone Financial Statements under local regulations.

Basis of consolidation

The Consolidated Financial Statements consolidate the Financial Statements of the Group. Subsidiaries are consolidated from the date on which the Group obtains control, including when control is obtained via potential voting rights, and continue to be consolidated until the date that control ceases.

The financial information of subsidiaries is prepared for the same reporting year as the parent company, using consistent accounting policies. When the Group ceases to have control, any retained interest in the entity is remeasured to its fair value, with the change in carrying amount recognised in the Statement of Profit or Loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in Other Comprehensive Income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities. This treatment may mean that amounts previously recognised in Other Comprehensive Income are recycled through the Statement of Profit or Loss. Intercompany balances and transactions, including unrealised profits arising from intragroup transactions, are eliminated in full. Unrealised losses are eliminated in the same way as unrealised gains except that they are only eliminated to the extent that there is no evidence of impairment.
Non-controlling interests represent the equity in subsidiaries that is not attributable, directly or indirectly, to the Group's shareholders.

Please refer to the Company Financial Statements of RHI Magnesita N.V. for a list of the Company's subsidiaries, joint ventures and associates in which it holds more than 20%.

Going concern

In considering the appropriateness of adopting the going concern basis in preparing the Consolidated Financial Statements, the Directors have assessed the potential cash generation of the Group and considered a range of downside scenarios that model different degrees of potential economic downturn, using the same model performed for the viability assessment. This assessment covers the period to 31 December 2024.

The scenarios considered by the Directors include a severe but plausible downside and a reverse stress test which determines the level of EBITDA that could breach the Group's debt covenant. Further mitigating actions within management control would be undertaken in such scenarios, including but not limited to: fixed cost and capital expenditure reduction, raising debt or reducing or cancelling the dividend. These mitigation actions were not incorporated in the downside modelling.

The Directors have also considered the Group's current liquidity and available facilities. As of 31 December 2022, the Consolidated Statement of Financial Position reflects cash and cash equivalents of €520.7 million. In addition, the Group has access to a €600 million Revolving Credit Facility (RCF), which is currently undrawn and not relied upon for the purpose of the going concern assessment. The Group is in compliance with the debt covenant.

In the scenarios assessed and taking into account liquidity, available resources and before the inclusion of all mitigating actions, the Directors consider it is appropriate to continue to adopt the going concern basis in preparing the Consolidated Financial Statements for the period ended 31 December 2022.

2. Impact of new financial reporting standards and interpretations

Adoption of new financial reporting standards and interpretations

The following amendments of standards have become effective during the reporting period. None of these amendments had a material impact on the Group's accounting and measurement principles.

Standard	Title	Effective date[1)]	Effects on RHI Magnesita Consolidated Financial Statements
Amendments of standards			
IFRS 3	Amendments to IFRS 3 Business Combinations (Update of an outdated reference to the Conceptual Framework in IFRS 3 without significantly changing the requirements in the standard)	01.01.2022	No material impact
	Amendments to IAS 16 Property Plant and Equipment (Proceeds received from selling items produced while the entity is preparing the asset for its intended use, is prohibited from deducting against the cost of an item of PP&E. Instead, such proceeds are to be recognised in profit or		No material

IAS 16	loss)	01.01.2022	impact
IAS 37	Amendments to IAS 37 Provisions, Contingent Liabilities and Contingent Assets (Onerous Contracts - Cost of Fulfilling a Contract. It clarifies that the direct costs of fulfilling a contract include both the incremental costs of fulfilling the contract and an allocation of other costs directly related to fulfilling contracts)	01.01.2022	No material impact
Annual Improvements 2018-2020	Annual Improvements to IFRS Standards 2018-2020 (IFRS 1, IFRS 9, IFRS 16 and IAS 41)	01.01.2022	No material impact

1) According to EU Endorsement Status Report of 22.09.2022.

New financial reporting standards and interpretations not yet applied

The following financial reporting standards have been adopted by the EU and were not early adopted and are not expected to have a significant impact on the Group.

Standard	Title	Effective date[1)]	Impact
New standards			
Amendments of standards			
IFRS 17	Amendments to IFRS 17 Insurance contracts (Require a current measurement model where estimates are remeasured in each reporting period. Also allows a choice recognising changes in discount rates)	01.01.2023	No material impact
IAS 12	Amendments to IAS 12 Income Taxes (Require to recognise deferred tax on transactions that, on initial recognition, give rise to equal amounts of taxable and deductible temporary differences)	01.01.2023	No material impact
IAS 1	Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2 (Disclosure of material rather than significant accounting policies)	01.01.2023	No material impact
IAS 8	Amendments to IAS 8 Accounting policies (Changes in Accounting Estimates and Errors clarifies how to distinguish changes in accounting policies from changes in accounting estimates)	01.01.2023	No material impact

1) According to EU Endorsement Status Report of 22.09.2022.

The IASB issued further standards, amendments to standards and interpretations yet to be adopted by the EU. They are not expected to have a significant impact on the Group.

Standard	Title	Effective date[1)]	Impact
New standards			
Amendments of standards			
IAS 1	Amendments to IAS 1 Presentation of Financial Statements (Classification of Liabilities as Current or Non-current, depending on the rights that exist at the end of the reporting period)	01.01.2023	No material impact
IFRS 16	Amendments to IFRS 16 Leases (Lease Liability in a Sale and Leaseback)	01.01.2024	No material impact

1) According to EU Endorsement Status Report of 22.09.2022.

3. Significant Accounting Policies, Judgements and Estimates

Interests in other entities

Business combinations

Business combinations are accounted for using the acquisition method. The identifiable assets acquired and liabilities assumed, including any contingent consideration, are recognised at their fair values at the acquisition date. The amount of the purchase consideration and value of non-controlling interest on acquisition, if any, above the fair value of assets and liabilities is recognised as goodwill (see separate policy). Negative goodwill, if any, is recognised within other income immediately. Transaction costs related to a business combination are expensed as incurred. When control is obtained, any non-controlling interest is recognised as the proportionate share of the identifiable net assets. The acquisition of a non-controlling interest in a subsidiary and the sale of an interest while retaining control, are accounted for as transactions within equity unless they result in the loss of control. The difference between the purchase consideration or sale proceeds after tax and the relevant proportion of the non-controlling interest, measured by reference to the carrying amount of the interest's net assets at the date of acquisition or sale, is recognised in retained earnings as a movement in equity attributable to the Group's shareholders.

Where the Group acquires less than 100% of shares in a business combination, IFRS 3 'Business Combinations' allows an accounting policy choice whereby non-controlling interest is either reflected at fair value including allocation of goodwill or at the fair value of the assets and liabilities acquired, excluding goodwill. This accounting policy choice can be exercised individually for each acquisition. For business combinations achieved in stages, the Group's previously held equity interest is remeasured to fair value at the acquisition date. Any gains and losses arising from such remeasurement are recognised in profit or loss.

Net assets of subsidiaries not attributable to the Group are shown separately in equity as non-controlling interests.
As part of a business acquisition or subsequently, the Group may enter into agreements with non-controlling interests in the form of a call or written put option to acquire the outstanding shares. A call option provides the Group with the right to acquire the outstanding shares not already owned while a written put option allows the non-controlling interest to sell their shares to the Group. The option price may be based on an earnings multiple such as EBITDA subject to contractual limits, if any, or may be fixed and exercisable at a future date. A financial liability is recognised on the written put option at the present value of the estimated redemption amount. Where the option is assessed to result in the non-controlling interest transferring the risks and rewards of ownership to the Group, on acquisition, the financial liability forms part of the purchase consideration with no value assigned to non-controlling interests. The financial liability is measured in line with IAS 32 'Financial Instruments: Presentation' at amortised cost with subsequent changes in value reflected in the Statement of Profit or Loss. For fixed price call and put options, the risks and rewards of ownership relating to the outstanding shares are assumed to have transferred to the Group.

Where the risks and rewards of ownership under the option are not transferred to the Group, the financial liability is not considered as part of the purchase consideration and a non-controlling interest is recognised on acquisition. The financial liability is initially recognised against equity. The Group applies the provisions of IAS 32 'Financial Instruments: Presentation' and subsequently derecognises the non-controlling interest to the extent that it is equal or less than the financial liability, against equity. The financial liability is measured at amortised cost with changes in the carrying amount reflected in the Statement of Profit or Loss.

Dividends paid to non-controlling interest with a fixed price or option are reflected as an expense within other finance expense unless there is a contractual right to reduce the liability.
Goodwill may also arise upon investments in joint ventures and associates, being the surplus of the cost of investment over the Group's share of the net fair value of the identifiable net assets. Any such goodwill is recorded within the corresponding investment in joint ventures and associates.

Significant judgements: Control over Horn & Co Minerals Recovery and SÖRMAŞ

During the year, the Group acquired 51.0% and 86,8% interest in Horn & Co Minerals Recovery ("Mireco") and SÖRMAŞ, respectively. Judgement is required in assessing the level of control or influence over another entity in which the Group holds an interest. The Group considered its respective rights and power to control in terms of the purchase agreements and judged that the Group controls both entities and consolidated these from the date of control. The Group exercises control over Mireco and SÖRMAŞ as it has the power to steer the relevant activities of the business and can use this power to affect the variable returns that it is exposed to. This is achieved through the Group's voting rights and management representation.

Significant judgements: Recognition of non-controlling interest of Mireco

The acquisition of Mireco includes a call and written put option for the Group to acquire the outstanding shares based on an EBITDA to net debt earnings multiple. The Group has judged, based on the terms and pricing of the call and written put option, that the risks and rewards of ownership associated with the outstanding shares have not been transferred and a non-controlling interest was recognised on acquisition. The financial liability arising from the call and written put option has been recognised against the carrying value of the non-controlling interest and equity in accordance with the Group's policy.

Significant estimates

Estimates relating to the calculation of fair values of acquired assets, liabilities and contingent liabilities are required within the context of business combinations.

Where intangible assets are identified, estimates are necessary for the determination of fair values by means of discounted cash flows, including the duration, amount of future cash flows, and discount rate. Fair values of physical assets are estimated with reference to comparable assets in the market.

When making estimates in the context of purchase price allocations on major acquisitions, the Group consults with independent experts who accompany the execution of the discretionary decisions and record it in appraisal documents. The Group has a period of one year from the date of control of the acquired businesses to update initial fair value estimates. The Group does not expect changes in these fair value estimates to have a significant impact on the recognised assets and liabilities over the remaining measurement period.

Goodwill and Other intangible assets

Goodwill

Goodwill arising on consolidation represents the excess of the cost of acquisition over the Group's interest in the fair value of the identifiable assets, liabilities and contingent liabilities of a subsidiary at the date of acquisition. Goodwill is initially recognised at cost and is subsequently measured at cost less any accumulated impairment losses. Goodwill recognised as an asset is reviewed for impairment at least annually.
On disposal of a subsidiary, the attributable amount of goodwill is included in the determination of the profit or loss on disposal.

Other intangible assets

Mining rights

Mining rights were recognised in the course of the purchase price allocation for Magnesita and are amortised based on the depletion of the related mines. Depletion is calculated based on the volume mined in the period in proportion to the total estimated economically viable volume.

estimated economically viable volume.

Customer relationships

Customer relationships arise from the acquisition of business and are measured at assigned fair values on acquisition, less accumulated amortisation and impairments. These intangibles are amortised on a straight-line basis over their expected useful lives.

Development costs

Research costs are expensed in the year incurred and included in general and administrative expenses. Development costs, including internally developed software are only capitalised if the costs can be measured reliably and are expected to result in future economic benefits either through use or sale. Capitalisation will also only arise when the product or process development can be clearly defined and is feasible in technical, economic and capacity terms. For internally developed software, costs are capitalised when these can be directly and conclusively allocated to individual programmes and represent a significant extension or improvement on existing software. All other internally developed software costs are expensed. Development costs are amortised on a straight-line basis over their expected useful lives of up to ten years, with internally developed software amortised over a period of up to four years. Amortisation is recognised in cost of sales.

Other intangible assets

These mainly represent purchased third party software, land-use rights and patent fees and are recognised when future associated economic benefits are expected to accrue to the Group. These intangibles are initially measured at their acquisition cost and amortised over their expected useful lives.

The useful lives of the Group's main classes of intangible assets are:

Customer relationships	6 to 15 years
Internally generated intangible assets	4 to 18 years
Other intangible assets	4 to 65 years

The useful economic lives of intangible assets are reviewed regularly and adjusted if necessary.
The carrying value of other intangible assets are assessed at each reporting period for indicators of impairments. See below for accounting policy relating to impairment of non-current assets other than goodwill and intangible assets with indefinite useful live.

Significant judgement: Mineral Rights
Management have assessed that given the few or no viable alternatives for the Group's refractory products, which are extracted from the Group's mines and used in the construction and automotive industries together with their continued use in the transition to a green economy, no indicators of impairment have arisen and as a consequence the useful lives remain unchanged.

Property, plant and equipment

Property, plant and equipment is measured at acquisition or construction cost, less accumulated depreciation and accumulated impairment losses. These assets are depreciated on a straight-line basis over their expected useful life to their estimated residual values and from when they are available for use in the manner intended by management.

Construction costs of assets comprise of direct costs as well as a proportionate share of capitalisable overhead costs and borrowing costs. If borrowed funds are directly attributable to an investment, borrowing costs are capitalised as a cost of the assets. If no direct connection between an investment and borrowed funds can be demonstrated, the average rate on borrowed capital of the Group is used as the capitalisation rate due to the central funding of the Group.

Expected demolition and disposal costs at the end of an asset's useful life are capitalised as part of its acquisition cost and recorded as a provision. The recognition criteria are a legal or constructive obligation towards a third party and the ability to reliably estimate future cost.

Land and plant under construction are not depreciated. Depreciation of property, plant and equipment is based on the following useful lives:

Real estate, land and buildings	8 to 50 years
Technical equipment, machinery	8 to 50 years
Other plant, furniture and fixtures	3 to 35 years

The carrying value of property, plant and equipment is assessed at each reporting period for indicators of impairments. See below for accounting policy relating to impairment of non-current assets other than goodwill and intangible assets with indefinite useful live.

The residual values and economic useful lives of property, plant and equipment, are reviewed regularly and adjusted if necessary.

When components of plant or equipment have to be replaced at regular intervals, the relevant replacement costs are capitalised when economic benefits are expected to arise to the Group. The carrying amount of the replaced components is derecognised. Regular maintenance and repair costs are expensed as incurred.

Gains or losses from the disposal of property, plant and equipment, which result as the difference between the net realisable value and the carrying amount, are recognised as income or expense in the Consolidated Statement of Profit or Loss.

Significant estimates

Management uses its experience to estimate the remaining useful life of an asset. The actual useful life of an asset may be impacted by an unexpected event that may result in an adjustment to the carrying amount of the asset. No such events are expected to arise which would have a material impact on carrying values within 12 months from the balance sheet date.

Leases

A contract, or part of a contract, that conveys the right to control the use of an identified asset for a period of time in exchange for payments to be made to the owners (lessors) is accounted for as a lease. Contracts are assessed to determine whether it is or contains, a lease at inception or when the terms and conditions of a contract are significantly changed. The lease term is the non-cancellable period of a lease, together with contractual options to extend or to terminate the lease early, where it is reasonably certain that an extension option will be exercised, or a termination option will not be exercised. At the commencement of a lease contract, a right-of-use asset and a corresponding lease liability are recognised, except for low-value items or for lease terms of less than 12 months. The commencement date of a lease is the date on which the underlying asset is made available for use. The lease liability is measured at an amount equal to the present value of the lease payments during the lease term that are not paid at that date. The lease liability includes contingent rentals and variable lease payments that depend on an index, rate, or where they are fixed payments in substance.

The lease liability is remeasured when the contractual cash flows of variable lease payments change due to a change in an index or rate when the lease term changes following a reassessment. Lease payments are discounted using the interest rate implicit in the lease. If that rate is not readily available, the incremental borrowing rate is applied. The incremental borrowing rate reflects the rate of interest that the lessee would have to pay to borrow over a similar term and similar security, the funds necessary to obtain an asset of a similar nature and value to the right-of-use asset in a similar economic environment.

In general, a corresponding right-of-use asset is recognised for an amount equal to each lease liability, adjusted by the amount of any pre-paid lease payment relating to the specific lease contract, less any lease incentives and for estimated restoration and removal costs. The depreciation on right-of-use assets is recognised in the Statement of Profit or Loss. Right-of-use assets are assessed for impairment indicators (see accounting policy on impairment of non-current assets).

Impairment of goodwill, property, plant and equipment and other intangible assets

Goodwill

Goodwill is reviewed at least annually for impairment. Any impairment loss is recognised as an expense immediately and is not subsequently reversed. For the purpose of impairment testing, goodwill is allocated to groups of individual Cash-Generating Units (CGUs) expected to benefit from the combination. If the recoverable amount of the CGU is less than the carrying amount of goodwill allocated to it, the resulting impairment loss is applied first to the allocated goodwill and then to the other assets on a pro-rata basis of the carrying amount of each asset. Reversals of impairment losses on goodwill are not permitted. The cash flows used to determine the recoverable amount of the CGU, including goodwill, is consistent with the description provided below for property, plant and equipment and other intangibles.

Significant estimates: Goodwill

Management makes use of various estimates and assumptions in determining the cash flow forecasts used in the impairment testing for goodwill. Key input assumptions include discount rates used to discount cash flows and the perpetual growth rate of the associated CGU. The effect of a 10% adverse change in the estimated discount rate or an adverse change of 50% in the perpetual growth rate would not result in an impairment of goodwill. For further details on goodwill impairment, refer to Note (17).

Property, plant and equipment and other intangibles

Property, plant and equipment, including right-of-use assets and intangible assets are tested for impairment if there is any indication that the value of these items may be impaired. An asset is considered to be impaired if its recoverable amount is less than its carrying amount. In the Group, individual assets do not generate cash inflows independent of one another and assets are combined in CGUs, which largely generate independent cash inflows. These CGUs are combined in strategic business units and reflect the market presence and appearance and drive cash inflows. The organisational structures of the Group reflect these units. In addition to the joint management and control of the business activities in each unit, the sales know-how, the knowledge of the long-standing customer relationships or knowledge of the customer's production facilities and processes further support these units. Product knowledge is manifested in the application-oriented knowledge of chemical, physical and thermal properties of RHI Magnesita products. The services offered extend over the life cycle of products at the customer's plant, from the appropriate installation and support of optimal operations, to environmentally sound disposal with the customer or sustainable reuse in the Group's production process. These factors determine cash inflow to a significant extent and consequently form the basis for the CGU structures.

The CGUs of the strategic business unit Steel are Linings and Flow Control. These two CGUs are determined according to the production stages in the process of steel production. In the Industrial business unit, each industry line of business (Glass, Cement/Lime, Non-Ferrous Metals and Environment, Energy, Chemicals) forms a separate CGU. All raw material producing facilities are combined in one CGU.

The recoverable amount of a CGU is the higher of its fair value less costs of disposal and its value in use (present value of future cash flows). In assessing value in use, the estimated future cash flows of the asset or CGU in its present condition are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks, including country, specific to the CGU. In determining fair value less costs to sell, consideration will be given to whether the value of the CGU can be determined from an active market (e.g., recognised exchange) or a binding sale agreement which are classified as level 1 in the fair value hierarchy under IFRS 13 'Fair Value Measurements'. Where this is not determinable, fair value less costs to sell for a CGU is usually estimated with reference to a discounted cash flow model, similar to the method used for value in use, but may include estimates of future production, revenues, costs and capital expenditure not included in the determination of value in use. Additionally, cash flow estimates include the impact of tax and are discounted using a post-tax discount rate. An estimate made on this basis is classified as level 3 in the fair value hierarchy.

The cash flows used in determining the recoverable amount are aligned with the first four years of the strategic business and financial planning models and incorporates a terminal value. The terminal value is based on a growth rate derived from the difference of the current and the possible degree of utilisation of the assets. To forecast the CGUs' cash flows, management predicts the growth rate using external sources for the development of the customers' industries and expert assumptions, including forecasts about the regional growth of steel production and the output of the non-steel clients. Growth rates are also influenced by the development of the specific refractory consumption patterns, including technological improvements.

If the carrying amount is higher than the recoverable amount, an impairment loss equivalent to the resulting difference is recognised in the Statement of Profit or Loss. If the reason for an impairment loss recognised in the past for property, plant and equipment or for other intangible assets ceases to exist, a reversal of the impairment is recognised in profit or loss. An impairment loss is reversed only to the extent that the CGUs carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised in prior years.

Significant judgements

Management reviewed CGUs for indicators of impairment. These indicators included both external factors affecting the CGUs, such as laws and regulations in specific countries and global and local economic conditions and internal factors, including but not limited to, useful lives of assets, major breakdowns or decisions to divest from certain businesses. Based on the impairment indicator review, no impairment indicators were identified at any of the CGU, which did not have goodwill allocated to it.

Additionally, management has assessed the useful lives of assets and these continue to be appropriate due to the limited refractory and other product alternatives available and as the steel and industrial sectors in which the Group operates, continue to play a significant part in the transition towards sustainable output and the transition to a green economy.

Financial instruments

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. In general, financial instruments can be classified to be measured subsequently at amortised cost, fair value through profit or loss or fair value through other comprehensive income. Classification of financial assets depends on the contractual terms of the cash flows as well as on the entity's business model for managing the financial assets. The business model determines whether cash flows will result from collecting contractual cash flows, selling the financial assets, or both.

Financial assets are classified as amortised cost, if the contractual cash flows include solely payments of principal and interest and held in order to collect the contractual cash flows. If the contractual cash flows include solely payments of principal and interest, but are held collect both the contractual cash flows and sell the financial asset, then they are classified as fair value through other comprehensive income. If the contractual cash flows do not solely include payments of principal and interest, then they are classified as fair value through profit or loss.

The Group initially recognises securities on the trading date when it becomes a party to the contractual provisions of the instruments. All other financial assets and financial liabilities are initially recognised on the date when they are originated. Financial instruments, except for trade receivables, are initially recognised at fair value. Financial assets are derecognised if the entity transfers substantially all the risks and rewards or if the entity neither transfers nor retains substantially all the risks and rewards and has not retained control. Financial liabilities are derecognised when the contractual obligations are settled, withdrawn or have expired.

Investment in debt securities are subsequently measured at fair value through profit and loss, as the contractual terms of cash flows do not solely include payments of principal and interest.

Investments in equity securities, including non-consolidated subsidiaries, are of minor importance and recognised and measured at fair value through profit or loss, since the irrevocable option for subsequent measurement at fair value through OCI was not exercised.

Financial assets at amortised costs are measured by applying the effective interest method.

Trade and other current receivables

Trade receivables are recognised initially at the amount of consideration that is unconditional, unless they contain significant financing components when they are recognised at fair value and subsequently carried at amortised cost minus

significant financing components when they are recognised at fair value and subsequently carried at amortised cost minus any valuation allowances. Valuation allowances are calculated in accordance with the simplified approach of the impairment model for financial instruments (see impairment of financial assets below).
In factoring arrangements, trade receivables are derecognised where the Group transfers substantially all the risks and rewards associated with the financial assets.

Cash and cash equivalents

Cash and cash equivalents include cash on hand, cheques received, cash at banks and short-term cash deposits with an original term of up to three months. Moreover, investments in money market funds exposed to insignificant value fluctuations due to their high credit rating and investments in short-term money market instruments that can be converted to defined cash amounts within a few days at any time, are also reflected as cash equivalents.

Borrowings

Financial liabilities include liabilities to financial institutions and other lenders and are measured at fair value less directly attributable transaction costs at initial recognition. In subsequent periods, these liabilities are measured at amortised cost applying the effective interest rate method.
A financial liability is derecognised when the obligation under the liability is discharged (by payment or legal release), cancelled or expires.

When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The terms are substantially different if the discounted present value of the cash flows under the new terms, including any fees paid net of any fees received and discounted using the original effective interest rate, is at least 10% different from the discounted present value of the remaining cash flows of the original financial liability. The difference in the respective carrying amounts is subsequently recognised in the Statement of Profit or Loss, including any costs or fees.

Trade payables and other current liabilities

These liabilities are initially recognised at fair value, and subsequently measured at amortised cost. The Group may participate in supply chain finance arrangements whereby suppliers may elect to receive a discounted early payment of their invoice from a bank as opposed to the agreed contractual payment terms. Where this arises, the Group settles the amount owed to the bank. The invoice due date as well as the value of the original liability remains unaltered. The Group assesses whether these arrangements modify the terms of the original trade payable. Financial liabilities subject to supply chain finance arrangements, that do not modify the terms of the original invoice, continue to be classified as trade payables.

Significant Judgement: Trade payables subject to supply chain finance arrangements
Management have judged that trade payables subject to supply chain finance arrangements do not modify the terms of the original invoice and as such the affected invoices continue to be recognised as such.

Derivative financial instruments and hedging activities

Derivative financial instruments not designated as hedges

Derivative contracts are used in the management of interest rate risk, commodity price risk and foreign currency risk. These derivative financial instruments, which are not designated in an effective hedging relationship in accordance with IFRS 9 'Financial Instruments', are recognised initially at fair value on the date on which a derivative contract is entered into and subsequently remeasured at fair value with changes in fair value reflected in the Statement of Profit or Loss. Derivatives are carried as assets when the fair value is positive and as liabilities when the fair value is negative.

Derivative financial instruments include forward exchange contracts and embedded derivatives in open orders denominated in a currency other than the functional currency of either contracting party, with the assessment made on a case-by-case basis at the respective forward rate on the reporting date. These forward rates are based on spot rates, including forward premiums and discounts. Unrealised valuation gains or losses and results from the realisation are recognised in the Statement of Profit or Loss in net expense of foreign exchange effects and related derivatives.

Forward purchase or sale arrangements for the physical delivery of non-financial assets that are entered into in line with the Group's expected purchase, sale or usage requirements ("own use") and are normally entered into to hedge the associated price risk are not recognised or measured at fair value. These forward contracts are assessed to be off-balance-sheet executory contracts due to their own use features. If the own use exemption is not met, the forwards will be recognised at fair value, with fair value remeasurement recorded in the Statement of Profit or Loss.

Significant Judgement: Own use exemption on gas and power forward purchase and physical delivery CO_2-certificate forwards
Due to the reduction of free CO_2 emission certificates and the expected increase in CO_2 market prices, the Group hedges the associated price risk by use of physical delivery forward purchases for own use. The Group also enters into fixed price and quantity forward gas and power contracts to secure supply for its production process and reduce price volatility. The own use exemption does not require fair value recognition and measurement of the forward purchases and thus avoid volatility in the Statement of Profit of Loss. The own use exemption requires that purchases of these forward contracts will be utilised. The Group settles the forwards through physical delivery and does not intend to sell any (unexpected) surplus of either gas, power or CO_2 emission certificates for speculative purposes. Management have judged that these forward

of either gas, power or CO_2 emission certificates for speculative purposes. Management have judged that these forward purchases based on current and expected future requirements satisfy the own use exemption and have not applied fair value recognition and measurement.

Derivative financial instruments designated as Cash flow hedges

For derivative financial instruments which are designated as an effective cash flow hedge in accordance with IFRS 9 'Financial Instruments', hedge accounting is applied. The hedging instruments, used to hedge the underlying items, are measured at fair value with the effective part of the fair value changes recorded in Other Comprehensive Income as an unrealised gain or loss. At the time of the realisation of the underlying transaction, the fair value changes of the hedging instrument recognised in Other Comprehensive Income is recycled to the Statement of Profit or Loss. Ineffective parts of the cash flow hedges are recognised immediately in the Statement of Profit or Loss. Where the hedged item is a non-financial asset or liability, the amount accumulated in Other Comprehensive Income is transferred to the initial carrying amount of the asset or liability. If the hedged transaction is no longer expected to take place, the accumulated amount recorded in Other Comprehensive Income is reclassified to the Statement of Profit or Loss. All relationships between hedging instruments and hedged items are documented, as well as risk management objectives and strategies for undertaking hedge transactions. The effectiveness of hedges is also continually assessed and hedge accounting is discontinued when there is a change in the risk management strategy.

Hedge of net investment

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Any gain or loss on the hedging instrument relating to the effective portion of the hedge are recognised in Other Comprehensive Income and presented in the currency translation difference reserve within equity while any gains or losses relating to the ineffective portion are recognised in the Statement of Profit or Loss. On disposal of the foreign operation, the cumulative amount of any such gains or losses in Other Comprehensive Income is reclassified to the Statement of Profit or Loss.

Impairment of financial assets

Impairment of certain financial assets is based on expected credit losses (ECL). Expected credit losses are defined as the difference between all contractual cash flows the entity is entitled under the contract and the cash flows expected to be received. The measurement of expected credit losses is generally a function of the probability of default, loss given default and the exposure at default.

Loss allowance is measured for expected credit losses on debt instruments, trade receivables and contract assets measured at amortised cost. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument.

The Group recognises lifetime ECL for trade receivables and contract assets by applying the simplified approach. The ECL on these financial assets are generally estimated using a provision matrix based on the Group's historical credit loss experience for customer groups located in different geographic regions. Forward-looking information is incorporated in the determination of the applicable loss rates for trade receivables. For the Group, the general economic development of the countries in which it sells its goods and services is relevant in determining if the adjustment of the historical loss rates is necessary.

For all other financial instruments, the Group recognises lifetime ECL when there has been a significant increase in credit risk since initial recognition. However, if the credit risk on the financial instrument has not increased significantly since initial recognition, the Group measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

Lifetime ECL represents the expected credit losses that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of lifetime ECL that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

The Group makes use of the practical expedient for financial instruments with an 'investment grade' rating that it is assumed to be of low credit risk and with no significant increase in the credit risk. Under the practical expedient, the expected credit loss is calculated using the 12-month ECL. Among other factors, the Group considers a significant increase in credit risk to have taken place when contractual payments are more than 30 days past due.

The Group assumes that a default event has occurred when trade receivables are 180 days past due unless reasonable and supportable information confirms otherwise. For those financial instruments where objective evidence of default is present, an individual assessment of expected credit losses takes place.

Generally, financial instruments are written off when there is no reasonable expectation of recovering amounts due.

Inventories

Inventories are stated at the lower of cost or net realisable value as of the reporting date. The determination of acquisition cost of purchased materials is based on the average cost. Finished goods and work in progress are valued at fixed and variable production cost. The net realisable value is the estimated selling price in the ordinary course of business minus any estimated cost to complete and to sell the goods. Impairments due to reduced usability are reflected in the calculation of the net realisable value.

Provisions

Provisions are recognised when the Group incurs a legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to meet this obligation, and the amount of the obligation can be reliably estimated.

Provisions for warranties are created for individual contracts at the time of the sale of goods or after the service has been provided. The amounts of the provisions are based on the expected or actual warranty claims.
Provisions for restructuring are recognised once a detailed formal restructuring plan has been developed and announced prior to the reporting date or whose implementation was commenced prior to the reporting date.
The Group recognises provisions for demolition and disposal costs and environmental damages. The Group's facilities and its refractory, exploration and mining operations are subject to environmental and governmental laws and regulations in each of the jurisdictions in which it operates. These laws govern, among other things, reclamation or restoration of the environment in mined areas and the clean-up of contaminated properties. These provisions include the estimated demolition and disposal costs of plants and buildings as well as environmental restoration costs arising from mining activities, based on the present value of estimated cash flows of the expected costs. The estimated future costs of asset retirements are reviewed annually and adjusted, if appropriate.

A provision for an onerous or unfavourable contract is recognised when the expected benefits to be derived from a contract are lower than the unavoidable cost of meeting its obligations under the contract. Provisions are measured at the present value of the unavoidable costs of meeting the obligation under the contract which exceed the economic benefits expected to arise from that contract.

Provisions for labour and civil contingencies are recognised for all risks referring to legal proceedings that represent a probable loss. Assessment of the likelihood of loss includes analysis of available evidence, including the opinion of internal and external legal advisors of the Group.
Provisions are measured at their discounted settlement value as of the reporting date if the discounting effect is material.

If maturities cannot be estimated, they are shown within current provisions.

Employee related benefits

Provisions for Post-employment benefits

Pension plans

With respect to post-employment benefits relating to pensions, a differentiation is made between defined contribution and defined benefit plans.

Defined contribution plans limit the Group's obligation to the agreed contributions to earmarked pension schemes. The contributions are expensed as incurred.

Defined benefit plans require the Group to provide agreed benefits to active and former employees and their dependents.

Pension obligations are measured using the projected unit credit method and is netted against the fair value of the plan assets, if any. If the plan assets are not sufficient to cover the obligation, the net obligation is recognised as a liability. However, if the plan assets exceed the obligations, the net surplus recognised is limited to reductions of future contribution payments to the plan and is presented as other non-current assets in the Statement of Financial Position. The Group applies the requirements of IFRIC 14 and restricts recognition of the net surplus by applying an asset recognition ceiling where the Group does not have an unconditional right to a refund, assuming full settlement of the liabilities. Changes in the asset ceiling are recorded in Other Comprehensive Income.

The present value of defined benefit obligations are determined separately for each plan, annually, by independent qualified actuaries. The present value of future benefits is based on the length of service, expected wage/salary developments and pension adjustments.

The expense to be recognised in a period includes current and past service costs, settlement gains and losses, interest expenses from the interest accrued on obligations, interest income from plan assets and administration costs paid from plan assets. The net interest expense is shown separately in net finance costs. All other expenses related to defined benefit plans are allocated to the costs of the relevant functional areas.
Actuarial assumptions required to calculate these obligations include the discount rate, increases in wages/salaries and pensions, retirement starting age and probability of employee turnover and actual claims. The calculation is based on local demographic parameters.

Interest rates, which are based on high-quality corporate bonds issued with comparable maturities and currencies, are applied to determine the present value of pension obligations. In countries where there is not a sufficiently liquid market for high-quality corporate bonds, the returns on government bonds are used as a basis.

The rates of increase for wages/salaries are based on an average of past years, which is also considered to be realistic for the future, while the retirement age is based on the respective statutory provisions of the country concerned.

Remeasurement gains and losses are recorded net of deferred taxes under Other Comprehensive Income in the period incurred.

Significant estimate: Pension plans

The measurement of defined benefit obligation and plan assets requires use of estimates such as discount rates, mortality rates, salary increases and inflation. These estimates are reviewed and update when a valuation is performed by third party experts. Further details of the estimates and assumptions together with sensitivities on changes to assumptions is reflected in Note (29). Changes in these assumptions may result in differences between cash outflows expected at the reporting date and actual cash outflows.

Other post employment benefits

Includes provisions for termination benefits primarily related to obligations to employees whose employment is subject to Austrian law.

Employees who joined an Austrian company before 31 December 2002 receive a one-off lump-sum termination benefit as defined by Austrian labour legislation if the employer terminates the employment or when the employee retires and is regarded as a post employment benefit under IAS 19 'Employee Benefits'. The termination payment depends on the relevant salary at the time of the termination as well as the number of years of service and ranges between two and 12 monthly salaries. These obligations are measured using the projected unit credit method applying an accumulation period of 25 years. Remeasurement gains and losses are recorded directly to other comprehensive income after considering tax effects.

For employees who joined an Austrian company after 31 December 2002, employers are required to make regular contributions equal to 1.53% of the monthly wage/salary to a statutory termination benefit scheme. The company has no further obligations. Claims by employees to termination benefits are filed with the statutory termination benefit scheme, while the continuous contributions are treated as defined contribution plans and included in the personnel expenses of the functional areas.

Other employee benefits

This includes service anniversary bonuses, payments to semi-retirees and lump-sum settlements.

Service anniversary bonuses are one-time special payments that are dependent on the employee's wage/salary and length of service. The employer is required by collective bargaining agreements or company agreements to make these payments after an employee has reached a certain number of years of uninterrupted service with the same company. Obligations are mainly related to service anniversary bonuses in Austrian and German group companies. Provisions for service anniversary bonuses are calculated based on the projected unit credit method. Remeasurement gains or losses are recorded in the personnel costs of the functional areas.

Local labour laws and other similar regulations require individual group companies to create provisions for semi-retirement obligations. The obligations are partially covered by qualified plan assets and are reported on a net basis in the Statement of Financial Position.

Income taxes

Income tax expense represents the sum of current tax and deferred tax.

Income tax is recognised in the Statement of Profit or Loss, except to the extent that it relates to items recognised in Other Comprehensive Income or directly in equity, including tax related impacts.

Current tax is based on the taxable profit for the period and is determined in accordance with the rules applicable in the relevant jurisdictions and includes taxes relating to prior periods. The liability for current tax is calculated using tax rates and laws that have been enacted or substantively enacted at the balance sheet date.

Deferred tax is provided, using the liability method, on temporary differences at the balance sheet date between the tax bases of assets and liabilities and their carrying amounts for financial reporting purposes. Deferred tax liabilities are recognised for all taxable temporary differences except:

- Where the deferred tax liability arises on initial recognition of goodwill
- Where the deferred tax liability arises on the initial recognition of an asset or liability in a transaction that is not a business combination, at the time of the transaction, affects neither accounting profit nor taxable profit or loss and, at the time of the transaction, does not give rise to equal taxable and deductible temporary differences
- In respect of taxable temporary differences associated with investments in subsidiaries and associates and interest in joint arrangements, where the Group is able to control the timing of the reversal of the temporary differences and it is probable that the temporary differences will not reverse in the foreseeable future
- For financial instruments which were issued by subsidiaries to non-controlling interests and which are classified as a financial liability in accordance with IFRS

Deferred tax assets are recognised for deductible temporary differences, carry-forward of unused tax credits and unused tax losses, to the extent that it is probable that taxable profit will be available against which these can be utilised, except where the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and at the time of the transaction, affects neither accounting profit nor taxable profit and loss and, at the time of the transaction, does not give rise to equal taxable and deductible temporary differences.

In respect of deductible temporary differences associated with investments in subsidiaries, associates and interest in joint arrangements, deferred tax assets are recognised only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilised.

The carrying amount of deferred tax assets is reviewed at each balance sheet date and reduced to the extent that it is no longer probable or increased to the extent that it is probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilised.
Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period when the asset is realised or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the balance sheet date. Deferred taxes of the Austrian group companies are determined at the corporation tax rate which is expected to be applicable when the temporary differences reverse (24.0% if the temporary difference is reversing in 2023 and 23.0% if the temporary difference reverses in 2024 or later). Deferred tax assets and liabilities of the Brazilian group companies are measured at 34.0%.

Deferred tax assets and liabilities are offset only when there is a legally enforceable right to set off current tax assets against current tax liabilities and when the deferred tax assets and liabilities relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities where there is an intention to settle the current tax assets and liabilities on a net basis or to realise the assets and settle the liabilities simultaneously.

Where tax legislation may not be clear or result in uncertainty, the Group will determine its tax obligations and resulting income tax expense using an approach which it believes has a probable chance of being accepted by the tax authorities based on historical experience, legal advice and communication with the tax authorities, as appropriate. Where the Group adopts an approach to an uncertain tax position that it regards as having a less than probable chance of being accepted by the tax authorities, the income tax expense and resulting income and deferred tax balances are adjusted to reflect this uncertainty using either the most likely outcome method or the expected value method.

Significant judgement: Uncertain tax treatments and recognition of deferred tax assets
Management makes judgements in relation to the recognition of current and deferred income taxes. In making judgements, management believes that the tax positions the Group adopts are in line with the applicable legislation and reflect the probable outcome. The tax obligations and receivables, upon audit by the tax authorities at a future date, may differ as a result of differing interpretations. These interpretations may impact the expected timing and quantum of taxes payable and recoverable.

Significant estimates: Recognition of deferred tax assets
Income tax expense is based on the tax laws applicable in the individual countries. Due to their complexity, the tax items presented may be subject to different interpretations by local finance authorities. When determining the amount of the deferred tax assets to be recognised, mainly relating to tax-losses, an estimate is required of future taxable income which is influenced by factors such as prices, gross profit margins and interest rates. A 10% change in the future taxable profit from the assumption made on the reporting date within the planning period defined for the accounting and measurement of deferred taxes would not result in a significant change in the carrying amount of deferred tax assets on recognised tax losses, over a 12-month period from the date of these Consolidated Financial Statements.

Revenue, income and expenses

Revenue from contracts with customers

Revenue from the sale of goods and services is recognised at an amount that reflects the consideration to which the Group expects to be entitled in exchange for those goods or services. Revenue is recognised to the extent that it is highly probable that there will not be a significant reversal of revenue in future periods. If the consideration in a contract includes a variable amount, the Group estimates the amount of consideration to which it will be entitled at inception and limits the recognition of revenue subject to the variability, until it is highly probable that a significant reversal of cumulative revenue recognised will not occur. The Group applies the practical expedient in IFRS 15 'Revenue from Contracts with Customers' and does not recognise the impact of financing for payment terms as the average credit terms is currently 60 days. At contract inception, the Group identifies the goods or services promised in the contract and assesses which of the promised goods or services shall be identified as separate performance obligation. Promised goods or services give rise to separate performance obligations if they are capable of being distinct. Revenue is recognised as control is transferred, either over time or at a point of time. Control is defined as the ability to direct the use of and obtain substantially all of the economic benefits from an asset.
For the delivery of refractory products, the goods promised are distinct and control of the goods is passed to the customer typically when physical possession has been transferred. The transport service does not give rise to a separate performance obligation to which a part of revenue would have to be allocated, as this service is usually performed before control of the products is transferred to the customer.

In consignment arrangements, the Group retains control of the goods generally until a withdrawal of the products from the consignment occurs. Most of the products within consignment arrangements have a high stock turnover rate.

The Group provides services (e.g. supervision, installation) that are either sold separately or bundled together with the sale of products to a customer. Contracts for bundled sales of products and installation services usually comprise of two performance obligations being (1) the promise to transfer products and (2) provide services which are capable of being distinct and separately identifiable in the context of the contract. Accordingly, the transaction price is allocated based on the relative stand-alone selling prices of the product and service. Revenue from services is recognised over time using an input method to measure progress towards completion of the service as the customer simultaneously receives and consumes the benefits provided by the Group.

Contracts for bundled sales of refractory products and non-refractory products (e.g. machines) provided to the customer free of charge comprise two performance obligations that are separately identifiable. Consequently, the Group allocates the transaction price based on the relative stand-alone selling prices of these performance obligations and allocates revenue to the non-refractory product which is delivered free of charge.
Expected penalty fees from guaranteed durabilities on refractory products are considered as a variable consideration in the form of a contract or a refund liability. However, the estimation of the variable consideration is not subject to a constraint as the Group has significant experience with promising durabilities and as a consequence does not expect significant reversal of revenue recognised in prior periods. All other product warranties issued by the Group guarantee that the transferred products correspond to the contractually agreed specifications and are classified as assurance type warranties. Consequently, no separate distinct performance obligation to the customer exists.

If transfer of goods or services to a customer is performed before the customer pays consideration or before payment is due and is conditional on something other than the passage of time, a contract asset, excluding any amounts presented as a receivable is recognised.

If a customer pays consideration before the entity transfers a good or service to the customer, the entity shall present the contract as a contract liability when the payment is made.
Contract costs, which are defined as the incremental costs of obtaining a contract, are recognised as an asset where the Group expects to recover those costs, except for those costs which are expected to be recovered within 12 months.

As the term of customer contracts is less than one year, the Group adopted the practical expedient not to disclose performance obligations for contracts with original expected duration of less than one year.

Significant Judgement: Revenue recognition
For customer contracts in the Steel segment with variable payment arrangements where the transaction price depends on the customer's production performance, (e.g. quantity of steel produced) management has determined that the commitment to transfer each of the products and services to the customer is not separately identifiable from the other commitments in the context of such contracts. The customer expects complete refractory management for the agreed product areas in the steel plant in order to enable steel production. Thus, only one performance obligation being the performance of a management refractory service, exists.

Cost of sales
Cost of sales comprises the production cost of goods sold as well as the purchase price of merchandise sold. In addition to direct material and production costs, it also includes overheads including depreciation charges on production equipment, amortisation charges of intangible assets as well as impairment losses and reversals of impairment losses of inventories. Moreover, cost of sales also includes the costs of services provided by the Group or services received.

Selling and marketing expenses
This item includes personnel expenses for the sales staff as well as depreciation charges and other operating expenses related to the market and sales processes.

General and administrative expenses
General and administrative expenses primarily consist of personnel expenses for the administrative functions, legal and other consulting costs, expenses for research and non-capitalisable development costs.

Interest income and expenses
Interest income and expenses are recognised in accordance with the effective interest method.

Dividends
Dividends from investments that are not accounted for using the equity method are recognised in the Statement of Profit or Loss at the time the legal claim arises.

Foreign currency translation
Functional currency and presentation currency
The Consolidated Financial Statements are presented in Euro, which represents the functional and presentation currency of RHI Magnesita N.V.
Consolidated subsidiary financial information is based on the currency of the primary economic environment in which it

Consolidated subsidiary financial information is based on the currency of the primary economic environment in which it operates (functional currency).

Foreign currency transactions and balances

In individual subsidiaries, joint ventures and associates, transactions in foreign currency are translated into the functional currency at the rate of exchange prevailing on the dates of the transaction. Gains and losses arising from the settlement of such transactions and the measurement of monetary assets and liabilities in foreign currencies at the closing rate are recognised in the Statement of Profit or Loss under net expense on foreign exchange effects and related derivatives. Unrealised currency translation differences from monetary items which form part of a net investment in a foreign operation are recognised in Other Comprehensive Income in equity. When a non-derivative financial instrument is designated as the hedging instrument in a net investment hedge in a foreign operation, the effective portion of the foreign exchange gains and losses is recognised in the currency translation difference reserve within equity. Non-monetary items, other than those measured at fair value, are carried at historical rates and not retranslated subsequent to initial recognition.

Group companies

Financial information of foreign subsidiaries with a functional currency different to the Euro are translated as follows: Assets and liabilities are translated at the closing rate on the reporting date of the Group, while monthly income and expenses and consequently the profit or loss for the year as presented in the Statement of Profit or Loss are translated at the respective closing rates of the previous month. Differences resulting from this translation process and differences resulting from the translation of amounts carried forward from the prior year are recorded under Other Comprehensive Income without recognition to profit or loss. Monthly cash flows are translated at the respective closing rates of the previous month. Goodwill and adjustments to the fair value of assets and liabilities related to the purchase price allocations of a subsidiary outside the European currency area are recognised as assets and liabilities of the respective subsidiary and translated at the closing rate.

On disposal of a non-Euro functional currency subsidiary, joint venture or associate, the related accumulated exchange gains and losses recognised in equity are reclassified to the Statement of Profit or Loss. In addition, when monetary items cease to form part of a net investment in a foreign operation or when in case of a net investment hedge the foreign operation is disposed, the currency translation differences previously recognised in Other Comprehensive Income are reclassified to profit or loss.

The Euro exchange rates of the currencies of the Group's significant operations are shown in the following table:

		Closing rate		Average rate[1)]	
Currencies	1 € =	31.12.2022	31.12.2021	2022	2021
Brazilian Real	BRL	5.63	6.30	5.47	6.38
Canadian Dollar	CAD	1.45	1.44	1.37	1.49
Chinese Renminbi Yuan	CNY	7.42	7.20	7.09	7.68
Indian Rupee	INR	88.26	83.89	82.50	87.76
US Dollar	USD	1.07	1.13	1.06	1.19

1) Arithmetic mean of the monthly closing rates.

4. Climate change and energy transition

In 2019 the Group announced its commitment to reduce Scope 1 and Scope 2 and 3 (raw materials) CO_2 emissions intensity by 15% by 2025, compared to a 2018 baseline. The below describes how the Group has considered climate related impacts in some key areas of the Consolidated Financial Statements and how this translates into the valuation of its assets and measurement of liabilities, as progress is made in reducing its own CO_2 emissions and prepares for the energy transition and technological changes that are likely to affect its customer industries.
Note (3) includes the significant accounting estimates, judgements and key sources of estimation uncertainties and how those uncertainties have the potential to have a material effect on the Consolidated Statement of Financial Position in the next 12 months. This note describes the key areas of climate impacts that potentially have longer-term effects on amounts recognised at 31 December 2022.

Financial planning assumptions

As disclosed in the Sustainability section on page 65, climate related risks faced by the Group include physical and transitional risks. The most material transitional risk impact is expected to be higher operating costs due to an increase in the level or scope of carbon pricing and changes to regulatory frameworks. This risk is most prominent in Europe where the existing system of allowances is to be replaced by the Carbon Border Adjustment Mechanism, with all existing CO_2 emissions allowances to be progressively phased out by 2034. The Group has also identified climate related opportunities, such as increased demand for its products arising from the transition by its customers to lower-carbon emitting industrial processes and increased demand for refractory products that are produced with a lower carbon footprint.

The Consolidated Financial Statements are based on reasonable and supportable assumptions that represent management's current best estimate of the range of economic conditions that may exist in the foreseeable future. The Group has performed an assessment of the potential future impact of climate change on key elements of its Consolidated Financial Statements utilising the Paris-aligned Mitigation and Hot House World Limited mitigation scenarios. The largest impact from higher carbon prices as contained in these scenarios is from 2026 onwards. The negative impacts are concentrated within the Group's assets located in Europe whilst opportunities are expected to be global in nature.

The Group is investing in the research and development of new technologies for the manufacturing of refractories which may enable it over the long term to avoid or capture its CO_2 emissions and thereby mitigate the impact of higher carbon prices.

Impairment of Goodwill and PP&E

Cash flow projections for its CGUs are based on the Group's one-year internal forecasts, the results of which are reviewed by the Board. The forecasts are extrapolated to five years based on management's expectations. Management then applies a terminal value which is derived from the fifth year forecasted cash flows.

The nominal growth rate is equal to the long-term rate of growth in steel/cement and/or inflation (depending on the country and business involved) and in any case no higher than the average long-term growth rate of the reference market. The Group has also taken account of the long-term impact of climate change, in particular by considering in the estimation of the terminal value a long-term growth rate in line with the change in steel/cement demand in 2030-2050 based on the specific characteristics of the businesses involved.

The Group is not currently subject to the European Carbon Border Adjustment Mechanism ('CBAM'). However, management believes that it is plausible that the CBAM could impact the Group from 2030 and have modelled the potential impact of the CBAM into its EU assets. Management is currently assessing the strategy and options to maximise the opportunities and minimise the impact of this regulation. Absent to any mitigating action by management, it is expected that the gross profit could reduce by 26% from 2030, on average across the EU assets and increase by 20% in regions outside the EU.

Restoration provisions

Management recognises liabilities that are expected to be incurred in relation to rehabilitation and restoration of the mining sites. As of balance sheet date, the Group's mines have an expected life between 13 and 100 years. The introduction of more stringent legislation could result in our mining operations to become uneconomical earlier than anticipated thus affecting the timing of our restoration liabilities. The discount rate used to measure asset restoration provisions is between 10-50-years term, in line with available government bond rates.
Management does not expect any reasonably possible change in the expected timing of restoration of our mines to have a material effect on the Group total provisions, assuming cash flows remain unchanged.

Deferred Tax assets

In jurisdictions where new or additional climate change related legislation is enacted, our taxable profits could be affected thereby impacting the recoverability of deferred tax assets. It is expected that sufficient deferred tax liabilities and forecasted taxable profits are available for recovery of the deferred tax assets recognised at 31 December 2022. The assessment of deferred taxes is described in Note (14). For certain deferred tax assets recognised in Brazil, the period extends beyond 5 years. Currently, no legislation is in place in Brazil that could limit the timing and, or the extent of the recognised deferred tax assets.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

5. Segmental analysis

The Group comprises the operating segments Steel and Industrial. The segmentation of the business activities reflects the internal control and reporting structures and is regularly monitored by the Chief Executive Officer (Chief Operating Decision Maker (CODM)), who has the responsibility over allocation of resources and evaluates the performance of each segment.

The Steel segment specialises in supporting customers in the steel-producing and steel-processing industry. The Industrial segment serves customers in the glass, cement/lime, non-ferrous metals and environment, energy and chemicals industries. The main activities of the two segments consist of market development, global sales of high-grade refractory bricks, mixes and special products as well as providing services at the customers' sites.
The globally located manufacturing sites, which extract and process raw materials, are combined in one strategic business unit. The allocation of manufacturing cost of the production plants to the Steel and Industrial Divisions is based on the supply flow.

Statements of Profit or Loss up to gross profit are available for each segment. Revenues and Gross profit are the key internal performance measures provided to and used by the CODM. Selling and marketing expenses, general and administrative expenses, restructuring and write-down expenses, other income and expenses, profit of joint ventures, net finance costs and income taxes are managed centrally and separately and thus not allocated to the segments.

Segment assets include trade receivables and inventories, which are available to the operating segments and are reported to the CODM for control and measurement, property, plant and equipment, goodwill and other intangible assets, are allocated to the segments based on the capacity of the productive assets base. All other assets are not allocated.

Segment reporting by operating company division

The following tables show the financial information for the operating segments for the year 2022 and the previous year:

2022 in € million	Steel	Industrial	Group 2022
Revenue	2,371.4	945.8	3,317.2
Gross profit	521.0	242.4	763.4
EBIT			343.6
Net finance costs			(73.1)
Profit before income tax			270.5
Depreciation and amortisation charges	(101.2)	(43.3)	(144.5)
Segment assets 31.12.2022	2,231.9	911.3	3,143.2
Investments in joint ventures and associates 31.12.2022			5.7
Reconciliation to total assets			926.0
			4,074.9
Additions to property, plant and equipment and intangible assets	128.6	68.8	197.4

2021 in € million	Steel	Industrial	Group 2021
Revenue	1,822.9	728.5	2,551.4
Gross profit	393.7	189.8	583.5
EBIT			213.8
Net finance costs			(24.9)
Result from joint ventures and associates			100.2
Profit before income tax			289.1
Depreciation and amortisation charges	(93.1)	(38.0)	(131.1)
Segment assets 31.12.2021	2,146.3	724.2	2,870.5
Investments in joint ventures and associates 31.12.2021			5.7
Reconciliation to total assets			1,037.9
			3,914.1
Additions to property, plant and equipment and intangible assets	196.0	83.5	279.5

No single customer contributed 10% or more to consolidated revenue in 2022 and in 2021. Companies that are known to be part of a group are treated as one customer.

When allocating revenue to product groups, a distinction is made between shaped products (e.g. hydraulically pressed bricks, fused cast bricks, isostatically pressed products), unshaped products (e.g. repair mixes, construction mixes and castables), refractory management services (e.g. full line service, contract business, cost per performance) as well as other revenue. Other mainly includes revenue from the sale of non-group refractory products.

In the reporting year, revenue is classified by product group as follows:

in € million	Steel	Industrial	Group 2022
Shaped products	1,100.4	692.6	1,793.0
Unshaped products	449.3	192.1	641.4
Management refractory services	755.7	0.2	755.9
Other	66.0	60.9	126.9
Revenue[1)]	2,371.4	945.8	3,317.2

In 2021, revenue was classified by product group as follows:

in € million	Steel	Industrial	Group 2021
Shaped products	842.7	518.9	1,361.6
Unshaped products	338.2	146.0	484.2
Management refractory services	575.0	0.0	575.0
Other	67.0	63.6	130.6
Revenue[1)]	1,822.9	728.5	2,551.4

1) Revenue includes €1,047.9 million (2021: €749.2 million) relating to the Solutions Business. Solutions Business is a customer classification that is characterised by sales of end-to-end solutions covering large parts of the customer process chain.

Revenue from shaped and unshaped products is transferred to the customers at a point in time, whereas revenue from management refractory services is transferred over time. Other revenue amounting to €44.7 million (2021: €48.0 million) is transferred over time and an amount of €82.2 million (2021: €82.6 million) is transferred at a point of time.

Segment reporting by country

The Revenue is based on the locations of the customers.

in € million	2022	2021
Netherlands	11.2	8.2
USA	586.5	416.8
India	344.0	255.4
Brazil	367.8	252.0
PR China	221.6	201.2
Other countries	1,786.1	1,417.8
Revenue	3,317.2	2,551.4

The carrying amounts of goodwill, other intangible assets and property, plant and equipment are classified based on the location of the Group companies:

in € million	31.12.2022	31.12.2021
Brazil	464.8	396.5
Austria	352.9	331.4
USA	234.1	229.3
PR China	171.4	161.8
Other countries	434.0	367.7
Goodwill, intangible assets and property, plant and equipment	1,657.2	1,486.7

6. Restructuring

Summary of restructuring and write-down expenses recognised as follows:

in € million	2022	2021
Restructuring income/(expenses)	6.8	(58.8)

2022

Following the approval by the regional government in Germany for the repair, upgrade and connection of the railway infrastructure to the Mainzlar plant, the Group committed to continue with its operations. The commitment was regarded as an indicator of an impairment reversal, following the write down of the non-current assets in 2020 of €7.7 million. The reversal of the write down amounted to €5.3 million in 2022. Additionally, around €6.4 million in employee restructuring and plant dismantling provisions were reversed.

The Group decided to close the operations at the plant in Dashiqiao, China, resulting in employee restructuring expenses of €2.2 million. Plant idling costs incurred during 2022 of €3.4 million are included within restructuring expenses. The Group continues its negotiations with the joint venture partner to exit its share of the net assets and amounts due of €26.4 million, see Note (28).

2021

In September 2021, the plant in Dashiqiao, China, was shut down and production suspended. The recoverable amount of Dashiqiao's assets was deemed to be equal to the fair value less costs of disposal and was estimated with reference to the difference between net assets to be given up and the amount of the expected waiver of the dividend liability as per 31 December 2021. As a result, write-down expenses of €29.0 million were recognised, of which €8.7 million was attributable to the Segment Steel and €20.3 million to the Segment Industrial. Further €2.4 million of idle costs were incurred until 31 December 2021 and recorded as restructuring expenses.

For the plant closure at Trieben, Austria, restructuring expenses amounting to €16.3 million were recognised. These mainly related to dismantling and site clean-up costs of €3.1 million and write-down expenses on non-current assets of €12.2 million, of which €8.6 million was attributable to the Segment Steel and €3.6 million to the Segment Industrial. The recoverable amount of these assets was estimated with reference to their expected scrap value, which was deemed negligible.

Following the sale of the plants in Drogheda, Ireland and Porsgrunn in Norway in February 2021, €9.9 million expenses mainly relating to environmental risks were recognised.

In the course of the plant closure in Hagen, Germany, restructuring expenses totalling to €0.6 million were recognised and land was sold resulting in a gain of €4.1 million.

Employee restructuring expenses of €4.7 million were recognised in 2021 under the Group's 2020 reorganisation plans, which ended in early 2022.

7. Other income

in € million	2022	2021
Net amortisation of Oberhausen provision	2.0	7.5
Result from deconsolidation incl. recycling of OCI components to P&L	0.0	6.8

Income from the disposal of non-current assets	0.5	6.2
Miscellaneous income	2.3	8.6
Other income	4.8	29.1

The net amortisation of the Oberhausen provision includes €9.2 million (2021: €7.5 million) release for the performance against the onerous contract, offset by €7.2 million (2021: €0.0 million) arising from updated estimates. Miscellaneous income mainly includes Government subsidies accrued for certain operational expenses. In 2021, the result from deconsolidation amounting to €6.8 million relates to the disposal of RHI Normag AS, Porsgrunn, Norway and Premier Periclase Limited, Drogheda, Ireland.

8. Other expenses

in € million	2022	2021
Expenses for strategic projects	(10.1)	(4.7)
Losses from the disposal of non-current assets	(1.7)	(2.6)
Miscellaneous expenses	(11.2)	(7.2)
Other expenses	(23.0)	(14.5)

Expenses for strategic projects amounting to €10.1 million (2021: €4.7 million) mainly include legal and consulting fees related to business development activities during the year. Miscellaneous expenses mainly consist of accounts receivables and inventory write downs arising from the Ukraine/Russia conflict.

9. Expense categories

The presentation of the Consolidated Statement of Profit or Loss is based on the function of expenses. The following table shows a classification by expense category for 2022 and the previous year:

in € million	2022	2021
Changes in inventories, own work capitalised	64.3	259.0
Cost of materials	(1,365.0)	(1,205.1)
Energy Costs	(285.7)	(187.2)
Personnel costs	(627.8)	(547.6)
Depreciation and amortisation charges	(144.5)	(131.1)
Write-down expenses	0.0	(41.3)
Other income	27.1	41.2
Freight expenses	(285.3)	(222.4)
Other expenses	(356.8)	(303.1)
Total cost of sales, selling and marketing, administrative and restructuring expenses	(2,973.7)	(2,337.6)

Cost of materials includes expenses for raw materials and supplies and purchased goods of €1,317.6 million (2021: €1,166.8 million) and expenses for services received amounting to €47.4 million (2021: €38.3 million).
Amortisation charges of intangible assets are largely recognised within cost of sales. Other expenses mainly include commissions, repairs and maintenance, travel costs, external consulting and information technology costs.
Research and development costs amounted to €41.9 million (2021: €36.7 million), of which €8.6 million (2021: €8.7 million) in development cost were capitalised. Amortisation and impairment of development costs recognised within cost of sales was €3.5 million (2021: €3.5 million).

Payments associated with short-term leases of equipment and vehicles and all leases of low-value assets are recognised as an expense in the Statement of Profit or Loss. Short-term leases are leases with a lease term of 12 months or less. Low-value assets comprise IT equipment, office furniture and other small items. Expenses for short-term, low-value and variable lease payments in 2022 amount to €3.5 million (2021: €2.2 million).

Other income of €27.1 million (2021: €41.2 million) mainly includes: Mainzlar reversal of prior year non-current assets write-down of €5.3 million, see Note (6), income from research grants amounted to €4.3 million (2021: €4.0 million), profit on disposal of non-current assets, insurance reimbursements and amortization of grants related to assets.

10. Personnel costs

Personnel costs consist of the following components:

in € million	2022	2021
Wages and salaries	(478.5)	(415.2)
Pension and other post employment benefits		
Defined benefit plans	(4.8)	(5.6)
Defined contribution plans	(11.4)	(6.2)
Other expenses termination benefits	(5.2)	(7.8)
Social security contribution	(99.2)	(86.6)
Fringe benefits	(28.7)	(26.2)
Personnel expenses (without interest expenses)	(627.8)	(547.6)

Average employee numbers

The average number of employees of the RHI Magnesita Group based on full time equivalents amounts to:

	2022	2021
Salaried employees	6,391	5,720
Waged workers	7,119	6,564

Number of employees on annual average	13,510	12,284

124 full time equivalents of salaried employees work in the Netherlands (2021: 108 employees). Total includes average employees of newly acquired businesses from the date of acquisition.

11. Interest income

Includes interest income on cash at banks and similar income amounting to €8.0 million (2021: €2.7 million) and on securities and shares amounting to €0.3 million (2021: €0.6 million). 2021 included interest income of €10.9 million relating to the successful judicial proceeding against tax authorities in Brazil, see Note (22).

12. Foreign exchange effects and related derivatives

The net (loss)/gain on foreign exchange effects and related derivatives consists of the following items:

in € million	2022	2021
Foreign exchange losses	(10.0)	(2.0)
Foreign exchange (losses)/gains from related derivative financial instruments	(13.3)	4.8
Net (losses)/gains on foreign exchange effects and related derivatives	(23.3)	2.8

13. Other net financial expenses

Other net financial expenses consist of the following items:

in € million	2022	2021
Net interest expense relating to personnel provisions	(5.7)	(4.6)
Unwinding of discount of provisions and payables	(8.5)	(5.6)
Interest expense on non-controlling interest liabilities	(5.3)	(5.2)
Interest expense on lease liabilities	(1.3)	(1.1)
Income from the revaluation of NCI put options	4.7	1.1
Other interest and similar expenses[1)]	(14.6)	(5.8)
Other net financial expenses	(30.7)	(21.2)

1) Includes mainly costs associated with the trade receivables factoring programme of €7.2 million (2021: €5.2 million).

14. Taxation

Income tax

Income tax consists of the following items:

in € million	2022	2021
Current tax expense	(52.7)	(43.2)
Deferred tax (expense)/income relating to		
temporary differences	(11.9)	(12.2)
tax loss carryforwards	(39.1)	16.0
	(51.0)	3.8
Income tax	(103.7)	(39.4)

The current tax expense includes favourable net income tax adjustments for previous periods of €2.3 million (2021: €8.4 million favourable).

In recognising deferred tax assets, the Group has considered the impacts of the global economic environment in which it operates. In this context, the relevant uncertainties and potential adverse effects of economic turmoil were taken into consideration when evaluating the recoverability of deferred tax assets, including accumulated tax losses. In arriving at its conclusions, the Group's latest forecasts and assumptions, as used for goodwill impairment testing and viability statement assessment, were considered. The Group's forecasted period is four years with the fifth year being the terminal year, consistent with goodwill impairment testing. In Brazil, however, a longer time frame is used due to the annual limitation for use of losses (30% of the taxable profits of the relevant year) which requires a longer-term prediction. Information on tax contingencies is provided under Note (39).

In addition to the income taxes recognised in the Consolidated Statement of Profit or Loss, a tax expense of €29.5 million (2021: €3.1 million, income), was recognised in Other Comprehensive Income mainly relating to cash flow hedges and measurement gains and losses on employee post-employment benefits.

A reconciliation of the difference between the income tax expense, which would result from the application of the Austrian corporate tax rate of 25% on the profit before income tax, and the income tax reported is shown below:

in € million	2022	2021
Profit before income tax	270.5	289.1
Income tax expense calculated at 25% (2021: 25%)	67.6	72.3
Different foreign tax rates	5.9	5.1
Expenses not deductible for tax purposes, non-creditable taxes	21.4	17.6
Non-taxable income and tax benefits	(25.7)	(17.4)
Tax losses and temporary differences of the financial year not recognised	2.3	7.8
Utilisation of previously unrecognised loss carryforwards and temporary differences	0.0	(4.0)
Recognition of previously unrecognised loss carryforwards and temporary differences	(3.1)	(37.9)
Change in write down of deferred tax assets	3.0	1.4
Deferred tax expense due to tax rate changes	2.7	(0.2)
Deferred tax assets derecognised	23.6	0.0
Deferred income tax relating to prior periods	5.2	2.6
Deferred income tax relating to foreign currency translation on non-monetary items	2.8	0.2

Deferred income tax relating to foreign currency translation on non-monetary items	[illegible]	[illegible]
Current income tax relating to prior periods	(2.3)	(8.4)
Other	0.3	0.3
Recognised tax expense	103.7	39.4
Effective tax rate (in %)	38.4%	13.6%

In 2022, expenses not deductible for tax purposes mainly includes: transfer pricing mismatches and adjustments of €3.4 million (2021: €2.6 million); tax impact of share based payment and other employee costs of €2.9 million (2021: €1.4 million); inflation, inventory and FX adjustments and exempt income in South America of €3.0 million (2021: €0.5 million); impact of thin capitalisation rules in Argentina of €2.0 million (2021: €1.2 million); non-creditable withholding taxes in Austria of €2.4 million (2021: €1.8 million); and non-deductible subsidiary recharged expenses of €1.2 million. Furthermore, other non-deductible expenses in 2021 included debt waiver costs of €1.6 million and certain technology costs recharged from subsidiaries of €1.8 million.

In 2022, non-taxable income and tax benefits mainly includes: tax incentives in Brazil of €7.4 million (2021: €1.6 million); additional tax depreciation in Austria of €7.5 million (€2021: €7.5 million) relating to historical acquisitions; non-taxable income from the write down of shares of €2.1 million in Austria; income of foreign permanent establishments in Austria of €1.0 million (2021: €1.8 million); and inflationary adjustments in Mexico of €3.1 million (2021: €0.8 million). Furthermore, other non-taxable income in 2021 includes income from restructuring of €1.3 million in Austria.

Deferred tax assets derecognised pursuant to a tax position reassessment in 2022, of €23.6 million including income adjustments following agreement with the tax authorities on the allocation of certain group functions and includes €8.7 million adjustment in relation to an intercompany debt waiver. These tax impacts are primarily non-cash in nature and had the effect of reducing previously recognised tax losses. The cash tax impact was €1.4 million and is included within current income tax relating to prior periods.

Deferred taxes expense relating to prior periods and change in write down of deferred tax assets, arises mainly from Mexico, of €2.5 million and €2.1 million respectively, following an internal review. Deferred income tax relating to foreign currency translation of local currency tax base is due to the devaluation of the Turkish Lira against the Euro of €2.8 million. In 2021, a deferred tax asset of €37.7 million was recognised resulting from a tax depreciation for future periods and the recognition of previously unrecognised temporary differences.

The change in the tax rate in Austria from 25% to 24% in 2023 and 23% in 2024, resulted in a €2.4 million increase in the expense from deferred taxes on taxable and deductible temporary differences.

The favourable current income tax adjustment relating to prior periods arose mainly from the Netherlands of €2.2 million and an additional charge of €1.4 million following the allocation of certain group functions and responsibilities to Austria mentioned above.

Due to the recognition of the €37.7 million of deferred tax asset in 2021, the Group's effective tax rate was 13.6%. In 2022, the Group's effective tax rate was 38.3%. Drivers for the 2022 effective tax rate were mainly the non-cash (€23.6 million) and cash (€1.4 million) tax impacts as mentioned above, deferred tax adjustments from Mexico of €4.6 million and the lower income tax rate in Austria of €2.7 million. The Group's Adjusted effective tax rate, once the impacts of these one-off items are excluded reduced to around 25.3% (2021: 18.0%).

Deferred taxes

Deferred taxes are related to the following significant balance sheet items and tax loss carryforwards:

	31.12.2022		2022	31.12.2021		2021
in € million	Deferred tax assets	Deferred tax liabilities	(Expense)/Income	Deferred tax assets	Deferred tax liabilities	(Expense)/Income
Property, plant and equipment, intangible assets	25.1	113.3	(6.1)	41.3	109.6	17.0
Inventories	20.8	9.0	6.3	16.3	11.0	(12.5)
Trade receivables, other assets	11.0	21.1	(17.2)	25.0	5.2	(0.8)
Pensions and other personnel provisions	41.9	0.3	(4.6)	61.7	0.2	(3.2)
Other provisions	27.4	0.6	0.2	25.5	0.3	(1.4)
Trade payables, other liabilities	22.2	6.7	9.5	20.4	12.2	(11.3)
Tax loss carried forward	68.8	0.0	(39.1)	102.3	0.0	16.0
Offsetting	(89.0)	(89.0)	0.0	(90.1)	(90.1)	0.0
Deferred taxes	128.2	62.0	(51.0)	202.4	48.4	3.8

Tax losses generated by subsidiaries in the current or the prior year, recognised net deferred tax assets on temporary

Tax losses generated by subsidiaries in the current or the prior year, recognised net deferred tax assets on temporary differences and tax loss carryforwards of €1.9 million (2021: €160.8 million). Deferred tax assets have been recognised as sufficient taxable income is expected to be generated in the future.

Tax loss carryforwards totalled €345.0 million at 31 December 2022 (2021: €477.0 million). A significant part of the tax loss carryforwards originated in Brazil and Austria where their deduction can be carried forward indefinitely. Furthermore, there are tax loss carryforwards in China expiring within the next five years. The annual utilisation of tax loss carryforwards is limited to 75% in Austria and 30% in Brazil of their respective taxable profits. Deferred tax assets were not recognised on tax losses of €116.5 million (2021: €118.7 million).

in € million	31.12.2022	31.12.2021
Year of expiry		
2022	0.4	0.4
2023	0.2	9.3
2024	7.4	7.6
2025	1.8	1.9
2026	2.1	2.4
2027	11.9	0.2
2028 or later	0.8	0.3
Not subject to expiration	91.9	96.6
Total unrecognised tax losses	116.5	118.7

No deferred tax assets were recognised on temporary differences totalling €209.0 million (2021: €216.0 million), which are expected to reverse by 2034.

Taxable temporary differences of €1,113.7 million (2021: €814.4 million) and temporary deductible differences of €7.2 million (2021: €116.8 million) were not recognised on shares in subsidiaries as the distributions of profit or the sale of the investments are controlled by the Group.

Income tax receivables

Income tax receivables amounting to €38.7 million (2021: €35.1 million) are mainly related to income tax receivables relating to prior periods, tax prepayments and deductible withholding taxes.

Income tax liabilities

Income tax liabilities amounting to €38.3 million (2021: €38.2 million) primarily include income taxes for the current year and previous years.

15. Earnings per share

Earnings per share is calculated by dividing the profit or loss attributable to the shareholders of the Group by the weighted average number of shares outstanding during the financial year.

	2022	2021
Profit after income tax attributable to RHI Magnesita N.V. shareholders (in € million)	155.7	243.1
Weighted average number of shares for basic EPS	47,000,708	47,629,647
Effects of dilution from share options	793,302	519,546
Weighted average number of shares for dilutive EPS	47,794,010	48,149,193
Earnings per share basic (in €)	3.31	5.10
Earnings per share diluted (in €)	3.26	5.05

The weighted average number of shares for basic and dilutive EPS considers the weighted average effect of the newly issued ordinary shares as well the effect of changes in treasury shares during the reporting period. As of 31 December 2022, there are 849,046 diluting options (2021: 554,238).

16. Dividend payments and proposed dividend

The final proposed dividend is subject to the approval of the Annual General Meeting on 24 May 2023 and was not recognised as a liability in these Consolidated Financial Statements. The final proposed dividend for 2022 will amount to €1.10 per share (2021: € 1.00 per share).

In line with the Group's dividend policy, the Board paid out an interim dividend in September 2022 of €0.50 per share for the first half of 2022 amounting to €24.0 million. The total dividend for 2022, which includes the proposed final dividend, yet to be approved, amounts to €1.60 per share (2021: €1.50 per share).

Based on a resolution adopted by the Annual General Meeting of RHI Magnesita N.V. on 25 May 2022, the final dividend for 2021 amounted to €1.00 per share and was paid out in June 2022, amounting to €47.0 million. The total dividend for 2021 amounted to €1.50 per share.

17. Goodwill

in € million	2022	2021
Carrying amount at beginning of the year	114.4	110.8
Newly acquired businesses	20.6	0.0
Currency translation	1.9	3.6

Currency translation	[illegible]	[illegible]
Carrying amount at year-end	136.9	114.4

Impairment of goodwill

Goodwill is tested for impairment at least annually based on the CGU to which it is allocated. The Group's goodwill is primarily within the Steel segment and assigned to the CGU as identified below.

As in the previous year, the impairment test is based on the value in use; the recoverable amount is determined using the discounted cash flow method and incorporates the terminal value. The assumptions were updated considering the latest economic developments, including energy and raw material prices. The Group is subject to environmental and other laws and regulations and has established environmental policies and procedures aimed at compliance with these laws. Impairment testing incorporated considerations for increased energy and raw material prices in its Budget and the Long-Term Plan and estimates the total increase in investments in research and development costs at approximately €36.0 million. Current technology used by the customer industries requiring advanced heat-resistant materials for their production depend on refractory materials and in our view will remain in use in the observable future.

The net cash flows are discounted using a discount rate that is calculated taking into account the weighted average cost of capital of comparable companies; the corresponding parameters are derived from capital market information. In addition, country-specific risk premiums are considered in the weighted average cost of capital. The discount rate ranges between 7.9% and 10.6% in 2022 (2021: 7.7% and 9.8%).

The net cash flows used for impairment testing are based on the strategic business and financial planning model of the Group including the 2023 budget and the Long-Term Plan, as approved by the Board. The cash flows are geared to a steady-state business development, which balances out possible economic or other non-sustainable fluctuations in the detailed planning period and forms the basis for the calculation of the terminal value. As in the previous year, the terminal value is based on a growth rate derived from the difference between the current and possible degree of asset capacity and utilisation.
The forecasts include cash flows from future maintenance investments while expansion investments are included when there has been a significant cash outflow or significant payment obligations have been entered into due to services received and it is sufficiently certain that the investment measure will be completed. Cash flows for other expansion investments are excluded from the discounted cash flow model; this applies in particular to expansion investments that have been decided on but that have not begun. To forecast the CGUs' cash flows, management predicts the growth rate using external sources for the development of the customer's industries; regional growth rates of the steel production and output of the non-steel clients in combination with the development of the specific refractory consumption including technological improvements.

Working capital is included in the carrying amount of the CGUs; therefore, the recoverable amount only takes into account changes in working capital.

A summary of the key assumptions relating to goodwill testing is reflected in the table below:

	2022			2021		
	Discount rate before Tax	Perpetual annuity growth rate	Goodwill in € million	Discount rate before Tax	Perpetual annuity growth rate	Goodwill in € million
Steel Division - Linings	10.8%	0.9%	107.2	8.4%	0.9%	83.5
Steel Division - Flow Control	11.1%	0.9%	28.5	8.7%	0.9%	29.6

As a sensitivity, the effect of an adverse change of 10% in the estimated discount rates at 31 December 2022 or an adverse change of 50% in the perpetual growth rate would not result in an impairment of goodwill.

18. Other intangible assets

2022

in € million	Mining rights	Customer relationship	Internally generated intangible assets	Other intangible assets	Total
Cost at 31.12.2021	139.3	99.2	70.9	145.4	454.8
Currency translation	12.6	4.4	0.1	1.0	18.1
Additions	0.0	0.0	8.7	7.2	15.9
Additions initial consolidation	0.0	28.5	0.0	0.0	28.5
Retirements and disposals	0.0	0.0	(0.8)	(0.7)	(1.5)
Reclassifications	0.0	0.0	(0.4)	3.9	3.5
Cost at 31.12.2022	151.9	132.1	78.5	156.8	519.3
Accumulated amortisation 31.12.2021	11.1	35.3	44.8	81.0	172.2
Currency translation	0.9	0.7	0.0	0.3	1.9
Amortisation charges	2.5	9.4	4.0	13.0	28.9
Retirements and disposals	0.0	0.0	0.0	(0.7)	(0.7)
Reclassifications	0.0	0.0	0.0	0.4	0.4
Accumulated amortisation 31.12.2022	14.5	45.4	48.8	94.0	202.7
Carrying amounts at 31.12.2022	137.4	86.7	29.7	62.8	316.6

Carrying amounts at 31.12.2022	137.4	86.7	29.7	62.8	316.6

2021

in € million	Mining rights	Customer relationship	Internally generated intangible assets	Other intangible assets	Total
Cost at 31.12.2020	133.1	95.1	62.0	121.3	411.5
Currency translation	6.2	4.2	0.2	4.9	15.5
Additions	0.0	0.0	8.8	9.9	18.7
Retirements and disposals	0.0	(0.1)	(0.1)	(4.1)	(4.3)
Reclassifications	0.0	0.0	0.0	13.4	13.4
Cost at 31.12.2021	139.3	99.2	70.9	145.4	454.8
Accumulated amortisation 31.12.2020	8.5	27.9	40.7	68.7	145.8
Currency translation	0.5	1.6	0.2	2.3	4.6
Amortisation charges	2.1	5.8	4.0	10.5	22.4
Impairment charges	0.0	0.0	0.0	3.7	3.7
Retirements and disposals	0.0	0.0	(0.1)	(3.8)	(3.9)
Reclassifications	0.0	0.0	0.0	(0.4)	(0.4)
Accumulated amortisation 31.12.2021	11.1	35.3	44.8	81.0	172.2
Carrying amounts at 31.12.2021	128.2	63.9	26.1	64.4	282.6

Internally generated intangible assets comprise capitalised software and product development costs.

The customer relations from the former Magnesita Group have a carrying amount of €61.1 million (2021: €63.6 million) and a remaining useful life between six to ten years.

Other intangible assets include in particular acquired patents, trademark rights, software, and land-use rights. The land-use rights have a carrying amount of €20.9 million (2021: €20.0 million) and a remaining useful life between 15 to 55 years.

There are no restrictions on the sale of intangible assets.

19. Property, plant and equipment

2022

in € million	Real estate, land and buildings	Technical equipment, machinery	Other plant, furniture and fixtures	Prepayments made and plant under construction 1)	Right-of-use assets	Total
Cost at 31.12.2021	670.3	1,143.6	379.4	209.7	87.1	2,490.1
Currency translation	11.0	13.2	4.9	11.2	2.6	42.9
Additions 2)	8.2	14.9	15.1	122.6	20.7	181.5
Additions initial consolidation	6.0	2.9	0.6	0.3	7.0	16.8
Retirements and disposals	(10.8)	(85.0)	(34.5)	(0.5)	(5.0)	(135.8)
Reclassifications	27.5	53.5	27.2	(111.7)	0.0	(3.5)
Cost at 31.12.2022	712.2	1,143.1	392.7	231.6	112.4	2,592.0
Accumulated depreciation 31.12.2021	311.5	793.4	260.3	1.5	33.7	1,400.4
Currency translation	0.3	5.7	1.1	0.1	1.2	8.4
Depreciation charges	15.1	54.1	26.2	0.0	20.2	115.6
Reversal of impairment charges	(1.5)	(3.0)	(0.9)	(0.3)	(0.3)	(6.0)
Retirements and disposals	(8.0)	(82.7)	(34.2)	0.0	(4.8)	(129.7)
Reclassifications	0.0	0.0	(0.4)	0.0	0.0	(0.4)
Accumulated depreciation 31.12.2022	317.4	767.5	252.1	1.3	50.0	1,388.3
Carrying amounts at 31.12.2022	394.8	375.6	140.6	230.3	62.4	1,203.7

1) Prepayments made and plant under construction include €10.2 million relating to intangible assets. €3.5 million was transferred to intangibles assets during the year.
2) Including €1.5 million capitalised borrowing costs within Additions.

2021

in € million	Real estate, land and buildings	Technical equipment, machinery	Other plant, furniture and fixtures	Prepayments made and plant under construction 1)	Right-of-use assets	Total
Cost at 31.12.2020	598.6	1,039.4	330.9	164.9	76.8	2,210.6
Currency translation	18.5	32.7	8.3	4.0	2.5	66.0
Additions	25.3	47.5	17.9	156.8	13.4	260.9
Retirements and disposals	(4.1)	(18.5)	(5.4)	0.0	(5.6)	(33.6)
Reclassifications	32.0	42.5	27.7	(116.0)	0.0	(13.8)
Cost at 31.12.2021	670.3	1,143.6	379.4	209.7	87.1	2,490.1
Accumulated depreciation 31.12.2020	277.1	720.5	230.9	1.1	22.4	1,252.0
Currency translation	4.8	19.2	5.8	0.0	0.7	30.5
Depreciation charges	12.8	56.3	23.4	0.0	16.0	108.5
Impairment charges	18.3	14.6	4.3	0.4	0.0	37.6
Retirements and disposals	(1.2)	(16.7)	(4.9)	0.0	(5.4)	(28.2)

disposals	(1.2)	(16.7)	(4.9)	0.0	(5.4)	(28.2)
Reclassifications	(0.3)	(0.5)	0.8	0.0	0.0	0.0
Accumulated depreciation 31.12.2021	311.5	793.4	260.3	1.5	33.7	1,400.4
Carrying amounts at 31.12.2021	358.8	350.2	119.1	208.2	53.4	1,089.7

1) Prepayments made and plant under construction include €6.0 million relating to intangible assets.
Prepayments made and plant under construction includes €212.0 million (2021: €179.2 million) mainly relating to the expansion of a production plant in Austria and a magnesite plant in Brazil during 2022. The spend in 2021 mainly related to the expansion of a magnesite plant in Brazil.

There are no restrictions on the sale of property, plant and equipment.

The Right-of-use assets per category developed as follows as of 31 December 2022:

in € million	Right-of-use assets land and buildings	Right-of-use assets technical equipment and machinery	Right-of-use assets other equipment, furniture and fixtures	Total
Cost at 31.12.2021	47.8	31.9	7.4	87.1
Currency translation	1.0	1.5	0.1	2.6
Additions	16.7	1.2	2.8	20.7
Additions initial consolidation	5.1	0.1	1.8	7.0
Retirements and disposals	(1.8)	(1.7)	(1.5)	(5.0)
Cost at 31.12.2022	68.8	33.0	10.6	112.4
Accumulated depreciation 31.12.2021	15.4	14.4	3.9	33.7
Currency translation	0.4	0.6	0.2	1.2
Depreciation charges	11.2	6.1	2.9	20.2
Reversal of impairment charges	0.0	(0.2)	(0.1)	(0.3)
Retirements and disposals	(1.7)	(1.7)	(1.4)	(4.8)
Accumulated depreciation 31.12.2022	25.3	19.2	5.5	50.0
Carrying amounts at 31.12.2022	43.5	13.8	5.1	62.4

The Right-of-use assets per category developed as follows as of 31 December 2021:

in € million	Right-of-use assets land and buildings	Right-of-use assets technical equipment and machinery	Right-of-use assets other equipment, furniture and fixtures	Total
Cost at 31.12.2020	40.4	30.7	5.7	76.8
Currency translation	1.0	1.3	0.2	2.5
Additions	8.7	1.6	3.1	13.4
Retirements and disposals	(2.3)	(1.7)	(1.6)	(5.6)
Cost at 31.12.2021	47.8	31.9	7.4	87.1
Accumulated depreciation 31.12.2020	9.3	9.8	3.3	22.4
Currency translation	0.2	0.4	0.1	0.7
Depreciation charges	8.2	5.8	2.0	16.0
Retirements and disposals	(2.3)	(1.6)	(1.5)	(5.4)
Accumulated depreciation 31.12.2021	15.4	14.4	3.9	33.7
Carrying amounts at 31.12.2021	32.4	17.5	3.5	53.4

The average lease term is eight years for land and buildings, six years for technical equipment and three years for other equipment, furniture and fixtures. Impacts resulting from extension and termination options, as well as residual value guarantees are immaterial. Detail on lease liabilities is in Note (28).

20. Other non-current assets

in € million	31.12.2022	31.12.2021
Tax receivables	18.7	27.1
Other non-current assets	21.3	14.1
Other non-current assets	40.0	41.2

Tax receivables relate to input tax credits, which are expected to be utilised in the medium term. Other non-current assets mainly include deferred mine stripping costs.

21. Inventories

in € million	31.12.2022	31.12.2021
Raw materials and supplies	303.3	300.2
Work in progress	206.7	151.5
Finished products and goods	526.3	512.4
Prepayments made	12.8	12.4
Inventories	1,049.1	976.5

Inventories include €8.4 million (2021: €6.9 million) carried at net realisable value. Net write-down expenses amount to €8.0 million (2021: €3.4 million).

There are no restrictions on the disposal of inventories.

22. Trade and other current receivables

in € million	31.12.2022	31.12.2021
Trade receivables	433.4	403.7
Contract assets	3.5	3.6
Other tax receivables	106.4	113.7
Dividend receivables	0.0	8.7
Prepaid expenses	5.9	3.9
Other current receivables	29.7	34.6
Trade and other current receivables	578.9	568.2
thereof financial assets	433.9	414.4
thereof non-financial assets	145.0	153.8

The Group enters into factoring agreements and sells trade receivables to financial institutions. Trade receivables sold at the end of the year was €245.1 million (2021: €178.1 million). These have been derecognised as substantially all risks and rewards as well as control have been transferred. Payments received from customers following the sale are recognised in current borrowings until repaid to the factorer.

Other tax receivables include VAT, receivables from energy tax refunds, research, education and apprentice subsidies. Other tax receivables at 31.12.2021 included €12.1 million receivable from the tax authorities in Brazil following a successful judicial proceeding relating to revenue-based taxes.

Other current receivables mainly relate to advances for insurance, IT services as well as custom and import-related services and costs.

23. Cash and cash equivalents

in € million	31.12.2022	31.12.2021
Cash at banks and in hand	471.8	565.4
Money market funds	48.9	15.4
Cash and cash equivalents	520.7	580.8

Cash and cash equivalents include restricted cash totalling €23.2 million at 31 December 2022 (2021: €5.7 million). Restricted cash is mainly related to cash and cash equivalents held in Argentina, which has restrictive foreign exchange control regulations and performance guarantees. In addition, €2.0 million (2021: €2.0 million) is held in escrow in Austria and not available for use by the Group. €28.5 million in cash and cash equivalents (2021: €17.3 million) are accounted for by subsidiaries with non-controlling interests or subsidiaries with put options to acquire the non-controlling shareholder.

24. Share capital

At 31 December 2022, the authorised share capital of RHI Magnesita N.V. amounts to €100,000,000 divided into 100,000,000 ordinary shares, of which 47,017,695 (2021: 46,999,019) fully paid-in ordinary shares are issued and outstanding. In addition, there are 2,460,010 (2021: 2,478,686) treasury shares held by the company. All outstanding RHI Magnesita shares grant the same rights. The shareholders are entitled to dividends and have one voting right per share at the Annual General Meeting. There are no shares with special control rights.

25. Group reserves

Treasury shares

At 31 December 2022, RHI Magnesita treasury shares amount to 2,460,010 (2021: 2,478,686).

Additional paid-in capital

At 31 December 2022, as well as at 31 December 2021, additional paid-in capital comprised premiums on the issue of shares less issue costs by RHI Magnesita N.V.

Mandatory reserve

The articles of association stipulate a mandatory reserve of €288,699,230.59 which was created in connection with the merger. No distributions, allocations or additions may be made and no losses of the Company may be allocated to the mandatory reserve.

Retained earnings

Retained earnings includes the result of the financial year and results that were earned by consolidated companies during prior periods, but not distributed.

Accumulated other comprehensive income

Cash flow hedge reserves includes gains and losses from the effective part of cash flow hedges less tax effects. The accumulated gain or loss from the hedge allocated to reserves is only reclassified to the Statement of Profit or Loss if the hedged transaction also influences the result or is terminated.

Reserves for defined benefit plans include the gains and losses from the remeasurement of defined benefit pension and termination benefit plans taking into account tax effects. No reclassification of these amounts to the Statement of Profit or

Loss will be made in future periods.

Currency translation includes the accumulated currency translation differences from translating the Financial Statements of foreign subsidiaries, unrealised currency translation differences from monetary items which are part of a net investment in a foreign operation, net of related income taxes, as well as the effective portion of foreign exchange gains or losses when a financial instrument is designated as the hedging instrument in net investment hedge in a foreign operation.

26. Non-controlling interests

Non-controlling interests in RHI Magnesita India Limited ("RHIM India").

In the course of the merger of the two Indian subsidiaries RHI CLASIL Private Limited and RHI India Private Limited in June 2021, into RHI Orient Refractories Limited and renamed to RHI Magnesita India Limited the Group shareholding changed from 66,5% to 70,2% and the share of the non-controlling interests decreased from 33.5% to 29.8%. RHIM India, based in New Delhi, India is a listed company on the BSE Limited, Mumbai, India and NSE Limited, Mumbai, India. The company is included in the Steel segment. The current reporting period and the previous reporting period are not fully comparable as a consequence of the merger in 2021. The carrying amount of the non-controlling interests is determined as follows:

in € million	31.12.2022	31.12.2021
Non-current assets	50.4	51.1
Current assets	168.3	153.9
Non-current liabilities	(2.5)	(2.8)
Current liabilities	(71.7)	(80.9)
Net assets before intragroup eliminations	144.5	121.3
Intragroup eliminations	0.1	(0.5)
Net assets	144.6	120.8
Percentage of non-controlling interests	29.8%	29.8%
Carrying amount of non-controlling interests	43.1	36.0

The aggregate Statement of Profit or Loss and Statement of Comprehensive Income are shown below:

in € million	2022	2021
Revenue	294.6	167.4
Operating expenses, net finance costs and income tax	(257.4)	(146.9)
Profit after income tax before intragroup eliminations	37.2	20.5
Intragroup eliminations	0.6	1.2
Profit after income tax	37.8	21.7
thereof attributable to non-controlling interests of RHIM India	11.3	6.6

in € million	2022	2021
Profit after income tax	37.8	21.7
Other comprehensive (expense)/income	(8.2)	8.0
Total comprehensive income	29.6	29.7
thereof attributable to non-controlling interests of RHIM India	8.8	8.7

The following table shows the summarised Statement of Cash Flows of RHIM India:

in € million	2022	2021
Net cash flow from operating activities	21.5	(1.4)
Net cash flow from investing activities	(6.9)	(5.2)
Net cash flow from financing activities	(6.4)	(3.6)
Total cash flow	8.2	(10.2)

Net cash flow from financing activities includes dividend payments to non-controlling interests amounting to €1.5 million (2021: €1.4 million).

Non-Controlling interest includes 10.6% in SÖRMAŞ, which was acquired on 1 September 2022, with a carrying amount of the non-controlling interest of €3.8 million at 31 December 2022. Further information relating to this acquisition is provided under Note (42). In line with the Group's accounting policy, the carrying amount of non-controlling interest is reduced to nil and replaced with a financial liability where the Group has provided a written put option (usually together with a call option) to acquire the shares not controlled by the Group. The Group has in place a written put option with the 49.0% non-controlling interest in RHI Magnesita (Chongqing) Refractory Materials Co., Ltd., China, with the carrying value of the liability at 31 December 2022 of €21.3 million. The Group also has a written put option with the 49.0% non-controlling interest in Mireco, with the carrying value of the liability at 31 December 2022 of €8.4 million. Further detail on the written put options is provided under Note (28).

27. Borrowings

Borrowings include all interest-bearing liabilities due to financial institutions and other lenders.

	Total		
in € million	31.12.2022	current	non-current
Syndicated & Term Loan	942.4	130.7	811.7
Bonded loans ("Schuldscheindarlehen")	585.0	0.0	585.0
Other credit lines and other loans	84.6	84.6	0.0
Total liabilities to financial institutions	1,612.0	215.3	1,396.7
Other financial liabilities	9.0	0.1	8.9
Capitalised transaction costs	(1.0)	(0.3)	(0.7)
Borrowings	1,620.0	215.1	1,404.9

Total

in € million	31.12.2021	current	non-current
Syndicated & Term Loan	791.5	58.3	733.2
Bonded loans ("Schuldscheindarlehen")	650.0	65.0	585.0
Other credit lines and other loans	88.2	88.2	0.0
Total liabilities to financial institutions	1,529.7	211.5	1,318.2
Other financial liabilities	7.4	3.2	4.2
Capitalised transaction costs	(2.4)	(1.0)	(1.4)
Borrowings	1,534.7	213.7	1,321.0

On 5 May 2022, the Group amended and extended its €305.0 million OeKB Term Loan maturing in June 2023, of which €260.0 million was outstanding as at 31 December 2021, increasing the total loan amount outstanding to €350.0 million and extending the final maturity to May 2027. The margin payable on the OeKB Term Loan will be adjusted based on the Group's EcoVadis ESG rating performance and the variable interest rate is based on the EURIBOR. The interest payments are due on a quarterly basis.

On 29 July 2022, the Group refinanced its existing $200 million USD Term Loan maturing in August 2023 with a new €250 million EUR Term Loan with a maturity in July 2027. The margin payable on the EUR Term Loan is adjusted based on the Group's EcoVadis ESG rating performance and the variable interest rate is based on the EURIBOR. Interest payments are due on a quarterly basis.

In November 2022, the Group exercised its third and last extension option and thereby extended the maturity of the committed RCF (€600.0 million) by one year to 2028.

In December 2022, the Group entered into an INR 7.0 billion (around €78.8 million) bilateral term loan to finance the announced acquisition of Hi Tech at its Indian subsidiary, see Note (44) for further information.

Net debt excluding lease liabilities/Adjusted EBITDA is the key financial covenant of the loan agreements and is shown under Note (38). Compliance with the covenants is measured on a semi-annual basis. In line with the Covenant requirements, net debt excluding lease liabilities to Adjusted EBITDA cannot exceed 3.5x. Breach of covenants leads to an anticipated maturity of loans. During 2022 and 2021, the Group met all covenant requirements.

Considering interest swaps, 73% (2021: 70%) of the liabilities to financial institutions carry fixed interest and 27% (2021: 30%) carry variable interest.

The following table shows fixed interest terms and conditions, taking into account interest rate swaps, without liabilities from deferred interest:

Interest terms fixed until	Effective annual interest rate	Currency	31.12.2022 Carrying amount in € million	Interest terms fixed until	Effective annual interest rate	Currency	31.12.2021 Carrying amount in € million
2023	EURIBOR + margin	EUR	372.3	2022	EURIBOR + margin	EUR	403.3
	Variable rate + margin	EUR	34.0		1.87%	EUR	65.0
	Various - Variable rate	Var.	27.4				
	0.25%	EUR	115.0		Variable rate + margin	EUR	34.0
2024	3.10%	EUR	35.0		Various - Variable rate	Var.	12.5
2025	0.59%	EUR	177.0	2023	0.79%	EUR	374.7
2027	2.72%	EUR	751.8		4.09%	USD	176.8
2028	0.92%	EUR	86.5	2024	3.10%	EUR	35.0
2029	1.52%	EUR	8.0	2025	0.59%	EUR	177.0
2031	1.28%	EUR	5.0	2027	1.00%	EUR	152.0
				2028	0.92%	EUR	86.5
				2029	1.52%	EUR	8.0
				2031	1.28%	EUR	5.0
			1,612.0				1,529.8

The table above shows how long the interest rates are fixed, rather than the maturity of the underlying instruments.

28. Other financial liabilities

Other financial liabilities include the negative fair value of derivative financial instruments as well as lease liabilities and fixed-term and puttable non-controlling interests payable in Group companies. Additional explanation on derivative financial instruments is provided under Note (36).

			31.12.2022			31.12.2021
in € million	Current	Non-current	Total	Current	Non-current	Total
Forward exchange contracts	0.6	0.0	0.6	0.0	0.0	0.0
Interest rate swaps	0.0	0.0	0.0	0.0	9.6	9.6
Commodity swaps	0.9	0.2	1.1	0.0	0.0	0.0
Derivatives in open orders	9.5	0.0	9.5	0.1	0.0	0.1
Derivative financial liabilities	11.0	0.2	11.2	0.1	9.6	9.7
Lease liabilities	17.5	46.4	63.9	16.1	39.4	55.5
Fixed-term or puttable non-controlling interests	21.6	46.2	67.8	3.0	57.0	60.0
Other financial liabilities	50.1	92.8	142.9	19.2	106.0	125.2

Fixed terms or puttable non-controlling interest reflects amounts payable to non-controlling interest where the Group has entered into agreements to purchase the shares not already controlled. The purchase agreements generally provide for a call and written option at a fixed price or based on earnings multiple, such as EBITDA and capped subject to contractual limits, if any, to be exercised in the future. The carrying amount represents the discounted value of the expected settlement for the following non-controlling interest:

in € million		31.12.2022	31.12.2021
Horn & Co. Minerals Recovery GmbH & Co.KG	49.00%	8.4	0.0
RHI Magnesita (Chongqing) Refractory Materials Co., Ltd.	49.00%	21.3	23.5
Liaoning RHI Jinding Magnesia Co., Ltd.	16.67%	26.4	23.5
RHI Refractories Liaoning Co., Ltd.	34.00%	11.7	13.0
Other financial liabilities		67.8	60.0

During the period, €5.3 million (2021: €5.2 million) was recognised as an interest expense on the liability and €4.7 million income (2021: €1.1 million income) was recognised within other net financial expenses as an adjustment to the amount payable where the written put option price is based on earnings multiple or is affected by a change in the discount rate. See Note (13)

29. Provisions for pensions

The net liability from pension obligations in the Consolidated Statement of Financial Position is as follows:

in € million	31.12.2022	31.12.2021
Present value of pension obligations	395.5	495.0
Fair value of plan assets	(186.6)	(255.5)
Deficit of funded plans	208.9	239.5
Asset ceiling	3.8	28.6
Net liability from pension obligations	212.7	268.1
Overfunded pension plans	2.0	0.9
Other pension plans	214.7	269.0

The present value of pension obligations by beneficiary groups is as follows:

in € million	31.12.2022	31.12.2021
Active beneficiaries	64.2	88.4
Vested terminated beneficiaries	43.4	68.4
Retirees	287.9	338.2
Present value of pension obligations	395.5	495.0

The pension obligations are measured using the following actuarial assumptions for the key countries in which the Group operates:

in %	31.12.2022	31.12.2021
Interest rate		
Austria and Germany	3.8%	0.9%
Brazil	10.5%	8.4%
United Kingdom	4.8%	1.8%
USA	5.0%	2.8%
Future salary increase		
Austria	4.5%	3.3%
Germany	2.5%	2.5%
Brazil	4.3%	3.0%
United Kingdom	3.3%	3.5%
USA	3.3%	3.3%
Future pension increase		

These are average values which were weighted with the present value of the respective pension obligation.

The calculation of the actuarial interest rate for the Eurozone countries is based on a yield curve for returns of high-quality corporate bonds denominated in EUR with an average rating of AA, which is derived from pooled index values. The calculation of the actuarial interest rate for the USD and GBP currency area is based on a yield curve for returns of high-quality corporate bonds denominated in USD and GBP with an average rating of AA, which is derived from pooled index values. Where there are very long-term maturities, the yield curve follows the performance of bonds without credit default risk. The interest rate is calculated annually at 31 December, taking into account the expected future cash flows which were determined based on the current personal and commitment data.

The calculation in Austria was based on the AVÖ 2018-P demographic calculation principles for salaried employees from the Actuarial Association of Austria. In Germany, the Heubeck 2018 G actuarial tables were used as a basis. In the other countries, country-specific mortality tables were applied.

The main pension regulations are described below:

The Austrian group companies account for €81.2 million (2021: €100.5 million) of the present value of pension obligations and for €18.1 million (2021: €20.6 million) of the plan assets. The agreed benefits include pensions, invalidity benefits and benefits for surviving dependents. Commitments in the form of company or individual agreements depend on the length of service and the salary at the time of retirement. For the majority of commitments, the amount of the pension subsidy is limited to 75% of the final remuneration including a pension pursuant to the General Social Insurance Act (ASVG). RHI Magnesita has concluded pension reinsurance policies for part of the commitments. The pension claims of the beneficiaries are limited to the coverage capital required for these commitments. Pensions are predominantly paid in the form of annuities and are partially indexed. For employees joining the Company after 1 January 1984, no defined benefits were granted. Rather, a defined contribution pension model is in place. In addition, there are commitments based on the deferred compensation principle, which are fully covered by pension reinsurance policies and commitments for preretirement benefits for employees in mining operations.

The pension plans of the German group companies account for €107.7 million (2021: €146.3 million) of the present value of pension obligations and for €0.7 million (2021: €0.7 million) of the plan assets. The benefits included in company agreements comprise pensions, invalidity benefits and benefits for surviving dependents. The amount of the pension depends on the length of service for the majority of the commitments and is calculated as a percentage of the average monthly wage/salary of the last 12 months prior to retirement. In some cases, commitments to fixed benefits per year of service have been made. The pensions are predominantly paid in the form of annuities and are adjusted in accordance with the development of the consumer price index for Germany. The pension plans are closed for new entrants, except one contribution-based plan. There is no defined contribution model on a voluntary basis. Individual commitments have been made, with major part of them being retired beneficiaries.

The pension plan of the US group company Magnesita Refractories Company, York, USA, accounts for €71.6 million (2021: €86.8 million) of the present value of pension obligations and for €63.3 million (2021: €79.0 million) of the plan assets. The pension plan is a non-contributory defined benefit plan covering a portion of the employees of the company. The plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA). Effective 21 June 1999, the company offered the participants the opportunity to elect to participate in a single enhanced defined contribution plan. Participants who made this election are no longer eligible for future accruals under this plan. All benefits accrued as of the date of transfer will be retained. Employees hired after 21 June 1999 and employees that did not meet the plan's eligibility requirements as of 21 June 1999 are not eligible for this plan. The pensions are predominantly paid in the form of annuities and are adjusted annually based on the US consumer price index. The company's contributions for the year ended 31 December 2021 met, or exceeded, the minimum funding requirements of ERISA.

The pension plan of the UK group company Magnesita Refractories Ltd., Dinnington, United Kingdom, accounts for €39.0 million (2021: €67.1 million) of the present value of pension obligations and holds €41.2 million (2021: €95.7 million) of assets, although only €39.0 million (2021: €67.1 million) of the plan assets are reflected on the balance sheet due to the application of International Financial Reporting Interpretations Committee 14 (IFRIC 14) (asset ceiling). The company sponsors a funded defined benefit pension plan for qualifying UK employees. The plan is administered by a separate Board of Trustees which is legally separate from the company. The trustees are composed of representatives of both the employer and employees, plus an independent professional trustee. The trustees are required by law to act in the interest of all relevant beneficiaries and are responsible for the investment policy with regard to the assets plus the day-to-day administration of the benefits. Under the plan, employees are entitled to annual pensions on retirement at age 65. During 2022, the Board of Trustees agreed to a buy-in of the defined benefit obligation with a third party insurer in the United Kingdom. In terms of the buy-in, the insurer assumed the obligations relating to the plan from July 2022 while the plan assets were liquidated and transferred to the Insurer at a value of around €61.7 million. Until the defined benefit scheme is wound up (the buy-out), the Group will continue to recognise the pension obligation and the value of the insurance policy as a plan asset equal to the pension obligation. The surplus plan assets of €2.2 million, at 31 December 2022 are not recognised due to the application of the IFRIC 14 and the asset ceiling requirements. It is expected that the plan will be wound up during 2023 with the remaining surplus, net of adjustments, tax payments and other minor expenses will be refunded to the Group. The decrease in the value of the plan assets between 31 December 2021 and its liquidation arose mainly from adverse market movements in early 2022.

The pension liabilities of the Brazilian group company Magnesita Refratários S.A. account for €49.9 million (2021: €44.1 million) of the present value of pension obligations and for €29.1 million (2021: €24.6 million) of the plan assets. The pension plan qualifies as an optional benefit plan. Employees are entitled to contribute to the plan, with the company contributing 1.5 times this value. The agreed benefits include pensions, invalidity benefits and benefits for surviving dependents. Commitments in the form of company or individual agreements depend on the length of service and salary at the time of retirement. For the majority of commitments, the amount of the company pension obligation is limited to 75% of the final remuneration. At retirement, the employee may choose to receive up to 25% of his/her amount at once or receive it on a pro-rata base with different options of monthly quotes.

The following table shows the development of net liability from pension obligations:

in € million	2022	2021
Net liability from pension obligations at beginning of year	268.1	303.6

Currency translation	4.5	2.5
Pension cost	8.8	8.5
Remeasurement (gains)/losses	(48.1)	(26.0)
Benefits paid	(17.3)	(17.6)
Employers' contributions to external funds	(3.3)	(2.9)
Net liability from pension obligations at year-end	212.7	268.1

The present value of pension obligations developed as follows:

in € million	2022	2021
Present value of pension obligations at beginning of year	495.0	523.3
Currency translation	11.7	15.4
Current service cost	3.4	4.2
Interest cost	11.8	8.9
Remeasurement (gains)/losses		
from changes in demographic assumptions	0.0	(3.7)
from changes in financial assumptions	(107.5)	(24.1)
due to experience adjustments	13.5	6.0
Benefits paid	(33.0)	(34.4)
Employee contributions to external funds	0.6	0.5
Disposal due to settlement	0.0	(1.1)
Present value of pension obligations at year-end	395.5	495.0

The movement in plan assets is shown in the table below:

in € million	2022	2021
Fair value of plan assets at beginning of year	255.5	240.2
Currency translation	6.2	14.5
Interest income	6.8	5.1
Administrative costs (paid from plan assets)	(0.4)	(0.2)
(Loss)/Income on plan assets less interest income	(69.7)	10.4
Benefits paid	(15.7)	(16.8)
Employers' contributions to external funds	3.3	2.9
Employee contributions to external funds	0.6	0.5
Disposal due to settlement	0.0	(1.1)
Fair value of plan assets at year-end	186.6	255.5

The changes in the asset ceiling are shown below:

in € million	2022	2021
Asset ceiling at beginning of year	28.6	20.4
Currency translation	(0.9)	1.6
Interest expense	0.0	0.4
(Losses)/gains from changes in asset ceiling less interest expense	(23.9)	6.2
Asset ceiling at year-end	3.8	28.6

At 31 December 2022, the weighted average duration of pension obligations amounts to 10.5 years (2021: 12 years).

The following amounts were recorded in the Consolidated Statement of Profit or Loss:

in € million	2022	2021
Current service cost	3.4	4.2
Interest cost	11.8	8.9
Interest income	(6.8)	(5.1)
Interest expense from asset ceiling	0.0	0.4
Administrative costs (paid from plan assets)	0.4	0.2
Pension expense recognised in profit or loss	8.8	8.6

The remeasurement results recognised in other comprehensive income are shown in the table below:

in € million	2022	2021
Accumulated remeasurement losses at beginning of year	143.6	170.0
Remeasurement gains on present value of pension obligations	(94.0)	(21.8)
Losses/(gains) on plan assets less interest income	69.7	(10.4)
(Losses)/gains from changes in asset ceiling less interest expense	(23.9)	6.2
Reclassification to other reserves	0.0	(0.4)
Accumulated remeasurement losses at year-end	95.4	143.6

The present value of plan assets is distributed to the following classes of investments:

	31.12.2022			31.12.2021		
in € million	Active market	No active market	Total	Active market	No active market	Total
Insurances	0.0	82.1	82.1	0.0	43.8	43.8
Equity instruments	34.4	0.0	34.4	48.8	0.0	48.8
Debt instruments	22.0	2.5	24.5	97.0	3.3	100.3
Cash and cash equivalents	11.8	0.7	12.5	11.2	0.1	11.3
Other assets	32.0	1.1	33.1	49.9	1.4	51.3
Fair value of plan assets	100.2	86.4	186.6	206.9	48.6	255.5

The present value of the insurances to cover the Austrian pension plans corresponds to the coverage capital. Insurance companies predominantly invest in debt instruments and to a low extent in equity instruments and properties.

Plan assets do not include own financial instruments or assets utilised by the Group.
RHI Magnesita works with professional fund managers for the investment of plan assets. They act on the basis of specific investment guidelines adopted by the pension fund committee of the respective pension plans. The committees consist of management staff of the finance department and other qualified executives. They meet regularly in order to approve the target portfolio with the support of independent actuarial experts and to review the risks and the performance of the investments. In addition, they approve the selection or the extension of contracts of external fund managers.

The largest part of the other assets is invested in pension reinsurance, which creates a low counterparty risk towards insurance companies. In addition, the Group is exposed to interest risks and longevity risks resulting from defined benefit commitments.

The Group generally endows the pension funds with the amount necessary to meet the legal minimum allocation requirements of the country in which the fund is based. Moreover, the Group makes additional allocations at its discretion from time to time. In the financial year 2023, RHI Magnesita expects employer contributions to external plan assets to amount to €3.1 million and direct payments to entitled beneficiaries to €16.2 million. In the previous year, employer contributions of €3.0 million and direct pension payments of €19.2 million had been expected for the financial year 2022.

The following sensitivity analysis shows the change in present value of the pension and termination benefit obligations if one key parameter changes, while the other influences are maintained constant. In reality, it is rather unlikely that these influences do not correlate. The present value of the pension obligations for the sensitivities shown was calculated using the same method as for the actual present value of the pension obligations (projected unit credit method).

		31.12.2022		31.12.2021	
in € million	Change of assumption in percentage points or years	Pension plans	Termination benefits	Pension plans	Termination benefits
Present value of the obligations		395.5	31.5	495.0	44.1
Interest rate	+0.25	(9.7)	(1.4)	(14.8)	(1.4)
	(0.25)	10.1	0.5	15.6	1.5
Salary increase	+0.25	0.3	0.5	0.7	1.4
	(0.25)	(0.3)	(1.4)	(0.7)	(1.4)
Pension increase	+0.25	8.0	-	11.3	-
	(0.25)	(7.4)	-	(10.9)	-
Life expectancy	+1 year	9.1	-	19.8	-
	(1) year	(8.1)	-	(20.6)	-

These changes would have no immediate effect on the result of the period as remeasurement gains and losses are recorded in other comprehensive income without impact on profit or loss. The assumptions regarding the interest rate are reviewed semi-annually; all other assumptions are reviewed at the end of the year.

30. Other personnel provisions

in € million	31.12.2022	31.12.2021
Termination benefits	31.5	44.1
Service anniversary bonuses	17.9	21.4
Semi-retirements	2.3	3.2
Other personnel provisions	51.7	68.7

Provisions for termination benefits

The provision for termination benefits relates mainly to employees that joined an Austrian company before 31 December 2022 and are subject to a one-off lump-sum termination benefit under Austrian legislation. This is regarded as a post-employment benefit and accounted for consistently with pensions benefits described above.
Provision for the Austrian termination benefits, which accounts for over 90% of the balance (2021: 94%) were based on the following measurement assumptions:

in %	31.12.2022	31.12.2021
Interest rate	3.8%	0.9%
Future salary increase	3.9%	3.5%

The interest rate for the measurement of termination benefit obligations in the Euro area was determined taking into account the Company specific duration of the portfolio.
Provisions for termination benefits developed as follows:

in € million	2022	2021
Provisions for termination benefits at beginning of year	44.1	46.4
Currency translation	0.1	0.0
Additions initial consolidation	0.4	0.0
Current service cost	1.0	1.2
Interest cost	0.5	0.4

Remeasurement (gains)/losses		
from changes in financial assumptions	(11.0)	(1.8)
from changes in demographic assumptions	0.0	1.9
due to experience adjustments	1.1	0.5
Benefits paid	(4.7)	(4.8)
Loss / (Gain) on settlement	0.0	0.3
Provisions for termination benefits at year-end	31.5	44.1

Payments for termination benefits are expected to amount to €1.3 million in the year 2023. In the previous year, the payments for termination benefits expected for 2022 amounted to €2.3million.

The following remeasurement gains and losses were recognised in other comprehensive income:

in € million	2022	2021
Accumulated remeasurement losses at beginning of year	27.7	27.6
Remeasurement (gains)/losses	(9.9)	0.6
Reclassification to other reserves	0.0	(0.5)
Accumulated remeasurement losses at year-end	17.8	27.7

At 31 December 2022 the duration of Austrian termination benefit obligations amounts to 12.6 years (2021: 14 years).

Provisions for service anniversary bonuses

The measurement of provisions for service anniversary bonuses relating to employees in Austria and Germany is based on an interest rate of 3.8% (2021: 0.8%) and considers salary increases of 5.6% (2021: 4.6%) in Austria and 2.5% in Germany (2021: 2.5%).

Provisions for semi-retirement

The funded status of provisions for obligations to employees with semi-retirement contracts is shown in the table below:

in € million	31.12.2022	31.12.2021
Present value of semi-retirement obligations	5.8	7.6
Fair value of plan assets	(3.4)	(4.4)
Provisions for semi-retirement obligations	2.4	3.2

External plan assets are ring-fenced from all creditors and exclusively serve to meet semi-retirement obligations.

31. Other Provisions

The development of provisions is shown in the table below:

in € million	Onerous/unfavourable contracts	Labour and civil contingencies	Demolition/disposal costs, environmental damages	Restructuring costs	Other	Total
31.12.2021	53.9	7.1	19.5	33.5	4.6	118.6
Currency translation	5.8	0.9	0.5	0.0	(0.1)	7.1
Reversals	(2.6)	(2.4)	(0.4)	(10.5)	0.0	(15.9)
Additions	9.4	5.8	4.3	3.5	1.4	24.4
Additions interest	6.0	1.0	1.4	0.0	0.1	8.5
Use	(10.2)	(5.2)	(2.5)	(14.2)	(1.7)	(33.8)
Reclassifications	0.0	1.2	0.4	(0.3)	(0.1)	1.2
31.12.2022	62.3	8.4	23.2	12.0	4.2	110.1
non-current	49.9	8.4	21.7	0.0	0.0	80.0
current	12.4	0.0	1.5	12.0	4.2	30.1

In November 2017, the Group sold a plant located in Oberhausen, Germany, in order to satisfy the conditions imposed by the European Commission in their approval of the Acquisition of Control of Magnesita. Under the terms, the Group remains obligated to provide raw materials at cost and recognised a provision for unfavourable contracts as part of the purchase price allocation to reflect the foregone profit margin and is reflected within Onerous/unfavourable contracts. The non-current portion of this contract obligation amounts to €49.9 million as of 31.12.2022 (2021: €43.1 million) and the current portion to €10.7 million (2021: €8.0 million). The unwinding of the discount led to a credit of €6.0 million in 2022 (2021: €7.5 million). In addition, current provisions for other unfavourable contracts amount to €1.7 million (2021: €2.9 million).

The provision for labour and civil contingencies primarily comprises labour litigation amounting to €3.6 million (2021: €4.9 million) arising mainly in Brazil.

The provision for demolition and disposal costs and environmental damages primarily includes provisions for the estimated costs of mining site restoration of several mines in Brazil amounting to €4.7 million (2021: €2.9 million) and various sites in the USA amounting to €7.2 million (2021: €6.0 million).

Provisions for restructuring costs amounting to €12.0 million at 31 December 2022 (2021: €33.5 million) primarily consist of estimated benefit obligations to employees due to termination of employment and dismantling costs. €6.2 million (2021: €14.9 million) relate to the remaining redundancy costs at Mainzlar, Germany for employees not subject to the restart of operations, €3.5 million (2021: €4.5 million) to the plant closure in Trieben, Austria, €0.8 million (2021: €4.6 million) to the plant closure in Kruft, Germany. Following the decision to restart operations at Mainzlar, €4.5 million of severance provisions were reversed and €3.2 million was paid while €1.0 million in plant closure costs were reversed.

Other consists mainly of provisions for claims arising from warranties and other similar obligations from the sale of refractory products.

32. Trade payables and other current liabilities

in € million	31.12.2022	31.12.2021
Trade payables	506.5	649.2
Contract liabilities	61.8	57.9
Liabilities to employees	97.2	80.9
Taxes other than income tax	35.0	29.3
Capital expenditure payable	43.1	24.3
Payables from commissions	7.7	7.3
Other current liabilities	29.0	34.3
Trade payables and other current liabilities	780.3	883.2
thereof financial liabilities	566.4	692.9
thereof non-financial liabilities	213.9	190.3

Trade payables include an amount of €68.8 million (2021: €142.0 million) for raw material purchases subject to supply chain finance arrangements.

Contract liabilities mainly consist of prepayments received on orders. In 2022 €57.9 million revenue was recognised related to contract liabilities recognised as of 31 December 2021.

The item liabilities to employees primarily consists of obligations for wages and salaries, payroll taxes and employee-related duties, performance bonuses, unused vacation and flextime credits.

33. Cash generated from/(used in) operations

in € million	2022	2021
Profit after income tax	166.8	249.7
Adjustments for		
income tax	103.7	39.4
depreciation	115.6	108.7
amortisation	28.9	22.4
(write-up)/write-down of property, plant and equipment and intangible assets	(6.0)	41.3
income from the reversal of investment subsidies	(0.7)	(0.9)
impairment losses/loss from sale/(write-ups) on securities	1.5	(0.2)
losses/(gains) from the disposal of property, plant and equipment	2.4	(6.3)
losses/(gains) from the disposal of subsidiaries	1.1	(5.2)
net interest expense and derivatives	47.3	24.4
result from joint ventures and associates	(0.2)	(100.2)
other non-cash changes	26.1	(12.7)
Changes in working capital		
inventories	(30.0)	(474.3)
trade receivables	(12.5)	(132.6)
contract assets	0.0	(1.6)
trade payables	(156.8)	314.8
contract liabilities	4.5	10.7
Changes in other assets and liabilities		
other receivables and assets	25.7	(56.9)
provisions	(49.4)	(49.0)
other liabilities	19.5	(24.8)
Cash generated from/(used in) operations	287.5	(53.3)

Other non-cash changes includes: expenses on the employee long-term incentive programme of € 8.3 million (2021: € 6.2 million); net interest expenses for defined benefit pension plans amounting to €5.7 million (2021: €4.6 million) and net remeasurement gains of monetary foreign currency positions and derivative financial instruments of €13.2 million (2021: €6.4 million).

34. Net cash flow from financing activities

The reconciliation of movements of financial liabilities and assets to cash flows arising from financing activities for the current and the prior year is shown in the tables below:

		Cash changes	Non-cash changes					
in € million	31.12.2021		Changes in foreign exchange rates	Interest and other fair value changes	Reclassifications	Additions from initial consolidation	Additions and modifications of leases (IFRS 16)	31.

Borrowings1)	(1,539.1)	(52.5)	(19.4)	(1.3)	0.0	(12.0)	0.0
Lease liabilities	(55.5)	20.6	(1.3)	0.0	0.0	(7.0)	(20.7)
Cash and cash equivalents	580.8	(49.8)	(10.3)	0.0	0.0	0.0	0.0
Net debt	(1,013.8)	(81.7)	(31.0)	(1.3)	0.0	(19.0)	(20.7)
Liabilities to fixed-term or puttable non-controlling interests	(60.0)	2.1	1.6	(0.6)	0.0	(10.9)	0.0

1) Included within Borrowings is interest payable of €4.3 million at 31.12.2022 and €4.4 million at 31.12.2021. Interest payable is reflected within Trade payables and other current liabilities on the Consolidated Statement of Financial Position.

		Cash changes			Non-cash changes			
in € million	31.12.2020		Changes in foreign exchange rates	Interest and other fair value changes	Additions	Reclassifications	Additions and modifications of leases (IFRS 16)	31.12.2
Borrowings1)	(1,114.5)	(408.9)	(15.3)	(0.4)	0.0	0.0	0.0	(1,53
Lease liabilities	(56.8)	16.3	(1.6)	0.0	0.0	0.0	(13.4)	(5
Cash and cash equivalents	589.2	(23.0)	14.6	0.0	0.0	0.0	0.0	58
Net debt	(582.1)	(415.6)	(2.3)	(0.4)	0.0	0.0	(13.4)	(1,0
Liabilities to fixed-term or puttable non-controlling interests	(38.8)	1.3	(3.7)	(4.2)	(23.4)	8.8	0.0	(6

1) Included within Borrowings is interest payable of €4.4 million at 31.12.2021 and €4.4 million at 31.12.2020. Interest payable is reflected within Trade payables and other current liabilities on the Consolidated Statement of Financial Position.

35. Additional disclosures on financial instruments

The following tables show the carrying amounts and fair values of financial assets and liabilities by measurement category and level and the allocation to the measurement category. In addition, carrying amounts are shown aggregated according to measurement category.

			31.12.2022		31.12.2021	
in € million	Measurement category IFRS 9[1]	Level	Carrying amount	Fair value	Carrying amount	Fair value
Other non-current financial assets						
Marketable securities	FVPL	1	9.0	9.0	13.2	13.2
Shares	FVPL	3	0.5	0.5	0.5	0.5
Interest derivatives designated as cash flow hedges	-	2	42.4	42.4	0.0	0.0
Other non-current financial assets	AC	-	3.2		0.9	-
Trade and other current receivables	AC	-	433.9		414.4	-
Other current financial assets						
Derivatives	FVPL	2	1.1	1.1	2.5	2.5
Other current financial receivables	AC	-	0.2		0.4	-
Cash and cash equivalents[3]	AC	-	520.7		580.8	-
Financial assets			1,011.0		1,012.7	
Non-current and current borrowings						
Liabilities to financial institutions	AC	2	1,612.0	1,578.1	1,529.7	1,547.1
Other financial liabilities	AC	2	8.0		5.0	-
Non-current and current other financial liabilities						
Lease liabilities	AC	2	63.9		55.5	-
Derivatives	FVPL	2	9.5	9.5	0.1	0.1
Interest derivatives designated as cash flow hedges	-	2	0.0		9.6	9.6
Forward exchange contracts	FVPL	2	0.6	0.6	0.0	0.0
Commodity swaps designated as cash flow hedges	-	2	1.1	1.1	0.0	0.0
Liabilities to fixed-term or puttable non-controlling interests[2]	AC	2/3	67.8	67.8	60.0	60.0
Trade payables and other current liabilities	AC	-	566.4		692.9	-
Financial liabilities			2,329.3		2,352.8	
Aggregated according to measurement category						
Financial assets measured at FVPL			10.6		16.2	
Financial assets measured at amortised cost			958.0		996.5	
Financial liabilities measured at amortised cost			2,318.1		2,343.1	
Financial liabilities measured at FVPL			10.1		0.1	

1) FVPL: Financial assets/financial liabilities measured at fair value through profit or loss.
AC: Financial assets/financial liabilities measured at amortised cost.
2) Including the put option of the acquired Mirosa amounting to €8.4 million, see Note (42)

2) Including the put option of the acquired Mireco amounting to €8.4 million, see Note (42).
3) Thereof €3.6 million related to cash in Russia.

In the RHI Magnesita Group marketable securities, derivative financial instruments, shares, and interests in subsidiaries not consolidated are measured at fair value.

Fair value is defined as the amount for which an asset could be exchanged, or a liability settled, between market participants in an arm's length transaction on the day of measurement. When the fair value is determined it is assumed that the transaction in which the asset is sold or the liability is transferred takes place either in the main market for the asset or liability, or in the most favourable market if there is no main market. RHI Magnesita considers the characteristics of the asset or liability to be measured which a market participant would consider in pricing. It is assumed that market participants act in their best economic interest.

RHI Magnesita takes into account the availability of observable market prices in an active market and uses the following hierarchy to determine fair value:

Level 1:	Prices quoted in active markets for identical financial instruments.
Level 2:	Measurement techniques in which all important data used are based on observable market data.
Level 3:	Measurement techniques in which at least one significant parameter is based on non-observable market data.

The fair value of securities, shares, and interests in subsidiaries not consolidated is based on price quotations at the reporting date (Level 1), where such quotations exist. In other cases, a valuation model (Level 3) would be used for such instruments with the exception if such instruments are immaterial to the Group, in which case amortised cost serves as an approximation of fair value.

The fair value of interest derivatives in a hedging relationship (interest rate swaps) is determined by calculating the present value of future cash flows based on current yield curves taking into account the corresponding terms (Level 2).

The fair value of other derivative contracts corresponds to the market value of the forward exchange contracts and the embedded derivatives in open orders denominated in a currency other than the functional currency. These derivatives are measured using quoted forward rates that are currently observable (Level 2).

RHI Magnesita takes into account reclassifications in the measurement hierarchy at the end of the reporting period in which the changes occur. Other than those from the initial application of IFRS 9, there were no shifts between the different measurement levels in the two reporting periods.

Liabilities to financial institutions, other financial liabilities, lease liabilities and liabilities to fixed-term or puttable non-controlling interests are carried at amortised cost in the Consolidated Statement of Financial Position. The fair values of the liabilities to financial institutions are only disclosed in the Notes and calculated at the present value of the discounted future cash flows using yield curves that are currently observable (Level 2). The carrying amount of other financial liabilities approximate their fair value at the reporting date. RHI Magnesita recognised a put option liability related to the newly acquired group company Mireco in May 2022 amounting to €10.9 million, see Note (42). The fair value is based on the present value of performance-related contractual cashflows with a maturity in 2032 for Mireco. The principal valuation parameters are deemed to be non-observable (Level 3). Other liabilities to fixed-term or puttable non-controlling interests are valued at Level 2 of the fair value hierarchy.

The carrying amounts of financial receivables approximately correspond to their fair value as due to the amount of the existing receivables no material deviation between the fair value and the carrying amount is assumed and the credit default risk is accounted for by forming valuation allowances.

Trade and other current receivables and liabilities as well as cash and cash equivalents are predominantly short-term. Therefore, the carrying amounts of these items approximate fair value at the reporting date.

No contractual netting agreement of financial assets and liabilities were in place as at 31 December 2022 and 31 December 2021.

Net results by measurement category in accordance with IFRS 9

The effect of financial instruments on the income and expenses recognised in 2022 and 2021 is shown in the following table, classified according to the measurement categories defined in IFRS 9:

in € million	2022	2021
Net loss from financial assets and liabilities measured at fair value through profit or loss	(14.6)	7.2
Net loss from financial assets and liabilities measured at amortised cost	4.6	0.5

The net gain from financial assets and liabilities measured at fair value through profit or loss includes income from securities and shares, income from the disposal of securities and shares, impairment losses and income from reversals of impairment losses, unrealised results from the measurement of a long-term commodity futures contract, changes in the market value and realised results of forward exchange contracts and embedded derivatives in open orders in a currency other than the functional currency of RHI Magnesita, interest derivatives which do not meet the requirements of hedge accounting in accordance with IFRS 9 'Financial Instruments' and interest income from securities.

accordance with IFRS 9 'Financial Instruments' and interest income from securities.

The net loss from financial assets and liabilities measured at amortised cost includes changes in valuation allowances, losses on derecognition and fair value gains and losses on the measurement of non-controlling interest put options. Net finance costs include interest income amounting to €8.3 million (2021: €14.2 million) and interest expenses of €47.5 million (2021: € 33.0 million), which result from financial assets and liabilities measured at amortised cost.

Other non-current financial assets

Other non-current financial assets consist of the following items:

in € million	31.12.2022	31.12.2021
Interests in subsidiaries not consolidated	3.0	0.6
Marketable securities and shares	9.5	13.7
Interest rate swaps	42.4	0.0
Other non-current financial receivables	0.2	0.3
Other non-current financial assets	55.1	14.6

Accumulated impairments on investments, securities and shares amount to €4.3 million (2021: €3.6 million).

Other current financial assets

This item of the Consolidated Statement of Financial Position consists of the following components:

in € million	31.12.2022	31.12.2021
Derivatives in open orders	1.0	2.4
Forward exchange contracts	0.1	0.1
Current portion of non-current loans	0.2	0.4
Other current financial assets	1.3	2.9

36. Derivative financial instruments

Interest rate swaps

The Group has concluded interest rate swaps to hedge the cash flow risk associated to financial liabilities carrying variable interest rates into fixed interest rates. Variable interest cash flows of financial liabilities were designated as hedged items. The Group has established a hedge ratio of 1:1 and the cash flow changes of the underlying hedged items are balanced out by the cash flow changes of the interest rate swaps. Potential hedge ineffectiveness could arise out of differences in critical terms between the interest rate swaps and the loans. Credit risk may affect hedge effectiveness, however this risk is assessed to be very low as only international banks with high credit ratings are the counterparties to the interest rate swap.

Following the refinancing of the OeKB Euro and USD term loans, see Note (27), the associated interest rate swaps were closed out which resulted in a pre-tax gain of €1.0 million (2021: €0.0 million) recognised in the income statement through other comprehensive income. The Group entered into new interest swap instruments on both refinanced borrowings to fix the interest rate. These interest rate swaps are treated as cash flow hedges for accounting purposes. At 31 December 2022, the fair value of these interest rate swaps was €28.9 million.

The fair value of all interest rate swaps was €42.4 million at the reporting date (2021: €-9.6 million) and is shown in other non-current financial assets (liabilities) in the Consolidated Statement of Financial Position. For the reporting period of 2022, €59.1 million (2021: €8.7 million) has been recognised in other comprehensive income as fair value movements of the hedging instrument and €7.2 million (2021: €0.0 million) has been reclassified from Other Comprehensive Income to profit or loss and recognised within other net financial expenses reflecting the settlement of the hedging instrument when interest on the underlying debt is paid. No ineffectiveness has been recognised in profit or loss.

The financial effect of the hedged item and the hedging instrument for the year 2022 and 2021 is shown as follows:

in € million	Carrying amount	Statement of Financial Position	Change in fair value recognised in Other Comprehensive Income	Nominal amount
2022	42.4	Other non-current financial assets	59.1	USD 0.0 million EUR 709.2million
2021	(9.6)	Other non-current financial liabilities	8.7	USD 200 million EUR 369.2 million

in € million	Cash flow hedge reserve within Other comprehensive income	Balance net of deferred tax
2022	42.4	32.7
2021	(9.6)	(7.2)

Forward exchange contracts

Foreign exchange forward contracts are entered into to reduce the Group's exposure to currency movements based on the internal risk assessment and analysis conducted.

The nominal value and fair value of forward exchange contracts as of 31 December 2022 are shown in the table below:

	31.12.2022

Purchase	Sale		Nominal value in million	Fair value in € million
EUR	USD	EUR	25.0	0.1
USD	INR	USD	8.5	0.0
INR	EUR	INR	4,000.0	(0.6)
Forward exchange contracts				(0.5)

The nominal value and fair value of forward exchange contracts as of 31 December 2021 are shown in the table below:

				31.12.2021
Purchase	Sale		Nominal value in million	Fair value in € million
USD	BRL	BRL	80.0	0.1
EUR	USD	USD	0.0	0.0
Forward exchange contracts				0.1

37. Financial risk management

Financial risks are incorporated in RHI Magnesita's corporate risk management and are centrally controlled by Corporate Treasury.

None of the following risks have a significant influence on the going concern of the RHI Magnesita Group.

Credit risks

The maximum credit risk from recognised financial assets amounts to €1,011.0 million (2021: €1,012.7 million) and is primarily related to investments with banks and receivables due from customers.

The credit risk with banks related to investments (especially cash and cash equivalents) is reduced as business transactions are only carried out with prime financial institutions with a good credit rating. Individual counterpart exposures limits are assigned to each financial institution based on a matrix composed of the credit rating (S&P or Moody's) and balance sheet assets.

Receivables from customers are hedged as far as possible through credit insurance and collateral arranged through banks (guarantees, letters of credit) in order to mitigate credit and default risk. Credit and default risks are monitored continuously, and provisions are formed for risks that have occurred and are identifiable.

In the following, the credit risk from trade receivables is shown classified by customer industry, by foreign currency and by term.

This credit risk, which is hedged by existing credit insurance and letters of credit, is shown by customer segment in the following table:

in € million	31.12.2022	31.12.2021
Steel	284.6	300.4
Industrial	148.8	103.3
Trade receivables	433.4	403.7
Credit insurance and letters of credit	(214.5)	(206.2)
Net credit exposure	218.9	197.5

The movement in the valuation allowance in respect of trade and other receivables and contract assets during the year and the previous year was as follows.:

in € million		2022		2021
	Individually assessed - credit impaired	Collectively assessed - not credit impaired	Individually assessed - credit impaired	Collectively assessed - not credit impaired
Accumulated valuation allowance at beginning of year	23.2	0.6	30.0	0.6
Currency translation	0.8	-	0.3	-
Addition	7.3	0.3	3.5	-
Use	(1.3)	-	(5.2)	-
Reversal	(0.6)	-	(5.4)	-
Accumulated valuation allowance at year-end	29.4	0.9	23.2	0.6

For trade receivables and contract assets, for which no objective evidence of impairment exists, lifetime expected credit losses have been calculated using a provision matrix as shown below. To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due.

in € million				Trade receivables - days past due
31.12.2022	Not past due	less than 30 days	more than 31 days	Total
Expected credit loss rate in %	0,02-0,34%	0,07-0,81%	0,31-49,48%	
Gross carrying amount invoiced	385.6	10.8	3.0	399.4
Lifetime expected credit loss	(0.5)	(0.1)	(0.4)	(1.0)

in € million	Trade receivables - days past due

31.12.2021	Not past due	less than 30 days	more than 31 days	Total
Expected credit loss rate in %	0.03-0.37%	0.06-0.86%	0.25-50.55%	
Gross carrying amount invoiced	351.9	26.3	7.2	385.4
Lifetime expected credit loss	(0.4)	(0.1)	(0.5)	(1.0)

Liquidity risk

Liquidity risk refers to the risk that financial obligations cannot be met when due. The Group's financial policy is based on long-term financial planning and is centrally controlled and monitored continuously at RHI Magnesita. The liquidity requirements resulting from budget and medium-term planning are secured by concluding appropriate financing agreements. As of 31 December 2022, RHI Magnesita has a committed Revolving Credit Facility (RCF) of €600.0 million, which was unutilised (2021: committed RCF was €600.0 million and was also unutilised). The RCF is a syndicated facility with multiple international banks and matures in 2028. The liquidity of the Group's subsidiaries is managed regionally, while access to liquidity and optimised cash levels is ensured by Corporate Treasury, which supports business needs and lowers borrowing costs.

Non-derivative financial instruments

An analysis of the terms of non-derivative financial liabilities based on undiscounted cash flows including the related interest payments shows the following expected cash outflows:

			Remaining term		
in € million	Carrying amount 31.12.2022	Cash outflows	up to 1 year	2 to 5 years	over 5 years
Borrowings					
fixed interest	469.0	481.4	118.5	274.3	88.6
variable interest	1,143.1	1,284.7	132.9	1129.1	22.7
Other financial liabilities	8.0	8.1	(0.2)	8.3	0.0
Lease liabilities	63.9	70.2	18.5	33.6	18.1
Liabilities to fixed-term or puttable non-controlling interests	67.8	182.8	21.6	15.7	145.5
Trade payables and other current liabilities	506.5	506.5	506.5	0.0	0.0
Non-derivative financial liabilities	2,258.3	2,533.7	797.8	1461.0	274.9

			Remaining term		
in € million	Carrying amount 31.12.2021	Cash outflows	up to 1 year	2 to 5 years	over 5 years
Borrowings					
fixed interest	534.0	551.4	69.9	337.3	144.2
variable interest	995.7	1,022.9	154.3	706.7	161.9
Other financial liabilities	5.0	5.4	2.3	3.0	0.1
Lease liabilities	55.5	59.9	16.9	29.7	13.3
Liabilities to fixed-term or puttable non-controlling interests	60.0	197.9	3.0	20.0	174.9
Trade payables and other current liabilities	692.9	688.5	688.5	0.0	0.0
Non-derivative financial liabilities	2,343.1	2,526.0	934.9	1096.7	494.4

Derivative financial instruments

The remaining terms of derivative financial instruments based on expected undiscounted cash flow as of 31 December 2022 and 31 December 2021 are shown in the table below:

			Remaining term		
in € million	Carrying amount 31.12.2022	Cash flows	up to 1 year	2 to 5 years	over 5 years
Receivables from derivatives with net settlement					
Interest rate swaps	42.4	42.4	0.0	40.6	1.8
Forward exchange contracts	0.1	0.1	0.1	0.0	0.0
Derivatives in open orders	1.0	1.0	1.0	0.0	0.0
Liabilities from derivatives with net settlement					
Derivatives in open orders	9.5	9.5	9.5	0.0	0.0
Commodity swaps	1.1	1.1	0.9	0.2	0.0
Forward exchange contracts	0.6	0.6	0.6	0.0	0.0

			Remaining term		
in € million	Carrying amount 31.12.2021	Cash flows	up to 1 year	2 to 5 years	over 5 years
Receivables from derivatives with net settlement					
Forward exchange contracts	0.1	0.1	0.1	0.0	0.0
Derivatives in open orders	2.4	2.4	2.4	0.0	0.0
Liabilities from derivatives with net settlement					
Interest rate swaps	9.6	12.5	7.5	4.9	0.1
Derivatives in open orders	0.1	0.1	0.1	0.0	0.0

Foreign currency risks

Foreign currency risks arise where business transactions (operating activities, investments, financing) are conducted in a currency other than the functional currency of a company. They are monitored at Group level and analysed with respect to hedging options. Usually, the net position of the Group in the respective currency serves as the basis for decisions regarding the use of hedging instruments.

Foreign currency risks arise in financial instruments which are denominated in a currency other than the functional currency and are monetary in nature. These include trade receivables and payables, cash and cash equivalents as well as financial liabilities as shown in the Consolidated Statement of Financial Position. Equity instruments are not of a monetary nature, and therefore not linked to a foreign currency risk in accordance with IFRS 7 'Financial Instruments: Disclosures'.

The majority of foreign currency financial instruments in the Group result from operating activities and intragroup financing transactions. The Group may designate intragroup balances as part of a net investment hedge in accordance with IAS 21 'The Effects of Changes in Foreign Exchange Rates' with the effective portion of exchange gains and losses recognised in equity. Significant provisions denominated in foreign currencies are also included in the analysis of risk.

The following table shows the foreign currency positions in the major currencies as of 31 December 2022:

in € million	USD	EUR	GBP	INR	Other	Total
Financial assets	813.3	69.5	11.2	5.2	60.3	959.5
Financial liabilities, provisions	(664.5)	(100.7)	(15.4)	(0.4)	(28.7)	(809.7)
Net foreign currency position	148.8	(31.2)	(4.2)	4.8	31.6	149.8

The foreign currency positions as of 31 December 2021 are structured as follows:

in € million	USD	EUR	GBP	INR	Other	Total
Financial assets	654.7	56.0	14.5	30.3	68.4	823.9
Financial liabilities, provisions	(622.9)	(72.8)	(14.2)	(0.4)	(17.6)	(727.9)
Net foreign currency position	31.8	(16.8)	0.3	29.9	50.8	96.0

The disclosures required by IFRS 7 for foreign exchange risks include a sensitivity analysis that shows the effects of hypothetical changes in the relevant risk variables on profit or loss and equity. In general, all non-functional currencies in which Group companies enter into financial instruments are considered to be relevant risk variables. The effects on a particular reporting period are determined by applying the hypothetical changes in these risk variables to the financial instruments held by the Group as of the reporting date. It is assumed that the positions on the reporting date are representative for the entire year. The sensitivity analysis does not include the foreign exchange differences that result from translating the net asset positions of the foreign group companies into the Group currency, the Euro.

A 10% appreciation or devaluation of the relevant functional currency against the following major currencies as of 31 December 2022 would have had the following effect on profit or loss and equity (both excluding income tax):

	Appreciation of 10%		Devaluation of 10%	
in € million	(Loss)/gain	Equity	Gain/(loss)	Equity
US Dollar	(12.9)	(12.9)	15.8	15.8
Euro	1.3	5.9	(1.6)	(7.2)
Indian Rupee	(0.4)	(0.4)	0.5	0.5
Other currencies	(2.5)	(2.5)	3.0	3.0

The effect in equity also includes the exchange effects recorded directly in Other comprehensive income in line with the Group's policy.

The hypothetical effect on profit or loss at 31 December 2021 can be summarised as follows:

	Appreciation of 10%		Devaluation of 10%	
in € million	Gain/(loss)	Equity	Gain/(loss)	Equity
US Dollar	(19.1)	(8.6)	23.3	10.6
Euro	1.8	6.3	(2.1)	(7.7)
Indian Rupee	(2.7)	(2.7)	3.3	3.3
Other currencies	(4.0)	(4.0)	4.8	4.8

The effect in equity also includes the exchange effects recorded directly in Other comprehensive income in line with the Group's policy.

Net investment hedge

On 29 July 2022, RHIMGMBH refinanced its USD 200 million loan with a new ESG-linked EUR 250 million loan. Further information is provided under Note (27). As a result, the Group's exposure to the USD foreign exchange risk on these investments ceased to exist. The cumulative translation effect of € 20.1 million (loss) before tax (2022: €15.1 million post tax; 2021: €10.6 million) is presented in the translation difference reserve within equity.

The impact of the net investment hedge is shown as follows:

in € million	Carrying amount	Statement of Financial Position	Recognised in Other Comprehensive Income	Nominal amount

in € million	Carrying amount	Position	Income	Nominal amount
July 2022	196.9	Non-current borrowings	(20.1)	USD 200 million
2021	176.8	Non-current borrowings	(14.1)	USD 200 million

Interest rate risks

The interest rate risk in the RHI Magnesita Group is primarily related to financial instruments carrying variable interest rates, which may lead to fluctuations in results and cash flows. At 31 December 2022, interest rate hedges amounting to a nominal value of €709.2 million (2021: €369.2 million) and a nominal value of USD 0.0 million (2021: USD 200.0 million) existed. In all cases, a variable interest rate was converted into a fixed interest rate through interest rate swaps. Further information is provided under Note (36).

The exposure to interest rate risks is presented through sensitivity analyses in accordance with IFRS 7. These analyses show the effects of changes in market interest rates on interest payments, interest income and interest expense and on equity.

The RHI Magnesita Group measures fixed interest financial assets and financial liabilities at amortised cost and did not use the fair value option - a hypothetical change in the market interest rates for these financial instruments at the reporting date would have had no effect on profit and loss or equity.

Changes in market interest rates on financial instruments designated as cash flow hedges to protect against interest rate-related payment fluctuations are considered with hedge accounting have an effect on equity and are therefore included in the equity-related sensitivity analysis. If the market interest rate as of 31 December 2022 had been 25 basis points higher or lower, equity would have been €1.1 million (2021: €1.1 million) higher or lower considering tax effects.

Changes in market interest rates have an effect on the interest result of primary variable interest financial instruments whose interest payments are not designated as hedged items as a part of cash flow hedge relationships against interest rate risks and are therefore included in the calculation of the result-related sensitivities. If the market interest rate as of 31 December 2022 had been 25 basis points higher or lower, the interest result would have been €0.1 million (2021: €0.3 million) lower or higher.

Commodity forward
Commodity price risk

The Group manages its exposure to commodity prices, namely gas and electricity purchases in Europe, by entering into forward fixed price take or pay contracts with various suppliers to mitigate and reduce the impact of price volatility and secure the energy supply for its production process. These contracts are accounted for as executory contracts as the commodities purchases are for own use purposes. The Group's Energy Risk policy sets out thresholds for fixing quantities based on the expected usage which is usually over a five-year period with lower levels of forward purchases in the outer years.

In line with the above strategy, the Group may also enter into financial commodity swap contracts to fix prices for expected purchases not covered by the fixed price take or pay contracts within the overall defined thresholds. These commodity swaps (the hedging instrument) are treated as cash flow hedges for accounting purposes to hedge the underlying price of the commodity (hedged item) used in the production process. The settlement of the commodity swaps is aligned with expected gas deliveries to reduce the risk of hedge ineffectiveness. Additionally, the counterparties to the hedging instruments are financial institutions with a high investment grade credit rating to reduce the credit risk exposure and any hedge ineffectiveness that may arise.

In the second half of 2022, the Group entered into commodity swap contracts for small volumes as part of the above strategy. At the end of the year, the fair value of the commodity swaps was €1.1 million and is reflected within liabilities. The loss was recognised within equity. The notional quantities of gas hedged using these instruments were 186.000 MwH.

Other market price risk

RHI Magnesita holds certificates in an investment fund amounting to €9.0 million (2021: €13.2 million) to provide the legally required coverage of personnel provisions of Austrian group companies. The market value of these certificates is influenced by fluctuations of the worldwide volatile stock and bond markets.

38. Capital management

The objectives of the capital management strategy of the RHI Magnesita Group are to continue as a going concern and to provide a capital base to finance growth and investments, to service debt, and to increase shareholders value, including the payment of dividends to shareholders.

The RHI Magnesita Group manages its capital structure through careful monitoring and assessment of the overall economic framework conditions, credit, interest rate and foreign exchange risks and the requirements and risks related to operations and strategic projects.

	31.12.2022	31.12.2021
Net debt (in € million)[1]	1,167.5	1,013.8
Net gearing ratio (in %)	111.3%	123.3%
Net debt to Adjusted EBITDA	2.34x	2.61x

1) Further information is provided under Note (34).

Net debt, which reflects borrowings and lease liabilities net of cash and cash equivalents and short-term marketable securities held for trading, is managed by Corporate Treasury. The main task of the Corporate Treasury department is to execute the capital management strategy as well as to secure liquidity to support business operations on a sustainable basis, to use banking and financial services efficiently and to limit financial risks while at the same time optimising earnings and costs.

The net gearing ratio is the ratio of net debt to total equity.

Net debt excluding lease liabilities/Adjusted EBITDA is the main financial covenant of loan agreements. The key performance indicator for net debt in the RHI Magnesita Group is the group leverage, which reflects the ratio of Net debt to Adjusted EBITDA, including lease liabilities. It is calculated as follows:

in € million	31.12.2022	31.12.2021
EBIT	343.6	213.8
Amortisation	28.9	22.4
Restructuring and write-down expenses	(6.8)	58.8
Other operating income and expenses	18.2	(14.6)
Adjusted EBITA	383.9	280.4
Depreciation	115.6	108.7
Adjusted EBITDA	499.5	389.1
Total debt	1,624.3	1,539.1
Lease liabilities	63.9	55.5
Less: Cash and cash equivalents	520.7	580.8
Net debt	1,167.5	1,013.8
Net debt excluding IFRS 16 lease liabilities	1,103.6	958.3
Net debt to Adjusted EBITDA	2.34x	2.61x
Net debt to Adjusted EBITDA excluding IFRS 16 lease liabilities	2.21x	2.46x

In both 2022 and 2021, all externally imposed capital requirements were met. The Group has sufficient liquidity headroom within its committed debt facilities.

39. Contingent liabilities

At 31 December 2022, warranties, performance guarantees and other guarantees amount to €61.9 million (2021: €52.5 million). Contingent liabilities have a remaining term of between two months and three years. Based on past experience, the probability that contingent liabilities are realised is considered to be low.

Individual administrative proceedings and lawsuits which result from ordinary activities are pending as of 31 December 2022 or can potentially be exercised against RHI Magnesita in the future. The related risks were analysed with a view to their probability of occurrence.

Taxation contingencies

The calculation of income taxes is based on the tax laws applicable in the individual countries in which the Group operates. Due to their complexity, the tax items presented in the Consolidated Financial Statements may be subject to different interpretations by local finance authorities. In this context it should be noted that a tax provision is generally recognised when the Group has a present obligation as a result of a past event, and when it is considered probable that there will be a future outflow of funds.

The Group is continually adapting its global presence to improve customer service and maintain its competitive advantage, and leads open discussions with tax authorities about, e.g., transfer of functions and related profit between related parties and exit taxation. In this regard, disputes may arise, where the Group's management understanding differs from the positions of the local authorities. In such cases, when an appeal is available, management's judgements are based on a likely outcome approach, taking into consideration advise from professional firms and previous experiences when assessing the risks.

The Group is party to several tax proceedings in Brazil which involve estimated contingent liabilities amounting to €243.0 million (2021: €200.8 million). These tax proceedings are as follows:

Income Tax relating to historical corporate transactions

There are three proceedings in which Brazilian Federal Tax Authorities issued tax assessments which rejected the deduction of goodwill generated in two corporate transactions that where undertaken 2007 and 2008, for Corporate Income Taxes. The tax authorities issued assessments arguing that such transactions cannot generate deductions as they do not fulfill the requirements provided by law. Although the Group has been broadly successful, the tax authorities have appealed those outcomes. The final outcome of these proceedings is expected within one and three years. The exposure of €157.0 million (2021: €130.6 million) is limited to the fiscal tax years ended 2018 at which stage all available goodwill tax deductions had been made.

Royalties

The Group is party to 38 proceedings where the Brazilian Mining Authorities ("ANM") challenged the criteria used for calculating and paying the Financial Compensation for Exploration of Mineral Resources ("CFEM"), which are mining royalties payable by every mining company. The authorities have mainly disputed the basis of production costs estimates used in the determination of the royalties that are payable. The claims relate to fiscal years up to 2017, following which the legislation for royalties was changed. The Group, together with its technical and legal advisors continues to challenge ANM assessments. Most of the procedures are ongoing within the ANM administrative courts. Final decisions of the first cases are expected within four to five years. As of 31.12.2022, the potential risk amounts to €28.2 million, including interest and penalties (2021: €23.6 million).

Corporate income and other taxes

There are several tax assessments in Brazil mainly relating to: offsetting federal tax payables and receivables, social security contributions, offsetting certain federal tax debts with corporate income tax credits. The potential risks of these tax assessments amount €57.8 million (2021: €46 million).

Civil litigation contingencies

Magnesita Refratários S.A., Contagem, Brazil, is party to a public civil action for damages allegedly caused by overloaded trucks in contravention to Brazilian traffic legislation. In 2017, a decision was rendered in favour of Magnesita in the trial court. The decision is being appealed by the Public Ministry of Minas Gerais. The final decision is expected in ten years. The potential loss from this proceeding amounts to € 15.5 million as of 31 December 2022 (2021: €11.6 million).

A class action against a Brazilian subsidiary relates to the working conditions of existing and former employees based at a customer's plant. A technical expertise appointed by the court indicated the exposure of approximately 900 current and employees to unhealthy conditions. The Company is currently assessing the number of current and former employees that may be entitled to compensation ('adicional de insalubridade'). In parallel, an external advisor has been engaged to determine the potential exposure should an unfavourable decision arise. Initial estimates are expected by the end of first quarter in 2023. The expected timing of court judgement is unknown. Management is unable to quantify the potential risk exposure as at 31 December 2022.

Other minor proceedings and lawsuits in which subsidiaries are involved have no significant impact on the financial position and performance of the Group.

40. Other financial commitments

Capital commitments amount to €20.4 million at 31 December 2022 (2021: €35.5 million) and are exclusively due to third parties. They are shown at nominal value.

In addition, the RHI Magnesita Group has purchase commitments related to the supply with raw materials, especially for electricity, natural gas, strategic raw materials as well as for the transport of raw materials within the Group. This results in other financial commitments of the nominal value of €399.7 million at the reporting date (2021: €410.8 million). The remaining terms of the contracts amount to up to four years. Purchases from these arrangements are recognised in accordance with the usual course of business. Purchase contracts are regularly reviewed for imminent losses, which may occur, for example, when requirements fall below the agreed minimum purchase volume or when contractually agreed prices deviate from the current market price level.

41. Independent Auditor's remuneration

in € million	2022	2021
Fees in respect of the audit of the Consolidated and Parent Company Financial Statements 1)	(1.1)	(1.0)
Other audit fees, in respect of subsidiaries to PwC network firms	(1.8)	(1.6)
Total audit fees	(2.9)	(2.6)
Other non-audit services - Interim review 1)	(0.2)	(0.2)
Total fees	(3.1)	(2.8)

1) Total fees to PricewaterhouseCoopers Accountants N.V. (Netherlands) totalled €1.3 million (2021: €1.2 million).

42. Business Combinations

Acquisition of Horn & Co Minerals Recovery Group

On 3 May 2022, RHI Magnesita Group acquired a 51% ownership stake in Horn & Co Minerals Recovery Group ("Mireco"), a company focused on the recycling of various refractory products. Mireco was acquired for a cash consideration of €13.3 million in order to accelerate the Group's use of secondary raw materials in its refractory production. In the short term, the million in order to accelerate the Group's use of secondary raw materials in its refractory production. In the short term, the arrangement will give RHI Magnesita access to additional quantities of secondary raw material and improve productivity in the recycling process. In the longer term the new business will make high quality green raw materials available to the entire refractory industry in Europe. New technologies for the automation of sorting, for new cleaning purposes and for process automation are being developed with research partners and at RHI Magnesita's own technology centre in Leoben, Austria.

The fair values of the assets and liabilities recognised 'based on the preliminary purchase price allocation' as a result of the acquisition are presented as follows:

in € million	preliminary fair values
Property plant and equipment	13.2
Intangible assets: Customer relationships	12.1
Other non-current financial assets	2.3
Inventories	5.3
Trade and other receivables	1.4
Cash and cash equivalents	0.2
Total assets acquired	34.5
Trade and other liabilities	2.7
Other employee obligations	0.8
Income Taxes payable	0.3
Other liabilities	0.1
Current Borrowings	4.3
Right of use liabilities	7.0
Deferred tax liabilities	3.9
Non-current borrowings	2.8
Total liabilities assumed	21.9
Net identifiable assets acquired	12.6
Less: Non-controlling interests	(6.1)
Goodwill	6.8
Consideration paid	13.3
Consideration paid, net of cash acquired for purposes of the Statement of Cash Flows	13.1

The fair value step-up that was identified in the course of the preliminary purchase price allocation amounts to €13.1 million. €1.1 million relate to land and €12.1 million relate to customer relationships. Additionally, right-of-use assets and corresponding liabilities of €7.0 million were also recognised. The deferred tax liability recognised on these preliminary fair value uplifts was €3.9 million.

The goodwill of the preliminary purchase price allocation is attributable to the improved productivity in recycling and an enlarged product portfolio. The goodwill is fully deductible for tax purposes. The fair values attributed to assets and liabilities and the resulting goodwill are preliminary and subject to adjustment for a period of one year from the acquisition as allowed under the accounting standards. On finalisation of the fair values, adjustments, including tax impacts, if any, will be reflected against goodwill. The fair values of the acquired assets and liabilities including initial purchase price allocations are expected to be finalised within the first half of 2023. The business of Mireco is included within the Group's Steel Operating segment.

The Group recognises non-controlling interests in an acquired entity at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets.

The non-controlling interests have the option to sell their remaining equity stake to RHI Magnesita at any time by 2032. The Group initially recognised the non-controlling interests of €6.1 million within equity. The put option liability of €10.9 million was initially recognised against the non-controlling interest, reducing it to zero and the difference was reflected against the Group's Retained income. The put option liability is recognised as a financial liability. Further information on the fair value of the put option is provided under Note (28).

Direct costs relating to the acquisition of Mireco and expensed in the Consolidated Statement of Profit or Loss amounted to €0.5 million.
Revenue and net profit after tax attributed to the Mireco acquisition from date of control and included in the Consolidated Statement of Profit or Loss was €18.8 million and €0.9 million, respectively. Its contribution to Adjusted EBITA was €1.6 million.

Had it been acquired from 1 January 2022, Group revenue and net profit after tax would have been higher by €29.7 million and €0.6 million, respectively.

Acquisition of SÖRMAŞ

On 1 September 2022, the Group completed the acquisition of 86,8% ownership stake in Söğüt Refrakter Malzemeleri Anonim Şirketi ("SÖRMAŞ"), a producer of refractories for the cement, steel, glass and other industries in Turkiye, for a consideration of €46.4 million in cash.

in € million	preliminary fair values
Property plant and equipment	3.6
Intangible assets: Customer relationships	10.5
Intangible assets: Order backlogs	5.9
Inventories	14.1
Trade and other receivables	14.7
Cash and cash equivalents	1.5
Total assets acquired	50.3
Trade and other liabilities	2.9
Other employee obligations	0.4
Income Taxes payable	0.7
Current Borrowings	4.9
Deferred tax liabilities	3.8
Total liabilities assumed	12.7
Net identifiable assets acquired	37.6
Less: Non-controlling interests	(5.0)
Goodwill	13.8
Consideration paid	46.4
Consideration paid, net of cash acquired for purposes of the Statement of Cash Flows	44.9

The fair value step-up that was identified in the course of the preliminary purchase price allocation amounts to €16.4 million. €10.5 million relate to customer relationships allocated to the Steel operating segment and €5.9 million to customer order backlogs. The deferred tax liability recognised on these preliminary fair value uplifts was €3.8 million.

The fair values attributed to assets and liabilities and the resulting goodwill are preliminary and subject to adjustment for a period of one year from the acquisition as allowed under the accounting standards. On finalisation of the fair values, adjustments, including tax impacts, if any, will be reflected against goodwill. The fair values of the acquired assets and liabilities including initial purchase price allocation are expected to be finalised by the third quarter of 2023. The business of SÖRMAŞ is mainly attributed to the Industrial division with the resulting goodwill allocated to Cement/Lime business.

Direct costs relating to the acquisition of SÖRMAŞ and expensed in the Consolidated Statement of Profit or Loss amounted to €0.7 million.

Revenue and net loss after tax attributed to the SÖRMAŞ acquisition from date of control and included in the Consolidated Statement of Profit or Loss was €12.0 million and €1.0 million, respectively. Its contribution to Adjusted EBITA was €2.6 million.

Had it been acquired from 1 January 2022, Group revenue and net profit after tax would have been higher by €36.6 million and €3.3 million, respectively.

Following the acquisition in September 2022, the Group acquired an additional 2.58% of the outstanding share capital for a total consideration of €1.4 million. This transaction has no impact on the Consolidated Statement of Profit or Loss and no adjustment to goodwill. The consideration paid is reflected within financing activities in the Consolidated statement of Cash Flows.

43. Transactions with related parties

Related companies include subsidiaries that are not consolidated, joint ventures, associates and MSP Foundation, Liechtenstein, as a shareholder of RHI Magnesita N.V. since it exercises significant influence based on its share of more than 25% in RHI Magnesita N.V. In accordance with IAS 24.9 `Related Party Disclosures`, the personnel welfare foundation of Stopinc AG, Switzerland, and Chestnut Beteiligungs GmbH, Germany (shareholder of the Group, which is related to a director) are considered related companies.

Related persons are persons having authority and responsibility for planning, directing and controlling the activities of the Group (key management personnel) and their close family members. Key management personnel comprise of members of the Board of Directors of RHI Magnesita N.V. and the Executive Management Team.

Related companies

In 2022 and 2021, the Group conducted the following transaction with its related companies:

	Joint ventures		Associates	
in € million	2022	2021	2022	2021
Revenue from the sale of goods and services	0.7	1.0	0.0	0.0
Purchase of raw materials	4.0	5.0	0.0	14.4
Interest income	0.0	0.1	0.7	0.2
Loans	0.0	0.0	0.0	0.8

Loans	0.0	0.0	0.0	0.8
Trade liabilities	0.5	0.0	0.0	1.3
Dividends received	0.0	6.8	0.0	0.0

In 2021, the Group charged electricity and stock management costs to the joint venture MAGNIFIN Magnesiaprodukte GmbH & Co KG, St. Jakob, Austria, and purchased raw materials. The 50% stake in Magnifin was sold as of 30 December 2021 and final disposal proceeds of € 8.7 million were received in 2022. In 2021, the associate Sinterco S.A., Nameche, Belgium, sold sintered doloma to the RHI Magnesita Group. The Group financing receivable (2021: €0.8 million) from a loan agreement with Sinterco is received.

In 2022 and 2021, no transactions were carried out between the RHI Magnesita Group and MSP Foundation and Chestnut Beteiligungs GmbH, with the exception of the dividend paid.

A service relationship with respect to the company pension scheme of the employees of Stopinc AG exists between the personnel welfare foundation of Stopinc AG and the fully consolidated subsidiary Stopinc AG. Stopinc AG makes contribution payments to the plan assets of the foundation to cover pension obligations. The pension plan is recognised as a defined benefit plan and is included in Note (29). At 31 December 2022, no current accounts receivable existed (2021: €0.0 million). In the past reporting period, employer contributions amounting to €0.6 million (2021: €0.6 million) were made to the personnel welfare foundation. At 31 December 2022, a net asset from overfunded pension plans of €1.7 million (2021: €0.8million) is recognised.

Related persons

Remuneration of key management personnel of the Group, which is subject to disclosure in accordance with IAS 24 'Related Party Disclosures', comprises the remuneration of the active Board of Directors and the Executive Management Team (EMT).

in € million	2022	2021
Executive Directors and EMT		
Salaries and short-term incentive schemes	6.6	5.5
Share based remuneration	4.6	3.9
Other	1.3	1.0
Total	12.5	10.4
Non- Executive Directors [1)]	1.1	1.2
Employee Representatives [2)]	0.3	0.4

(1) Compensation paid to Non-Executive Directors reflects short-term employee benefits, mainly fees for services as Directors.
(2) Employee representatives acting as Non-Executive Directors do not receive additional compensation for these services. The compensation relates to the expense as employees.

Share Dealing reports of persons discharging managerial responsibilities are published on the websites of RHI Magnesita N.V. and via regulatory news services. The members of the Board of Directors are covered by Directors & Officers insurance at RHI Magnesita.

Detailed and individual information on the remuneration of the Board of Directors is presented in the Annual Report on Remuneration, in the Remuneration Committee report and the Remuneration Policy on pages 132 to 157 of the Annual Report of the RHI Magnesita Group.

RHI Magnesita and a close relative of a Non-Executive Director concluded a non-remunerated consultancy agreement to advise the Group on the economic and political framework in countries in which it does not yet have strong business links.

44. Material events after the reporting date

Acquisition of Dalmia OCL Limited ("DOCL")

On 21 November 2022, the Group announced the acquisition of DOCL. DOCL is a refractory business located in India. It has five manufacturing facilities spread across the east, south, central and western region of India with a total annual production capacity of about 300,000 tonnes and around 1,200 employees.

The acquisition completed on 5 January 2023. The Group acquired 100% of DOCL through the issue of 27 million shares in its subsidiary RHI Magnesita India Limited ("RHIM India") which is listed on the Bombay Stock Exchange of India. The market share price of RHIM India closed at around 877 INR (Indian Rupees) on the day of the exchange (around €10/share). Following the share swap, the Group settled a related party payable in DOCL of INR 3.9 billion (around €45 million), to the previous shareholders. This was settled through a new external debt facility in DOCL of INR 6.3 billion (around €72 million) maturing in January 2024. The remaining facility will be used for working capital purposes.

Following the issue of shares in RHIM India, the Group's interest in this subsidiary decreased from 70.2% to 60.1%. The Group continues to exercise control and will continue to consolidate RHIM India.

Acquisition of Jinan New Emei ("Jinan")

In January 2023, the Group entered into an agreement to acquire a 65.0% shareholding in Jinan New Emei Industries Co. Ltd, a company registered in China. Jinan is a leading producer of refractory slide gate plates and systems, nozzles and mixes for use in steel flow control, employing over 1,300 people and headquartered in Shandong province, China.

Under the terms of the acquisition, the Group will acquire the initial 65.0% shareholding for a total cash consideration of €40 million (CNY 293 million), of which 80% is payable on closing with the remaining 20% deferred to one year after closing. The Group has also agreed to acquire the remaining 35.0% in 2026 with the consideration calculated at an agreed average annual multiple of EBITDA and subject to a cap of €137 million (CNY 1 billion).

The acquisition is subject to competition authority clearance and is expected to complete within 2023.

Acquisition of Hi Tech.

On 31 January 2023, the Group completed the acquisition of the refractory business of Hi-Tech Chemicals Limited ("Hi-Tech"). It operates a state-of-the-art fully automated facility in the city of Jamshedpur, Jharkhand, manufacturing high-qualitative flow control products largely for the steel industry.

The business was acquired by the Group's subsidiary RHIM India. Total consideration paid for the acquisition amounts to around INR 7.3 billion (around €83 million) and is subject to final working capital adjustments. The acquisition was mainly funded through utilising INR 6.2 billion (around €69 million) from the INR 7.0 billion term loan with a maturity in December 2023 through RHIM India.

Statement of the Board of Directors

Statement pursuant to Article 5:25c, paragraph 2, subsection c. of the Dutch Financial Markets Supervision Act ("Wet op het financieel toezicht").

The Consolidated Financial Statements for the year ended 31 December 2022, have been prepared on a going concern basis and in accordance with IFRSs, as issued by the IASB and interpretations issued by the IFRIC, and as endorsed by the European Union (EU).

To our knowledge,

- the Consolidated Financial Statements referred to above give a true and fair view of the assets, liabilities, financial position, and profit of RHI Magnesita N.V. and the undertakings included in the consolidation as a whole; and

- the Annual Report for RHI Magnesita Group (comprising RHI Magnesita NV and its affiliated companies whose details are included in its Financial Statements) for the year ended 31 December 2022 gives a true and fair view of the state of affairs as of the balance sheet date, the development and course of business during the financial year, and that the Annual Report describes the material risks that the RHI Magnesita Group faces.

Vienna, 26 February 2023

Executive Directors

Stefan Borgas	Ian Botha

Non-Executive Directors

Herbert Cordt	John Ramsay
Janet Ashdown	David Schlaff
Stanislaus Prinz zu Sayn-Wittgenstein	Janice "Jann" Brown
Karl Sevelda	Marie-Hélène Ametsreiter
Sigalia Heifetz	Wolfgang Ruttenstorfer

Employee Representative Directors

Karin Garcia	Martin Kowatsch
Michael Schwarz	

Company Financial Statements of RHI Magnesita N.V.

Company Balance Sheet as at 31 December 2022

(before appropriation of result)

in € million	Note	31.12.2022	31.12.2021
ASSETS			
Non-current assets			
Property, plant and equipment		0.2	0.5
Non-current financial assets	(A)	943.3	644.8
Securities		0.5	0.5
Deferred tax assets		10.8	32.5
Total non-current assets		954.8	678.3
Current assets			
Receivables from group companies		52.2	138.1
Other current receivables		0.4	0.4
Cash and cash equivalents	(B)	1.6	0.6
Total current assets		54.2	139.1
Total assets		1,009.0	817.4
EQUITY AND LIABILITIES			
Equity			
Share capital	(C)	49.5	49.5
Additional paid-in capital	(D)	361.3	361.3
Legal and mandatory reserves	(E)	86.3	84.3
Other reserves		464.5	164.7
Treasury shares	(F)	(116.1)	(117.0)
Result for the period	(L)	155.7	243.1
Shareholders' Equity		1,001.2	785.9
Non-current liabilities			
Non-current liabilities	(G)	0.2	2.0
Current liabilities			
Other current liabilities	(H)	7.6	29.5
Total liabilities		7.8	31.5
Total equity and liabilities		1,009.0	817.4

Company Statement of Profit or Loss for the period 1 January 2022 to 31 December 2022

in € million	Note	2022	2021
General and administrative expenses	(I)	(22.0)	(25.5)
Result before taxation		(22.0)	(25.5)
Net financial result	(J)	0.0	0.1
Profit before income tax		(22.0)	(25.4)
Income tax		(18.8)	29.3
Net result from investments	(K)	196.5	239.2
Net result for the period	(L)	155.7	243.1

Movements in Shareholders' Equity

in € million	Share capital	Treasury shares	Additional paid-in capital	Legal and mandatory reserves Cash flow hedges	Currency translation	Mandatory reserve	Other reserves Retained earnings	Net result	Equity attributable to shareholders
31.12.2021	49.5	(117.0)	361.3	(7.1)	(197.3)	288.7	164.7	243.1	785.9
Appropriation of prior year result							243.1	(243.1)	-
Net result								155.7	155.7
Share transfer / Vested LTIP		0.9					(0.9)		0.0
Share-based expenses							8.3		8.3
Dividends							(70.5)		(70.5)
Net income / (expense) recognised directly in equity				38.9	48.7		34.2		121.8
31.12.2022	49.5	(116.1)	361.3	31.8	(148.6)	288.7	378.9	155.7	1,001.2

in € million	Share capital	Treasury shares	Additional paid-in capital	Legal and mandatory reserves Cash flow hedges	Currency translation	Mandatory reserve	Other reserves Retained earnings	Net result	Equity attributable to shareholders
31.12.2020	49.5	(21.5)	361.3	(13.7)	(249.3)	288.7	206.3	24.8	646.1
Appropriation of prior year result							24.8	(24.8)	-
Net result								243.1	243.1
Shares repurchased		(95.5)							(95.5)
Share-based expenses							6.2		6.2
Dividends							(71.2)		(71.2)
Net income / (expense) recognised directly in equity				6.6	52.0		(1.4)		57.2
31.12.2021	49.5	(117.0)	361.3	(7.1)	(197.3)	288.7	164.7	243.1	785.9

General

RHI Magnesita N.V. (the "Company"), a public company with limited liability under Dutch law is registered with the Dutch Trade Register of the Chamber of Commerce under the number 68991665 and has its corporate seat in Arnhem, Netherlands. The administrative seat and registered office is located at Kranichberggasse 6, 1120 Vienna, Austria.

The shares of RHI Magnesita N.V. (ISIN code NL0012650360) are listed on the Main Market of the London Stock Exchange and are included in the FTSE 250 index. The Company holds a secondary listing on the Vienna Stock Exchange (Wiener Börse).

Basis of preparation

The Company Financial Statements have been prepared in accordance with the provisions of Part 9 of Book 2 of the Dutch Civil Code. The Company uses the option of Section 362, subsection 8, of Part 9, Book 2, of the Dutch Civil Code to prepare the Company Financial Statements on the basis of the same accounting principles as those applied for the Consolidated Financial Statements. Valuation is based on recognition and measurement requirements of accounting standards adopted by the EU (i.e. only IFRS that is adopted for use in the EU at the date of authorisation) as explained further in the Notes to the Consolidated Financial Statements.

The Company has issued a declaration of joint and several liability as referred to in section 403, Book 2 of the Dutch Civil Code in respect of one of its consolidated participations, namely Trading B.V.

Fiscal Unity

For corporate income tax purposes, RHI Magnesita NV, Vienna Branch, acts as the head of a corporate tax group in Austria with the following companies:

- RHI Magnesita GmbH
- Veitscher Vertriebsgesellschaft GmbH
- "Veitsch-Radex" Vertriebgesellschaft GmbH
- Refractory Intellectual Property GmbH

- Refractory Intellectual Property GmbH
- Veitsch-Radex GmbH
- Radex Vertriebsgesellschaft GmbH
- RHI Refractories Raw Material GmbH
- Lokalbahn Mixnitz-St. Erhard Aktien-Gesellschaft

According to the group and tax compensation agreement, which forms a legal requirement for the Austrian corporate tax group, tax compensation payments within the corporate tax group are calculated based on the stand-alone method, without charging negative tax compensations. In case of a taxable profit, the respective tax group member has to pay a tax compensation to RHI Magnesita N.V. as the head of the corporate tax group amounting to the legally applicable corporate tax rate (25.0% for 2022). In case of a taxable loss, the respective tax group member does not receive a negative tax compensation by RHI Magnesita N.V., but rather the taxable loss is carried forward internally and reduces the calculation base for any future tax compensation payment by the respective tax group member to RHI Magnesita N.V. (group internal carry forward of losses). Any tax compensation payment by tax group members to RHI Magnesita N.V. is reduced by withholding taxes paid by the respective group member, which RHI Magnesita N.V. could credit against any corporate income tax due in Austria. For cases of termination of the corporate tax group or cases in which a tax group member leaves the corporate tax group, the group and tax compensation agreement foresees a final tax compensation true-up.

The corporate income tax rate for the Company is 25% (2021: 25%). The effective tax rate is 86.0% (2021: 115.3%) with an income tax expense of €18.8 million (2021: €29.4 million income) on a loss before income tax of €22.0 million (2021: €25.4 million loss). The higher effective income tax rate is mainly attributable to deferred tax asset revaluations on transfer pricing adjustments and intercompany debt waiver losses of €17.5 million in 2022, non-deductible expenses and non-taxable income of €0.9 million (2021: € 1.6 million) and the tax effect of subsidiaries included within the fiscal unity without a corresponding impact on losses before income tax.

All income and expenses are settled through their intercompany (current) accounts.

Significant accounting policies

Non-current financial assets

Investments in Group companies in the Company Financial Statements are accounted for using the equity method.

Receivables from Group companies

Accounts receivables are measured at fair value and are subsequently measured at amortised cost, less allowance for credit losses. The carrying amount of the accounts receivable approximates the fair value.

Net result from investments

The share in the result of investments comprises the share of the Company in the result of these investments.

Fixed assets

(A) Financial fixed assets

The financial fixed assets comprise investments in:

		31.12.2022	31.12.2021
Name and registered office of the company	Country of core activity	Share in %	Share in %
RHI Magnesita Deutschland AG, Wiesbaden, Germany	Germany	12.5	12.5
RHI Refractories Raw Material GmbH, Vienna, Austria	Austria	25.0	25.0
RHI Magnesita GmbH, Vienna, Austria	Austria	100.0	100.0

The investments have developed as follows:

in € million	2022	2021
At beginning of year	644.8	480.6
Transactions with non-controlling interests without change of control	(5.2)	(21.7)
Capital contributions	0.0	70.0
Changes from currency translation and cash flow hedges	87.7	58.6
Changes from defined benefit plans	39.5	20.2
Equity settled transaction	0.0	(2.1)
Dividend distribution	(20.0)	(200.0)
Net result from investments	196.5	239.2
Balance at year-end	943.3	644.8

The following list, prepared in accordance with the relevant legal requirements (Dutch Civil Code, Book 2, Sections 379), shows all companies in which RHI Magnesita N.V. holds a direct or indirect share of at least 20%:

		31.12.2022		31.12.2021	
Ser. no.	Name and registered office of the company	Share-holder	Share in %	Share-holder	Share in %
1.	RHI Magnesita N.V., Arnhem, Netherlands				
2.	Agellis Group AB, Lund, Sweden	46.	100.0	46.	100.0

3.	Baker Refractories Holding Company, Delaware, USA	35.	100.0	35.	100.0
4.	Baker Refractories I.C., Inc., Delaware, USA	3.	100.0	3.	100.0
5.	D.S.I.P.C.-Didier Société Industrielle de Production et de Constructions, Valenciennes, France	7.	100.0	7.	100.0
6.	RHI Magnesita Belgium N.V., Evergem, Belgium	60.,94.	100.0	60.,94.	100.0
7.	RHI Magnesita Deutschland AG, Wiesbaden, Germany	1.,46.	100.0	1.,46.	100.0
8.	Dutch Brasil Holding B.V., Arnhem, Netherlands	100.	100.0	100.	100.0
9.	Dutch MAS B.V., Arnhem, Netherlands	7.	100.0	7.	100.0
10.	Dutch US Holding B.V., Arnhem, Netherlands	100.	100.0	100.	100.0
11.	FE "VERA", Dnipro, Ukraine	46.	100.0	46.	100.0
12.	Feuerfestwerk Bad Hönningen GmbH, Wiesbaden, Germany	105.	100.0	105.	100.0
13.	GIX International Limited, Dinnington, United Kingdom	106.	100.0	106.	100.0
14.	Horn & Co. Minerals Recovery GmbH, Siegen, Germany	62.	51.0	-	0.0
15.	INDRESCO U.K. Ltd., Dinnington, United Kingdom	13.	100.0	13.	100.0
16.	Intermetal Engineers Private Limited, Mumbai, India	44.	99.9	44.	99.9
17.	Liaoning RHI Jinding Magnesia Co., Ltd., Dashiqiao City, PR China 1)	46.	83.3	46.	83.3
18.	LLC "RHI Wostok Service", Moscow, Russia	46.,62.	100.0	46.,62.	100.0
19.	LLC "RHI Wostok", Moscow, Russia	46.,62.	100.0	46.,62.	100.0
20.	Lokalbahn Mixnitz-St. Erhard GmbH, Vienna, Austria	85.	100.0	85.	100.0
21.	LWB Holding Company, Delaware, USA	-	0.0	47.	100.0
22.	LWB Refractories Belgium S.A., Liège, Belgium	37.,105.	100.0	37.,105.	100.0
23.	LWB Refractories Beteiligungs GmbH & Co. KG, Wiesbaden, Germany	-	0.0	47.	100.0
24.	LWB Refractories Hagen GmbH, Wiesbaden, Germany	105.	100.0	105.	100.0
25.	LWB Refractories Holding France S.A.S., Valenciennes, France	105.	100.0	105.	100.0
26.	RHI Magnesita Turkey Refractories, Eskisehir, Turkey 2)	46.	100.0	46.	100.0
27.	Magnesita Asia Refractory Holding Ltd, Hong Kong, PR China	25.	100.0	25.	100.0
28.	Magnesita Finance S.A., Luxembourg, Luxembourg	8.	100.0	8.	100.0
29.	Magnesita International Limited, London, United Kingdom	-	0.0	42.	100.0
30.	Magnesita Malta Finance Ltd., St. Julians, Malta	31.,105.	100.0	31.,105.	100.0
31.	Magnesita Malta Holding Ltd., St. Julians, Malta	37.,105.	100.0	37.,105.	100.0
32.	Magnesita Mineração S.A., Brumado, Brazil	42.	100.0	42.	100.0
33.	Magnesita Refractories (Canada) Inc., Montreal, Canada	3.	100.0	3.	100.0
34.	Magnesita Refractories (Dalian) Co. Ltd., Dalian, PR China	28.	100.0	28.	100.0
35.	Magnesita Refractories Company, York, USA	21.	100.0	21.	100.0
36.	Magnesita Refractories Mexico S.A. de C.V., Monterrey, Mexico	3.,4.	100.0	3.,4.	100.0
37.	Magnesita Refractories GmbH, Wiesbaden, Germany	105.	100.0	105.	100.0
38.	Magnesita Refractories Ltd., Dinnington, United Kingdom	3.	100.0	3.	100.0
39.	Magnesita Refractories Middle East FZE, Dubai, United Arab Emirates	28.	100.0	28.	100.0
40.	Magnesita Refractories S.C.S., Valenciennes, France	25.,105.	100.0	25.,105.	100.0
41.	Magnesita Refractories S.R.L., Milano, Italy	105.	100.0	105.	100.0
42.	Magnesita Refratários S.A., Contagem, Brazil	8.	100.0	8.	100.0
43.	Magnesita Resource (Anhui) Company. Ltd., Chizhou, PR China	63.	100.0	63.	100.0
44.	RHI Magnesita India Limited	8.,10.,106.	70.2	8.,10.,106.	70.2

		31.12.2022		31.12.2021	
Ser. no.	Name and registered office of the company	Share-holder	Share in %	Share-holder	Share in %
45.	Producción RHI México, S. de R.L. de C.V., Ramos Arizpe, Mexico	93.,106.	100.0	93.,106.	100.0
46.	Radex Vertriebsgesellschaft m.b.H., Leoben, Austria	102.	100.0	102.	100.0
47.	Rearden G Holdings Eins GmbH, Wiesbaden, Germany	28.	100.0	28.	100.0
48.	Refractarios Argentinos S.A.I.C.M., San Nicolás, Argentina	8.,50.	100.0	8.,50.	100.0
49.	Refractarios Magnesita Chile S/A, Santiago, Chile	-	0.0	42.,48.	100.0
50.	Refractarios Magnesita Colombia S/A, Sogamoso, Colombia	8.	100.0	8.	100.0
51.	Refractarios Magnesita del Perú S.A.C., Lima, Peru	8.,50.	100.0	8.,50.	100.0
52.	Refractory Intellectual Property GmbH & Co KG, Vienna, Austria	53.,62.	100.0	53.,62.	100.0
53.	Refractory Intellectual Property GmbH, Vienna, Austria	62.	100.0	62.	100.0
54.	Reframec Manutenção e Montagens de Refratários S.A., Contagem, Brazil	-	0.0	42.	100.0
55.	RHI Argentina S.R.L., Buenos Aires, Argentina	-	0.0	10.,106.	100.0
56.	RHI Canada Inc., Burlington, Canada	106.	100.0	106.	100.0
57.	RHI Chile S.A., Santiago, Chile	13.,106.	100.0	13.,106.	100.0
58.	RHI Dinaris GmbH, Wiesbaden, Germany	-	0.0	94.	100.0
59.	RHI Finance A/S, Hellerup, Denmark	62.	100.0	62.	100.0
60.	RHI GLAS GmbH, Wiesbaden, Germany	94.	100.0	94.	100.0
61.	RHI ITALIA S.R.L., Brescia, Italy	62.	100.0	62.	100.0
62.	RHI Magnesita GmbH, Vienna, Austria	1.	100.0	1.	100.0
63.	RHI Magnesita China Ltd., Shanghai, China	46.	100.0	46.	100.0
64.	RHI Magnesita (Chongqing) Refractory Materials Co., Ltd.	63.	51.0	63.	51.0
65.	RHI Magnesita Distribution B.V., Rotterdam, Netherlands	-	0.0	67.	100.0
66.	RHI Magnesita Re Limited, Guernsey, United Kingdom	46.	100.0	-	0.0
67.	RHI Magnesita Trading B.V., Rotterdam, Netherlands	62.	100.0	62.	100.0
68.	RHI Magnesita Vietnam Company Limited, Ho Chi Minh City, Vietnam	78.	100.0	78.	100.0
69.	RHI Magnesita Services Europe Gerbstedt GmbH, Gerbstedt/Hübitz, Germany	-	0.0	70.	100.0
70.	RHI Magnesita Services Europe GmbH, Kerpen, Germany	-	0.0	7.	100.0
71.	RHI MARVO S.R.L., Bucharest, Romania	46.,100.	100.0	46.,100.	100.0
72.	RHI Magnesita Properties MO, LLC, Missouri, USA	-	0.0	101.	100.0
73.	RHIM Mireco Mitterdorf GmbH, St.Barbara im Mürztal, Austria	14.	100.0	-	0.0
74.	RHI Refractories (Dalian) Co., Ltd., Dalian, PR China	46.	100.0	46.	100.0
75.	RHI Refractories (Site Services) Ltd., Dinnington, United Kingdom	15.	100.0	15.	100.0

76.	RHI Refractories Africa (Pty) Ltd., Sandton, South Africa	46.	100.0	46.	100.0
77.	RHI Refractories Andino C.A., Puerto Ordaz, Venezuela	106.	100.0	106.	100.0
78.	RHI Refractories Asia Pacific Pte. Ltd., Singapore	62.	100.0	62.	100.0
79.	RHI Refractories Egypt LLC., Cairo, Egypt	-	0.0	46.,100.	100.0
80.	RHI Refractories France SA, Valenciennes, France 3)	97.	100.0	97.	100.0
81.	RHI Refractories Ibérica, S.L., Oviedo, Spain	97.	100.0	97.	100.0
82.	RHI Refractories Liaoning Co., Ltd., Bayuquan, PR China 1)	46.	66.0	46.	66.0
83.	RHI Refractories Mercosul Ltda., Sao Paulo, Brazil	-	0.0	100.,106.	100.0
84.	RHI Refractories Nord AB, Stockholm, Sweden	97.	100.0	97.	100.0
85.	RHI Refractories Raw Material GmbH, Vienna, Austria	1.,46.,62.	100.0	1.,46.,62.	100.0
86.	RHI Refractories Site Services GmbH, Wiesbaden, Germany	7.	100.0	7.	100.0
87.	RHI Refractories UK Limited, Bonnybridge, United Kingdom	7.	100.0	7.	100.0
88.	RHI Refratários Brasil Ltda, Contagem, Brazil; i.l.	10.,42.	100.0	10.,42.	100.0

		31.12.2022		31.12.2021	
Ser. no.	Name and registered office of the company	Share-holder	Share in %	Share-holder	Share in %
89.	RHI Sales Europe West GmbH, Urmitz, Germany	-	0.0	7.,94.	100.0
90.	RHI Trading (Dalian) Co., Ltd., Dalian, PR China	46.	100.0	46.	100.0
91.	RHI Ukraina LLC, Dnepropetrovsk, Ukraine	46.,100.	100.0	46.,100.	100.0
92.	RHI United Offices America, S.A. de C.V., Monterrey, Mexico	67.,93.	100.0	67.,93.	100.0
93.	RHI Refractories España, S.L., Lugones, Spain	7.,9.	100.0	7.,9.	100.0
94.	RHI Urmitz AG & Co. KG, Mülheim-Kärlich, Germany	7.,86.	100.0	7.,86.	100.0
95.	RHI US Ltd., Delaware, USA	10.	100.0	10.	100.0
96.	RHI-Refmex, S.A. de C.V., Ramos Arizpe, Mexico	93.,106.	100.0	93.,106.	100.0
97.	SAPREF AG für feuerfestes Material, Basel, Switzerland	106.	100.0	106.	100.0
98.	SÖRMAŞ SÖĞÜT REFRAKTER MALZEMELERİ ANONİM ŞİRKETİ (Sörmas), Söğüt / Bilecik, Turkiye	46.	89.2	-	0.0
99.	RHI Magnesita Interstop AG, Hünenberg, Switzerland	7.,46.	100.0	7.,46.	100.0
100.	Veitscher Vertriebsgesellschaft m.b.H., Vienna, Austria	62.	100.0	62.	100.0
101.	Veitsch-Radex America LLC., Delaware, USA	95.	100.0	95.	100.0
102.	Veitsch-Radex GmbH & Co OG, Vienna, Austria	62.,103.	100.0	62.,103.	100.0
103.	Veitsch-Radex GmbH, Vienna, Austria	62.	100.0	62.	100.0
104.	Veitsch-Radex Vertriebsgesellschaft m.b.H., Vienna, Austria	62.	100.0	62.	100.0
105.	Vierte LWB Refractories Holding GmbH, Wiesbaden, Germany	47.	100.0	23.,47.	100.0
106.	VRD Americas B.V., Arnhem, Netherlands	46.,62.	100.0	46.,62.	100.0
107.	Zimmermann & Jansen GmbH, Wiesbaden, Germany	7.	100.0	7.	100.0
108.	Dr.-Ing. Petri & Co. Unterstützungsgesellschaft m.b.H., Wiesbaden, Germany	7.	100.0	7.	100.0
109.	Horn & Co Minerals Recovery Verwaltungs GmbH, Siegen, Germany	14.	100.0	-	0.0
110.	Horn & Co. Polska sp. z o.o., Poland	14.	100.0	-	0.0
111.	Magnesita Refractories A.B., Stocksund, Sweden; i.l.	105.	100.0	105.	100.0
112.	Magnesita Refractories PVT Ltd, Mumbai, India	47.,105.	100.0	47.,105.	100.0
113.	Magnesita Refractories S.A. (Pty) Ltd., Sandton, South Africa	37.	100.0	37.	100.0
114.	MAG-Tec Participações Ltda. Ltda., Contagem, Brazil; i.l.	42.	98.7	42.	98.7
115.	Minerals and Metals Recovering - Mireco Aktiebolag, Fagersta, Sweden	14.	100.0	-	0.0
116.	Mireco SARL, Entzheim, France	14.	100.0	-	0.0
117.	Mireco SH.P.K, Kosovo	14.	100.0	-	0.0
118.	Refractarios Especiales Y Moliendas S.A., Buenos Aires, Argentina	-	0.0	48.	100.0
119.	Refractarios Magnesita Uruguay S/A, Montevideo, Uruguay	-	0.0	42.	100.0
120.	RHI Réfractaires Algérie E.U.R.L., Sidi Amar, Algeria	80.	100.0	80.	100.0
121.	Rudgruvans Industrier AB, Fagersta, Sweden	14.	100.0	-	0.0
	Equity-accounted joint ventures and associated companies	.		.	
122.	Chongqing Boliang Refractory Materials Co. Ltd, Chongqing, China	63.	51.0	63.	51.0
123.	Magnesita Envoy Asia Ltd., Kaohsiung, Taiwan	3.	50.0	3.	50.0
124.	Sinterco S.A., Nameche, Belgium	47.	70.0	47.	70.0

1) In accordance with IAS 32, fixed-term or puttable non-controlling interests are shown under liabilities.
2) Further shareholders are VRD Americas B.V., Lokalbahn Mixnitz St. Erhard GmbH and Veitscher Vertriebsgesellschaft mbH.
3) Further shareholders are RHI Magnesita Deutschland AG and RHI GLAS GmbH.
i.l. in liquidation

Current assets

(B) Cash and cash equivalents

Cash and cash equivalents are at RHI Magnesita N.V.'s free disposal.

Equity

(C) Share capital

The Company's authorised share capital amounts to €100,000,000, comprising 100,000,000 ordinary shares, each of €1 nominal value. As at 31 December 2022, RHI Magnesita N.V.'s issued and fully paid-in share capital consists of 47,017,695 ordinary shares (2021: 46,999,019 ordinary shares). For additional information on treasury shares see (F).

(D) Additional paid-in capital

Additional paid-in capital comprises premiums on the issue of shares less issue costs by RHI Magnesita N.V.

(E) Legal and mandatory reserves

Cash flow hedges

The item cash flow hedges include gains and losses from the effective part of cash flow hedges less tax effects. Further information on hedge accounting is included in Note (36) and Note (37) of the Consolidated Financial Statements.

Currency translation

Currency translation includes the accumulated currency translation differences from translating the Financial Statements of

Currency translation includes the accumulated currency translation differences from translating the Financial Statements of foreign subsidiaries as well as unrealised currency translation differences from monetary items which are part of a net investment in a foreign operation, net of related income taxes. If foreign companies are deconsolidated, the currency translation differences are recognised in the Statement of Profit or Loss as part of the gain or loss from the sale of shares in subsidiaries. In addition, when monetary items cease to form part of a net investment in a foreign operation, the currency translation differences of these monetary items previously recognised in other comprehensive income are reclassified to profit or loss.

The cash flow hedges reserve and the currency translation reserve are legal reserves and are restricted for distribution.

Legal and mandatory reserve

The articles of association stipulate a mandatory reserve of €288,699,230.59 which was created in connection with the merger of RHI Refractories and Magnesita in 2017.

No distributions, allocations or additions may be made, and no losses of the Company may be allocated to the mandatory reserve.

Legal and mandatory reserves represent legal and statutory reserves in line with Chapter 7 'Decree on financial statements formats' of the Dutch Civil Code.

(F) Treasury shares

As at 31 December 2022, RHI Magnesita treasury shares amount to 2,460,010 (2021: 2,478,686).

Non-Current liabilities

(G) Other non-current liabilities

in € million	31.12.2022	31.12.2021
Personnel provisions	0.1	1.7
Provisions for pensions	0.1	0.0
Other non-current financial liabilities	0.0	0.3
Total non-current liabilities	0.2	2.0

Current liabilities

(H) Other current liabilities

in € million	31.12.2022	31.12.2021
Trade payables	1.2	1.6
Payables to group companies	0.4	21.5
Accrued liabilities	6.0	6.4
Total current liabilities	7.6	29.5

The current liabilities are due in less than one year. The fair value of other current liabilities approximates the book value, due to their short-term character.

(I) General and administrative expenses

in € million	2022	2021
External services/consulting expenses	(2.0)	(2.6)
Cost for principal services Austria	0.0	3.0
Personnel expenses	(18.4)	(22.9)
Other expenses	(1.6)	(3.0)
Total general and administrative expenses	(22.0)	(25.5)

in € million	2022	2021
Wages and salaries	(16.5)	(19.7)
Social security charges	(1.1)	(2.0)
Pension contributions	(0.4)	(0.5)
Other employee costs	(0.4)	(0.7)
Total wages and salaries	(18.4)	(22.9)

(J) Net financial result

The 2022 net financial result amounts to €0.0 million (2021: €0.1 million).

(K) Net results from investments

In year 2022, the full year results of the investments amount to a profit of €196.5 million (2021: €239.2 million) and are recognised in the Company Statement of Profit or Loss.

(L) Net result for the period

In 2022, there are no differences in the result between the Company Financial Statements and the Consolidated Financial Statements.

Proposed appropriation of result

It is proposed that pursuant to Article 27 clause 1 of the articles of association of the Company the result shown in RHI Magnesita N.V. income statement be appropriated as follows:

in € million	2022
Profit attributable to shareholders	155.7
In accordance with Article 27 clause 1 to be transferred to reserves	0.0
At the disposal of the General Meeting of Shareholders	155.7

For 2022, the Board of Directors will propose a dividend of €1.10 per share for the shareholders of RHI Magnesita N.V. The proposed dividend is subject to the approval by the Annual General Meeting on 24 May 2023.

Other notes

Number of employees

The average number of employees of RHI Magnesita N.V. during 2022 amounts to 8 (2021: 67).

Off balance sheet commitments

Off balance sheet commitments

RHI Magnesita N.V. as an ultimate parent company provided a corporate guarantee of €1,549.4 million (2021: €1,530.3 million) for the borrowings of the Group. The Borrowings are as disclosed in Note (27). Additionally €20.1 million (2021: €79.2 million) of corporate guarantees are issued in favour of customers and suppliers of the Group.

Other information

Information regarding independent auditor's fees, number of employees of RHI Magnesita Group and the remuneration of the Board of Directors is included in Note (41), (10) and (43) of the Consolidated Financial Statements.

The Company opened a branch in Vienna, Austria and started as of February 2020 to employ staff in the branch office and undertake services.

Material events after the reporting date

There were no material events after the reporting date other than those disclosed in Note (44) of the Consolidated Financial Statements.

Vienna, 26 February 2023

Board of Directors

Executive Directors

Stefan Borgas	Ian Botha

Non-Executive Directors

Herbert Cordt	John Ramsay
Janet Ashdown	David Schlaff
Stanislaus Prinz zu Sayn-Wittgenstein	Janice "Jann" Brown
Karl Sevelda	Marie-Hélène Ametsreiter
Sigalia Heifetz	Wolfgang Ruttenstorfer

Employee Representative Directors

Karin Garcia	Martin Kowatsch
Michael Schwarz	

Other information

Provisions of the articles of association on profit and distributions

The stipulations of Article 27 and 28 of the Articles of Association concerning profit and distributions are:

27 Profit and distributions

27.1 The Board may resolve that the profits realised during a financial year will fully or partially be appropriated to increase and/or form reserves. With due regard to Article 26.2, a deficit may only be offset against the reserves prescribed by law to the extent this is permitted by law.

27.2 The allocation of profits remaining after application of Article 27.1 shall be determined by the General Meeting. The Board shall make a proposal for that purpose. A proposal to make a distribution of profits shall be dealt with as a separate agenda item at the General Meeting.

27.3 Distribution of profits shall be made after adoption of the annual accounts if permitted under the law given the contents of the annual accounts.

27.4 The Board may resolve to make interim distributions and/or to make distributions at the expense of any reserve of the Company, other than the Mandatory Reserve.

27.5 Distributions on shares may be made only up to an amount which does not exceed the amount of the Distributable

Equity. If it concerns an interim distribution, the compliance with this requirement must be evidenced by an interim statement of assets and liabilities as referred to in Section 2:105 paragraph 4 of the Dutch Civil Code. The Company shall deposit the statement of assets and liabilities at the Dutch Trade Register within eight days after the day on which the resolution to make the distribution is published.

27.6 Distributions on shares payable in cash shall be paid in Euro, unless the Board determines that payment shall be made in another currency.

27.7 The Board is authorised to determine that a distribution on shares will not be made in cash but in kind or in the form of shares, or to determine that shareholders may choose to accept the distribution in cash and/or in the form of shares, all this out of the profits and/or at the expense of reserves, other than the Mandatory Reserve, and all this if and in so far the Board has been designated by the General Meeting in accordance with Article 6.1. The Board shall set the conditions under which such a choice may be made.

28 Release for payment

Distributions of profits and other distributions shall be made payable four weeks after adoption of the relevant resolution, unless the Board or the General Meeting at the proposal of the Board determine another date.

Independent auditor's report

To: the general meeting of RHI Magnesita N.V.

Report on the financial statements 2022

Our opinion

In our opinion:

- the consolidated financial statements of RHI Magnesita N.V. together with its subsidiaries ('the Group') give a true and fair view of the financial position of the Group as at 31 December 2022 and of its result and cash flows for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union ('EU-IFRS') and with Part 9 of Book 2 of the Dutch Civil Code;

- the company financial statements of RHI Magnesita N.V. ('the Company') give a true and fair view of the financial position of the Company as at 31 December 2022 and of its result for the year then ended in accordance with Part 9 of Book 2 of the Dutch Civil Code.

What we have audited

We have audited the accompanying financial statements 2022 of RHI Magnesita N.V., Arnhem. The financial statements comprise the consolidated financial statements of the Group and the company financial statements.

The consolidated financial statements comprise:

- the consolidated statement of financial position as at 31 December 2022;
- the following consolidated statements for the year 2022: profit or loss, comprehensive income, cash flows and changes in equity; and
- the notes to the consolidated financial statements, comprising the significant accounting policies and other explanatory information.

The company financial statements comprise:

- the company balance sheet as at 31 December 2022;
- the company statement of profit or loss for the period 1 January 2022 to 31 December 2022; and
- the notes, comprising a summary of the accounting policies applied and other explanatory information.

The financial reporting framework applied in the preparation of the financial statements is EU-IFRS and the relevant provisions of Part 9 of Book 2 of the Dutch Civil Code for the consolidated financial statements and Part 9 of Book 2 of the Dutch Civil Code for the company financial statements.

Dutch Civil Code for the company financial statements.

The basis for our opinion

We conducted our audit in accordance with Dutch law, including the Dutch Standards on Auditing. We have further described our responsibilities under those standards in the section 'Our responsibilities for the audit of the financial statements' of our report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We are independent of RHI Magnesita N.V. in accordance with the European Union Regulation on specific requirements regarding statutory audit of public-interest entities, the 'Wet toezicht accountantsorganisaties' (Wta, Audit firms supervision act), the 'Verordening inzake de onafhankelijkheid van accountants bij assuranceopdrachten' (ViO, Code of Ethics for Professional Accountants, a regulation with respect to independence) and other relevant independence regulations in the Netherlands. Furthermore, we have complied with the 'Verordening gedrags- en beroepsregels accountants' (VGBA, Dutch Code of Ethics).

Our audit approach

We designed our audit procedures with respect to the key audit matters, fraud and going concern, and the matters resulting from that, in the context of our audit of the financial statements as a whole and in forming our opinion thereon. The information in support of our opinion, like our findings and observations related to individual key audit matters, our audit approach regarding fraud risks and our audit approach regarding going concern was set up in this context and we do not provide a separate opinion or conclusion on these matters.

Overview and context

RHI Magnesita N.V. is a global producer and supplier of refractory products, systems and solutions. The Group is comprised of several components and therefore we considered our group audit scope and approach as set out in the section 'The scope of our group audit'. We paid specific attention to the areas of focus driven by the operations of the Group, as set out below.

During 2022, the Company executed price increases resulting in increased revenues compared to prior year and offsetting the impact from cost inflation from energy, raw materials and labour. Profit before tax adjusted for exceptional items increased to €318 million. Management considered these developments when preparing its financial statements. This affected the determination of materiality, the scope of our group audit and our audit procedures as described in the section 'Materiality', 'The scope of our audit' and 'Key audit matters'.

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we considered where the board of directors made important judgements, for example, in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. In these considerations, we paid attention to, amongst others, the assumptions underlying the physical and transition risk related to climate change. In note 3 of the financial statements, the Company describes the areas of judgement in applying accounting policies and the key sources of estimation uncertainty.

Given the significant estimation uncertainty and the related higher inherent risks of material misstatement in the impairment assessment of goodwill and other intangible assets and the recognition and valuation of tax positions, we considered these matters as key audit matters as set out in the section 'Key audit matters' of this report.
Apart from key audit matters and the impact from the climate change on our audit, as described below, other areas of focus in our audit were the asset impairment considerations on construction projects and the purchase price allocation for acquisitions made in 2022. In addition, we performed audit procedures on the items marked 'audited' in the remuneration report.

RHI Magnesita N.V. assessed the possible effects of climate change and its plans to meet a zero-waste product life cycle strategy on its financial position, refer to the sections 'Principal risks' and 'Sustainability' of the Group's Strategic Report where management defined potential physical as well as transitional risks, risk mitigating activities, risk governance, strategy and metrics.

Management acknowledged that the inherent likelihood of the climate change related risk has risen due to the increasing regulatory complexity in various countries and stakeholders' expectations. The potential reputational risk remains high and financial impact of this risk was further assessed during 2022.

Climate change initiatives and commitments impact the preparation of the Group's financial statements in a variety of ways, all with inherent uncertainties. In the reporting period management further expanded its analysis of the impact of climate related risks (physical and transitional) on major assumptions incorporated in forecasts and disclosures in the financial statements. The Company assessed specific financial risks and opportunities from initiatives on carbon pricing, the Carbon

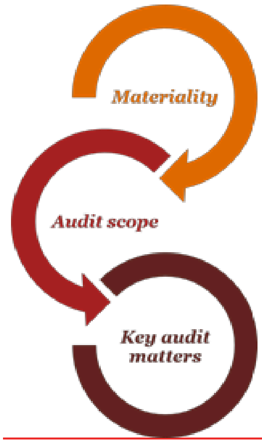
Border Adjustment Mechanism (CBAM) as well as the opportunities from recycling and other initiatives to lower carbon emissions for its customers.

In note 4 of the financial statements, management highlighted that it incorporated considerations around climate change and the energy transition in its financial planning assumptions. The most important transitional risk impact is expected to be higher operating costs due to an increase in the level or scope of carbon pricing. Management also sees opportunities in increased demand for products that can support customers reducing carbon emissions. Within the financial statements management acknowledged the impact of climate risks on the valuation of goodwill and property, plant and equipment, restoration provisions, and deferred tax assets. Due to the high degree of estimation uncertainty the impact of the effects of climate risk on the financial statements will be assessed by management on an ongoing basis.

As we have not been engaged in expressing assurance over the sustainability reporting, our procedures in this context consisted primarily of making inquiries with officers of the entity and determining the plausibility of the information reported. During our planning procedures, we made enquiries of management to understand and assess the extent of potential impact of climate related risk on the Group's financial statements. We challenged the appropriateness of management's assessment of the potential impact (e.g. estimated useful life of assets, potential diminished access to financing) on major accounting estimates. The impact of climate related risks is not considered to be a separate key audit matter.

We ensured that the audit teams at both Group and component level included the appropriate skills and competences which are needed for the audit of an international industrial products company. We therefore included in our team experts and specialists in the areas of valuations, employee benefits, IT and corporate income taxes.

The outline of our audit approach was as follows:



Materiality

- Overall materiality: €14 million.

Audit scope

- We conducted audit work in 13 locations.
- Site visits were conducted to Austria, Brazil, India and the Integrated Business Services Centre (Oviedo, Spain). We have also performed (remote) file reviews for the Netherlands, Austria, Brazil, China, India, Türkiye and the USA.
- Audit coverage: 83% of consolidated revenue, 84% of consolidated total assets and 72% of consolidated profit before tax.

Key audit matters

- Valuation of goodwill and other intangible assets
- Recognition and valuation of tax positions

Materiality

The scope of our audit was influenced by the application of materiality, which is further explained in the section 'Our responsibilities for the audit of the financial statements'.

Based on our professional judgement we determined certain quantitative thresholds for materiality, including the overall materiality for the financial statements as a whole as set out in the table below. These, together with qualitative considerations, helped us to determine the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and to evaluate the effect of identified misstatements, both individually and in aggregate, on the financial statements as a whole and on our opinion.

Overall group materiality	€14.0 million (2021: €12.6 million)
Basis for determining materiality	We used our professional judgement to determine overall materiality. As a basis for our judgement, we used 5% of profit before tax adjusted for exceptional items.
Rationale for benchmark applied	We used profit before tax adjusted for exceptional items (i.e., restructuring, certain items included in other income and expenses and financial expenses and amortization of intangible assets) as the primary benchmark, a generally accepted auditing practice, based on our analysis of the common information needs of the users of the financial statements. On this basis, we believe that profit before tax adjusted for exceptional items is the most relevant metric for the financial performance of the Group.
Component materiality	Based on our judgement, we allocate materiality to each component in our audit scope that is less than our overall group materiality. The range of materiality allocated across components was between €1.2 million and €12 million.

We also take misstatements and/or possible misstatements into account that, in our judgement, are material for qualitative reasons.
We agreed with the board of directors that we would report to them any misstatement identified during our audit above €0.8 million (2021: €0.7 million) as well as misstatements below that amount that, in our view, warranted reporting for qualitative reasons.

The scope of our group audit

RHI Magnesita N.V. is the parent company of a group of entities. The financial information of this group is included in the consolidated financial statements of RHI Magnesita N.V.

We tailored the scope of our audit to ensure that we, in aggregate, provide sufficient coverage of the financial statements for us to be able to give an opinion on the financial statements as a whole, taking into account the management structure of the Group, the nature of operations of its components, the accounting processes and controls, and the markets in which the components of the Group operate. In establishing the overall group audit strategy and plan we determined the type of work required to be performed at component level by the group engagement team and by each component auditor.

Our audit primarily focused on the significant components of the Group: RHI Magnesita GmbH (Austria), RHI US Ltd (USA), and Magnesita Refratários S.A. (Brazil). We subjected those three components to audits of their complete financial information, as they are individually financially significant to the Group. Additionally, we selected nine components for audit procedures to achieve appropriate coverage on financial line items in the consolidated financial statements. Those additional components also cover entities that include significant or higher risk areas defined during the risk assessment process.

In total, in performing these procedures, we achieved the following coverage on the financial line items:

Revenue	83%
Total assets	84%
Profit before tax	72%

None of the remaining components individually represented more than 3% of total group revenue or total group assets. For those remaining components we performed, among other things, analytical procedures to corroborate our assessment that there were no significant risks of material misstatements within those components.
Where component auditors performed the work, we determined the level of involvement we needed to have in their work to be able to conclude whether we had obtained sufficient and appropriate audit evidence as a basis for our opinion on the consolidated financial statements as a whole.

We issued instructions to the component audit teams in our audit scope. These instructions included amongst others our risk analysis, materiality and the scope of the work. We explained to the component audit teams the structure of the Group, the main developments that were relevant for the component auditors, the risks identified, the materiality levels to be applied and our global audit approach. We had individual calls with each of the in-scope component audit teams, both during the year and upon conclusion of their work. During these calls, we discussed the significant accounting and audit issues identified by the component auditors, their reports, the findings of their procedures and other matters that could be of relevance for the consolidated financial statements.

The group engagement team visits the component teams and local management on a rotational basis. In the current year, the group audit team visited the RHI Magnesita finance functions in Austria, Brazil and India given the size of these operating locations. We also visited the Integrated Business Services location office in Spain. During our visits we met with local management and component auditors, discussed significant business developments, accounting matters and the areas of significant risks. Furthermore, we reviewed selected working papers of the component auditors in the Netherlands, Austria, Brazil, China, India, Türkiye, and the USA. We also conducted a series of video conference meetings with local management along with our component teams. During these meetings, we discussed the strategy and financial performance of the local businesses, as well as the audit plan and execution, significant risks and other relevant audit topics.

The group engagement team performed the audit work for the parent company RHI Magnesita N.V. as well as the Integrated Business Services (IBS) office activities in Spain on areas such as fixed assets, cash and cash equivalents and aspects of accounts payable and accounts receivable. In addition, the group engagement team performed audit work over the headquarter-related activities in Vienna. This includes the audit of IT systems, group consolidation, inventory valuation, financial statement disclosures, remuneration disclosures and several complex items, such as goodwill impairment testing, share-based compensation and compliance of accounting positions taken by the Group in accordance with EU-IFRS.
By performing the procedures outlined above at the components, combined with additional procedures exercised at group

By performing the procedures outlined above at the components, combined with additional procedures exercised at group level, we have been able to obtain sufficient and appropriate audit evidence on the Group's financial information, to provide a basis for our opinion on the financial statements.

Audit approach to fraud risks

We identified and assessed the risks of material misstatements of the financial statements due to fraud. During our audit we obtained an understanding of the entity and its environment and the components of the internal control system. This included management's risk assessment process, management's process for responding to the risks of fraud and monitoring the internal control system and how the board of directors exercised oversight, as well as the outcomes. We refer to section 'Effective risk management' of the Strategic report for management's fraud risk assessment and section 'Sustainability governance' of the Strategic report in which management reflects on this fraud risk assessment.

We evaluated the design and relevant aspects of the internal control system and in particular the fraud risk assessment, as well as the code of conduct, whistle blower procedures and incident registration process, among other things.

As part of our process of identifying fraud risks, we, together with our forensic specialists, evaluated fraud risk factors with respect to financial reporting fraud, misappropriation of assets and bribery and corruption. We assessed whether those factors indicate that a risk of material misstatement due to fraud is present. In doing this:

- We performed an inquiry of audit committee members as to fraud risks and related party transactions to identify the areas of their concerns in relation to fraud.
- We inquired with the chief audit executive about fraud cases identified throughout the year and reviewed the reports of the Internal Audit Function relevant to the reporting period. We also assessed the matters reported through the Group's whistleblowing and complaints procedure and results of management's investigation and follow-up on such matters.
- We inquired with Group and local executives and sales managers, other members of management and the board of directors as to whether they have any knowledge of (suspected) fraud, their views on overall fraud risks within the Group and their perspectives on the Groups mitigating controls addressing the risk of fraud.
- We assessed the IT environment around key systems. We paid specific attention to the access safeguards in the IT system and the possibility that these lead to violations of the segregation of duties.

We identified the following fraud risks and performed the following specific procedures:

Identified fraud risks	*Our audit work and observations*
<u>Risk of management override of controls</u> It is generally presumed that management is in a unique position to perpetrate fraud because of the available opportunity to manipulate accounting records and prepare fraudulent financial statements by overriding manual controls, such as those related to journal entries, related party transactions, significant accounting estimates, etc. Adjusted EBITDA and adjusted EBITA are key financial measures that the executive management and Directors use to assess the performance of the Group. Adjusted EBITA and adjusted operating cash flow are also a key financial target for executive management. Focus on meeting financial targets could provide to management an incentive for bypassing of controls.	• Where relevant to our audit, we evaluated the design and effectiveness of controls in the processes of generating and processing journal entries. We assessed whether deficiencies in controls may create additional opportunities for fraud and incorporated respective corroborative procedures in our audit approach. We paid specific attention to non-routine transactions and areas of significant management judgement. We also paid specific attention to the access safeguards in the IT system, possibility of functional segregation and together with management followed up on business rationale for conflicting user rights granted within the IT environment. We considered the outcome of our audit procedures over the estimates and significant accounting areas and assessed whether control deficiencies and misstatements identified could be indicative of fraud. Where necessary, we planned and performed additional auditing procedures to ensure that fraud risks are sufficiently addressed in our audit. We evaluated key accounting estimates and judgements used in accounting areas where management judgement is applied (e.g., timing of acquisition of group companies, valuation of provisions) for biases, including retrospective reviews of prior year's estimates where available. We performed data analysis focused on journal entries related to the fraud risk factors identified during our fraud risk assessment. Where we identified instances of unexpected journal entries, we performed audit procedures. We evaluated whether the business rationale (or lack thereof) of the significant transactions concluded in 2022 suggests that the Group may have entered into those to engage in fraudulent financial reporting or to conceal misappropriation of assets. We incorporated an element of unpredictability in the nature, timing, and extent of audit procedures. We performed substantive testing procedures over the consolidation entries. Our audit procedures did not identify indications of specific fraud or suspicions of fraud with respect to management override of controls.
<u>Risk of fraud in revenue recognition</u> As part of our risk assessment and based on a presumption that there are risks of fraud in revenue recognition, we considered the risk of fraud in revenue recognition. This	We discussed and inquired with the audit committee and executive management about their views on overall fraud risks within the Group, their perspectives on the Group's mitigating controls addressing the risk of fraud in revenue

relates to the presumed management incentive that exists to overstate revenue in order to meet financial targets, guidance provided to the market or shareholder expectations. In this context, we consider this as a risk of fraud focused to overstate revenue through the recording of non-existent transactions.	and whether they have any knowledge of (suspected) fraud. Where relevant to our audit, we have evaluated the design of the internal control measures that are intended to mitigate the risk of fraud and error in revenue recognition and assessed the effectiveness of those measures. We also paid specific attention to the processes surrounding the relevant IT systems. Through data analysis, we tested both expected and unexpected journal entries and performed relevant testing on revenue transactions throughout the year and the receivable balances at year end. We did not identify specific indications of fraud or suspicion of fraud in respect of revenue recognition.

We reviewed lawyer's letters and correspondence with regulators. During the audit we remained alert to indications of fraud. We also considered the outcome of our other audit procedures and evaluated whether any findings were indicative of fraud or non-compliance of laws and regulations. Whenever we identify any indications of fraud, we re-evaluate our fraud risk assessment and its impact on our audit procedures.

Audit approach going concern

As disclosed in section 'Principles and methods' in the financial statements, management prepared the financial statements on the assumption that the entity is a going concern and that it will continue all its operations for at least 12 months from the date of preparation of the financial statements. Our procedures to evaluate the board of directors' going-concern assessment included, amongst others:

- Review of management's going-concern assessment and sensitivity analysis. We corroborated management's analysis with the approved budget 2023 and facts and circumstances that came to our attention from our auditing procedures.
- Inquiries of corporate and local management as to their knowledge of going-concern risks beyond the period of management's assessment.
- Review of management's analysis of the forecasted levels of net debt, available undrawn borrowing facilities, compliance with debt covenants and the debt maturity profile.
- Corroboration of consistency between management's going-concern analysis, the analysis of the forecasted levels of net debt with the future cash flow forecast as incorporated in the goodwill impairment test. In evaluating management's forecasts and cash flows we performed a look-back analysis to assess the accuracy of the forecasting process.
- An analysis of the financial position at balance sheet date in comparison to prior year's year end to assess whether events or circumstances exist that may lead to a going-concern risk.
- Consideration of the potential indications of the component's going-concern uncertainty based on audit procedures performed by the component auditors. We evaluated the impact of such indications on the overall use of the going-concern assumption applied by the Group.

Our procedures did not result in outcomes contrary to management's assumptions and judgements used in the application of the going concern assumption.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in the audit of the financial statements. We have communicated the key audit matters to the board of directors. The key audit matters are not a comprehensive reflection of all matters identified by our audit and that we discussed. In this section, we described the key audit matters and included a summary of the audit procedures we performed on those matters.

We addressed the key audit matters in the context of our audit of the financial statements as a whole, and in forming our opinion thereon. We do not provide separate opinions on these matters or on specific elements of the financial statements. Any comment or observation we made on the results of our procedures should be read in this context.

Key audit matter	***Our audit work and observations***
Recognition and valuation of tax positions *Refer to note 3, 4, 14 and 39 of the consolidated financial statements* The Group recorded deferred tax assets for tax losses carried forward for the amount of €68.8 million. Reference is made to note 14 of the financial statements. Deferred tax assets are capitalised based on the assumption that sufficient taxable income will be generated against which losses carried forward and other deductible temporary differences can be offset. This assumption is based on estimates of the current and the estimated taxable results, and any future measures implemented by the Company in several jurisdictions concerned that will have an effect on income tax, taking into account the available carry-forward period. The Group also has losses and other temporary differences for which no deferred tax asset has been recognised in these consolidated financial statements. As described in Note 39 of the financial statements the Group is also a party to several tax proceedings in Brazil which involve estimated contingent liabilities amounting to € 243.0 million. Given that the tax legislation in Brazil is complex and unpredictable this could give rise to significant uncertainties and the Company's estimate of tax liabilities	• With regard to recognition and valuation of deferred tax assets we have requested and obtained evidence for the existence and accuracy of the tax losses carried forward and assessed the expiration dates per jurisdiction. Where there was uncertainty around the acceptance of losses by the tax authorities, we requested, received and read tax opinions from the Group's tax advisors. In auditing recoverability, we have critically assessed the underlying assumptions of the forecasted taxable income through agreeing the forecasted future taxable profits with approved business plans in a tax jurisdiction. We also assessed the past performance against the expected future tax profits in the business plans used by the Group, by using our knowledge of the Group and the industry in which it operates. In addition, we have considered the local remaining carry-forward period together with any applicable restrictions in recovery for each individual jurisdiction. With regard to recognition and valuation of uncertain tax positions we have requested and obtained management's valuation of tax positions, reviewed correspondence with the tax authorities, independent legal and tax opinions and latest available tax filings. We also corroborated tax assessment with the group management and local auditors.

Key audit matter	*Our audit work and observations*
may differ from interpretations by the relevant tax authorities as to how regulations should be applied to actual transactions. Judgement is therefore required by management to determine whether it is probable that an uncertain tax position should be recognised and or will not be sustained. Judgement is required by management in determining the degree of probability of an unfavourable outcome for non-income tax claims and the ability of management to make a reasonable estimate of the amount of loss. Due to the inherent level of uncertainty, significant judgement involved, potential limitations in the recoverability of deferred tax assets and uncertain tax positions, we considered the valuation of tax positions to be a key audit matter for our audit.	We analysed the outcomes of resolution of tax disputes within territory (Brazil) where uncertain tax positions were identified. Where significant management estimates and judgements involved are susceptible to management bias, we have critically reviewed the underlying facts to assess recognition and assessed the recoverability of the deferred tax assets and uncertain tax positions. Based on the audit procedures performed, we found the Group's estimates and judgement used in the recognition and valuation of tax positions to be supported by the available evidence. We assessed and corroborated the adequacy and appropriateness of the disclosures made in the consolidated financial statements.
Valuation of goodwill and other intangible assets *Refer to note 3, 4, and 17 of the consolidated financial statements* The Group capitalised goodwill of €136.9 million, mainly related to the acquisition of the Magnesita Group in 2017 with new acquisitions in 2022 increasing goodwill by €20.6 million. In addition, the Company capitalised other intangible assets of €316.6 million. These assets form part of cash-generating units ('CGUs') to the extent that they independently generate cash inflows. If and to the extent to which these CGUs include goodwill or intangible assets with indefinite useful lives, or show signs of impairment, the recoverable amount is assessed. Annual planning process data is used to make assumptions on the discount rates, profitability as well as growth rates, and sensitivity analysis are carried out regarding any accounting effects. The assessment did not result in an impairment. As disclosed in note 4 of the financial statements, the Group has considered the long-term impact of climate change, in particular by considering a long-term growth rate in the estimation of the terminal value in line with the change in steel and cement demand based on the specific characteristics of the businesses involved. Management also considered the potential impact of the CBAM regulation on its assets located within Europe and is currently assessing the strategy and options to maximise the opportunities and minimise the impact of this regulation. In the 'Principal risks' section of the annual report, management acknowledges the potential impact of climate related risks on its business strategy and committed €9 million investments in the next three-year R&D program to pilot new sustainable production technologies. This is not expected to have a material impact on the impairment assessment of goodwill. We identified the impairment assessment as a key audit matter due to significant estimates and assumptions about the discount rates, profitability and growth rates.	• As part of our audit procedures, we have evaluated and challenged the composition of management's future cash flow forecast and process applied to identify and define cash-generating units, recalculate the recoverable amount, test for impairment, recalculate the capital cost rate and the growth rate as well as the calculation model. We have reconciled the assumed future cash flows used in the budget planning with the information included in the forecast made by management. Given that the areas where significant management estimates and judgements involved are susceptible to management bias and creates opportunities for fraud, we, with the support of our valuation specialists, have evaluated management's assumptions such as revenue and margin, the discount rate, terminal value, operational and capital expenditure. We have obtained corroborative evidence for these assumptions. We performed analysis to assess the reasonableness of forecasted revenues and margins and obtained further explanations when considered necessary. We also compared the forecast to prior year's forecast and actuals. We compared the long-term growth rates used in determining the terminal value with economic and industry forecasts. We have reperformed calculations, compared the methodology applied with generally accepted valuation techniques, assessed appropriateness of the cost of capital for the company and comparable assets, as well as considered territory specific factors. Finally, we assessed the appropriateness of the disclosure of the key assumptions and sensitivities underlying the tests. Based on the audit procedures performed, we found the assumptions to be reasonable and supported by the available evidence.

Report on the other information included in the annual report

The annual report contains other information. This includes all information in the annual report in addition to the financial statements and our auditor's report thereon.

Based on the procedures performed as set out below, we conclude that the other information:

- is consistent with the financial statements and does not contain material misstatements; and
- contains all the information regarding the directors' report and the other information that is required by Part 9 of Book 2 and regarding the remuneration report required by the sections 2:135b and 2:145 subsection 2 of the Dutch Civil Code.

We have read the other information. Based on our knowledge and the understanding obtained in our audit of the financial statements or otherwise, we have considered whether the other information contains material misstatements.

By performing our procedures, we comply with the requirements of Part 9 of Book 2 and section 2:135b subsection 7 of the Dutch Civil Code and the Dutch Standard 720. The scope of such procedures was substantially less than the scope of those procedures performed in our audit of the financial statements, except for the audit performed on information in the remuneration report marked 'audited'.

The board of directors is responsible for the preparation of the other information, including the directors' report and the other information in accordance with Part 9 of Book 2 of the Dutch Civil Code. The board of directors is responsible for ensuring that the remuneration report is drawn up and published in accordance with sections 2:135b and 2:145 subsection 2 of the Dutch Civil Code.

Report on other legal and regulatory requirements and ESEF

Our appointment

We were appointed as auditors of RHI Magnesita N.V. by the board of directors following the passing of a resolution by the shareholders at the annual meeting held on 4 October 2017. Our appointment has been renewed annually by the shareholders and now represents a total period of uninterrupted engagement of six years.

European Single Electronic Format (ESEF)

RHI Magnesita N.V. has prepared the annual report, including the financial statements, in ESEF. The requirements for this format are set out in the Commission Delegated Regulation (EU) 2019/815 with regard to regulatory technical standards on the specification of a single electronic reporting format (these requirements are hereinafter referred to as: the RTS on ESEF).

In our opinion, the annual report prepared in XHTML format, including the partially marked-up consolidated financial statements, as included in the reporting package by RHI Magnesita N.V., complies, in all material respects, with the RTS on ESEF.

The board of directors is responsible for preparing the annual report, including the financial statements, in accordance with the RTS on ESEF, whereby the board of directors combines the various components into a single reporting package. Our responsibility is to obtain reasonable assurance for our opinion on whether the annual report in this reporting package complies with the RTS on ESEF.

Our procedures, taking into account Alert 43 of the NBA (Royal Netherlands Institute of Chartered Accountants), included amongst others:

- Obtaining an understanding of the entity's financial reporting process, including the preparation of the reporting package.
- Obtaining the reporting package and performing validations to determine whether the reporting package, containing the Inline XBRL instance document and the XBRL extension taxonomy files, has been prepared, in all material respects, in accordance with the technical specifications as included in the RTS on ESEF.
- Examining the information related to the consolidated financial statements in the reporting package to determine whether all required mark-ups have been applied and whether these are in accordance with the RTS on ESEF.

No prohibited non-audit services

To the best of our knowledge and belief, we have not provided prohibited non-audit services as referred to in article 5(1) of the European Regulation on specific requirements regarding statutory audit of public-interest entities.

Services rendered

The services, in addition to the audit, that we have provided to the Company or its controlled entities, for the period to which our statutory audit relates, are disclosed in note 41 to the financial statements.

Responsibilities for the financial statements and the audit

Responsibilities of the board of directors for the financial statements

The board of directors is responsible for:

- the preparation and fair presentation of the financial statements in accordance with EU-IFRS and Part 9 of Book 2 of the Dutch Civil Code; and for
- such internal control as the board of directors determines is necessary to enable the preparation of the financial statements that are free from material misstatement, whether due to fraud or error.

As part of the preparation of the financial statements, the board of directors is responsible for assessing the Company's ability to continue as a going-concern. Based on the financial reporting frameworks mentioned, the board of directors should prepare the financial statements using the going concern basis of accounting unless the board of directors either intends to liquidate the Company or to cease operations or has no realistic alternative but to do so. The board of directors should disclose in the financial statements any event and circumstances that may cast significant doubt on the Company's ability to continue as a going concern.

The board of directors is responsible for overseeing the Company's financial reporting process.

Our responsibilities for the audit of the financial statements

Our responsibility is to plan and perform an audit engagement in a manner that allows us to obtain sufficient and appropriate audit evidence to provide a basis for our opinion. Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error and to issue an auditor's report that includes our opinion. Reasonable assurance is a high but not absolute level of assurance, which makes it possible that we may not detect all material misstatements. Misstatements may arise due to fraud or error. They are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

Materiality affects the nature, timing and extent of our audit procedures and the evaluation of the effect of identified misstatements on our opinion.

A more detailed description of our responsibilities is set out in the appendix to our report.

Rotterdam, 26 February 2023

PricewaterhouseCoopers Accountants N.V.

PricewaterhouseCoopers Accountants N.V.

Original has been signed by A. F. Westerman RA

Appendix to our auditor's report on the financial statements 2022 of RHI Magnesita N.V.

In addition to what is included in our auditor's report, we have further set out in this appendix our responsibilities for the audit of the financial statements and explained what an audit involves.

The auditor's responsibilities for the audit of the financial statements

We have exercised professional judgement and have maintained professional scepticism throughout the audit in accordance with Dutch Standards on Auditing, ethical requirements and independence requirements. Our audit consisted, among other things of the following:

- Identifying and assessing the risks of material misstatement of the financial statements, whether due to fraud or error, designing and performing audit procedures responsive to those risks, and obtaining audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the intentional override of internal control.
- Obtaining an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the board of directors.
- Concluding on the appropriateness of the board of directors' use of the going-concern basis of accounting, and based on the audit evidence obtained, concluding whether a material uncertainty exists related to events and/or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report and are made in the context of our opinion on the financial statements as a whole. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluating the overall presentation, structure and content of the financial statements, including the disclosures, and evaluating whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

Considering our ultimate responsibility for the opinion on the consolidated financial statements, we are responsible for the direction, supervision and performance of the group audit. In this context, we have determined the nature and extent of the audit procedures for components of the Group to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole. Determining factors are the geographic structure of the Group, the significance and/or risk profile of group entities or activities, the accounting processes and controls, and the industry in which the Group operates. On this basis, we selected group entities for which an audit or review of financial information or specific balances was considered necessary.

We communicate with the board of directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit. In this respect, we also issue an additional report to the audit committee in accordance with article 11 of the EU Regulation on specific requirements regarding statutory audit of public-interest entities. The information included in this additional report is consistent with our audit opinion in this auditor's report.

We provide the board of directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related actions taken to eliminate threats or safeguards applied.

From the matters communicated with the board of directors, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, not communicating the matter is in the public interest.

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