28 February 2022

RHI Magnesita N.V.

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

2021 Full Year Results

“Strong revenue momentum and strategic progress offset by higher costs due to global logistics disruption”

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 2021 ("2021" or the “Year").

Financial results (€m unless stated otherwise)	**2021 Adjusted**[1]	2020 Adjusted[1]	2020 Adjusted[1] at constant currency	Change	Change at constant currency
Revenue	**2,551**	2,259	2,201	*12.9%*	*15.9%*
Adjusted EBITA	**280**	260	257	*7.7%*	*8.9%*
Adjusted EBITA margin	**11.0%**	11.5%	11.7%	*(50)bps*	*(70)bps*
Adjusted EPS	**€4.52**	€3.28		*38.0%*	
Net debt[2]	**1,014**	582		*74.2%*	
Net debt to adjusted EBITDA[2]	**2.6x**	1.5x		*1.1x*	

(€m unless stated otherwise)	**2021 Reported**	2020 Reported
Revenue	**2,551**	2,259
EBITA	**236**	140
Profit before tax	**289**	42
EPS	**€5.10**	€0.51
Dividend[3]	**€1.50**	€1.50

1. Adjusted figures are alternative performance measures “APM” excluding impairments, amortisation of acquisition intangibles and exceptional items to enable an understanding of the underlying performance of the business. Full details are shown in the APM section.
2. Following the introduction of IFRS 16 Leases, 2021 net debt includes the impact of IFRS 16 of €55.5 million. 2020 adjusted net debt figures are shown including the impact of IFRS 16 (€56.8 million) to facilitate comparison between reporting periods.
3. Recommended final dividend of €1.00 per share subject to AGM approval on 25 May 2022. Full year dividend of €1.50 per share includes the interim dividend of €0.50 per share paid to shareholders on 14 September 2021.

Highlights

- **Strong customer demand drives volume and revenue growth, offset by higher costs**
  - Revenue increased year on year by 13% to €2,551 million (2020: €2,259 million) and by 16% in constant currency terms, with shipped volumes now above 2019 levels
  - Adjusted EBITA of €280 million (2020: €260 million) in line with guidance of €280-310 million, supported by €127 million price increase programme realised largely in Q4

  - Unprecedented supply chain disruption resulted in higher freight, energy and purchased raw materials costs
  - Significant inventory increase and use of air freight to guarantee customer deliveries
  - Net debt increased to €1,014 million (2020: €582 million) due to high inventories, with strong available liquidity of €1,181 million (2020: €1,189 million)

- **Continued progress on strategic initiatives despite global logistics disruption**
  - Completed SG&A cost saving programme, delivering €29 million in annual EBITA savings
  - Capital expenditure of €252 million (2020: €157 million) as RHI Magnesita undertakes largest investment program in the Group's history, covering most key sites
  - Production Optimisation Plan projects to deliver benefits from 2022, leading to sustainable cash flow improvements and a higher EBITA margin in the long-term
  - Group now expects to deliver c.€90 million of EBITA benefit from cost optimisations in 2022 and €110 million in 2023, from prior guidance of €100 million in 2022
  - Sales strategies now targeting €40-60 million in 2023 as flow control trials and solutions contracts delayed by lack of access to customer sites during pandemic
  - Growth in new markets delivered organically in India (+36%) and China (+20%), supported by agreement to acquire SÖRMAŞ in Turkey and new joint venture in Chongqing, China

- **Market leader in innovation, technology and sustainability**
  - Increased use of secondary raw materials with recycling rate now 6.8% (2020: 5.0%)
  - €50m R&D investment in new technologies to reduce, capture and store or utilise CO2 emissions
  - Maintained strong market share in Electric Arc Furnace refractories, which generated 16% of Group revenues
  - Digital products support growth in solutions contracts, now representing 29% of revenue with strong customer retention

- **Final dividend of €1.00 per share recommended, total full year dividend in respect of 2021 €1.50 per share**

- **CIS region exposure**
  - RHI Magnesita has 63 staff based in Russia and Ukraine but no refractory production sites
  - Approximately 3.4% of Group revenues were from the CIS region in 2021. This business will be impacted by sanctions
  - Will keep sanction escalations under close review to remain in full compliance
  - Main financial impact expected to be from higher energy costs

Outlook

In the steel division there is a strong order book and visibility for the first half of 2022, although the high customer demand recovery experienced in 2021 is expected to normalise in the second half. The industrial division order book covers most of 2022 and lead times in some cases exceed 12 months. Industrials division margins will continue to benefit in the first quarter of 2022 from the stronger pricing environment for cement customers compared to the prior year.

Cost pressures from freight, energy and raw materials are continuing in 2022 with significant labour inflation now also expected in both local currency and Euro terms, as high inflation leads to wage demands. Further price increases have become effective in January and more price increases are under negotiation to preserve margins in response to ongoing cost inflation.

Net debt to EBITDA of 2.6x is above the Group's targeted range of 0.5x-1.5x, mainly due to inventory build. Gearing is expected to reduce in 2022 due to lower capital expenditure and growth in EBITDA.

Board changes

Five new Directors joined the Board in 2021, including three independent non-executive directors and two employee representatives: Jann Brown, Marie-Hélène Ametsreiter, Sigalia Heifetz, Karin Garcia and Dr. Martin Kowatsch. Ms. Garcia and Dr. Kowatsch were appointed by the works councils representing employees in Spain and Austria, respectively.

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

"This has been a strong year of progress for RHI Magnesita in challenging conditions. Customer demand recovered much faster than was anticipated, creating an unprecedented strain on global supply chains and significant increases in costs and logistics lead times. We responded with €127 million of price increases largely realised in the fourth quarter and increased inventories to keep our customers supplied throughout this period of disruption.

Despite logistics difficulties and market volatility we have progressed the strategic investments which will deliver long term growth and margin improvement. We agreed to acquire SÖRMAŞ in Turkey in October and we are making a new joint venture investment in Chongqing, China. Our strategic commitment to grow in new markets has been validated by strong organic revenue growth in both our India and China businesses. We enter 2022 with restored margins and ready to build further on our sustainability and technology leadership position in the global refractory industry."

For further enquiries, please contact:

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Conference call

The presentation will be broadcast via webcast and conference call at 8.15am UK time, 28 February 2022. The webcast can be accessed using the following link: https://streamstudio.world-television.com/1047-1599-31767/en. A replay will be available on the same link shortly after event.

Conference call participant dial-in numbers are as follows:

UK: 020 3936 2999

Austria: 0720 884 162

All other locations: +44 20 3936 2999

Access code: 151045

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 12,000 employees in 28 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 Vienna Stock Exchange (Wiener Börse). For more information please visit: www.rhimagnesita.com

CEO REVIEW

Demand for refractory products and services was strong in 2021 as our customer industries began their recovery from the 2020 downturn caused by the COVID-19 pandemic much faster than was anticipated. This created an unprecedented strain on global supply chains, which led to a significant increase in costs and logistics lead times.

Our reaction to these challenges has been comprehensive and included the allocation of additional resources to planning and logistics, a significant increase in inventory levels, use of air freight where necessary and multiple price increases during the year to restore margins by passing on additional production and shipping costs to our customers.

People and culture

Our people and culture are the cornerstone of our achievements and without a strong team ethos and individual accountability we would not have been able to respond to the significant challenges we faced together in 2021. Our colleagues in logistics, planning, procurement, operations and sales functions deserve special praise for their efforts this year in responding to widespread disruption to global supply chains and prioritizing the needs of our customers.

Delivering our strategic initiatives

Although some investment projects have been impacted by cost inflation and minor delays, logistical difficulties have not materially impacted on the delivery of our long-term strategy. We have improved our competitive position through SG&A savings and the Production Optimization Plan, which is advancing our ‘local for local’ production strategy whilst preserving scale benefits from our global footprint. We have delivered further growth in our solutions business, in flow control sales and in target markets where we are seeking to increase our market share. Progress has been accelerated through M&A, a key pillar of our growth ambitions, with the agreement to acquire SÖRMAŞ in Turkey and the establishment of a new joint venture in Chongqing, China to widen our product range for cement customers in the region.

Innovation and sustainability leadership

We have an excellent track record in health and safety, with a Lost Time Injury Frequency Rate of 0.18 (2020: 0.13), despite many of our employees working in environments with significant occupational hazards and as we have delivered close to record high production volumes. The safety of our people in the workplace will always be a core value for us.

RHI Magnesita is already the leading global supplier of high-performance refractory products, systems and solutions. We are increasingly adding digital products alongside our core offering which differentiate us from competitors and enable us to offer full heat management solutions. Solutions contracts grew to represent 29% of Group revenues in 2021 (2020: 27%).

We also lead the refractory industry in all areas of sustainability. No other refractory producer is taking the same steps as we are to increase the use of secondary raw materials and to reduce and capture CO2 emissions. Our efforts to increase recycling of refractories offer major benefits through improved waste management and the avoidance of CO2 emissions that would otherwise be released in the processing of new raw material. To make this possible, we have developed proprietary technology for achieving high levels of performance from recycled refractory material. We are also investing €50 million over the next four years in the research and development of new technologies to reduce and capture CO2 emissions released during the materials manufacturing process chain.

Our product portfolio is uniquely positioned to benefit from the shift to lower CO2 emitting processes in our customer industries. In steel, we are global leaders in the supply of specialised refractories for Electric Arc Furnaces and stand to benefit from the ongoing transition towards this technology, which will be a key enabler of the decarbonisation of global steel production.

Our commitment to improving our sustainability performance was demonstrated this year by the linking of the margin on over €1 billion of new or existing debt facilities to our EcoVadis rating, which improved to 'gold' from 'silver' this year.

We are leading the industry on these issues because of the wider benefits for all stakeholders but we are also increasing the value of RHI Magnesita's products and services to our customers. We believe the value attached to sustainable business practices will translate into market share opportunities or pricing advantages in the future, as we extend our leadership position relative to our competitors.

Financial and operational performance

The Group delivered adjusted EBITA of €280 million in 2021, in line with the adjusted guidance range issued in October. Profitability improved materially during the fourth quarter as the Group benefited from multiple price increases offsetting over €150 million of additional costs, mainly from higher freight rates, logistics, purchased raw material and energy costs.

Sales volumes in 2021 were ahead of our initial expectations, reflecting strong demand from our customers and the strength of underlying end markets in construction and machinery. To meet this high demand we had to deliver additional volumes from our production facilities while deploying the largest investment programme in the Company's history at most of our key sites across the network.

Unplanned downtime at Radenthein in the third quarter impacted EBITA by around €8 million as customer shipments of high margin refractories for use in non-ferrous metals and steel applications were delayed. In these difficult circumstances, with local supply chain bottlenecks adding to planning complexity, it is a huge credit to our people that we nevertheless managed to deliver a 15% increase in shipped volumes versus 2020 and 1% above the volume achieved in 2019.

Key strengths and outlook

RHI Magnesita is uniquely positioned within the refractory industry as a leader in technology, including digitalization and sustainability. A key differentiator of our business model is our vertical integration in the supply of magnesite based raw materials, with assets in the first quartile of the cost curve giving us security of supply over c.70% of the magnesite and dolomite that we consume and higher margins compared to non-integrated peers, especially during periods of elevated raw material prices.

In the fourth quarter, energy shortages in China significantly increased the cost of externally purchased refractory raw materials. Whilst this cost pressure has eased in the first months of 2022, magnesite, dolomite, alumina and fused raw material prices remain above 2021 averages and this has increased pricing for finished refractory products across the market. The higher raw material price environment supported refractory price increases of €127 million during 2021 and combined with initial savings from our cost optimisation initiatives to restore the Group's EBITA margin to 12.5% in Q4.

2021 was the peak year of capital expenditure on our Production Optimisation plan and we have already completed works at our Hochfilzen, Urmitz and Vizag plants. As we move through 2022 we will complete plant upgrades, expansions and modernisation work at Veitsch, Radenthein, Contagem and Brumado which have been delayed slightly due to global supply chain problems and labour shortages. As the new facilities ramp up we will see material cash flow benefits from these fast-payback projects and establish a higher EBITA margin that we believe is sustainable in the long term.

Whilst uncertainty and volatility will remain ongoing features of global markets, we are well positioned to navigate any new challenges that 2022 will bring. This is mainly thanks to the commitment and dedication of our employees, as well as the major investments and restructurings we have undertaken to improve the cost position and efficiency of our business over the last three years.

FINANCIAL REVIEW

Reporting approach

The Company uses a number of alternative performance measures (APMs), in addition to those reported in accordance with 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 which 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.

In January 2021, the Foundry division was reclassified into the Industrial division from the Steel division. In 2021, the Foundry division contributed €13 million to Group revenue. 2020 divisional revenues have been restated accordingly.

All references to comparative 2020 numbers in this review are on a reported basis, unless stated otherwise. Figures presented at constant currency represent 2020 translated to average 2021 exchange rates as disclosed in Note 6 to the Financial Statements.

Revenue

The Group recorded revenue of €2,551 million in 2021, an increase against the prior year of 13% (2020: €2,259 million). The Group benefited from increased customer demand driven by the rebound of end market activity, following the adverse impact of the COVID-19 pandemic in 2020. The higher raw material price environment in 2021 compared to 2020 supported higher refractory pricing across all businesses.

In 2021 the Group negotiated price increases totalling €130 million in response to significant cost inflation driven by higher freight and energy costs. The Group was successful in realising 98% of planned price increases in 2021, with further benefit expected in 2022 from the restoration of margins to higher levels. Price increases restored Gross margin to 26% in December 2021, establishing a run rate into 2022.

Raw material prices

Raw material prices increased and then held broadly stable levels for eight months of the year before increasing in the fourth quarter as Chinese suppliers reduced production due to power shortages, energy rationing and high energy costs.

Steel Division

The Group's Steel Division delivered revenue of €1,823 million in 2021, 16% higher than 2020 (2020: €1,570 million). On a constant currency basis, Steel Division revenue increased by 20% (2020: €1,522 million). Global economies started to recover in 2021 with the most notable impact in India, West Asia and Africa where revenues were 26% higher than in 2020. The China & East Asia region also performed well in 2021, recording an 23% increase in year-on-year revenues attributed mostly to East Asia. The Americas and Europe, CIS and Turkey regions contributed 15% and 9% year-on-year growth, respectively. The Americas enjoyed a strong rebound in steel demand, with steel demand outweighing production throughout the year as steel producers constrained production focusing on price rather than volumes. On a constant currency basis, the Americas region recorded revenue increase of 21%, impacted by currency devaluations particularly from Brazilian Reais and US Dollar against the Euro. The Europe, CIS and Turkey region was positively impacted by the recovery of the European steel market, as well as an increase in market share.

Industrial Division

Industrial Division revenue increased by 6% to €729 million (2020: €689 million) largely due to the strong recovery in volumes in the Cement and Lime business which increased by 18% year-on-year to €322 million (2020: €273 million), recording a very strong Q1 and Q4, characteristic of strong seasonal demand during the northern hemisphere winter months. However, prices for the Cement repair season in Q1 2021 was set in the summer of 2020 when prices were low, ahead of raw material price increases, contributing to lower product pricing. The Industrial projects business was broadly flat against 2020, recording revenue of €407 million (2020: €416 million), as production capability in the business was impacted by global supply chain disruption and unscheduled tunnel kiln maintenance at Radenthein, Austria. Revenue recovery across the project business was further impacted by the delay in implementing Group-wide price increases across the segment, given longer lead times on orders with replacement cycles of greater than one year.

Cost of goods sold

The Group cost of goods sold over the Period amounted to €1,967 million, an increase of 15% compared to the same period last year. Higher freight costs were partially offset by favourable currency movements, and on a constant currency basis cost of goods sold was 19% higher than in 2020.

Inbound and outbound freight costs accounted for 12% of COGS in 2021, compared to 8% in 2020 and amounted to €236 million (2020: €137 million). The Shanghai Containerized Freight Index increased by 81% since the beginning of the year. Supply chain delays caused by low freight reliability impacted production schedules and deliveries and there was continued use of air freight when necessary to ensure customer supply.

In June 2021, the Group implemented a dedicated taskforce to mitigate the impact of supply chain disruption, including real-time logistics monitoring to help plan around shipment delays. In December 2021, the Group launched the first phase of its Transport Management System (TMS) in China, ahead of its planned global roll out. The TMS will provide end-to-end transport management control covering planning, execution, monitoring and auditing, allowing enhanced visibility of freight status and location.

The Group purchased €906 million of raw materials from external sources in 2021, compared to spending of €807 million in 2020. The cost impact in the 2021 profit and loss statement was €(69) million. Elevated raw material prices in Q4 2021 were mainly due to higher costs of production and transportation costs for raw material suppliers, as energy costs increased significantly. The Group restocked its raw material inventory over the course of the year prior to expected tighter supply from China during Q4 2021 ahead of the Beijing Winter Olympics.

Energy costs significantly increased in Q4 2021, as post pandemic demand returned whilst supply remained constrained. Natural gas and power in Europe and Asia were most impacted. The Group purchased European natural gas and power contracts in advance for Q4 2021 and Q1 2021, significantly below where spot prices subsequently moved to. The Group was also impacted by higher costs of CO2 credits in Europe, mainly due to higher production volumes in our raw material plants. During the year, the Group implemented a rolling 5-year hedging programme to reduce its exposure to spot CO2 contract prices.

Gross profit

The Group recorded a 6% increase in gross profit to €584 million in 2021 (2020: €550 million) due to higher sales volumes, pricing and revenues, offset by increased freight and energy costs and higher prices for externally sourced raw material. Gross margins declined to 22.9% (2020: 24.4%) as price increases realised during the year did not fully offset the significant increase in costs from supply chain disruption and higher energy costs.

On a divisional basis, gross profit in the Steel Division of €394 million represented an increase of 7% against the previous year (2020: €368 million), while gross margin reduced by 180bps to 21.6%, (2020: 23.4%). Gross profit in the Industrial Division amounted to €190 million (2020: €182 million), up 4% against the prior year, with gross margin declining by 30bps to 26.1% (2020: 26.4%).

Steel	**2021**	2020	Change
Revenue (€m)	**1,823**	1,570	16%
Gross profit (€m)	**394**	368	7%
Gross margin	**21.6%**	23.4%	(180)bps

Industrial	**2021**	2020	Change
Revenue (€m)	**729**	689	6%
Gross profit (€m)	**190**	182	4%
Gross margin	**26.1%**	26.4%	(30)bps

SG&A

The Group completed its permanent SG&A cost saving programme in 2021, achieving €29 million in annual EBITA savings, through the decentralisation of 540 managerial positions into lower cost locations and driving increased regionalisation in order to localise decision making, closer to customers and plants.

At the height of the Covid-19 pandemic in 2020, €50 million of temporary cost saving measures were implemented, including short time work arrangements and plant suspensions. In 2021, €43 million of these temporary savings returned to the cost base as expected, with €7 million to be captured as a permanent cost reduction in the form of lower depreciation.

Total selling, general and administrative expenses, before R&D related expenses, were €297 million, representing a 7% increase against the prior year given inflation and additional expenditure on strategic initiatives, notably digitalisation (2020: €279 million).

Depreciation and amortisation

Depreciation for 2021 amounted to €109 million (2020: €120 million), 9% lower than 2020 given the short-term cost measures taken in 2020 which lowered depreciation by €7 million and the reduction of assets due to the closure of plants from the Production Optimisation Plan. Depreciation in 2022 is expected to be around €125 million.

Amortisation of intangible assets amounted to €22 million in 2021 (2020: €19 million).

Adjusted EBITDA

Adjusted EBITDA amounted to €389 million, up by 2% compared to 2020 (2020: €380 million). The adjusted EBITDA margin for 2021 was 15.2%, compared to 16.8% over the same period last year, a decrease of 160bps.

Adjusted EBITA

The Group delivered adjusted EBITA in 2021 of €280 million, an increase of 8% compared to 2020 (2020: €260 million), as the €292 million increase in revenues was offset by c.€150 million of supply chain, raw material and energy related cost headwinds. The Group realised an incremental €49 million in 2021 from its strategic initiative programmes, with cost saving initiatives contributing €36 million and sales strategies €13 million. €43 million of temporary cost savings made in 2020 to preserve liquidity were reintroduced to the cost base in 2021.

(€m)	2021	2020 reported	2020 at constant currency	% change reported	% change at constant currency
Revenue	2,551	2,259	2,201	12.9%	15.9%
Cost of sales	(1,967)	(1,709)	(1,658)	15.1%	18.6%
Gross profit	584	550	543	6.2%	7.6%
SG&A	(297)	(279)	(275)	6.8%	8.4%
R&D expenses	(28)	(30)	(30)	(6.7)%	(6.7)%
OIE	(44)	(120)	(120)	63.3%	63.3%
EBIT	214	121	118	76.9%	81.4%
Amortisation	(22)	(19)	(19)	15.8%	15.8%
EBITA	236	140	137	68.6%	72.3%
Adjusted items	44	120	120	(63.3)%	(63.3)%
Adjusted EBITA	280	260	257	7.7%	8.9%
Refractory EBITA	199	205		(2.4)%	
Vertical integration EBITA	81	55		49.1%	

Impacted by significant supply chain headwinds in 2021, the Group's price increase programme and other cost reduction initiatives delivered an adjusted EBITA margin of 11.0% (2020: 11.5%). The Group's refractory margin was directly impacted by higher supply chain, energy and raw material costs and declined to 7.8% (2020: 9.1%). However, the Group's vertical integration margin on the production of raw materials for internal consumption increased to 3.2% (2020: 2.4%), reflecting the higher raw material price environment and the low-cost position of the Group's raw material assets. The EBITA contribution of the Group's raw material assets increased to €81 million (2020: €55 million), based on external market price benchmarks for the raw materials produced.

Net finance costs

Net finance costs in 2021, including gains and losses relating to foreign exchange, amounted to €(25) million (2020: €(87) million).

Net interest expense amounted to €(7) million in 2021 (2020: €(14) million), with interest expenses on borrowings of €(21) million (2020: €(20) million) and interest income of €14 million (2020: €6 million). Foreign exchange gains of €3 million were incurred, compared to a €(43) million in 2020, mainly due to the significant depreciation of the Brazilian Real and US Dollar against the Euro, resulting in an increased effect of foreign currency translation on the P&L in 2020.

Items excluded from adjusted performance

In order to accurately assess the performance of the business, the Group excludes certain non-recurring items from its adjusted figures. In 2021, these adjustments comprise:

€91 million recorded in share of joint ventures and associates following the proceeds from the sale of the Group's 50% stake in the Magnifin Joint Venture;

€(44) million recorded in “restructurings, other income and expenses”, relating mainly to the cost reduction initiatives, including €16 million relating to the plant closure at Trieben, Austria, and €31 million for impairment of Dashiqiao, China. These included severance costs of €1 million and non-cash impairments of €41 million;

€22 million amortisation of intangible assets created at the time of the merger between RHI and Magnesita;

€6 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

One-time charges excluded from the effective tax rate (“ETR”), largely the restructuring, impairment expenses and a tax depreciation.

Taxation

Total tax for 2021 in the income statement amounted to €39 million (2020: €14 million), representing a 14% effective tax rate (2020: 33%). The effective tax rate in 2021 decreased as a result of restructuring expenses.

Reported profit before tax amounted to €289 million (2020: €42 million). Adjusted profit before tax amounted to €270 million (2020: €197 million), with an adjusted effective tax rate of 18.0% (2020: 16.7%). The adjusted ETR guidance is between 20%-22% for 2022.

Profit after tax

On a reported basis, the Group recorded a profit after tax of €250 million (2020: €28 million) and earnings per share of €5.10 in 2021 (2020: €0.51). Adjusted earnings per share for 2021 were €4.52 (2020: €3.28).

(€m)	2021 reported	Items excluded from adjusted performance	2021 adjusted
EBITA[1]	236	44	280
Amortisation	(22)	22	-
Net financial expenses	(25)	6	(19)
Result of profit in joint ventures	100	(91)	9
Profit before tax	289	(19)	270
Income tax	(39)	(10)	(49)
Profit after tax	250	(28)	222
Non-controlling interest	7	-	7
Profit attributable to shareholders	243	(28)	215
Shares outstanding[2]	47.6	-	47.6
Earnings per share (€ per share)	5.10	(0.58)	4.52

1. EBITA reconciled to revenue on page 10
2. Total issued and outstanding share capital as at 31 December 2021 was 46,999,019. The Company held 2,478,686 ordinary shares in treasury. Weighted average number of shares used for basic earnings per share 47,629,647.

Other assets and liabilities

€(90) million of other assets and liabilities includes €19 million in pension contributions and €20 million from a change in bonus provision relative to 2020. €53 million of indirect and other tax, temporary timing differences includes €43 million refundable VAT paid on increased raw material purchases, recognition of a refund of revenue-based taxes previously overpaid in Brazil, energy taxes and research incentives. The Group has recognised €14 million of other revenue and €11 million of interest income following a Brazilian Supreme Court ruling resulting in a refund of revenue-based taxes previously overpaid in the period 2005-2020.

Working capital

Working capital increased to €677 million (31 December 2020: €369 million) as supply chain delays increased the value of material in transit and as inventories of raw materials and finished goods were intentionally increased to ensure sufficient levels of product availability for customers. Cash outflow from increased working capital was €283 million compared with an inflow of €97 million in 2020. Favourable foreign exchange effects reduced working capital cash outflow by €25 million. Working capital intensity, measured as percentage of the last three months' annualised revenue (€2,911 million), increased to 23.3% in 2021 (2020: 15.9%), outside of the targeted range of 15-18%. Working capital intensity levels were higher than guided given the higher raw material prices, and intentional build-up of raw material given concerns on lower availability. An improvement in the Group's working capital intensity is dependent on improved supply chain reliability. If supply chain disruption continues in 2022 and returning to within the targeted range may not occur until 2023.

Working and raw material availability improves following energy shortages in China in the fourth quarter and the impact of the Beijing winter Olympics in Q1 2022. Improvement in working capital intensity is also expected to be supported by the implementation of a new Integrated Business Planning system in 2021, which supports Group-wide decision making and financial planning.

Inventories increased to €977 million (31 December 2020: €477 million), Accounts Receivable increased to €349 million (31 December 2020: €210 million) and Accounts Payable increased to €649 million (31 December 2020: €319 million).

The decision to increase inventory levels across both raw materials and finished products was taken in response to global supply chain issues with raw material availability significantly disrupted by poor freight availability and in anticipation of shortages ahead of the Beijing Winter Olympics in Q1 2022. The Group spent a total of €906 million on externally sourced raw material in 2021, compared to €807 million in 2020. Raw material coverage ratios in 2021 increased from 1.3 months in 2020 to 2.3 months in 2021, and finished goods from 1.9 months to 2.4 months, given the higher costs of raw materials and longer delivery times.

Accounts receivable increased by €139 million, to €349 million, given the higher level of business activity. The Accounts receivable intensity level increased by 300 bps to 12.0% (31 December 2020: 9.0%), as the prior year comparative benefited from high revenue in the fourth quarter in 2020. Accounts receivable is calculated as trade receivables plus contract assets less contract liabilities, as per the financial statements.

Accounts payable increased by €330 million, to €649 million, largely due to payables relating to the material increase in externally purchased raw material over the year. Accounts payable intensity increased to 22.3%, by 860bps (31 December 2020: 13.7%). Accounts payable refers to trade payables, as per the financial statements.

Working capital financing, used to provide low-cost liquidity and support the Group's commercial offering to customers, stood at €320 million at the end of the year (31 December 2020: €221 million). This comprised €178 million of accounts receivable financing (factoring) and €142 million of accounts payable financing (forfeiting). Working capital financing levels vary according to business activity, and the Group targets a medium-term level below €320 million. As business activity levels increased over 2021 from 2020, working capital financing has helped to moderate the cash outflow from working capital increases.

Capital expenditure

Capital expenditure in 2021 was €252 million (2020: €157 million), comprising €75 million of maintenance capex (2020: €71 million) and €177 million of project capex (2020: €86 million). In 2021, the Group increased its capital expenditure on capital projects, as guided.

The project capital spent in 2021 was slightly below the guidance of €180 million, largely due to capital project delays at Contagem and Brumado in Brazil. Mainly given the high inflationary environment, the individual projects are expected to require higher capital expenditure during 2022 and 2023, however other parameters of the project have moved favourably, and the additional returns offset the higher capex such that the economics of the projects remain attractive.

In 2022 guidance for capital expenditure is approximately €190 million, comprising €85 million of maintenance capex and €105 million of project capex, increasing by €20 million due to €12 million to be invested at Chongqing, €5 million increase at Contagem and Brumado and €3 million underspend in 2021 carried forward.

In 2023, capital expenditure is expected to increase to approximately €150 million, of which €85 million will be directed towards maintenance expenditure and €65 million towards projects. In 2024, the Group anticipates approximately €130 million of capital expenditure, of which €85 million will be on maintenance expenditure and €45 million on projects.

In 2021, the Group invested €61 million (2020: €35 million) in its raw material assets, including maintenance capex of €13 million (2020: €14 million[1]) and project capex of €48 million (2020: €21 million).

1. Restated from €6 million given an internal change in methodology

Cash flow

The Group generated operating cash flow of €(236) million in 2021 (2020: €290 million), representing cash flow conversion of (84)% (2020: 112%). Free cash flow was adversely impacted by high capital expenditure in 2021 on the Group's strategic initiatives as previously guided, combined with higher than usual working capital requirements due to supply chain disruptions. Free cash flow decreased to €(427) million (2020: €101 million).

Cash Flow		
€m	2021	2020[1]
Adjusted EBITA	280	260
Working capital	(283)	97
Changes in other assets/liabilities	(90)	(31)
Capital expenditure (including pre-payments)	(252)	(157)
Depreciation	109	120
Operating Cash Flow[2]	(236)	290
Cash tax	(39)	(48)
Net financial expenses	(25)	(26)
Restructuring/transaction costs	(56)	(52)
Magnifin disposal proceeds	100	-
Dividend payments	(71)	(50)
Share buyback	(96)	(3)
Dividends from associates	-	11
MORCO acquisition	-	(9)
Sale of PPE[3]	8	11
Right of use assets acquisition	(13)	(25)
Derivative gains	1	2
Free Cash Flow	(427)	101

1. Reported basis
2. Operating free cash flow is presented to reflect the net cash flow from operating activities before certain items such as restructuring costs. Full details shown in the APM section.
3. Including the sale of the Burlington site (Canada) in 2020, cash inflow of €8 million.

Net debt

Net debt at the end of 2021 was €1,014 million, comprising total debt of €1,595 million including IFRS 16 leases of €56 million, cash and cash equivalents of €581 million, this compares to net debt at the end of 2020 of €583 million including IFRS 16 leases of €57 million. Net debt to EBITDA at the year-end was 2.6x, 1.1x higher than 2020 (2020: 1.5x) and above the Group's target range of 0.5x-1.5x, mainly due to inventory build. Supported by lower capital expenditure and earnings growth from organic and inorganic sources, the Group expects to reduce its gearing level towards its targeted range during 2022, before considering M&A

Additional refinancing was conducted in 2021 to maintain liquidity levels, extend debt maturities and establish links to the Group's sustainability performance. On 30 November 2021, the company entered into a €150 million ESG linked Bilateral facility with ING, and successfully placed a €250 million ESG-linked Schuldschein bond with investors, with maturities ranging from 5.5 years to 10 years and a weighted average interest rate on issuance of 0.80%.

Total liquidity for the Group at year end was €1,181 million, including undrawn committed facilities of €600 million.

Return on invested capital

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 2021 was 9.6% (2020: 11.5%), from a total of €2,296 million of invested capital (2020: €1,754 million) and €219 million net operating profit after tax (NOPAT) (2020: €201 million). Raw material ROIC was 16.2% (2020: 13.5%), from a total of €377 million of invested capital (2020: €385 million) and €61 million NOPAT (2020: €52 million).

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

- Cost savings initiatives representing €110 million of incremental EBITA by 2023. In 2021, the cost reduction initiatives delivered EBITA benefit of €66 million, representing an increase of €36 million on 2020. The programme targets to achieve an additional €44 million in EBITA run rate savings in 2023, achieving its total EBITA benefit of €110 million, (€90 million in 2022). The Production Optimisation Plan benefits will increase its total target to €110 million, although with one year delay than previous guidance given the project delays at Brumado and the decision to extend the operation of Mainzlar through 2022.

- Sales strategies representing c.€40-60 million of incremental EBITA benefit by 2023. The sales strategies delivered €18 million of cumulative EBITA in 2021. The Group is targeting to achieve c.€40 - 60 million in 2023, and €30 million in 2022. The restrictions from the pandemic and global supply chain issues resulted in delays in accessing customer sites, impacting the revenue benefit from Flow Control and the Solutions business. New markets continue to deliver attractive revenue growth, with strong organic and inorganic revenue contribution expected in 2022 from the JV with Chongqing and acquisition of SÖRMAŞ.

Cost savings initiatives

In 2021 the Group started to gain material benefits from its strategic initiatives, with an incremental EBITA improvement in 2021 of €36 million from its ongoing cost initiatives, including €17 million from the Production Optimisation Plan and a €19 million benefit from the SG&A Reduction programme.
The Production Optimisation Plan seeks to rationalise the Group's global production footprint through the closure of up to 10 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.

During 2021, the Group invested in its Hochfilzen site, Austria, to consolidate European dolomite production into a single low-cost site. The Group is creating its flagship digital and automated plant at Radenthein, Austria, including the installation and commissioning of a new tunnel kiln. At Contagem, Brazil, the Group's largest production facility in the Americas, the Group is automating the production of Magnesite finished products. Key project milestones at Contagem included the commissioning of two new automated presses which will increase production efficiency and capacity and the installation of new grinding lines. At Urmitz, Germany, the Group is modernising and expanding the plant to create a new hub for non-basic refractory products and the installation of a new tunnel kiln which was commissioned in November 2021.

The closure of Mainzlar, Germany, was delayed until the end of 2022 in response to high demand from European customers, supply chain related delays affecting the rest of the Group's network, the investment project work taking place at Radenthein reducing capacity and the temporary closure of Radenthein in Q3 for unscheduled maintenance.

The Group completed its SG&A cost saving programme in 2021, achieving €29 million in annual EBITA savings, through the decentralisation of 540 managerial positions into lower cost locations and driving increased regionalisation in order to localise decision making, closer to customers and plants.

The extension of the closure of the Mainzlar site in 2022, combined with the continued investment in the production optimisation plan, will enable additional run rate savings of €10 million in 2023, achieving a total cumulative run rate benefit from the cost savings of €110 million in 2023 (€90 million in 2022).

Sales strategies
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% by 2025, supported by investment in digitalisation.

The Group increased percentage of Group revenue to 29% from solutions contracts (2020: 27%). It agreed to acquire two assets in new markets. Flow Control as a percentage of revenue remained stable, at 16.9% (2020: 16.9%).

M&A

In October 2021, the Group agreed to acquire an 85% ownership stake in Söğüt Refrakter Malzemeleri Anonim Şirketi ("SÖRMAŞ"), a producer of refractories for the cement, steel, glass and other industries in Turkey, for a consideration of €39 million in cash. The asset recorded €6.4m EBITDA in 2020 and we expect to benefit from at least 30% EBITDA synergies.

The Group completed its disposal of its stake in the Magnifin joint venture in December 2021, a non-core asset producing high grade magnesium hydroxide for use in flame retardancy, for a cash consideration of €100 million. The asset is held as a financial investment and is not consolidated into the Group's reported EBITDA. In the year to 31 December 2021, the Group's share of profit before tax from the Magnifin joint venture was €9 million and the Magnifin joint venture recorded EBITDA of €19 million.

In December 2021, the Group acquired a 51% ownership stake in "Chongquing Boliang Refractory Materials" in return for initial consideration of €5 million and an investment of €15 million in new production capacity, to be deployed in 2022 and 2023.

In December 2020 the Group entered into an agreement to sell its two high-cost raw material plants, Porsgrunn, Norway, and Drogheda, Ireland. The sale of both plants completed on 1 February 2021, realising a loss of €6 million. Further provisions for restructuring costs amounting to €4 million have been recognised during 2021 for the exposure to environmental risks, unfavourable contracts and dismantling costs.

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.

2021 was the peak capital expenditure year for spending on strategic initiatives, including the substantial completion of the Production Optimisation Plan. In 2021 the Group incurred capital expenditure of €252 million, of which €75 million was maintenance capital expenditure and €177 million was expansionary capital expenditure related to project investments.

Given the resilient performance of the business and positive outlook into 2022, the Board has recommended a final dividend of €1.00 per share for the full financial year, and €47 million in aggregate.

This represents a dividend cover of 3.0x adjusted earnings per share. Subject to approval at the AGM on 25 May 2022, the final dividend will be payable on 14 June 2022 to shareholders on the register at the close of trading on 27 May 2022. The ex-dividend date is 26 May 2022. This represents a full year dividend of €1.50 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.

In December 2020, the Group commenced a share buyback programme, to return value to shareholders, of up to €50 million which completed in April 2021, with €45 million of expenditure falling in 2021 and €3 million in 2020. The buyback programme was extended in May 2021, and the Company purchased a further €50 million. In total across 2020 and 2021, the buyback programme repurchased a total of 2,078,686 shares for a total consideration of €98 million[1]. As at 31 December 2021, the Company held a total of 2,478,686 ordinary shares in Treasury which represent 5.01% of the issued share capital at the date of acquisition of the shares.

1. The price paid and value of shares purchased by the company on 8 April 2021 overstated the value of shares bought back by €1.5 million. The total value of shares purchased during the first buyback, completed on 13 April 2021, was €48,450,082 at an average price of 3946 pence per share and not the previously disclosed value of €49,998,930 at an average price of 4071 pence per share. The number of shares repurchased in the first buyback and the shares in issue and held in treasury are unchanged as a result of this correction.

OPERATIONAL REVIEW

Steel Division

Steel	2021	2020 Reported	2020 (Constant currency)	Change (reported)	Change (constant currency)
Revenue (€m)	1,823	1,570	1,522	16.1%	19.8%
Gross Profit (€m)	394	368	356	6.9%	10.5%
Gross margin	21.6%	23.4%	23.4%	(180)bps	(180)bps
Adj EBITA (€m)	183	174	165	5.2%	10.9%
Adj EBITA margin	10.1%	11.1%	10.8%	(100)bps	(70)bps

Steel by region by revenue (€m)	2021	2020 Reported	2020 (Constant currency)	Change (reported)	Change (constant currency)
Europe, CIS, Turkey	474	437	434	8.5%	9.3%
North America	504	447	428	12.8%	17.8%
South America	279	233	217	19.7%	28.6%
China and East Asia	206	167	164	23.3%	25.6%
India, Africa, West Asia	358	285	275	25.6%	30.1%

The Steel Division accounts for roughly 70% of Group revenues, and demand is driven by global steel production volumes. Refractory products are used to line steel applications in the plant, to protect against the extreme temperatures of liquid steel of up to 1,800 degrees C. RHI Magnesita offers a complete product and service portfolio for all steel applications, including primary steelmaking such as basic oxygen furnace (BOF), electric arc furnace (EAF) and ladles as well as ingot and continuous casting. Refractories have a finite lifetime of between 20 minutes and 2 months in steel applications. They are consumable items and therefore treated as an operating expense by steel producers, accounting for between 2-3% of the cost of steel production, on average. The division serves over 1,000 customer sites worldwide, with a global market share of c.15%, or c.30% excluding China and East Asia.

Steel Division revenues increased by 16% in 2021, to €1,823 million (2020: €1,570 million) reflecting the strong economic rebound globally following the impact of COVID-19 on demand in 2020. World Steel Association recorded an increase in global steel production of 4% in 2021 compared to 2020, and by 4% in 2021 compared to 2019. Comparatively, Steel Division revenues were down by 10% on 2019 (2019: €2,018 million). Gross profit for the Division was €394 million, 7% higher than 2020 (2020: €368 million). However, gross margin declined over the same period by 180bps, predominantly due to the adverse impact of supply chain disruptions which increased the cost of sales, and the timing of passing through cost increases to higher product prices into H1 2022.

Refractory production increased in 2021, in response to increased end market demand as economies started to re-open. However, plant production capacity was hampered by the construction work at some of our key plants, as part of the production optimisation plan, which was further exacerbated by the supply chain disruption. Freight availability remained poor for the majority of the year, containerized shipping remained disrupted and tightness in this market is expected to continue into 2022. This heavily impacted the supply chain for both shipping raw material to production plants and finished goods to customer sites.

Regions which rely heavily on raw material imports for refractory production and finished goods were impacted more severely by the supply chain issues, such as the India and West Asia steel region.

From Q2 2021, the Group implemented price increases across all business areas totalling €130 million to mitigate the increasingly inflationary environment and was successful in achieving 98% of these planned price increases in 2021, with further benefit expected in 2022. The price increase negotiations were supported by a generally higher product pricing environment during Q4, including raw material price increases.

Europe, CIS, Turkey

Total revenue for the year in Europe, CIS and Turkey amounted to €474 million, up 9% on 2020 (2020: €437 million). On a constant currency basis, revenues increased by 9% from €434 million in 2020. The Group's overall performance in the combined region was positively impacted by the recovery of the European steel market, as well as increases in market share and higher finished goods pricing given higher raw material prices in Q4. World Steel Association data recorded a 11% increase in steel production in the region compared to 2020.

The Group is making good progress in Europe in its strategy to consolidate its production footprint and drive efficiencies through automation and modernisation of plants. The Group invested €27 million at Hochfilzen, Austria in 2021 to transform it into a European hub for dolomite-based materials. In 2021, the new mine and automated conveyor systems were successfully commissioned, and the new rotary kiln became operational in Q4 2021. Production from the newly installed facilities is expected to ramp up over the first half of 2022.

As part of its digitalisation initiative, the Group signed its first Automated Process Optimisation ("APO ") digital service contract, a cloud based real time monitoring and maintenance system, with a central European customer on the operational performance of the RH degasser application, with security standards based on blockchain technology.

The Group made good progress in growing its solution business model in the region during 2021. The Group renewed a solutions contract with a longstanding customer in Poland for an additional five years, following an existing 10-year relationship. The Group also secured a large solution contract for a CIS customer, in joint collaboration with an OEM partner, for a basic oxygen furnace (BOF) application, enhancing the Group's growth trajectory in this strategic market.

Aligned to the Group's strategy of growth in currently under-represented regions, the Group agreed to acquire in October 2021 an 85.2% ownership stake in SÖRMAŞ Söğüt Refrakter Malzemeleri Anonim Şirketi ("SÖRMAŞ"), a producer of refractories for the cement, steel, glass and other industries in Turkey, for a consideration of €38.8 million in cash. The acquisition will significantly expand the Group´s locally manufactured product portfolio and serve as a production hub and platform for business growth in Turkey and the wider region. With an enlarged product portfolio, further potential exists from the opportunity to deliver full-line service solutions to customers in Turkey.

In 2021, the Group also signed and implemented its first on-site recycling contract with Arcelor Mittal, France. The contract includes the sorting and re-use of spent refractories at the customer site. The on-site recycling facility will have the ability to sort more than 20,000 tonnes of material per year, with approximately a third of that expected to be eligible for reuse as secondary raw material, allowing the Group to both expand its solutions portfolio as well as driving its sustainability efforts. RHI Magnesita commits to help its partners to reduce landfill costs by increasing the share of secondary raw material into its own production, underpinned by applied R&D.

Americas

Total revenues for the year of €784 million in North and South America represented a 15% increase on 2020 (2020: €681 million), as domestic steel production enjoyed a strong rebound and steel production returned to, and in some cases exceeded, pre-pandemic levels. Strong demand for steel in the Americas is expected to continue into 2022 and beyond, following the announcement of a $1 trillion infrastructure bill in the United States that is expected to be directed towards new road and bridge construction. World Steel Association data recorded a 17% increase in production over 2020 in North America and 18% increase in South America.

On a constant currency basis, revenues increased by 21%, from €645 million in 2020. The Group experienced a FX revenues headwind, given BRL and USD weakened in 2021.

During 2021, the Group advanced its investment projects in Brazil, which are part of the Group's Production Optimisation Programme. At the Brumado mine in Brazil, the installation of a rotary kiln for magnesite production is due to complete in H2 2022. The investment will increase the life of the mine from 47 years to 120 years, and further improve the cost competitiveness of the mine which is already in the first quartile of the global cost curve for DBM raw material. The Group also continued its investment in the modernisation and automation of the Contagem plant, which will increase productivity and reduce costs, creating a Magnesite hub for the Americas. This project is expected to complete in H2 2022. A new primary crusher in York, Pennsylvania, United States, (Americas dolomite hub), was installed and commissioned in 2021 after a multiyear €7 million investment. The new crusher will increase efficiency, reduce waste and extend the life of the dolomitic mine.

RHI Magnesita continues to expand its solutions contracts in the Americas, which accounts for approximately 41% of total revenues. In 2021, the Group secured a new full line solution contract with a major steel customer in Texas, United States, over a time period of 2 years, with 14 people on-site dedicated to refractory installation.

In 2021 the Group expanded its market position in flow control, with five projects commissioned over the year for slide gates and a further four confirmed for 2022. Production capacity in flow control was increased with an investment at York, United States, in a tundish working linings, as well as a new alumina-based production line and pre-cast nozzle line at Tlalnepantla, Mexico.

The Americas region demonstrated excellent traction in expanding its digital offering, a key part of the Group's overall sales strategy. Seven projects for laser measurement technology were successfully implemented, with a further three in the pipeline.

Initiatives to increase the percentage of recycled raw materials in our production chain have gained momentum in the Americas. In the month of March 2021, for the first time, we achieved a record 10.3% recycling rate at Ramos Arizpe, Mexico. R&D success enabled a change in the composition to include higher secondary raw material in the products of the basic and aluminous lines, without affecting performance. The Group has committed €1 million over 2022 with a two-year payback period towards developing Ramos Arizpe, Mexico, into the Group's first recycling plant in North America. This transformation will include a dedicated refractory waste purchasing team and new refractory waste crushing line.

China and East Asia

The China and East Asia region recorded revenues of €206 million in 2021, an increase of 23% on 2020 (2020: €167 million). On a constant currency basis, the Group recorded revenues of €164 million in 2020.

World Steel Association data recorded a 1% decrease in production over 2020 in the combined region, where production in China decreased by 3%.

The Group performed especially well in the East Asia region, where revenues increased by 33% to €132 million from 2020 (2020: €99 million) reflecting the strength of the economic rebound in the region, especially within South Korea, Taiwan and Vietnam. China revenues increased to €74 million (2020: €67 million), as the Group continued to execute its strategy in developing new business and increasing market share. However, steel production in China was adversely impacted by the Chinese Government's steel reduction policy implemented in H2 2021, environmental restrictions imposed ahead of the Beijing Winter Olympics and power shortages in Q4, which impeded production and reduced local refractory demand. China revenues increased by 10% to €74 million, from €67 million in 2020.

Over the next four years a key focus area for the Group will be to grow its market share in EAF plants, with an additional 75Mt of capacity in China expected by 2023. In 2021, the group completed the start up of its first Quantum-EAF project in China with Pinggang. It also achieved a new record number of heats for the EAF plant at SJZ steel, driving efficiencies for the customer and contributing to the establishment of a new solutions contract.

As part of the Group's ongoing Production Optimisation Plan, a new temper furnace was implemented at Dalian, China, which will approximately double capacity at that site. Additionally, the production plant installed a new flow control production line for purge plugs.

Dalian, China, is home to one of the Group's first Manufacturing Execution Systems ("MES"), a flagship site for the Group's digitalisation initiatives. The MES project was initiated in August 2021 and is due to complete during H2 2022, which will optimise operation of machinery, improve safety and reduce costs. The Group also implemented a new RFID-enabled warehouse in Chongqing, China. RFID technology allows customers to achieve real time, virtual inventory management of consignment stock.

The Group initiated an on-site recycling solutions contract with a major Chinese steel customer in 2020, and following strong performance during 2021, will now commission the project as a global pilot given its efficient and cost-effective sorting, treatment and recycling processes.

India, Africa and West Asia

Total revenues recorded for the year in India, Africa and West Asia was €359 million, an increase of 26% compared to 2020 (2020: €285 million). The combined region recorded significant volume growth in 2021, with sales volumes higher than in 2019. On a constant currency basis, revenues increased by 30% (2020: €275 million). By comparison, India, Africa and West Asia steel production increased by 15% in the period according to the World Steel Association data. The strong revenues performance was due to a strong economic rebound in the combined region, despite the strict Covid-19 lockdown in India in H1 2021.This was supported by the financial stimulus programme in India for infrastructure development. Demand for steel exports from India have also increased, increasing refractory demand in the region, as production in China slowed. This trend is expected to continue into 2022.

Outside of India, the Group continued to partner with its solutions customers in Bahrain and Oman, helping to drive production efficiencies. The Group won market share in Iraq and Algeria and expanded its business in Egypt.

In India, the region has expanded capacity in non-basic shaped products at the Vizag plant as part of the Production Optimisation Plan. A new tunnel kiln was commissioned in October 2021 which will increase capacity of alumina brick production and a new shuttle kiln at the plant was installed during 2021, ready for production in Q1 2022. In line with the Indian government's "Made in India" policy, which encourages companies to on-shore manufacturing in India for domestic customers, the Group is gaining competitive advantage from manufacturing products for the Indian market locally. 65% of the plant's production is supplied to customers in the domestic market. The Group also announced a €42 million investment to expand its production capacity in India and increase automation of existing plants in Bhiwadi, Vizag and Cuttack, to be completed by 2025.

The combined region celebrated the first installation of the APO tool in 2021 at a BOF operated by a major steel customer. The India region also won its first contract in the country for electro-magnetic level indicators ("EMLI") for a tundish application of a major steel customer. Other new products and services installed during the year to improve steel quality at customer sites include Purgebeam and Magfilter, which have been designed by RHI Magnesita's R&D and innovation departments using flow simulation to imitate the flow of molten steel in moulds and in the tundish.

As part of the Group's efforts to drive its solutions business, the Group won a solutions contract in October 2021 to partner with a major steel customer which has recently commissioned the largest brownfield expansion in India, creating the largest plant capacity in India. RHI Magnesita will provide refractory products for applications such as the BOF, Ladle and RH degasser as well as flow control applications.

In November 2021, the Group opened a new regional R&D centre in India to facilitate a greater understanding of local markets and enable more unified technology transfer in the region, driving cost efficiencies. Focus areas will be local raw material development, providing solutions support for customer performance improvement projects and supporting local content and manufacturing in each of the Group's three plants in India.

Over the year the Group progressed its flow control strategy in this region, increasing market share in both slide gates and ladle purging and remains the market leaders in the region for the long segment of tundish and ISO products.

India has historically recorded high rates of secondary raw material usage, given the lack of virgin raw material availability in the region, and in 2021 it recorded a high recycling rate of 16%. In West Asia and Africa, the Group consistently increased the amount of secondary raw material content in products sold to EAF and ladle applications and increased efforts to collect spent refractory material from customer sites.

Industrial Division

Industrial	2021	2020 (Reported)	2020 (Constant currency)	Change (reported)	Change (constant currency)
Revenue (€m)	729	689	679	5.7%	7.3%
Gross Profit (€m)	190	182	183	4.0%	3.3%
Gross margin	26.1%	26.4%	27.0%	(30)bps	(90)bps
Adj EBITA (€m)	97	87	89	12.1%	9.2%
Adj EBITA margin	13.3%	12.6%	13.1%	70bps	20bps

Industrial by segment by revenue (€m)	2021	2020 (Reported)	2020 (Constant currency)	Change (reported)	Change (constant currency)
Cement/Lime	322	273	267	17.8%	20.4%
Industrial Projects	407	416	407	(2.2)%	(0.8)%

The Industrial Division accounts for c.30% of Group revenues and provides refractory solutions to customers across cement and lime and industrial projects (non-ferrous metals ('NFM'), glass, environment, energy and chemicals ('EEC'), foundry and mineral sales).

The Industrial Division segments are subject to longer replacement cycles as the lifetime of a refractory product in these industries ranges from one year to 20 years. Refractories used in the Industrial Division are treated as capital expenditure at our customer sites, given the long replacement cycles of over a year. They account for between 0.2% to 1.5% of the customer cost base and consume less refractory material per tonne of production than steel, on average. The Industrial Division serves approximately 2,800 customers worldwide, with a significant global market share of c.35% in Cement and Lime and c.25% in NFM and c.5% in Glass, EEC and Foundry.

Industrial Division revenues increased by 6% in 2021 to €729 million (2020: €689 million), led by a strong recovery in the Cement and Lime business which increased by 18% following a record year of volumes. On a constant currency basis, revenues increased by 7%, from €679 million in 2020.

Gross profit for the Division was €190 million, up from €182 million in 2020 and gross margin declined over the same period by 30bps to 26.1% as the impact from supply chain disruption increased costs, especially for the project business.

Cement and Lime

Revenue for the year was €322 million, up by 18% on 2020 (2020: €273 million), and on a constant currency basis by 20% (2020: €267 million). Cement and Lime accounted for 44% of total Industrial Division revenues in 2021 and 13% of Group revenues. The Cement and Lime segment recorded a record year for volumes attributed to both new orders and from a carry-over of delayed orders during 2020. End-user demand remained strong throughout 2021 and this trend is expected to continue into 2022 with full order books for repair activity in Q1 2022. Stimulus packages, initiating new infrastructure projects, were implemented globally to help stimulate slowed economies over 2020, boosting cement demand internationally.

The raw materials required for the portfolio of refractory products for the Cement and Lime segment were in tight supply at the start of the year, which was exacerbated by global freight disruption from Q2 onwards. Raw material inventory levels have since been restored ahead of the high seasonal demand expected during the 2021-2022 northern hemisphere winter months, when the annual industry repair cycle takes place.

Pricing was softer in the first half of the year, resulting in a lower average price per tonne compared to 2020. Pricing was established at the start of Q3 2020 for H1 2021, when refractory raw material prices were at their lowest levels for five years. Price increases implemented during 2021 in response to inflationary pressures started to come through during Q4 2021 and will be fully realised in 2022. The higher raw material price environment towards the end of 2021 supported customer pricing negotiations for 2022.

On 30 December 2021 the Group acquired a 51% ownership stake in 'Chongqing Boliang Refractory Materials Co. Ltd.' for a cash consideration of €5 million. The joint venture investment will establish production of non-basic refractories alongside an existing fully automated plant that will complement the Group's magnesite-based production in Dalian and deliver a full range of refractory products for cement customers in China and Southeast Asia.

In 2021 the Group continued to make considerable traction in its ANKRAL Low Carbon (LC) product in Europe based on the circular economy approach and sustainable technology. The Group approximately doubled revenues contribution from these products compared to 2020 and increased the number of customers served from 13 to 22. In 2021 the production of the ANKRAL LC series was also extended from

Europe to China, at the Dalian site, which will further increase our market share in sustainable products in Asia.

The Group also expanded its digitalisation solutions in 2021, launching the 'LaserScan' preview for cement customers. LaserScan uses high speed 3D lasers to measure the remaining thickness of rotary kiln linings ahead of any repair work, optimising refractory performance and kiln availability.

Industrial Projects

Industrial Projects, comprising NFM, process industries (glass, EEC and foundry) and mineral sales reported revenues of €407 million in 2021, 2% below revenues recorded in 2020 (€416 million) and below expectations for the year. On a constant currency basis, 2021 revenue was 1% lower than 2020 (2020: €410 million). The Industrial Projects business experienced significant demand throughout the year for both NFM and process industries, from new orders as well as carry-over from project postponements in 2020. Demand in the non-ferrous metals sector strengthened in H1 2021, as commodity prices rallied in the first five months of 2021.

NFM recorded revenues of €145 million, 2% higher than the prior year (2020: €142 million). Process industries revenues declined by 4% to €262 million (2020: €274 million) as the production capability in the business and deliveries to customers were impacted by insufficient production capacity, given the production optimisation plan work at Radenthein, Austria, which was then aggravated by the global supply chain disruption.

Disruption across the Industrial Projects business was exacerbated by unplanned maintenance at Radenthein, the Group's main production facility for the projects business. An unscheduled shutdown during Q3 2021 adversely impacted Group EBITA by €8 million. The plant was repaired and fully operational in Q4 2021.

In response to higher inflationary costs, the Group implemented price increases in its Industrial Projects business for new orders as well as for previously negotiated contracts. The response from our customers has been largely successful, however the long lead-time characteristic of projects with replacement cycles of over one year means that a significant portion of these price increases will only be realised in 2022.

Radenthein, Austria, is the Group's main production plant for Industrial Projects. The Group is modernising and, automating the plant, as well as investing in new infrastructure, centred around a new tunnel kiln, which was inaugurated in May 2021. A further investment towards new presses at the site will increase the plant's production capacity by 30%, with the investment project due to complete in H2 2022.

The Group strengthened its sustainable market share in 2021 and broadened its solution offering, signing a consortium agreement with Russia's ZiO-Podolsk to supply refractory engineering, materials and installation services. The initiative will construct four new waste-to-energy plants in the Moscow area, which is due to commence in 2023. The plants will process around 2.8 million tonnes of waste annually, supplying up to 1.5 million people with a renewable source of electricity.

The Group's AGELLIS® systems increase yield, improve quality, reduce maintenance, greatly enhance safety and are used in our customer operations for NFM, as well as steel. Sensor technology monitors process critical parameters within our customers' furnaces using electromagnetic and optical sensors. AGELLIS® systems are gaining significant market share within the non-ferrous metals segment.

Outlook

In the steel division there is a strong order book and visibility for the first half of 2022, although the high customer demand recovery experienced in 2021 is expected to normalise in the second half. The industrial division order book covers most of 2022 and lead times in some cases exceed 12 months. Industrials division margins will continue to benefit in the first quarter of 2022 from the stronger pricing environment for cement customers compared to the prior year.

Cost pressures from freight, energy and raw materials are continuing in 2022 with significant labour inflation now also expected in both local currency and Euro terms, as high inflation leads to wage demands. Further price increases have become effective in January and more price increases are under negotiation to preserve margins in response to ongoing cost inflation.

Consolidated Statement of Financial Position

as of 31.12.2021

in € million	Note	31.12.2021	31.12.2020
ASSETS			
Non-current assets			
Goodwill	(10)	114.4	110.8
Other intangible assets	(11)	282.6	265.7
Property, plant and equipment	(12)	1,089.7	958.6
Investments in joint ventures and associates	(13)	5.7	16.3
Other non-current financial assets	(14)	14.6	14.5
Other non-current assets	(15)	41.2	26.6
Deferred tax assets	(16)	202.4	199.2
		1,750.6	**1,591.7**
Current assets			
Inventories	(17)	976.5	477.4
Trade and other current receivables	(18)	568.2	351.8
Income tax receivables	(19)	35.1	27.7
Other current financial assets	(20)	2.9	0.3
Cash and cash equivalents	(21)	580.8	587.2
Assets disposal groups	(5)	0.0	16.6
		2,163.5	**1,461.0**
		3,914.1	**3,052.7**

EQUITY AND LIABILITIES			
Equity			
Share capital	(22)	49.5	49.5
Group reserves	(23)	736.4	596.6
Equity attributable to shareholders of RHI Magnesita N.V.		785.9	646.1
Non-controlling interests	(24)	36.3	20.0
		822.2	**666.1**
Non-current liabilities			
Borrowings	(25)	1,321.0	983.0
Other non-current financial liabilities	(26)	106.0	88.8
Deferred tax liabilities	(16)	48.4	45.0
Provisions for pensions	(27)	269.0	303.6
Other personnel provisions	(28)	68.7	70.5
Other non-current provisions	(29)	63.6	62.6
Other non-current liabilities	(30)	5.9	4.8
		1,882.6	**1,558.3**
Current liabilities			
Borrowings	(25)	218.1	131.5
Other current financial liabilities	(26)	19.2	44.0
Trade payables and other current liabilities	(31)	878.8	522.7
Income tax liabilities	(32)	38.2	25.8
Current provisions	(33)	55.0	86.4
Liabilities disposal groups	(5)	0.0	17.9
		1,209.3	**828.3**
		3,914.1	**3,052.7**

Consolidated Statement of Profit or Loss

from 01.01.2021 to 31.12.2021

in € million	Note	2021	2020
Revenue	(34)	2,551.4	2,259.0
Cost of sales	(35)	(1,967.9)	(1,708.9)
Gross profit		**583.5**	**550.1**
Selling and marketing expenses	(36)	(108.1)	(110.9)
General and administrative expenses	(37)	(217.4)	(198.3)
Restructuring	(38)	(58.8)	(113.8)
Other income	(39)	29.1	19.7
Other expenses	(40)	(14.5)	(26.2)
EBIT		**213.8**	**120.6**
Interest income	(41)	14.2	5.9
Interest expenses on borrowings		(20.7)	(20.1)
Net income/(expense) on foreign exchange effects and related derivatives	(42)	2.8	(42.8)
Other net financial expenses	(43)	(21.2)	(29.7)
Net finance costs		**(24.9)**	**(86.7)**
Result from joint ventures and associates	(13)	100.2	7.6
Profit before income tax		**289.1**	**41.5**
Income tax	(44)	(39.4)	(13.9)
Profit after income tax		**249.7**	**27.6**
attributable to shareholders of RHI Magnesita N.V.		243.1	24.8
attributable to non-controlling interests	(24)	6.6	2.8

in €			
Earnings per share – basic	(51)	5.10	0.51
Earnings per share – diluted		5.05	0.50

Consolidated Statement of Comprehensive Income

from 01.01.2021 to 31.12.2021

in € million	Note	2021	2020
Profit after income tax		**249.7**	**27.6**
Currency translation differences			
Unrealised results from currency translation	(6)	70.5	(227.8)
Deferred taxes thereon	(44)	0.6	39.9
Current taxes thereon		0.1	3.7
Unrealised results from net investment hedge	(55)	(14.1)	15.8
Deferred taxes thereon		3.5	(2.0)
Current taxes thereon		0.0	(2.0)
Reclassification to profit or loss	(40)	0.0	0.3
Reclassification to profit or loss – Disposal subsidiaries	(5)	(7.9)	0.0
Cash flow hedges			
Unrealised fair value changes	(54)	8.7	(3.6)
Deferred taxes thereon	(44)	(2.1)	0.9
Items that will be reclassified subsequently to profit or loss, if necessary		**59.3**	**(174.7)**
Remeasurement of defined benefit plans			
Remeasurement of defined benefit plans	(27)	25.3	(0.7)
Deferred taxes thereon	(44)	(5.2)	0.6
Share of other comprehensive income of joint ventures and associates	(13)	0.6	0.0
Reclassification to other reserves due to disposal of joint ventures and associates		(0.5)	0.0
Items that will not be reclassified to profit or loss		**20.2**	**(0.1)**
Other comprehensive income after income tax		**79.5**	**(174.8)**
Total comprehensive income		**329.2**	**(147.2)**
attributable to shareholders of RHI Magnesita N.V.		320.5	(147.5)
attributable to non-controlling interests	(24)	8.7	0.3

Consolidated Statement of Cash Flows

from 01.01.2021 to 31.12.2021

in € million	Note	2021	2020
Cash (used in) / generated from operations	**(47)**	**(53.3)**	**366.6**
Income tax paid less refunds		(38.5)	(47.6)
Net cashflow from operating activities		**(91.8)**	**319.0**
Investments in property, plant and equipment and intangible assets		(252.1)	(156.9)
Investments in subsidiaries net of cash acquired		3.2	(8.5)
Cash flows from sale of subsidiaries net of cash disposed of		(4.8)	0.0
Cash receipts from the sale of equity instruments of interests in joint ventures		100.0	0.0
Cash inflows from the sale of property, plant and equipment		12.2	10.5
Dividends received from joint ventures and associates		7.6	10.8
Investment subsidies received		2.4	0.0
Interest received	(49)	2.7	6.0
Cash outflows / inflows from non-current receivables		(0.1)	0.2
Net cashflow from investing activities		**(128.9)**	**(137.9)**
Acquisition of treasury shares		(95.5)	(2.7)
Dividend payments to shareholders of the Group		(71.2)	(49.1)
Dividend payments to non-controlling interests		(1.4)	(1.1)
Proceeds from borrowings and loans		516.1	97.6
Repayments of borrowings and loans		(112.7)	(23.7)
Changes in current borrowings		5.5	7.4
Interest payments	(49)	(26.6)	(30.5)
Repayment of lease obligations		(16.3)	(15.8)
Interest payments from lease obligations		(1.1)	(1.3)
Cash flows from derivatives		0.9	1.5
Net cashflow from financing activities	**(48)**	**197.7**	**(17.7)**
Total cash flow		**(23.0)**	**163.4**
Change in cash and cash equivalents		**(23.0)**	**163.4**
Cash and cash equivalents at beginning of year[1]		589.2	467.2
Foreign exchange impact		14.6	(41.4)
Cash and cash equivalents at year-end	(21)	580.8	589.2

1) thereof shown under assets held for sale €2.0 million as of 31.12.2020.

Consolidated Statement of Changes in Equity

from 01.01.2021 to 31.12.2021

			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	Accumulated other comprehensive income/expenses relating to disposal groups	Equity attributable to shareholders of RHI Magnesita N.V.	Non-controlling interests	Total equity
Note	(22)	(23)	(23)	(23)	(23)	(23)	(23)	(23)			(24)	
31.12.2020	**49.5**	**(21.5)**	**361.3**	**288.7**	**376.8**	**(13.7)**	**(145.7)**	**(257.1)**	**7.8**	**646.1**	**20.0**	**666.1**
Profit after income tax	**–**	**–**	**–**	**–**	**243.1**	**–**	**–**	**–**	**–**	**243.1**	**6.6**	**249.7**
Currency translation differences	–	–	–	–	–	–	–	58.5	(7.9)	50.6	2.1	52.7
Market valuation of cash flow hedges	–	–	–	–	–	6.6	–	–	–	6.6	–	6.6
Remeasurement of defined benefit plans	–	–	–	–	–	–	20.0	–	0.1	20.1	–	20.1
Share of other comprehensive income of joint ventures and associates	–	–	–	–	(0.5)	–	0.6	–	–	0.1	–	0.1
Other comprehensive income after income tax	**–**	**–**	**–**	**–**	**(0.5)**	**6.6**	**20.6**	**58.5**	**(7.8)**	**77.4**	**2.1**	**79.5**
Total comprehensive income	**–**	**–**	**–**	**–**	**242.6**	**6.6**	**20.6**	**58.5**	**(7.8)**	**320.5**	**8.7**	**329.2**
Dividends	–	–	–	–	(71.2)	–	–	–	–	(71.2)	(1.4)	(72.6)
Shares repurchased [1]	–	(95.5)	–	–	–	–	–	–	–	(95.5)	–	(95.5)
Reclassification of puttable non-controlling interests without change of control[2]	–	–	–	–	(1.6)	–	–	1.4	–	(0.2)	9.0	8.8
Change in non-controlling interests due to addition to consolidated companies	–	–	–	–	–	–	–	–	–	–	3.4	3.4
Reclassification of puttable non-controlling interests without a change of control	–	–	–	–	(20.0)	–	–	–	–	(20.0)	(3.4)	(23.4)
Share-based payment expenses	–	–	–	–	6.2	–	–	–	–	6.2	–	6.2
Transactions with shareholders	**–**	**(95.5)**	**–**	**–**	**(86.6)**	**–**	**–**	**1.4**	**–**	**(180.7)**	**7.6**	**(173.1)**
31.12.2021	**49.5**	**(117.0)**	**361.3**	**288.7**	**532.8**	**(7.1)**	**(125.1)**	**(197.2)**	**0.0**	**785.9**	**36.3**	**822.2**

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.
2) Further information is provided under Note (5) and Note (53).

		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	Accumulated other comprehensive income/expenses relating to disposal groups	Equity attributable to shareholders of RHI Magnesita N.V.	Non-controlling interests	Total equity
Note	(22)	(23)	(23)	(23)	(23)	(23)	(23)	(23)			(24)	
31.12.2019	**49.5**	**(18.8)**	**361.3**	**288.7**	**379.6**	**(11.0)**	**(145.6)**	**(79.8)**	**–**	**823.9**	**20.8**	**844.7**
Profit after income tax	**–**	**–**	**–**	**–**	**24.8**	**–**	**–**	**–**	**–**	**24.8**	**2.8**	**27.6**
Currency translation differences	–	–	–	–	–	–	–	(177.3)	7.9	(169.4)	(2.5)	(171.9)
Market valuation of cash flow hedges	–	–	–	–	–	(2.7)	–	–	–	(2.7)	–	(2.7)
Remeasurement of defined benefit plans	–	–	–	–	–	–	(0.1)	–	(0.1)	(0.2)	–	(0.2)
Other comprehensive income after income tax	**–**	**–**	**–**	**–**	**–**	**(2.7)**	**(0.1)**	**(177.3)**	**7.8**	**(172.3)**	**(2.5)**	**(174.8)**
Total comprehensive income	**–**	**–**	**–**	**–**	**24.8**	**(2.7)**	**(0.1)**	**(177.3)**	**7.8**	**(147.5)**	**0.3**	**(147.2)**
Dividends	–	–	–	–	(24.5)	–	–	–	–	(24.5)	(1.1)	(25.6)
Shares repurchased	–	(2.7)	–	–	–	–	–	–	–	(2.7)	–	(2.7)
Share-based payment expenses	–	–	–	–	(3.1)	–	–	–	–	(3.1)	–	(3.1)
Transactions with shareholders	**–**	**(2.7)**	**–**	**–**	**(27.6)**	**–**	**–**	**–**	**–**	**(30.3)**	**(1.1)**	**(31.4)**
31.12.2020	**49.5**	**(21.5)**	**361.3**	**288.7**	**376.8**	**(13.7)**	**(145.7)**	**(257.1)**	**7.8**	**646.1**	**20.0**	**666.1**

Notes

to the Consolidated Financial Statements 2021

Principles and Methods

1. 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 Company and its subsidiaries, associates and joint ventures (the "Group") are a global industrial group whose core activities comprise of 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. The Group supplies customers in the steel, cement, lime, glass and non-ferrous metals industries. In addition, the Group's products are used in the environment (waste incineration), energy (refractory construction) and chemicals (petrochemicals) sectors.

The shares of RHI Magnesita N.V. are listed on the Main Market of the London Stock Exchange and are included in the FTSE 250 Index, with a secondary listing on the Vienna Stock Exchange.

RHI Magnesita N.V. was incorporated on 20 June 2017 and became the ultimate parent of the RHI Magnesita Group as of 26 October 2017, after completing the corporate restructuring of RHI AG. Until then, RHI AG was the ultimate parent of the Group. This restructuring represented a common control transaction that had no impact on the Consolidated Financial Statements, except for the reclassification of individual equity components.

The financial year of RHI Magnesita N.V. and the Group corresponds to the calendar year. If the financial years of subsidiaries included in the Consolidated Financial Statements do not end on 31 December due to local legal requirements, a special set of financial statements are prepared for the purpose of consolidation. The reporting date of the Indian subsidiaries is 31 March.

For the following German entities the exemption clause pursuant to section 264 paragraph 3 HGB (German commercial Code) was applied: RHI Urmitz AG & Co. KG (Koblenz), Magnesita Refractories GmbH (Wiesbaden), RHI Dinaris GmbH (Wiesbaden), RHI GLAS GmbH (Wiesbaden), RHI Magnesita Services Europe GmbH (Cologne), RHI Refractories Site Services GmbH (Wiesbaden), RHI Sales Europe West GmbH (Coblenz), RHI Magnesita Deutschland AG (Wiesbaden).

The Consolidated Financial Statements for the period from 1 January 2021 to 31 December 2021 were drawn up in accordance with all International Financial Reporting Standards (IFRSs) mandatory at the time of preparation as adopted by the European Union (EU). The presentation in the Consolidated Statement of Financial Position distinguishes between current and non-current assets and liabilities. Assets and liabilities are classified as current if they are due within one year or within a longer normal business cycle or if the company does not have an unconditional right to defer settlement of the liability for at least 12 months after the reporting date. Inventories as well as trade receivables and trade payables are generally presented as current items. Deferred tax assets and liabilities as well as assets and provisions for pensions and termination benefits are generally presented as non-current items.

The Consolidated Statement of Profit or Loss is drawn up in accordance with the cost of sales method.

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 unless otherwise stated.

Basis for preparation

The preparation of the Consolidated Financial Statements in accordance with generally accepted accounting principles under IFRS, as adopted by the EU, requires the use of estimates and assumptions that influence the amount and presentation of assets and liabilities recognised as well as the disclosure of contingent assets and liabilities as of the reporting date and the recognition of income and expenses during the reporting period. Although these estimates reflect the best knowledge of management based on experience from comparable transactions, the actual values recognised at a later date may differ from these estimates. The financial statements are prepared on a going concern basis.

All amounts in the Notes and tables are shown in € million, unless indicated otherwise. For computational reasons, rounding differences may occur.

The Annual Report was authorised for issue on 27 February 2022 and will be submitted for adoption to the Annual General Meeting of shareholders on 25 May 2022.

2. Initial application of new financial reporting standards

The following amendments of standards have become effective during the reporting period. None of these amendments will have an effect on the Group's accounting and measurement principles.

Standard	Title	Publication (Effective date)[1]	Effects on RHI Magnesita Consolidated Financial Statements
Amendments of standards			
IFRS 16	Amendment to IFRS 16 Leases Covid 19-Related Rent Concessions beyond 30 June 2021	31.03.2021 (01.04.2021)	No effect
IFRS 4	Amendments to IFRS 4 Insurance Contracts – deferral of IFRS 9	25.06.2020 (01.01.2021)	Not relevant
IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16	Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16: Interest Rate Benchmark Reform – Phase 2	27.08.2020 (01.01.2021)	No effect

1) According to EU Endorsement Status Report of 01.02.2022.

IFRS 7, IFRS 9, IAS 39, IFRS 16, IFRS 4 "Interest Rate Benchmark Reform"

In 2019 RHI Magnesita elected to early adopt the Phase 1 amendments to IAS 39 and IFRS 7 Interest Rate Benchmark Reform (IBOR) issued in September 2019 and is still applying the Phase 1 amendments in the Consolidated Financial Statements of 2020. In accordance with the transition provisions, the amendments have been adopted retrospectively to hedging relationships that existed at the start of the reporting period and to the amount accumulated in the cash flow hedge reserve at that date. The Phase 1 amendments provided temporary relief from applying specific hedge accounting requirements to hedging relationships directly affected by the IBOR reform by assuming that the interest rate benchmark is not altered as a result of the IBOR reform. The reliefs stipulated in the IBOR reform should not cause hedge accounting to terminate in general. However, any hedge ineffectiveness was continued and continues to be recorded in the Consolidated Statement of Profit or Loss. Furthermore, the amendments set out triggers for when the reliefs will end, which include the uncertainty arising from interest rate benchmark reform no longer being present.

In August 2020 the Phase 2 amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 were issued, which focus on the treatment of accounting impacts arising from the actual transition from the currently used to an alternative benchmark interest. The Phase 2 amendments are effective for annual periods beginning on or after 1 January 2021 and are to be applied retrospectively. RHI Magnesita's risk exposure that is directly affected by the IBOR reform concerns its USD 200 million floating-rate debt with a remaining term until mid-2023. RHI Magnesita has hedged this debt with an interest rate swap, and it has designated the swap in a cash flow hedge of the variability in cash flows of the debt, due to changes in USD LIBOR that is the current benchmark interest rate. Further information is provided under Note (55). The applicable 3-month USD LIBOR is continued to being published until 30 June 2023 – which is after the last interest fixing date of the USD 200 million debt and interest rate swap. Therefore, the potential risk of any hedge ineffectiveness can be considered immaterial. Even in the unlikely scenario of discontinuation of USD LIBOR before 2023, management considers that the hedged debt would move to the same alternative benchmark rate as the swap, without any material effect on the Group.

One of the main uncertainties regarding LIBOR, even if not directly impacting the Group's structural debt, is the use of its replacement rates after 31 December 2021. As USD LIBOR cannot be applied to new contracts starting 1 January 2022, the Group is being exposed to LIBOR replacement rates for its working capital and short-term financings in USD. Currently, the market predominantly uses a combination of the Secured Overnight Financing Rate (SOFR), plus a fixed credit spread adjustment that is based on a lookback period comparing credit spreads between SOFR and USD LIBOR, ranging from two to five years. As for the SOFR rate, either the simple overnight rate or specific Term-SOFR is used depending on the bank and product. There are still uncertainties in the market whether a true benchmark rate will prevail, that is as easily comparable and widely used as the USD LIBOR, however management is in close contact with banking counterparts to understand how the pricing of each underlying transaction is formed.

The EURIBOR is expected to remain active as the benchmark rate in the Euro area and consequently the risk of discontinuation before 2023 is relatively small, thus the interest rate swap of€305.6 million and its corresponding underlying hedged item, a floating-rate debt, both maturing in 2023, would most likely be unaffected. Even in the unlikely scenario of precocious discontinuation of the EURIBOR, management considers that the hedged debt would move to the same alternative benchmark rate as the swap.

RHI Magnesita is continuing to closely monitor the developments of the IBOR reform and is in regular communication with the banks to minimise any mismatches going forward.

IFRS 16 "Amendment to IFRS 16 Leases Covid-19-Related Rent Concessions"

The amendment permits lessees, as a practical expedient, not to assess whether particular rent concessions occurring as a direct consequence of the COVID-19 pandemic are lease modifications and instead to account for those rent concessions as if they are not lease modifications.

The practical expedient only applies to rent concessions occurring as a direct consequence of the COVID-19 pandemic and only if the following conditions are met cumulatively:

- The change in lease payments results in revised consideration for the lease that is substantially the same as, or less than, the consideration for the lease immediately preceding the change;
- Any reduction in lease payments affects only payments due on or before 30 June 2022; and
- There is no substantive change to other terms and conditions of the lease.

RHI Magnesita has evaluated the effect of applying the amendment to IFRS 16 Leases "COVID-19-Related Rent Concessions" with the conclusion that the Company will not make use of the practical expedient and that there is no effect to be expected to the Group.

3. New financial reporting standards not yet applied

The IASB issued further standards, amendments to standards and interpretations, whose application is, however, not yet mandatory as at 31 December 2021. The following financial reporting standards have not yet been adopted by the EU and were not applied early on a voluntary basis. They are not expected to have a significant impact on RHI Magnesita.

Standard	Title	Publication[1]	Mandatory application for RHI Magnesita	Expected effects on RHI Magnesita Consolidated Financial Statements
New standards and interpretations				
IFRS 14	Regulatory Deferral Accounts	30.01.2014	No EU endorsement	Not relevant
IFRS 17	Insurance Contracts; including amendments to IFRS 17	18.05.2017 (09.12.2021)	01.01.2023	Not relevant
Amendments of standards				
IAS 1	Classification of Liabilities as Current or Non-current	23.01.2020	01.01.2023	No material effects expected
IAS 1	Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2: Disclosure of Accounting policies	12.02.2021	01.01.2023	No material effects expected
IAS 8	Amendments to IAS 8 Accounting policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates	12.02.2021	01.01.2023	No material effects expected
IAS 12	Amendments to IAS 12 Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single transaction	07.05.2021	01.01.2023	No material effects expected

1)According to EU Endorsement Status Report of 01.02.2022.

The following financial reporting standards have been adopted by the EU and were not applied early on a voluntary basis. They are not expected to have a significant impact on RHI Magnesita.

Standard	Title	Publication (EU endorsement)[1]	Mandatory application for RHI Magnesita	Expected effects on RHI Magnesita Consolidated Financial Statements
New standards				
Amendments of standards				
IFRS 17	**IFRS 17 Insurance Contracts (issued on 18 May 2017); including Amendments to IFRS 17**	**25.06.2020**	**01.01.2023**	**not relevant**
IFRS 3, IAS 16, IAS 37	Amendments to IFRS 3 Business Combinations; IAS 16 Property Plant and Equipment; IAS 37 Provisions, Contingent Liabilities and Contingent Assets as well as Annual Improvements 2018-2020	14.05.2020	01.01.2022	No material effects expected

1)According to EU Endorsement Status Report of 01.02.2022.

4. Other changes in comparative information

Segment reporting

As foundry is a very fragmented small customer industry and Segment Industrial is used to serve many more customers than only Segment Steel, given the multitude of different customer industries RHI Magnesita delivers to, the responsibility of the foundry business has been moved from the Segment Steel to Segment Industrial in 2021. The information for the previous year was adjusted accordingly, impacting segment revenue by €12.9 million, segment gross profit by €3.6 million and segment assets by €11.3 million.

5. Methods of consolidation

Subsidiaries

Subsidiaries are companies over which RHI Magnesita N.V. exercises control. Control exists when the company has the power to decide on the relevant activities, is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.

The main operating companies of the RHI Magnesita Group and their core business activities are as follows:

Name and registered office of the company	Country of core activity	Core business activity
RHI Magnesita Deutschland AG, Germany	Germany	Production
Magnesit Anonim Sirketi, Turkey	Turkey	Mining, production, sales
Magnesita Mineração S.A., Brazil	Brazil	Mining
Magnesita Refractories Company, USA	USA	Mining, production, sales
Magnesita Refractories GmbH, Germany	Germany	Production
Magnesita Refratários S.A., Brazil	International	Production, sales
RHI Magnesita Trading B.V., Netherlands	International	Procurement, sales, supply chain
RHI Magnesita India Limited, India	India	Production, sales
RHI Canada Inc., Canada	Canada	Production, sales, provision of services
RHI Magnesita GmbH, Austria	International	Sales, R&D, financing
RHI GLAS GmbH, Germany	International	Sales
RHI Refractories (Dalian) Co., Ltd., PR China	PR China	Production
RHI US Ltd., USA	USA	Production, sales, provision of services
RHI-Refmex, S.A. de C.V., Mexico	Latin America	Sales
Veitsch-Radex GmbH & Co OG, Austria	Austria	Mining, production

The acquisition method is used to account for all business combinations. The purchase price for shares is offset against the proportional share of net assets based on the fair value of the acquired assets and liabilities at the date of acquisition or when control is obtained. Intangible assets which were previously not recognised in the separate Financial Statements of the company acquired are also measured at fair value. Intangible assets identified when a company is acquired, including for example technology, mining rights and customer relations, are only measured separately at the time of acquisition if they are identifiable and are in the control of the company and a future economic benefit is expected.

For acquisitions where less than 100% of shares in companies are acquired, IFRS 3 allows an accounting policy choice whereby either goodwill proportionate to the share held or goodwill including the share accounted for by non-controlling interests can be recognised. This accounting policy choice can be exercised individually for each acquisition. For the acquisition of Magnesita, non-controlling interests have been measured at their proportionate share of Magnesita's identifiable net assets.

If a business combination is achieved in stages, the acquirer's previously held equity interest in the acquiree is remeasured to fair value at the acquisition date. Any gains and losses arising from such remeasurement are recognised in profit or loss.

After completing the purchase price allocation, the determined goodwill is allocated to the relevant cash-generating unit and tested for impairment. In accordance with the provisions of IFRS 3, negative goodwill is immediately recognised in profit or loss in other income after renewed measurement of the identifiable assets, liabilities and contingent liabilities.

Net assets of subsidiaries not attributable to RHI Magnesita N.V. are shown separately in equity as non-controlling interests. The basis for non-controlling interests is the equity after adjustment to the accounting and measurement principles of the RHI Magnesita Group and proportional consolidation entries.

Transaction costs which are directly related to business combinations are expensed as incurred. Contingent consideration included in the purchase price is recorded at fair value at initial consolidation.

When additional shares are acquired in entities already included in the Consolidated Financial Statements as subsidiaries, the difference between the purchase price and the proportional carrying amount in the subsidiary's net assets is offset against shareholders' equity. Gains and losses from the sale of shares are recorded in equity unless they result in a loss of control.

All intragroup results are fully eliminated.

In accordance with IAS 12, deferred taxes are calculated on temporary differences arising from the consolidation. Subsidiaries are deconsolidated on the day control ceases.

Foundation of RHI Magnesita (Chongqing) Co., Ltd., Chongqing, China

On 2 November 2021 RHI Magnesita Group has founded RHI Magnesita (Chongqing) Co., Ltd., Chongqing, China (RHIMNGG). The Group holds a stake of 51% in the share capital of the company.

RHI Magnesita Group exercises control over RHIMNGG, as through voting rights and management representation, it has the power to steer the relevant activities of the business and can use this power to affect the variable returns from the company that it is exposed to. Therefore, RHIMNGG is a fully consolidated entity.

The non-controlling interests have the option to put the remaining equity stake to RHI Magnesita in 2031. RHI Magnesita opts to account for the non-controlling interests in accordance with IFRS 10. Thus, the non-controlling interests are initially recognised in accordance with IFRS 3 within equity while the put option liability is initially recognised against the non-controlling interest, reducing it to zero. The put option liability is recognised as a financial liability in accordance with IFRS 9. Further information on the fair value of the put option is provided under Note (53).

Disposal of RHI NORMAG AS and Premier Periclase Limited

In line with the Group's raw material strategy, the Group completed the disposal of RHI Normag AS, Porsgrunn, Norway and Premier Periclase Limited, Drogheda, Ireland on 1 February 2021, being classified as held for sale as at 31 December 2020. The fair value less cost of disposal of the disposal group was determined with reference to the compensation payable to the purchaser. The total gain on loss of control of €6.0 million recognised in the Consolidated Statement of Profit or Loss predominantly relates to the recycling of certain components of Other Comprehensive Income of the entities within the disposal group.

The gain on loss of control is presented as follows:

in € million	01.02.2021
Loss on derecognition of net assets	(1.2)
Recycling of OCI components to P&L	8.0
Result from deconsolidation	**6.8**
Cash consideration payable to the purchaser	(0.8)
Gain from loss of control	**6.0**

As of 31 December 2021, further provisions for restructuring costs amounting to €4.2 million have been recognised for the exposure to an environmental guarantee and unfavourable contracts, see Note (33).

The following assets and liabilities were disposed of as at 1 February 2021:

in € million	01.02.2021
Non-current assets	5.3
Inventories	7.2
Trade receivables and other current assets	2.0
Cash and cash equivalents	4.0
Assets	**18.5**
Non-current liabilities	1.4
Current liabilities	15.9
Liabilities	**17.3**

Merger of Indian entities

In June 2021 the two Indian subsidiaries RHI CLASIL Private Limited and RHI India Private Limited were merged into RHI Orient Refractories Limited (ORL), now renamed to RHI Magnesita India Limited, leaving RHI Magnesita with a share of 70.19% in ORL. As a result of this transaction, put options held by the minority shareholders were waived and consequently the current financial liability of €8.8 million was reclassified to non-controlling interest within equity. Further information is provided under Note (24) and (53).

Joint ventures and associates

Shares in joint ventures and associates are accounted for using the equity method. A joint venture is a joint arrangement between the RHI Magnesita Group and one or several other partners whereby the parties that have joint control over the arrangement have rights to the net assets of the arrangement.

An associate is an entity over which the RHI Magnesita Group has significant influence. Significant influence is the power to participate in the investee's financial and operating policy decisions without control or joint control. There is the rebuttable presumption that if a company holds directly or indirectly 20% of the shares of the investee or has other possibilities (e.g. through seats in the supervisory board) to influence the company's financial and operating policy decisions it has significant influence over the investee.

At the date of acquisition, a positive difference between the acquisition costs and the share in the fair values of identified assets and liabilities of the joint ventures and associates is determined and recognised as goodwill. Goodwill is shown as part of investments in joint ventures and associates in the Statement of Financial Position.

The carrying amount of investments accounted for using the equity method is adjusted each year to reflect the change in equity of the individual joint venture or associate that is attributable to the RHI Magnesita Group. Unrealised intragroup results from transactions are offset against the carrying amount of the investment on a pro-rata basis upon consolidation, if material.

RHI Magnesita examines at every reporting date whether there exist any objective indications of an impairment of the shares in joint ventures and associates. If such indications exist, an impairment loss is determined as the difference between the recoverable amount and the carrying amount of the joint ventures and associates and is recognised in profit and loss in the item share of profit of joint ventures and associates.

When the group's share of losses in an equity-accounted investment equals or exceeds its interest in the entity, including any other unsecured long-term receivables, the group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the other entity. If the equity-accounted investment subsequently reports profits, the entity resumes recognising its share of profits only after those profits equal or exceed its share of losses not recognised.

The Financial Statements of the companies accounted for using the equity method are prepared in accordance with uniform accounting and measurement methods throughout the Group.

Acquisition of Chongqing Boliang Refractory Materials Co., Ltd, Chongqing, China

On 30 December 2021 RHI Magnesita Group has acquired a 51% ownership stake over Chongqing Boliang Refractory Materials Co., Ltd, Chongqing, China (RHIMNU), for a cash consideration of €5.2 million.

RHI Magnesita Group has determined that it does not control Chongqing Boliang Refractory Materials Co., Ltd even though the Group owns 51% of the issued capital of this entity. The Group is not represented in the management board of the entity and does not have the power to direct the relevant activities of the entity, but participates in central financial policy-making choices, including decisions about dividends. RHI Magnesita Group has significant influence over RHIMNU. RHI Magnesita Group has the option to purchase the remaining equity stake from the JV partner in 2031 therefore.

Disposal of Magnifin

As MAGNIFIN Magnesiaprodukte GmbH & Co KG ("MAGNIFIN"), is not core to RHI Magnesita's growth strategy, the 50% stake in Magnifin was sold as of 30 December 2021 for a cash consideration of €100.0 million to the joint venture partner J.M. Huber Corporation. The book value as of 31 December 2021 of the interest in the joint venture amounts to €0.0 million (31.12.2020: €15.8 million). Most of its profits are distributed and RHI Magnesita is entitled to receive the share of the dividend accordingly until closing. Further information is provided under Note (13).

6. 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.

The items included in the Financial Statements of each Group company are based on the currency of the primary economic environment in which the company operates (functional currency).

Foreign currency transactions and balances

Foreign currency transactions in the individual Financial Statements of Group companies are translated into the functional currency based on the exchange rate in effect on the date 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 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 denominated in foreign currency are carried at historical rates.

If foreign companies are deconsolidated, the currency translation differences are recycled to 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 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.

Group companies

The Annual Financial Statements of foreign subsidiaries that have a functional currency differing from the Group presentation currency are translated into Euros 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.

RHI Magnesita has evaluated the effect of applying IAS 29 "Financial Reporting in Hyperinflationary Economies" in Argentina with the conclusion that the effect on the Consolidated Financial Statements is considered immaterial to the Group.

The Euro exchange rates of currencies important for the RHI Magnesita Group are shown in the following table:

		Closing rate		Average rate[1]	
Currencies	1 € =	31.12.2021	31.12.2020	2021	2020
Argentine Peso	ARS	116.25	103.47	111.99	79.35
Brazilian Real	BRL	6.30	6.38	6.38	5.83
Canadian Dollar	CAD	1.44	1.57	1.49	1.53
Chinese Renminbi Yuan	CNY	7.20	8.03	7.68	7.89
Indian Rupee	INR	83.89	89.83	87.76	84.13
Mexican Peso	MXN	23.12	24.45	24.20	24.48
Norwegian Krone	NOK	9.98	10.50	10.21	10.76
Pound Sterling	GBP	0.84	0.90	0.86	0.89
Swiss Franc	CHF	1.03	1.08	1.08	1.07
South African Rand	ZAR	17.97	17.97	17.60	18.72
Turkish Lira	TRY	15.01	9.07	10.29	7.96
US Dollar	USD	1.13	1.23	1.19	1.14

1) Arithmetic mean of the monthly closing rates.

7. Principles of accounting and measurement

Goodwill

Goodwill is recognised as an asset in accordance with IFRS 3. It is tested for impairment at least once each year, or when events or a change in circumstances indicate that the asset could be impaired.

Other intangible assets

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 volume. Given that globally there are currently few or no viable alternatives for the construction and automotive segments to use other than Steel and Industrial products such as Cement and Glass and given the production process for Steel and Industrial products is moving towards green production, which will still require very high temperatures, our refractory products, also in the green economy, will remain to be required. The raw materials to our refractory products, that are extracted from our mines, will therefore continue to be used in line with previously assessed economic useful life terms, based on our current assessment. However, there remains a level of uncertainty and our views may change over time. Therefore the number of years of depreciation and cash generation to offset the carrying value of these assets, have remained unchanged in our assessment.

Customer relations were recognised in the course of purchase price allocations of acquired subsidiaries and are amortised on a straight-line basis over their expected useful life.

Research costs are expensed in the year incurred and included in general and administrative expenses.

Development costs are only capitalised if the allocable costs of the intangible asset can be measured reliably during its development period. Moreover, capitalisation requires that the product or process development can be clearly defined, is feasible in technical, economic and capacity terms and is intended for own use or sale. In addition, future cash inflows which cover not only normal costs but also the related development costs must be expected. Capitalised development costs are amortised on a straight-line basis over the expected useful life, however, with a maximum useful life of ten years. Amortisation is recognised in cost of sales.

The development costs for internally generated software are expensed as incurred if their primary purpose is to maintain the functionality of existing software. Expenses that can be directly and conclusively allocated to individual programmes and represent a significant extension or improvement over the original condition of the software are capitalised as production costs and added to the original purchase price of the software. These direct costs include the personnel expenses for the development team as well as a proportional share of overhead costs. Software is predominantly amortised on a straight-line basis over a period of four years.

Purchased intangible assets are measured at acquisition cost, which also includes acquisition-related costs, less accumulated amortisation and impairments. Intangible assets with a finite useful life are amortised on a straight-line basis over the expected period of useful life. The following table shows useful lives of the Group's main classes of intangible assets:

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

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 the expected useful life, calculated pro rata from the month the asset is available for use.

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 production costs. 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 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.

Stripping costs incurred in the development phase to gain access to mines are recognised as a separate other non-current asset. These capitalised prepaid expenses are subsequently depreciated by reference to the actual depletion of the mineral resources of the mine during the production phase.

Land and plant under construction are not depreciated. Depreciation of other material property, plant and equipment is based on the following useful lives in the RHI Magnesita Group:

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

RHI Magnesita's leases include mainly arrangements regarding land and buildings, technical equipment and machinery as well as other equipment, furniture and fixtures. The average lease term is nine years for land and buildings, five 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.

RHI Magnesita makes use of the following practical expedients of IFRS 16:

- Lease payments for leases whose contractual term is 12 months or less or whose remaining term at adoption is 12 months or less will continue to be recognised as an expense.
- Lease payments for leases for which the underlying asset is of low value will continue to be recognised as an expense.
- Applying a single discount rate to a portfolio of leases with reasonably similar characteristics.

Since 1 January 2019, leases are recognised as a Right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between principal payments on the liability and finance cost. The finance cost is charged to profit or loss over the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The Right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- Fixed payments (including in-substance fixed payments), less any lease incentives receivable
- Variable lease payments that are based on an index or a rate
- Amounts expected to be payable by the lessee under residual value guarantees
- The exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- Payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions. The incremental borrowing rate is based on the German federal bond and the US Government Treasury Yield Curve. Based on these two governmental curves, a spread is determined in relation to the bond rating of RHI Magnesita. This spread is then added with an inflation differential and a country risk premium for each country. The weighted average incremental borrowing rate applied to these lease liabilities was 3.62%.

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

- The amount of the initial measurement of lease liability
- Any lease payments made at or before the commencement date less any lease incentives received
- Any initial direct costs, and
- Restoration and removal costs.

A lease modification is a change in the scope of a lease or the consideration for a lease, that was not part of the original terms and conditions of the lease. If the modification decreases the scope of the lease, the carrying amount of the Right-of-use asset and the lease liability has to be reduced accordingly. If the modification increases the scope of the lease (consideration is not at a stand-alone price), the carrying amount of the Right-of-use asset and the lease liability has to be increased accordingly.

Payments associated with short-term leases of equipment and vehicles and all leases of low-value assets are recognised as an expense in 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 2021 amount to €2.2 million (31.12.2020: €4.5 million). The total cash outflow for leases in 2021 amounts to €19.6 million (31.12.2020: €21.7 million).

The residual values and economic useful lives of property, plant and equipment, intangible assets and Right-of-use assets 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 as incurred if the criteria per IAS 16 have been met. 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.

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

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. Intangible assets with an indefinite useful live and goodwill are tested for impairment at least annually.

An asset is considered to be impaired if its recoverable amount is less than its carrying amount. The recoverable amount of an asset is the higher of its fair value less costs of disposal and its value in use (present value of future cash flows). 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 and for other intangible assets ceases to exist, a reversal of impairment on the amortised acquisition and production costs is recognised in profit or loss.

In the case of impairment losses related to cash-generating units (CGUs) to which goodwill is allocated, the goodwill is reduced first. If the impairment loss exceeds the carrying amount of goodwill, the difference is apportioned proportionately to the remaining non-current tangible and intangible assets of the CGU on the basis of their carrying amounts. Reversals of impairment losses recognised on goodwill are not permitted and are therefore not considered.

If there is an indication for an impairment of a specific asset or a group of assets, only this specific asset will be tested for impairment. The recoverable amount is determined as the asset's fair value. If the fair value is lower than the carrying amount, an impairment loss is recorded in EBIT. If impairment losses arise due to restructuring, they are recorded in restructuring costs.

Cash-generating units (CGU)

In the Group individual assets do not generate cash inflows independent of one another; therefore, no recoverable amount can be presented for individual assets. As a result, the assets are combined in CGUs, which largely generate independent cash inflows. These units are combined in strategic business units and reflect the market presence and market appearance and are as such responsible for cash inflows. CGUs are determined based on group of assets that can generate cash inflows independent of other assets.

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 RHI Magnesita's 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 RHI Magnesita products at the customer's plant, from the appropriate installation and support of optimal operations, to environmentally sound disposal with the customer or the 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 units 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.

Major assumptions

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 developments of the COVID-19 pandemic, energy and raw material prices. The detailed planning period was shortened by one year compared with the previous period and is now based on the Budget and Long-Term Plan for the next four years. This is a change in estimate compared to prior period.

The detailed planning of the first four years is congruent with the strategic business and financial planning. Based on the detailed planning period, it is 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 of the current and the possible degree of utilisation of the assets.

RHI Magnesita is subject to environmental and other laws and regulations in various countries in which it operates and has established environmental policies and procedures aimed at compliance with these laws. RHI Magnesita has incorporated considerations for increased energy and raw material prices in its Budget and Long-Term Plan 2023-2025 and estimates the total increase in investments in research and development costs (related to both capitalisable assets and expenditure) until 2025 at approximately €50 million. Current technology used by the 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 impact of climate related risks on major assumption incorporated in forecasts and disclosures to relevant assets and obligations remains uncertain and therefore our estimations were not adjusted accordingly. This will remain an area of increased focus in the upcoming reporting period.

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 (peer group); 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 7.7% and 9.8% in the year 2021. In the previous year, the discount rates ranged between 7.4% and 9.5%.

Composition of estimated future cash flows

The estimates of future cash flows include forecasts of the cash flows from continued use. If assets are disposed at the end of their useful life, the related cash flows are also included in the forecasts.

A simplified statement of cash flows serves to determine the cash flows on the basis of strategic business and financial planning. The forecasts include cash flows from future maintenance investments. Expansion investments are only taken into account in the estimated future cash flows for impairment testing 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 DCF model; this applies in particular to expansion investments that have been decided on but that have not begun.

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

Basis for Planning
Basis for the impairment test was the 2022 Budget and Long-Term Plan 2023 to 2025, which was approved by the Board, and developed with the growth rates used in the forward-looking business plan. To forecast the CGUs' cash flows, management predicts the growth rate using external sources for the development of the customer's industries and expert assumptions. This includes forecasts about the regional growth of the steel production and the output of the non-steel clients. In combination with the development of the specific refractory consumption, which considers technological improvements, the growth rates for the individual CGUs are determined.

			2021			2020
	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	8.4%	0.9%	83.5	8.2%	0.9%	84.2
Steel Division – Flow Control	8.7%	0.9%	29.6	8.1%	0.9%	25.0

The remaining immaterial portion of goodwill amounting to €1.3 million (31.12.2020: €1.6 million) is allocated to the remaining CGUs, all of them having sufficient headroom.

Given that globally there are currently few or no viable alternatives for the construction and automotive segments to use other than Steel and Industrial products such as Cement and Glass and given the production process for Steel and Industrial products is moving towards green production, which will still require very high temperatures, our refractory products, also in the green economy, will remain to be required. As a result, the goodwill that produces our refractory products will therefore continue to be used in line with previously assessed economic useful life terms, based on our current assessment. However, there remains a level of uncertainty and our views may change over time. Therefore the number of years of depreciation and cash generation to offset the carrying value of these assets, have remained unchanged in our assessment.

Result of impairment test
Based on the impairment test conducted at 31 December 2021, the recoverability of the assets was demonstrated for all CGUs.

As in the previous year, no reversals of impairments were made in the financial year 2021.

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 as at amortised cost, at fair value through profit or loss or at 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.

Further information on the Group's financial assets and liabilities, as well as on the fair value measurement is provided under Note (53).

Other financial assets and liabilities
The item other financial assets in the Consolidated Statement of Financial Position of RHI Magnesita includes shares in non-consolidated subsidiaries and other investments, securities, financial receivables and positive fair values of derivative financial instruments.

The item other financial liabilities includes negative fair values of derivative financial instruments as well as liabilities to fixed-term or puttable non-controlling interests and in the previous reporting period a financial liability relating to the termination of an energy supply contract.

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

The Group initially recognises securities on the trading date when the entity 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.

The Group's investment in debt securities is 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.

The Group's investments in equity securities are of minor importance and are subsequently measured at fair value through profit or loss, since the irrevocable option for subsequent measurement at fair value through OCI was not exercised.

Shares in non-consolidated subsidiaries (RHI Magnesita exercises control but the subsidiary is not-fully consolidated due to materiality reasons), shares in other companies as well as securities are classified as at fair value through profit or loss in the RHI Magnesita Group. For materiality reasons if such financial assets are of minor significance cost serves as an approximation of fair value. Directly attributable transaction costs are recognised in profit or loss as incurred. Securities at fair value through profit or loss are measured at fair value and changes therein, including any interest income, are recognised in profit or loss.

Financial receivables are measured at amortised cost applying the effective interest method. Any doubt concerning the collectability of the receivables is reflected in the use of the lower present value of the expected future cash flows according to the impairment model described below. Foreign currency receivables are translated at the closing rate.

Derivative financial instruments, which are not designated in an effective hedging relationship in accordance with IFRS 9, must be carried at fair value through profit or loss. In the RHI Magnesita Group, this measurement category includes derivatives related to purchase obligations, forward exchange contracts, embedded derivatives in open orders that are denominated in currencies other than the functional currency of either contracting party as well as interest rate swaps.

The measurement of forward exchange contracts and embedded derivatives in open orders denominated in a currency other than the functional currency of either contracting party is 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.

For derivative financial instruments, which are designated in an effective hedging relationship in accordance with IFRS 9, the provisions regarding hedge accounting are applied. RHI Magnesita has concluded interest rate swaps to hedge the cash flow risk of financial liabilities carrying variable interest. Hedging transactions are shown as part of cash flow hedge accounting. The interest rate swaps as hedging instruments are measured at fair value, which corresponds to the amount which RHI Magnesita would receive or has to pay on the reporting date when the financial instrument is terminated. The fair value is calculated using the interest rates and yield curves relevant on the reporting date. The effective part of the fair value changes is initially recorded in other comprehensive income as an unrealised gain or loss. Only at the time of the realisation of the underlying transaction, the contribution of the hedging instrument 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. If the hedged transaction is no longer expected to take place, the accumulated amount previously recorded in other comprehensive income is reclassified to the Statement of Profit or Loss.

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 recorded in Other Comprehensive Income is reclassified to the Statement of Profit or Loss. The Group uses a loan to hedge its exposure to foreign exchange risk on its investments in foreign subsidiaries.

Capital shares of non-controlling interests in subsidiaries with a fixed term are recognised under other financial liabilities in the Consolidated Statement of Financial Position in accordance with IAS 32. The liabilities are measured at amortised cost. The share of profit attributable to non-controlling interests is recognised under other net financial expenses in the Statement of Profit or Loss. Dividend payments to non-controlling interests reduce liabilities.

Furthermore, the RHI Magnesita Group entered into purchase obligations with non-controlling shareholders of a subsidiary. Based on these agreements, the shareholders received the right to tender their shares at any time on previously defined conditions. In this case, IAS 32 provides for carrying a liability in the amount of the probable future exercise price. The difference between the estimated liability and the carrying amount of the non-controlling interest was recognised to equity at the time of initial recognition without affecting profit or loss. Subsequently, the liability for puttable non-controlling interests was measured at amortised cost and changes were recorded in net finance costs. In 2021 the puttable non-controlling interests within equity were reclassified to equity upon completion of the merger of the Indian entities. Further information is provided under Note (24) and (53).

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 to according to the contract and the cash flows that the entity expects to receive. The measurement of expected credit losses is generally a function of the probability of default, loss given default and the exposure at default.

RHI Magnesita recognises a loss allowance for expected credit losses on debt instruments that are measured at amortised cost, trade receivables and contract assets. 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 expected credit losses 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 the relevant for the determination if 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.

RHI Magnesita makes use of the practical expedient that if a financial instrument has an 'investment grade' rating that it is assumed to be of low credit risk and no significant increase in the credit risk took place and 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 considers the following as constituting an event of default, hence leading to a credit-impaired financial asset:

- significant financial difficulty of the issuer or the borrower;
- a breach of contract;
- the lender(s) of the borrower, for economic or contractual reasons relating to the borrower's financial difficulty, having granted
- to the borrower concessions that the lender(s) would not otherwise consider;
- it is becoming probable that the borrower will enter bankruptcy or other financial reorganisation;
- the disappearance of an active market for that financial asset because of financial difficulties.

In addition to these factors, RHI Magnesita applies the presumption in regard to trade receivables, that a default event has occurred when such receivables are 180 days past due unless the Group has reasonable and supportable information for anything different. 180 days past due are used as an objective evidence of default as this is presumed to reflect the Group's customer industry.

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 recovery. Financial assets written off may still be subject to enforcement activities under the Group's recovery procedures, taking into account legal advice where appropriate. Any recoveries made are recognised in profit or loss.

Deferred taxes
Deferred taxes are recognised on temporary differences between the tax base and the IFRS carrying amount of assets and liabilities, tax-loss carryforwards and consolidation entries.

Deferred tax assets are recognised on temporary differences to the extent it is probable that sufficient deferred tax liabilities exist or that sufficient taxable income before the reversal of temporary differences is available for the settlement of deductible temporary differences.

Deferred taxes are recognised on temporary differences relating to shares in subsidiaries and joint ventures, unless the parent company is in a position to control the timing of the reversal of the temporary differences and it is probable that the temporary differences will not reverse. No temporary differences are recognised for financial instruments which were issued by subsidiaries to non-controlling interests and which are classified as a financial liability in accordance with IFRS.

The calculation of deferred taxes is based on the tax rate expected in the individual countries at the time the deferred tax asset is realised or the liability is settled and generally reflects the enacted or substantively enacted tax rate on the reporting date. As in the previous year, deferred taxes of the Austrian group companies are determined at the corporation tax rate of 25.0%. Deferred tax assets and liabilities of the Brazilian group companies are measured at 34.0%. Tax rates from 13.0% to 35.0% (31.12.2020: 12.5% to 34.0%) were applied to the other companies.

Deferred tax assets and liabilities are offset if there is an enforceable right to offset current tax receivables against current tax liabilities, and if the deferred taxes relate to income taxes due from/to the same tax authorities.

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 inventories 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.

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 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 above).

In case of factoring arrangements trade receivables are derecognised if RHI Magnesita transfers substantially all the risks and rewards associated with the financial assets.

Receivables denominated in foreign currencies are translated using the closing rate.

Cash and cash equivalents
Cash and cash equivalents includes cash on hand, cheques received and cash at banks with an original term of a maximum of three months. Moreover, shares in money market funds, which are only exposed to insignificant value fluctuations due to their high credit rating and investments in extremely short-term money market instruments and can be converted to defined cash amounts within a few days at any time, are also recorded under cash equivalents in accordance with IAS 7.

Cash and cash equivalents denominated in foreign currencies are translated at the closing rate.

Disposal groups held for sale
Non-current assets and disposal groups which can be sold in their present state and whose sale is highly probable are classified as held for sale. Assets and liabilities which are intended to be sold together in a single transaction represent a disposal group held for sale and are shown separately from other assets and liabilities in the Statement of Financial Position.

Non-current assets and disposal groups which are classified as held for sale are carried at the lower of fair value less costs to sell and carrying amount. Impairments are initially allocated to existing goodwill and then to the non-current assets on a pro-rata basis, based on the carrying amount of each individual asset of the disposal group. Non-current assets are not depreciated as long as they are classified as held for sale.

Borrowings and other financial liabilities
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 measurements these liabilities are measured at amortised cost applying the effective interest method. Financial liabilities in foreign currency are translated at the closing rate.

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.

Provisions
Provisions are recognised when the Group incurs a legal or constructive obligation as a result of past events, and 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.

Non-current 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 under current provisions.

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

Defined contribution plans limit the company's obligation to the agreed amount of contributions to earmarked pension plans. The related expenses are shown in the functional areas and thus in EBIT.

Defined benefit plans require the company to provide the agreed amount of benefits to active and former employees and their dependents, with a differentiation made between pension systems financed through provisions and pension systems financed by external funds.

For pension plans financed by way of external funds, the pension obligation according to the projected unit credit method is netted against the fair value of the plan assets. If the plan assets are not sufficient to cover the obligation, the net obligation is recognised as a provision for pensions. However, if the plan assets exceed the obligations, the asset recognised is limited to reductions of future contribution payments to the plan and is presented as an other non-current asset on the face of the statement of financial positions.

The present value of defined benefit obligations for current pensions, future pension benefits and similar obligations and the related expenses are calculated separately for each plan annually by independent qualified actuaries in accordance with the provisions of IAS 19. 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 used are the rates 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 were based on an average of past years, which is also considered to be realistic for the future.

The fluctuation probabilities were estimated specific to age or seniority.

The retirement age used for the calculation is based on the respective statutory provisions of the country concerned. The calculation is based on the earliest possible retirement age according to the current statutory provisions of the respective country, among other things depending on gender and date of birth.

Remeasurement gains and losses are recorded net of deferred taxes under other comprehensive income in the period incurred.

Other personnel provisions

Other personnel provisions include provisions for termination benefits, service anniversary bonuses, payments to semi-retirees, share-based payments and lump-sum settlements.

Provisions for termination benefits are 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. 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 in accordance with IAS 19 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 pension plans and included in the personnel expenses of the functional areas.

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. Under IAS 19 service anniversary bonuses are treated as other long-term employee benefits. 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.

In 2018, the shareholders approved the Rules Of The RHI Magnesita Long-Term Incentive Plan (the Rules). Share-options are granted to members of senior management of the Group in accordance with these Rules. Each reporting date the provisional amount per due date is recognised in equity.

Obligations for lump-sum settlements are based on company agreements in individual companies.

Other provisions

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 created providing 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. RHI Magnesita'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. Provisions for demolition and disposal costs and environmental damages 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 probable loss. Assessment of the likelihood of loss includes analysis of available evidence, including the opinion of internal and external legal advisors of the RHI Magnesita Group.

Trade payables and other current liabilities

These liabilities are initially recognised at fair value, and subsequently measured at amortised cost. Liabilities denominated in foreign currencies are translated at the closing rate.

Government grants

Government grants to promote investments are recognised as deferred income and released through profit or loss over the useful life of the relevant asset distributed on a straight-line basis.

Grants that were granted as compensation for expenses or losses are recognised to profit or loss in the periods in which the subsidised expenses are incurred. In the RHI Magnesita Group, they mainly include grants for research and employee development. Grants for research are recorded as income in general and administrative expenses.

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. The transaction price is the expected consideration to be received, 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 in exchange for transferring the goods or services to the customer. The variable consideration is estimated at contract inception and constrained until it is highly probable that a significant revenue reversal in the amount of cumulative revenue recognised will not occur when the associated uncertainty with the variable consideration is subsequently resolved. The average credit term is 60 days upon transfer of goods or service. The Group applies the practical expedient in IFRS 15 and does not adjust the promised amount of consideration for the effects of a significant financing component if it expects, at contract inception, that the period between the transfer of the promised good or service to the customer and payment will be one year or less. 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 obligations. 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.

Regarding delivery contracts 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 to the customer. 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 performed before control of the products is transferred to the customer.

In consignment arrangements, RHI Magnesita Group ships products to a customer but retains control of the goods until a predetermined event occurs. Revenue is not recognised on delivery of the products to the customer if the delivered products are held on consignment, but generally when the withdrawal of the products from the consignment stock 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 are comprised of two performance obligations as the promises to transfer products and to provide services are capable of being distinct and separately identifiable in the context of the contract. Accordingly, the allocation of the transaction price is based on the relative stand-alone selling prices of the product and services. Revenue from services is recognised over time, using an input method to measure progress towards complete satisfaction of the service, because 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.

For contracts in the Steel segment with variable payment arrangements (transaction price depends on the customer's production performance) management has determined that the promise to transfer each of the products and services to the customer is not separately identifiable from all the other promises in the context of such contracts. Therefore, only one single performance obligation exists – the performance of a management refractory service. Further information is provided under Note (9). With regards to these contracts, revenue is recognised over time on the basis using the output-oriented method (e.g. quantity of steel produced in the customer aggregate serviced).

Expected penalty fees from guaranteed durabilities when using refractory products are considered as a variable consideration in the form of a contract or a refund liability. Based on the expected value method, the amount of the variable consideration is estimated. The estimation of the variable consideration is not subject to a constraint as the Group has significant experience with promising durabilities. Once the uncertainty related to guaranteed durabilities ceases to exist, a significant reversal of revenue is highly unlikely. All other warranties 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, a contract asset, excluding any amounts presented as a receivable is recognised. A contract asset is an entity's right to consideration in exchange for goods or services that the entity has transferred to a customer.

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, or the payment is due (whichever comes first). A contract liability is an entity's obligation to transfer goods or services to a customer for which the entity has received consideration (or an amount of consideration is due) from the customer.

Contract costs are the incremental costs of obtaining a contract and must be recognised as an asset if the company expects to recover those costs. As a practical expedient, RHI Magnesita expenses such costs when incurred, if the amortisation period would be 12 months or less.

In general, the term of customer contracts in accordance with IFRS 15 is no longer than one year. Therefore, the Group decided, as a practical expedient, not to disclose the remaining performance obligations for contracts with original expected duration of less than one year.

Further income and expenses
Expenses are recognised in the Statement of Profit or Loss when a service is consumed, or the costs are incurred.

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

Dividends from investments that are not accounted for using the equity method are recognised to profit and loss at the time the legal claim arises.

Current income taxes are recognised according to the local regulations applicable to each company. Current and deferred income taxes are recognised in the Statement of Profit or Loss unless they are related to items which were recorded directly in equity or in other comprehensive income. In such a case, income taxes are also recorded in equity or other comprehensive income.

Since 2020 RHI Magnesita N.V., tax resident of Austria, acts as the head of a corporate tax group in Austria. Until 31 December 2019 RHI Magnesita GmbH, Vienna, Austria, acted as the head of a corporate tax group in Austria. According to the group and tax compensation agreement, the members of the group have to pay a positive tax compensation of 20% of the taxable profit to the head of the Group if the result is positive, as long as tax loss carry forwards exist with the head of the group; subsequently 25% of the taxable profit have to be paid. In case of a tax loss of the group member, the head of the group has to pay a negative tax compensation to the member of the group, with a rate of 12.5% being applied insofar as the loss can be utilised within the group. In case the losses of a group member were compensated (negative tax allocation payment) and this group member generates taxable income within the next three years (after compensation), the positive tax allocation amounts to 12.5%. In case of a loss in the tax group, an unused tax loss of a group member is retained and offset against future taxable profits of the group member. When the contract is terminated, a compensation payment is agreed for unused tax losses of a group member, which were allocated to the head of the group.

In Germany, RHI Magnesita Deutschland AG, Wiesbaden, acts as the head of a tax group for corporate and trade tax purposes. The five tax group members are obliged to transfer their profit or loss to RHI Magnesita Deutschland AG based on a profit or loss transfer agreement. Additionally, RHI Magnesita Deutschland AG, Wiesbaden, acts as the head of a tax group for VAT purposes with eight German tax group members. Furthermore, Rearden G Holdings Eins GmbH, Hagen, acts as the head of a two-level structure tax group with four group members for corporate, trade tax and VAT purposes.

8. Segment reporting
The RHI Magnesita Group comprises the operating segments Steel and Industrial. The segmentation of the business activities reflects the internal control and reporting structures and is regularly reported to the Chief Executive Officer.

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, 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. The gross profit serves the management of the RHI Magnesita Group for internal performance management. 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 on a group basis and are not allocated.

Segment assets include trade receivables and inventories, which are available to the operating segments and are reported to the management for control and measurement, as well as property, plant and equipment, goodwill and other intangible assets, which are allocated to the segments based on the capacity of the assets provided to the segments. All other assets are not allocated. The recognition of segment assets is determined on the basis of the accounting and measurement methods applied to the IFRS Consolidated Financial Statements.

Data on revenue by country are disclosed by the sites of the customers. Data on non-current assets (goodwill, intangible assets and property, plant and equipment) are disclosed on the basis of the respective locations of the companies of the RHI Magnesita Group.

9. Critical accounting judgements and key sources of estimation uncertainty
The RHI Magnesita Group used forward-looking assumptions and estimates, especially with respect to business combinations, non-current assets, valuation adjustments to inventories and receivables, provisions and income taxes to a certain extent in the application of accounting and measurement methods.

The estimates are based on comparable values in the past, plan data and other findings regarding transactions to be accounted. The actual values may ultimately deviate from the assumptions and estimates made. The resulting changes in value of assets, liabilities, revenue and expenses are accounted for in the reporting period in which the change is made and in the affected future reporting periods.

Critical accounting judgements

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, performance of a management refractory service, exists.

Trade payables subject to supply chain finance arrangements

RHI Magnesita participates in supply chain finance arrangements whereby raw material suppliers may elect to receive a discounted early payment of their invoice from a bank rather than being paid in line with the agreed contractual payment terms. The Group settles the amount owed to the bank. The invoice due date as well as the value of the original liability remains unaltered. RHI Magnesita assesses that these arrangements do not modify the terms of the original trade payable, and therefore financial liabilities subject to supply chain finance arrangements continue to be classified as trade payables.

Own use exemption on physical delivery CO2-certificate forwards

Due to the reduction of free CO2 emission certificates and the expectation of increased CO2 market prices, the Group is hedging the price risk by use of physical delivery forward purchases (for "own use"). The "Own use exemption" is important to prevent fair value accounting and thus avoid P&L volatility. The "Own use exemption" requires that all purchases via forward contracts will be utilised. Any surpluses from forwards must be settled and kept for future use. If the own use exemption is not met, the forwards will be recognised on Balance Sheet at fair value, with fair value remeasurement through P&L for the entire CO2 forward portfolio. The Group settles the forwards through physical delivery and does not intend to sell any (unexpected) surplus of CO2 emission certificates for speculative purposes. Therefore, in accordance with IFRS 9, the forward contracts are assessed to be off-balance executory contracts.

There are no other critical accounting judgements made in the preparation of the Consolidated Financial Statements.

Key sources of estimation uncertainty

Business combinations (initial consolidation)

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

If 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. When determining the fair value of land, buildings and technical plant, above all the estimate of comparability of the reference objects with the objects subject to valuation is discretionary.

When making estimates in the context of purchase price allocations on major acquisitions, RHI Magnesita consults with independent experts who accompany the execution of the discretionary decisions and record it in appraisal documents.

Impairment of intangible assets with finite useful lives and property, plant and equipment

Intangible assets with a finite useful life and property, plant and equipment must be tested for impairment when events or a change in circumstances indicate that the carrying amount of an asset may not be recoverable. The carrying amounts of these assets amounted to €1,370.5 million at 31 December 2021 (31.12.2020: €1,222.5 million). In accordance with IAS 36, such impairment losses are determined through comparisons with the discounted future cash flows expected from the related assets of the cash-generating units (CGUs).

As part of the annual planning process, the impairment test is conducted for the CGUs defined in the RHI Magnesita Group, thus considering all changes resulting from updates of strategic planning. Sensitivity analyses are also performed as part of the impairment test. In their calculation one of the main parameters is changed as follows: increase in the discount rate by 10%, reduction in the form of the contribution margin by 10% and reduction of the growth rate in terminal value by 50%. In all CGUs, these simulations do not result in impairments. Likewise, in all CGUs a reduction of the discount rate by 10%, an increase in profitability in the form of the contribution margin by 10% and an increase in the growth rate in terminal value by 50% do not result in reversals of impairments.

Impairment of goodwill and other intangible assets with indefinite useful life

The effect of an adverse change by plus 10% in the estimated interest rates as of 31 December 2021 or by minus 10% in the contribution margin would not result in an impairment of goodwill recognised (carrying amount 31.12.2021: €114.4 million, 31.12.2020: €110.8 million) nor in an impairment charge to intangible assets with indefinite useful lives (carrying amount at 31.12.2021: €1.8 million and 31.12.2020: €1.8 million).

Intangible assets and property, plant and equipment

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.

Provisions for pensions and termination benefits

The present value of pension and termination benefit obligations depends on several factors, which are based on actuarial assumptions such as interest rates, future salary and pension increases as well as life expectancy. Due to the long-term nature of these obligations, these assumptions are subject to significant uncertainties.

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).

in € million	Change of assumption in percentage points or years	31.12.2021 Pension plans	31.12.2021 Termination benefits	31.12.2020 Pension plans	31.12.2020 Termination benefits
Present value of the obligations		495.0	44.1	523.3	46.4
Interest rate	+0.25	(14.8)	(1.4)	(16.2)	(1.3)
	(0.25)	15.6	1.5	16.9	1.4
Salary increase	+0.25	0.7	1.4	1.6	1.3
	(0.25)	(0.7)	(1.4)	(1.5)	(1.3)
Pension increase	+0.25	11.3	-	12.5	-
	(0.25)	(10.9)	-	(11.0)	-
Life expectancy	+1 year	19.8	-	21.3	-
	(1) year	(20.6)	-	(20.7)	-

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. Further information on pensions is provided under Note (27).

Other provisions

The recognition and measurement of other provisions totalling €118.6 million (31.12.2020: €149.0 million) were based on the best possible estimates using the information available at the reporting date. The estimates take into account the underlying legal relationships and are performed by internal experts or, when appropriate, also by external experts. Despite the best possible assumptions and estimates, cash outflows expected at the reporting day may deviate from actual cash outflows. As soon as additional information is available, the estimates made are reviewed and provisions are also adjusted.

The majority of the provisions refers to an unfavourable contract which was recognised in the course of the acquisition of Magnesita and is mainly based on an estimate of forgone profit margins compared to market conditions.

Income taxes

The calculation of income taxes of RHI Magnesita N.V. and its subsidiaries is based on the tax laws applicable in the individual countries. Due to their complexity, the tax items presented in the Consolidated Financial Statements may be subject to different interpretations by local finance authorities. When determining the amount of the capitalisable deferred tax assets, an estimate is required of future taxable income. Should the future taxable profit deviate by 10% from the assumption made on the reporting date within the planning period defined for the accounting and measurement of deferred taxes, the net position of deferred tax assets amounting to €154.0 million (31.12.2020: €154.2 million) would have to be increased by €0.1 million (31.12.2020: €0.3 million) or reduced by €0.2 million (31.12.2020: €0.3 million).

Additional sources of estimation uncertainty with regard to climate change

Net realisable value of inventories

As stricter climate-related laws and regulations are expected to increase the demand for higher quality refractory products in customer industries, RHI Magnesita assesses that, overall, these events will not have an adverse effect on the net realisable value of the Group's inventories.

Useful lives and residual values

Given that globally there are currently few or no viable alternatives for the construction and automotive segments to use other than Steel and Industrial products such as Cement and Glass and given the production process for Steel and Industrial products is moving towards green production, which will still require very high temperatures, our refractory products, also in the green economy, will remain to be required. As a result, the PPE that produces our refractory products will therefore continue to be used in line with previously assessed economic useful life terms, based on our current assessment. However, there remains a level of uncertainty and our views may change over time. Therefore the number of years of depreciation and cash generation to offset the carrying value of these assets, have remained unchanged in our assessment.

Due to the high degree of estimation uncertainty around the impact of climate change and consequential changes in legislature, this conclusion may change in the future.

NOTES TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

10. Goodwill

Goodwill developed as follows:

in € million	2021	2020
Carrying amount at beginning of the year	110.8	117.5
Additions initial consolidation	0.0	3.8
Currency translation	3.6	(10.5)
Carrying amount at year-end	**114.4**	**110.8**

11. Other intangible assets

Other intangible assets changed as follows in the financial year 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**

Other intangible assets changed as follows in the previous year:

in € million	Mining rights	Customer relationship	Internally generated intangible assets	Other intangible assets	Total
Cost at 31.12.2019	169.1	109.3	52.4	134.1	464.9
Currency translation	(36.0)	(14.2)	(0.3)	(8.9)	(59.4)
Additions	0.0	0.0	9.9	3.1	13.0
Retirements and disposals	0.0	0.0	0.0	(11.0)	(11.0)
Disposal group IFRS 5	0.0	0.0	0.0	(0.2)	(0.2)
Reclassifications	0.0	0.0	0.0	4.2	4.2
Cost at 31.12.2020	**133.1**	**95.1**	**62.0**	**121.3**	**411.5**
Accumulated amortisation 31.12.2019	8.0	25.2	37.1	75.6	145.9
Currency translation	(1.7)	(3.4)	(0.1)	(3.6)	(8.8)
Amortisation charges	2.2	6.1	3.7	7.4	19.4
Impairment charges	0.0	0.0	0.0	0.3	0.3
Retirements and disposals	0.0	0.0	0.0	(10.8)	(10.8)
Disposal group IFRS 5	0.0	0.0	0.0	(0.2)	(0.2)
Accumulated amortisation 31.12.2020	**8.5**	**27.9**	**40.7**	**68.7**	**145.8**
Carrying amounts at 31.12.2020	**124.6**	**67.2**	**21.3**	**52.6**	**265.7**

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

The customer relations of Magnesita have a carrying amount of €63.6 million (31.12.2020: €66.9 million) and a remaining useful life of 7 to 11 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 €20.0 million (31.12.2020: €21.1 million) and a remaining useful life of 16 to 56 years.

There are no restrictions on the sale of intangible assets.

12. Property, plant and equipment

Property, plant and equipment developed as follows in the year 2021 and in the previous year:

in € million	Real estate, land and buildings	Raw material deposits	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	561.7	36.9	1,039.4	330.9	164.9	76.8	2,210.6
Currency translation	17.8	0.7	32.7	8.3	4.0	2.5	66.0
Additions	24.8	0.5	47.5	17.9	156.8	13.3	260.8
Reassessment / Modification of leases (IFRS 16)	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Retirements and disposals	(4.1)	0.0	(18.5)	(5.4)	0.0	(5.6)	(33.6)
Reclassifications	31.6	0.4	42.5	27.7	(116.0)	0.0	(13.8)
Cost at 31.12.2021	**631.8**	**38.5**	**1,143.6**	**379.4**	**209.7**	**87.1**	**2,490.1**
Accumulated depreciation 31.12.2020	253.3	23.8	720.5	230.9	1.1	22.4	1,252.0
Currency translation	4.6	0.2	19.2	5.8	0.0	0.7	30.5
Depreciation charges	11.9	0.9	56.3	23.4	0.0	16.0	108.5
Impairment charges	18.3	0.0	14.6	4.3	0.4	0.0	37.6
Retirements and disposals	(1.2)	0.0	(16.7)	(4.9)	0.0	(5.4)	(28.2)
Reclassifications	(0.3)	0.0	(0.5)	0.8	0.0	0.0	0.0
Accumulated depreciation 31.12.2021	**286.6**	**24.9**	**793.4**	**260.3**	**1.5**	**33.7**	**1,400.4**
Carrying amounts at 31.12.2021	**345.2**	**13.6**	**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.

in € million	Real estate, land and buildings	Raw material deposits	Technical equipment, machinery	Other plant, furniture and fixtures	Prepayments made and plant under construction	Right-of-use assets	Total
Cost at 31.12.2019	641.3	36.6	1,210.4	321.6	173.5	76.1	2,459.5
Currency translation	(50.8)	(2.1)	(92.3)	(9.2)	(17.1)	(7.6)	(179.1)
Additions	6.3	2.9	13.8	6.7	105.2	24.5	159.4
Additions initial consolidation	2.0	0.0	0.3	0.1	0.0	0.0	2.4
Reassessment / Modification of leases (IFRS 16)	0.0	0.0	0.0	0.0	0.0	2.5	2.5
Retirements and disposals	(5.4)	(0.3)	(61.2)	(10.1)	0.0	(8.6)	(85.6)
Disposal group IFRS 5	(47.8)	0.0	(57.6)	(25.0)	(1.9)	(10.1)	(142.4)
Reclassifications	16.1	(0.2)	26.0	46.8	(94.8)	0.0	(6.1)
Cost at 31.12.2020	**561.7**	**36.9**	**1,039.4**	**330.9**	**164.9**	**76.8**	**2,210.6**
Accumulated depreciation 31.12.2019	283.3	23.6	777.1	237.8	6.0	24.9	1,352.7
Currency translation	(6.6)	(0.6)	(37.8)	(4.9)	(0.3)	(2.8)	(53.0)
Depreciation charges	12.3	1.1	70.6	20.3	0.0	16.0	120.3
Impairment charges	11.2	0.0	26.0	5.1	2.7	1.5	46.5
Retirements and disposals	(2.8)	(0.3)	(57.2)	(7.5)	0.0	(7.1)	(74.9)
Disposal group IFRS 5	(46.3)	0.0	(54.0)	(24.9)	(1.5)	(10.1)	(136.8)
Reclassifications	2.2	0.0	(4.2)	5.0	(5.8)	0.0	(2.8)
Accumulated depreciation 31.12.2020	**253.3**	**23.8**	**720.5**	**230.9**	**1.1**	**22.4**	**1,252.0**
Carrying amounts at 31.12.2020	**308.4**	**13.1**	**318.9**	**100.0**	**163.8**	**54.4**	**958.6**

The item prepayments made and plant under construction includes plant under construction with a carrying amount of €179.2 million (31.12.2020: €147.6 million), with the expansion of a dolomite plant in Austria, representing the largest investment project under construction in 2020 and the expansion of a magnesite plant in Brazil representing the largest investment project under construction in 2021.

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 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	8.5	1.7	3.1	13.3
Reassessment / Modification of leases (IFRS 16)	0.2	(0.1)	0.0	0.1
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 Right-of-use assets per category developed as follows as of 31 December 2020:

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 31.12.2019	39.5	30.0	6.6	76.1
Currency translation	(2.0)	(5.2)	(0.4)	(7.6)
Additions	13.3	10.2	1.0	24.5
Reassessment / Modification of leases (IFRS 16)	2.8	0.0	(0.3)	2.5
Retirements and disposals	(3.4)	(4.1)	(1.1)	(8.6)
Disposal group IFRS 5	(9.8)	(0.2)	(0.1)	(10.1)
Cost at 31.12.2020	**40.4**	**30.7**	**5.7**	**76.8**
Accumulated depreciation 31.12.2019	15.5	7.0	2.4	24.9
Currency translation	(1.1)	(1.4)	(0.3)	(2.8)
Depreciation charges	7.2	6.7	2.1	16.0
Impairment charges	0.0	1.3	0.2	1.5
Retirements and disposals	(2.5)	(3.6)	(1.0)	(7.1)
Disposal group IFRS 5	(9.8)	(0.2)	(0.1)	(10.1)
Accumulated depreciation 31.12.2020	**9.3**	**9.8**	**3.3**	**22.4**
Carrying amounts at 31.12.2020	**31.1**	**20.9**	**2.4**	**54.4**

Further detail on IFRS 16 related information is provided under Note (7) and (26).

13. Investments in joint ventures and associates

The following investments in joint ventures and associates are accounted for using the equity method in the RHI Magnesita Consolidated Financial Statements:

in € million	31.12.2021	31.12.2020
Investments in joint ventures and associates	5.7	16.3
Carrying amount at year-end	**5.7**	**16.3**

Joint ventures

The RHI Magnesita Group held a share of 50% (2020: 50%) in MAGNIFIN Magnesiaprodukte GmbH & Co KG ("MAGNIFIN"), a private company based in St. Jakob, Austria. until 30 December 2021. The company's core business activity is the production and sale of halogen-free flame retardants for plastics. The investment in MAGNIFIN was treated as a financial investment. MAGNIFIN was set up as an independent vehicle. RHI Magnesita had a residual interest in the net assets of the company and accordingly classified its share as a joint venture. There are no listed market prices available. Further information on the sale of the equity stake in Magnifin is provided under Note (5).

The movement in the carrying amount of the share in MAGNIFIN in the RHI Magnesita's Consolidated Financial Statements is shown below:

in € million	31.12.2021	31.12.2020
Proportional share of net assets at beginning of year	**10.9**	**14.1**
Share of profit	9.3	7.7
Share of other comprehensive income (remeasurement gains/(losses))	0.1	(0.1)
Dividends	(16.2)	(10.9)
Other changes in value	0.0	0.1
Proportional share of net assets	**4.1**	**10.9**
Goodwill	4.9	4.9
Disposal	(9.0)	0.0
Carrying amount of investment	**0.0**	**15.8**

In addition, the Group holds interests in an immaterial joint venture with a carrying amount of €0.5 million as of 31 December 2021 (31.12.2020: €0.5 million). The Group's share of the profit after income tax, other comprehensive income and total comprehensive income in 2021 amounts to €0.0 million (2020: less than €0.1 million).

Associates

On 30 December 2021 RHI Magnesita Group has acquired a 51% ownership stake over Chongqing Boliang Refractory Materials Co., Ltd, Chongqing, China (RHIMNU), for a cash consideration of €5.2 million. Further information on this acquisition is provided under Note (5).

In 2019 the Group decided to restructure its Sinterdolime sourcing options in Europe and increase its vertical integration. As a result, operations will be suspended in the first quarter of 2022 and the equity accounted investment in Sinterco will be liquidated in 2023. In the course of the Magnesita purchase price allocation the fair value of the investment was determined as zero due to its economic performance. It is RHI Magnesita's best estimate that no additional cash contributions will be needed to cover the closing cost based on the current operations and determined exit plan.

14. Other non-current financial assets

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

in € million	31.12.2021	31.12.2020
Interests in subsidiaries not consolidated	0.6	0.6
Marketable securities and shares	13.7	13.5
Other non-current financial receivables	0.3	0.4
Other non-current financial assets	**14.6**	**14.5**

Accumulated impairments on investments, securities and shares amount to €3.6 million (31.12.2020: €3.7 million).

15. Other non-current assets

Other non-current assets include the following items:

in € million	31.12.2021	31.12.2020
Tax receivables	27.1	14.5
Prepaid stripping costs	9.3	8.4
Judicial deposits	3.5	2.9
Plan assets from overfunded pension plans	0.9	0.2
Prepaid expenses	0.4	0.6
Other non-current assets	**41.2**	**26.6**

Prepaid expenses for stripping costs arising from mining raw materials in a surface mine are included in non-current assets due to the planned use of the mine.

Tax receivables relate to input tax credits, which are expected to be utilised in the medium term.

16. Deferred taxes

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

	31.12.2021		2021	31.12.2020		2020
in € million	Deferred tax assets	Deferred tax liabilities	(Expense)/Income	Deferred tax assets	Deferred tax liabilities	(Expense)/Income
Property, plant and equipment, intangible assets	41.3	109.6	17.0	36.5	117.4	11.2
Inventories	16.3	11.0	(12.5)	20.7	3.9	(5.5)
Trade receivables, other assets	25.0	5.2	(0.8)	25.1	4.1	20.8
Pensions and other personnel provisions	61.7	0.2	(3.2)	70.5	0.8	(5.3)
Other provisions	25.5	0.3	(1.4)	26.3	0.4	11.8
Trade payables, other liabilities	20.4	12.2	(11.3)	24.8	11.7	(36.6)
Tax loss carried forward	102.3	0.0	16.0	88.6	0.0	16.8
Offsetting	(90.1)	(90.1)	0.0	(93.3)	(93.3)	0.0
Deferred taxes	**202.4**	**48.4**	**3.8**	**199.2**	**45.0**	**13.2**

As of 31 December 2021, subsidiaries that generated tax losses in the past year or the previous year recognised net deferred tax assets on temporary differences and tax loss carryforwards of €160.8 million (31.12.2020: €116.3 million). Deferred tax assets have been recognised because the companies concerned are expected to generate taxable income in the future.

Regarding the recognition of tax expenses, deferred tax assets, and deferred tax liabilities, RHI Magnesita has evaluated the economic scenario's impacts arising, mainly, out of COVID-19's implications to a global downturn. In this context, the relevant uncertainties and potential negative effects of the downturn for the Group's financial results were considered when evaluating the recoverability of the tax assets. Particular focus was given to working with the most reliable forecasts and assumptions to minimise the effects of economic uncertainty to reach an assessment that reflects the best analysis possible, considering the circumstances and information available. Based on this analysis it was concluded that there is no need for a material impairment of deferred tax assets.

Tax loss carryforwards totalled €477.0 million in the RHI Magnesita Group as of 31 December 2021 (31.12.2020: €413.8 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 substantial tax loss carryforwards in China expiring within the next five years. The annual compensation of tax loss carryforwards in Austria is limited to 75% and to 30% in Brazil's respective taxable profits. Deferred taxes were not recognised on tax losses of €118.7 million (31.12.2020: €115.3 million). Of these losses, €0.4 million will expire in 2022,€9.3 million in 2023, €7.6 million in 2024, €1.9 million in 2025, €2.4 million in 2026, €0.2million in 2027, €0.3 million in 2028 (31.12.2020: €0.4 million in 2022, €5.2 million in 2023, €6.9 million in 2024, €1.2 million in 2025, €0.2 million in 2027 and €0.3 million in 2028), while the remainder will be carried forward indefinitely.

Besides, no deferred tax assets were recognised for temporary differences totalling €216.0 million (31.12.2020: €89.7 million), which reverse until 2034.

Taxable temporary differences of €814.4 million (31.12.2020: €721.0 million) and temporary deductible differences of €116.8 million (31.12.2020: €456.0 million) were not recognised on shares in subsidiaries because the corresponding distributions of profit or the sale of the investments are controlled by the Group and are not expected in the foreseeable future.

The maturity structure of deferred taxes is shown in the table below:

	31.12.2021			31.12.2020		
in € million	Current	Non-current	Total	Current	Non-current	Total
Deferred tax assets	53.2	149.2	202.4	69.1	130.1	199.2
Deferred tax liabilities	(10.4)	(38.0)	(48.4)	(3.1)	(41.9)	(45.0)

17. Inventories

Inventories as presented in the Consolidated Statement of Financial Position consist of the following items:

in € million	31.12.2021	31.12.2020
Raw materials and supplies	300.2	92.7
Work in progress	151.5	102.5
Finished products and goods	512.4	272.2
Prepayments made	12.4	10.0
Inventories	**976.5**	**477.4**

Inventories include €6.9million (31.12.2020: €1.4 million) carried at net realisable value. Net write-down expenses amount to €3.4 million (2020: € 1.4 million).

The Group has increased its stock of raw materials and finished goods to mitigate supply chain disruptions and to meet expected demand in 2022.

There are no restrictions on the disposal of inventories.

18. Trade and other current receivables

Trade and other current receivables as presented in the Statement of Financial Position are classified as follows:

in € million	31.12.2021	31.12.2020
Trade receivables	403.7	254.3
Contract assets	3.6	1.8
Other taxes receivable	113.7	58.4
Receivables from dividends	8.7	0.0
Receivables from employees	5.4	8.9
Prepaid expenses	3.9	4.2
Prepaid transaction costs related to financial liabilities	2.6	2.3
Receivables from joint ventures and associates	0.8	1.1
Receivables from property transactions	1.3	1.6
Receivables from non-consolidated subsidiaries	0.3	0.2
Emission rights	0.0	2.0
Other current receivables	24.2	17.0
Trade and other current receivables	**568.2**	**351.8**
thereof financial assets	414.4	255.6
thereof non-financial assets	153.8	96.2

RHI Magnesita entered into factoring agreements and sold trade receivables to financial institutions. The balance sold totalled €178.1 million as of 31 December 2021 (31.12.2020: €177.6 million). The trade receivables have been derecognised as substantially all risks and rewards as well as control have been transferred. Payments received from customers in the period between the last sale of receivables and the reporting date are recognised in current borrowings.

Other taxes receivable include VAT credits and receivables from energy tax refunds, research, education and apprentice subsidies. The increase compared to the prior year mainly results from the previous financial year's low balance as well as import transactions and acquisitions of fixed assets at year-end. Further, this position contains a receivable of €12.1m (31.12.2020 €0.0m) that was recognised as a result of a successful judicial proceeding against tax authorities in Brazil relating to revenue based taxes.

Other current receivables mainly consist of advances to suppliers not related to inventories. The increase compared to prior financial year mainly results from advances for IT services as well as custom and import related services and costs.

19. Income tax receivables

Income tax receivables amounting to €35.1 million (31.12.2020: €27.7 million) are mainly related to income tax receivables relating to prior periods, tax prepayments and deductible withholding taxes.

20. Other current financial assets

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

in € million	31.12.2021	31.12.2020
Derivatives in open orders	2.4	0.0
Forward exchange contracts	0.1	0.3
Current portion of non-current loans	0.4	0.0
Other current financial assets	**2.9**	**0.3**

Accumulated impairments on other current financial receivables amount to €0.0 million (31.12.2020: €0.6 million).

21. Cash and cash equivalents

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

in € million	31.12.2021	31.12.2020
Cash at banks	564.0	571.2
Money market funds	15.4	14.8
Cheques	1.3	1.0
Cash on hand	0.1	0.2
Cash and cash equivalents	**580.8**	**587.2**

Cash and cash equivalents include restricted cash totalling €19.7 million at 31 December 2021 (31.12.2020: €21.6 million). Restricted cash is mainly related to cash and cash equivalents at subsidiaries (mainly in China, India and Colombia) to which the Company only has limited access due to foreign exchange and capital transfer controls. In addition, €2.0 million (31.12.2020: 0.0 million) are held in escrow in Austria and are therefore not available for use by the Group. €17.3 million cash and cash equivalents (31.12.2020: €12.2 million) are accounted for by subsidiaries with non-controlling interests.

22. Share capital

As at 31 December 2021 the authorised share capital of RHI Magnesita N.V. amounts to €100,000,000 divided into 100,000,000 ordinary shares, of which 46,999,019 (31.12.2020: 49,008,955) fully paid-in ordinary shares are issued and outstanding, taking into consideration the treasury shares amounting to 2,478,686 (31.12.2020: 468,750). 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 RHI Magnesita shares with special control rights.

23. Group reserves

Treasury shares

In the course of the share buyback program which was initiated on 16 December 2020, completed on 13 April 2021, extended on 5 May 2021 and completed on 4 August 2021 the Company acquired additional 2,078,686 shares in treasury, Thereof 2,009,936 shares in treasury equalling €95.5 million in 2021 and 68,750 shares in treasury equalling €2.7 million in 2020.

Additional paid-in capital

At 31 December 2021 as well as at 31 December 2020, 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 non-financial instrument is designated as the hedging instrument in net investment hedge in a foreign operation.

24. Non-controlling interests

Non-controlling interests in Orient Refractories Ltd.

In June 2021 the two Indian subsidiaries RHI CLASIL Private Limited and RHI India Private Limited were merged into RHI Orient Refractories Limited (ORL), now renamed to RHI Magnesita India Limited, leaving RHI Magnesita with a share of 70.19% in ORL. As a result, non-controlling interests hold a share of 29,81% (31.12.2020: 33.5%) in the listed company RHI Magnesita India Ltd. (in the following "ORL"), based in New Delhi, India. ORL is allocated to the Steel segment. The current reporting period and the previous reporting period need to be read in conjuction but are non- comparable as a consequence of the merger.

Based on the net assets of the company, the carrying amount of the non-controlling interests is determined as follows:

in € million	31.12.2021	31.12.2020
Non-current assets	51.1	29.1
Current assets	153.9	56.1
Non-current liabilities	(2.8)	(3.5)
Current liabilities	(80.9)	(23.0)
Net assets before intragroup eliminations	**121.3**	**58.7**
Intragroup eliminations	(0.5)	(0.1)
Net assets	**120.8**	**58.6**
Percentage of non-controlling interests	29.8%	33.5%
Carrying amount of non-controlling interests	**36.0**	**19.6**

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

in € million	2021	2020
Revenue	167.4	77.0
Operating expenses, net finance costs and income tax	(146.9)	(68.6)
Profit after income tax before intragroup eliminations	**20.5**	**8.4**
Intragroup eliminations	1.2	0.1
Profit after income tax	**21.7**	**8.5**
thereof attributable to non-controlling interests of ORL	6.6	2.8

in € million	2021	2020
Profit after income tax	21.7	8.5
Other comprehensive income/(loss)	8.0	(7.5)
Total comprehensive income	**29.7**	**1.0**
thereof attributable to non-controlling interests of ORL	8.7	0.3

The following table shows the summarised Statement of Cash Flows of ORL:

in € million	2021	2020
Net cash flow from operating activities	(1.4)	8.1
Net cash flow from investing activities	(5.2)	(3.5)
Net cash flow from financing activities	(3.6)	(3.2)
Total cash flow	**(10.2)**	**1.4**

Net cash flow from financing activities includes dividend payments to non-controlling interests amounting to €1.4 million (2020: €1.1 million).

In addition, non-controlling interests hold a share of 29,81% (31.12.2020: 33,5%) in one immaterial subsidiary with a carrying amount of the non-controlling interests amounts to €0.3 million as of 31 December 2021 (31.12.2020: €0.4 million) and a share of 49.0% in RHIMNGG founded on 2 November 2021 with a carrying amount of the non-controlling interests of €0.0 million as of 31 December 2021. Further information is provided under Note (5).

Accumulated other comprehensive income attributable to non-controlling interests

The development of accumulated other comprehensive income attributable to non-controlling interests is shown in the following table:

in € million	Currency translation
Accumulated other comprehensive income 31.12.2020	**(4.3)**
Unrealised results from currency translation	2.1
Accumulated other comprehensive income 31.12.2021	**(2.2)**

25. Borrowings

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

Borrowings have the following contractual remaining terms:

	Total	Remaining term		
in € million	31.12.2021	up to 1 year	2 to 5 years	over 5 years
Syndicated & Term Loan	791.5	58.3	733.2	0.0
Bonded loans ("Schuldscheindarlehen")	650.0	65.0	282.5	302.5
Other credit lines and other loans	88.2	88.2	0.0	0.0
Accrued interest	4.4	4.4	0.0	0.0
Total liabilities to financial institutions	**1,534.1**	**215.9**	**1,015.7**	**302.5**
Other financial liabilities	7.4	3.2	4.2	0.0
Capitalised transaction costs	(2.4)	(1.0)	(1.3)	(0.1)
Borrowings	**1,539.1**	**218.1**	**1,018.6**	**302.4**

	Total	Remaining term		
in € million	31.12.2020	up to 1 year	2 to 5 years	over 5 years
Syndicated & Term Loan	613.0	40.6	572.4	0.0
Bonded loans ("Schuldscheindarlehen")	400.0	0.0	100.0	300.0
Other credit lines and other loans	88.2	83.4	4.8	0.0
Accrued interest	4.4	4.4	0.0	0.0
Total liabilities to financial institutions	**1,105.6**	**128.4**	**677.2**	**300.0**
Other financial liabilities	11.9	4.3	7.6	0.0
Capitalised transaction costs	(3.0)	(1.2)	(1.7)	(0.1)
Borrowings	**1,114.5**	**131.5**	**683.1**	**299.9**

In March 2021 RHI Magnesita took out a €65.0 million credit facility, maturing in March 2022. In October 2021, this facility was increased by €50.0 million to a total amount of €115.0 million and maturity has been extended until April 2023. A part of the proceeds of the loan were used to repay a €60.0 million 2-year revolving credit facility guaranteed by the Austrian export credit agency (OeKB), which remains committed and can be utilised until its maturity in March 2022.

In August 2021 the CNY 100.0 million term loan in China, from which CNY 47.5m have been outstanding as of 31 December 2020 has been fully repaid.

In November 2021 the Group exercised its second extension option and thereby extended the maturity of the revolving credit facility (€600.0 million) by one year to 2027. The third and last extension option could be requested in November 2022 and would further extend the maturity of the revolving credit facility to 2028.

In December 2021 RHI Magnesita issued a Schuldscheindarlehen ("SSD") bonded loan in the amount of €250.0 million with tenors ranging from 5.5 years to 10 years as well as a new term loan in the amount of €150.0 million and a maturity of 3.5 years. The proceeds of the new instruments will be used for general corporate purposes, including for example refinancing and potential acquisitions.

The introduction of ESG-related pricing mechanics into the Group's financing facilities highlights RHI Magnesita's commitment to sustainability. The margin under the USD term loan (USD 200.0 million) and revolving credit facility (€600.0 million) as well as the newly issued SSD bonded loan (€250.0 million) and EUR term loan (€150.0 million) will be adjusted based on the Group's EcoVadis rating performance. RHI Magnesita is currently rated 'Gold' by EcoVadis and will seek to further improve its ESG performance and ratings through the execution of its sustainability strategy.

Net debt excluding lease liabilities/adjusted EBITDA is the main financial covenant of the loan agreements and is shown under Note (56). Compliance with the covenants is measured on a semi-annual basis. Covenant ratio is limited at 3.5x as at 31 December 2021. Breach of covenants leads to an anticipated maturity of loans. During 2021 and 2020, the Group met all covenant requirements.

Considering interest swaps, 70% (31.12.2020: 53%) of the liabilities to financial institutions carry fixed interest and 30% (31.12.2020: 47%) 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	31.12.2021 Carrying amount in € million	Interest terms fixed until	Effective annual interest rate	Currency	31.12.2020 Carrying amount in € million
2022	EURIBOR + margin	EUR	403.3	2021	EURIBOR + margin	EUR	380.7
	1.87%	EUR	65.0		LIBOR + margin	USD	15.3
					Interbank Deposit Certificate (CDI) + Margin	CNY	19.9
	Variable rate + margin	EUR	34.0		Various – Variable rate	Var.	3.3
	Various – Variable rate	Var.	12.5		Variable rate + margin	EUR	94.0
2023	0.79%	EUR	374.7	2022	1.87%	EUR	65.0
	4.09%	USD	176.8	2023	0.83%	EUR	290.3
2024	3.10%	EUR	35.0		3.94%	USD	162.6
2025	1.00%	EUR	177.0	2024	3.10%	EUR	35.0
2027	1.00%	EUR	152.0	2026	1.10%	EUR	27.0
2028	0.92%	EUR	86.5	2029	1.52%	EUR	8.0
2029	1.52%	EUR	8.0				
2031	1.28%	EUR	5.0				
			1,529.8				**1,101.1**

The table above shows how long the interest rates are fixed, rather than the maturity of the underlying instruments. In some cases, the terms to maturity of the contracts are substantially longer than the period during which interest terms are fixed.

26. Other financial liabilities

Other financial liabilities include the negative fair value of derivative financial instruments as well as lease liabilities, fixed-term and puttable non-controlling interests in Group companies. The puttable non-controlling interests have been reclassified to non-controlling interests within equity upon completion of the merger of the Indian entities. Additional explanation on derivative financial instruments is provided under Note (54).

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

			31.12.2021			31.12.2020
in € million	Current	Non-current	Total	Current	Non-current	Total
Derivatives from supply contracts	0.0	0.0	0.0	1.6	0.0	1.6
Interest rate swaps	0.0	9.6	9.6	0.0	18.3	18.3
Derivatives in open orders	0.1	0.0	0.1	1.8	0.0	1.8
Derivative financial liabilities	**0.1**	**9.6**	**9.7**	**3.4**	**18.3**	**21.7**
Lease liabilities	16.1	39.4	55.5	12.2	44.6	56.8
Power supply contract Norway	0.0	0.0	0.0	15.5	0.0	15.5
Fixed-term or puttable non-controlling interests	3.0	57.0	60.0	12.9	25.9	38.8
Other financial liabilities	**19.2**	**106.0**	**125.2**	**44.0**	**88.8**	**132.8**

Further information on IFRS16 related information is provided under Note (7) and (43).

27. Provisions for pensions

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

in € million	31.12.2021	31.12.2020
Present value of pension obligations	495.0	523.3
Fair value of plan assets	(255.5)	(240.2)
Deficit of funded plans	**239.5**	**283.1**
Asset ceiling	28.6	20.5
Net liability from pension obligations	**268.1**	**303.6**
thereof assets from overfunded pension plans	0.9	0.0
thereof pensions	269.0	303.6

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

in € million	31.12.2021	31.12.2020
Active beneficiaries	88.4	101.0
Vested terminated beneficiaries	68.4	72.9
Retirees	338.2	349.4
Present value of pension obligations	**495.0**	**523.3**

The calculation of pension obligations is based on the following actuarial assumptions:

in %	31.12.2021	31.12.2020
Interest rate	2.3%	1.7%
Future salary increase	2.5%	2.4%
Future pension increase	2.1%	1.7%

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 European currency area 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 €100.5 million (31.12.2020: €111.8 million) of the present value of pension obligations and for €20.6 million (31.12.2020: €23.0 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 company 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 €146.3 million (31.12.2020: €155.2 million) of the present value of pension obligations and for €0.7 million (31.12.2020: €0.7 million) of 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 €86.8 million (31.12.2020: €86.0 million) of the present value of pension obligations and for €79.0 million (31.12.2020: €70.2 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 €67.1 million (31.12.2020: €63.7 million) of the present value of pension obligations and holds €95.7 million (31.12.2020: €84.2 million) of assets, although only €67.1 million (31.12.2020: €63.7 million) of the plan assets are reflected on the balance sheet due to the application of 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.

The pension liabilities of the Brazilian group company Magnesita Refratários S.A. account for €44.1 million (31.12.2020: €52.3 million) of the present value of pension obligations and for €24.6 million (31.12.2020: €26.9 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	2021	2020
Net liability from pension obligations at beginning of year	**303.6**	**328.1**
Currency translation	2.5	(13.2)
Pension cost	8.5	10.3
Remeasurement (gains)/losses	(26.0)	0.6
Benefits paid	(17.6)	(18.6)
Employers' contributions to external funds	(2.9)	(3.6)
Net liability from pension obligations at year-end	**268.1**	**303.6**

The present value of pension obligations developed as follows:

in € million	2021	2020
Present value of pension obligations at beginning of year	**523.3**	**557.9**
Currency translation	15.4	(34.7)
Current service cost	4.2	4.6
Interest cost	8.9	10.9
Remeasurement (gains)/losses		
from changes in demographic assumptions	(3.7)	(1.0)
from changes in financial assumptions	(24.1)	24.3
due to experience adjustments	6.0	(8.6)
Benefits paid	(34.4)	(30.6)
Employee contributions to external funds	0.5	0.5
Disposal due to settlement	(1.1)	0.0
Present value of pension obligations at year-end	**495.0**	**523.3**

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

in € million	2021	2020
Fair value of plan assets at beginning of year	**240.2**	**248.0**
Currency translation	14.5	(22.9)
Interest income	5.1	6.0
Administrative costs (paid from plan assets)	(0.2)	(0.4)
Income on plan assets less interest income	10.4	17.4
Benefits paid	(16.8)	(12.0)
Employers' contributions to external funds	2.9	3.6
Employee contributions to external funds	0.5	0.5
Disposal due to settlement	(1.1)	0.0
Fair value of plan assets at year-end	**255.5**	**240.2**

The changes in the asset ceiling are shown below:

in € million	2021	2020
Asset ceiling at beginning of year	**20.4**	**18.0**
Currency translation	1.6	(1.0)
Interest expense	0.4	0.4
Losses/(gains) from changes in asset ceiling less interest expense	6.2	3.0
Asset ceiling at year-end	**28.6**	**20.4**

At 31 December 2021 the weighted average duration of pension obligations amounts to 12 years (31.12.2020: 13 years).

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

in € million	2021	2020
Current service cost	4.2	4.6
Interest cost	8.9	10.9
Interest income	(5.1)	(6.0)
Interest expense from asset ceiling	0.4	0.4
Administrative costs (paid from plan assets)	0.2	0.4
Pension expense recognised in profit or loss	**8.6**	**10.3**

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

in € million	2021	2020
Accumulated remeasurement losses at beginning of year	**170.0**	**169.7**
Remeasurement losses on present value of pension obligations	(21.8)	14.7
Income on plan assets less interest income	(10.4)	(17.4)
Losses/(gains) from changes in asset ceiling less interest expense	6.2	3.0
Reclassification to other reserves	(0.4)	0.0
Accumulated remeasurement losses at year-end	**143.6**	**170.0**

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

in € million	Active market	No active market	31.12.2021 Total	Active market	No active market	31.12.2020 Total
Insurances	0.0	43.8	43.8	0.0	41.0	41.0
Equity instruments	48.8	0.0	48.8	5.5	35.4	40.9
Debt instruments	97.0	3.3	100.3	60.5	38.0	98.5
Cash and cash equivalents	11.2	0.1	11.3	2.1	6.5	8.6
Other assets	49.9	1.4	51.3	48.7	2.5	51.2
Fair value of plan assets	**206.9**	**48.6**	**255.5**	**116.8**	**123.4**	**240.2**

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 of the Group or assets utilised by the RHI Magnesita 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 2022, RHI Magnesita expects employer contributions to external plan assets to amount to €3.0 million and direct payments to entitled beneficiaries to €19.2 million. In the previous year, employer contributions of €3.1 million and direct pension payments of €22.5 million had been expected for the financial year 2021.

28. Other personnel provisions

Other personnel provisions consist of the following items:

in € million	31.12.2021	31.12.2020
Termination benefits	44.1	46.4
Service anniversary bonuses	21.4	19.4
Legacy share-based payment program	0.0	0.1
Semi-retirements	3.2	4.6
Other personnel provisions	**68.7**	**70.5**

Provisions for termination benefits

Provisions for termination benefits were based on the following weighted average measurement assumptions:

in %	31.12.2021	31.12.2020
Interest rate	1.3%	0.9%
Future salary increase	3.5%	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 the financial year and the previous year:

in € million	2021	2020
Provisions for termination benefits at beginning of year	**46.4**	**52.0**
Currency translation	0.0	(0.1)
Current service cost	1.2	1.3
Interest cost	0.4	0.6
Remeasurement losses/(gains)		
from changes in financial assumptions	(1.8)	2.1
from changes in demographic assumptions	1.9	0.0
due to experience adjustments	0.5	(1.9)
Benefits paid	(4.8)	(7.5)
Loss / (Gain) on settlement	0.3	(0.1)
Provisions for termination benefits at year-end	**44.1**	**46.4**

Payments for termination benefits are expected to amount to €2.3 million in the year 2022. In the previous year, the payments for termination benefits expected for the year 2021 amounted to €2.9 million.

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

in € million	2021	2020
Accumulated remeasurement losses at beginning of year	**27.6**	**27.5**
Remeasurement losses/(gains)	0.6	0.1
Reclassification to other reserves	(0.5)	0.0
Accumulated remeasurement losses at year-end	**27.7**	**27.6**

At 31 December 2021 the weighted average duration of termination benefit obligations amounts to 14 years (31.12.2020: 12 years).

Provisions for service anniversary bonuses

The measurement of provisions for service anniversary bonuses is based on an average weighted interest rate of 0.8% (31.12.2020: 0.5%) and considers salary increases of 4.1% (31.12.2020: 3.5%).

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	31.12.2021	31.12.2020
Present value of semi-retirement obligations	7.6	7.8
Fair value of plan assets	(4.4)	(3.2)
Provisions for semi-retirement obligations	**3.2**	**4.6**

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

29. Other non-current provisions

The development of non-current provisions is shown in the table below:

in € million	Onerous/unfavourable contracts	Labour and civil contingencies	Demolition/disposal costs, environmental damages	Total
31.12.2020	**45.2**	**6.7**	**10.7**	**62.6**
Currency translation	0.5	0.0	0.9	1.4
Reversals	0.0	(1.5)	0.0	(1.5)
Additions	0.0	1.9	0.4	2.3
Additions interest	5.2	0.0	0.3	5.5
Reclassifications	(7.8)	0.0	1.1	(6.7)
31.12.2021	**43.1**	**7.1**	**13.4**	**63.6**

In November 2017, RHI Magnesita sold a plant located in Oberhausen, Germany, in order to satisfy the conditions imposed by the European Commission in connection with their approval of the Acquisition of Control of Magnesita. As RHI Magnesita is obligated to provide raw materials at cost, the Group has recognised a provision for unfavourable contracts as part of the purchase price allocation to reflect the foregone profit margin. The non-current portion of this contract obligation amounts to €43.1 million as of 31.12.2021 (31.12.2020: €45.2 million).

The provision for labour and civil contingencies primarily comprises labour litigation provisions against RHI Magnesita totalling 258 cases amounting to €4.9 million (31.12.2020: €5.2 million).

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 €2.9 million (31.12.2020: €2.3 million) and various sites in the United States amounting to €6.0 million (31.12.2020: €5.3 million).

30. Other non-current liabilities

Other non-current liabilities consist of the following items:

in € million	31.12.2021	31.12.2020
Deferred income for subsidies received	4.7	3.1
Liabilities to employees	0.5	0.8
Miscellaneous non-current liabilities	0.7	0.9
Other non-current liabilities	**5.9**	**4.8**
thereof financial liabilities	0.0	0.0
thereof non-financial liabilities	5.9	4.8

31. Trade payables and other current liabilities

Trade payables and other current liabilities included in the Consolidated Statement of Financial Position consist of the following items:

in € million	31.12.2021	31.12.2020
Trade payables	649.2	318.6
Contract liabilities	57.9	46.2
Liabilities to employees	80.9	88.8
Taxes other than income tax	29.3	27.0
Payables from property transactions	24.3	9.9
Payables from commissions	7.3	5.6
Liabilities to joint ventures and associates	1.3	1.2
Liabilities to non-consolidated subsidiaries	0.7	0.7
Dividend liabilities	0.4	0.4
Other current liabilities	27.5	24.3
Trade payables and other current liabilities	**878.8**	**522.7**
thereof financial liabilities	688.5	337.6
thereof non-financial liabilities	190.3	185.1

Trade payables increased in line with the Group's replenishment of raw material and finished goods stock, see Note (17).

Trade payables include an amount of €142.0 million (31.12.2020: €43.5 million) for raw material purchases subject to supply chain finance arrangements. The increase in forfaiting considers to match the inventory ramp up of the company in order to avoid supply chain disruptions.

Contract liabilities mainly consist of prepayments received on orders. In 2021 €46.2 million revenue was recognised related to contract liabilities recognised as at 31 December 2020.

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.

As a result of the increase in prepayments made and plant under construction for property, plant and equipment payables from property transactions increased accordingly in 2021.

Other current liabilities include €1.0 million (31.12.2020: €0.6 million) investment reimbursement obligation to the former subsidiary Dolomite Franchi S.p.A., and other accrued expenses.

32. Income tax liabilities

Income tax liabilities amounting to €38.2 million (31.12.2020: €25.8 million) primarily include income taxes for the current year and previous years, which domestic and foreign tax authorities have not definitively assessed. Considering many factors, including the interpretation and jurisprudence on the respective tax laws and previous experiences, adequate liabilities were recognised.

33. Current provisions

The development of current provisions is shown in the table below:

in € million	Restructuring costs	Demolition/ disposal costs, environmental damages	Warranties	Onerous/unfavourable contracts	Other	Total
31.12.2020	**53.4**	**7.8**	**9.9**	**12.9**	**2.4**	**86.4**
Currency translation	(0.1)	0.0	0.1	0.2	0.0	0.2
Disposal of subsidiaries	0.0	0.0	0.0	(3.3)	0.0	(3.3)
Utilised	(23.7)	(0.7)	(4.3)	(9.2)	(1.1)	(39.0)
Reversals	(5.5)	(0.4)	(3.4)	0.0	(0.2)	(9.5)
Additions	9.4	0.5	1.8	2.4	0.1	14.2
Reclassifications	0.0	(1.1)	0.0	7.8	(0.7)	6.0
31.12.2021	**33.5**	**6.1**	**4.1**	**10.8**	**0.5**	**55.0**

Provisions for restructuring costs amounting to €33.5 million as of 31 December 2021 (31.12.2020: €53.4 million) primarily consist of estimated benefit obligations to employees due to termination of employment and dismantling costs. Thereof, €14.9 million (31.12.2020: €22.5 million) relate to the plant closure in Mainzlar, Germany, €4.6 million (31.12.2020: €9.2 million) to the plant closure in Kruft, Germany, € 4.5 million (31.12.2020: €1.2 million) to the plant closure in Trieben, Austria and €1.0 million (31.12.2020: €0.5 million) to the plant closure in Evergem, Belgium. Further, € 3.1 million (31.12.2020: € 15.4 million) relate to other cost saving initiatives. In addition, provisions for restructuring costs amounting to €4.2 million relate to the sale of the plants in Porsgrunn, Norway and Drogheda, Ireland. Thereof, 3.9 million have been recognised for the exposure from an environmental guarantee. In 2021 €5.5 million (2020: €1.1 million) of provisions for restructuring costs were reversed mainly as a consequence of a revision of the estimate of redundancy costs payable.

The item demolition and disposal costs, environmental damages includes an amount of €2.3 million (31.12.2020: €2.5 million) which refers to the former site in Aachen, Germany. It is assumed that this provision will be used up within the next 12 months.

Provisions for warranties include provisions for claims arising from warranties and other similar obligations from the sale of refractory products.

Provisions for contract obligations include the current portion of the Oberhausen supply contract obligation amounting to €8.0 million (31.12.2020: €7.6 million). The amortisation of this provision led to an income of €7.5 million in 2021 (31.12.2020: €13.1 million). In addition, provisions for other unfavourable contracts amount to €2.9 million (31.12.2020: €2.0 million).

Furthermore, several provisions, which are individually immaterial and cannot be allocated to one of the above-mentioned categories, are included in other provisions. A large part of these costs is expected to be paid within 12 months.

NOTES TO THE CONSOLIDATED STATEMENT OF PROFIT OR LOSS

34. Revenue
Revenue is essentially generated by product deliveries and by performing management refractory services. The distribution of revenue by product group, division and country is given in the explanations to segment reporting under Note (50).

35. 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.

36. 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.

37. 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.

Research and development expenses totalled €36.7 million (2020: €37.8 million), of which development costs amounting to €8.7 million (2020: €7.2 million) were capitalised. Income from research grants amounted to €4.0 million (2020: €3.9 million) in 2021. Amortisation and impairment of development costs amounting to €3.5 million (2020: €3.6 million) are recognised under cost of sales.

38. Restructuring
Production Optimisation Plan
The Group continued the Production Optimisation Plan initiated in 2019 throughout 2021, which led to restructuring expenses amounting to €2.8 million (2020: €46.5 million) and non-current asset write-downs amounting to €41.3 million (2020: €28.1 million). Thereof €17.4 million (2020: €19.1 million) are allocated to Segment Steel and €23.9 million (2020: €9.0 million) are allocated to Segment Industrial.

In September 2021, the plant in Dashiqiao, China, was shut down and production suspended. At the same time, the Group entered negotiations with the joint venture partner to exit the Liaoning RHI Jinding Magnesia Co., Ltd. undertaking, to give up the entity's net assets in exchange for a waiver of the dividend payable amounting to €23.5 million as per 31 December 2021. These negotiations are still ongoing. The recoverable amount of Dashiqiao's assets is 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 have been recognised, of which €8.7 million are attributable to Segment Steel and €20.3 million are attributable to Segment Industrial. Further €2.4 million of idle costs were incurred until 31 December 2021 and recorded as restructuring expenses.

For the final closure of plant Trieben, Austria, restructuring expenses amounting to €16.3 million have been recognised in 2021. These expenses mainly relate to dismantling and site clean-up costs amounting to €3.1 million and write-down expenses recognised on non-current assets amounting to €12.2 million, of which €8.6 million are attributable to Segment Steel and €3.6 million to Segment Industrial. The recoverable amount of these assets was estimated with reference to their expected scrap value, which is deemed negligible.

In the course of the plant closure in Hagen, Germany, restructuring expenses totalling to €0.6 million have been recognised and land has been sold resulting in a gain from disposal amounting to €4.1 million in 2021.

Organisational restructuring
In 2020 management conducted a detailed and far-reaching review of the Group's cost base on a long-term basis, to make sure the business is right-sized and prepared for the challenges and opportunities ahead, including reduction of management and implementation of a new structure. As this project is still ongoing, further restructuring expenses related to termination of employment costs amounting to €4.7 million (2020: €22.2 million) have been recognised in 2021.

Divestment Norway and Ireland
Following the sale of plants in Drogheda, Ireland, and Porsgrunn, Norway, in February 2021 expenses amounting to €9.9 million have been recognised. Thereof, expenses amounting to €6.6 million were incurred for the exposure to environmental risks. In 2020, write-down expenses on non-current assets amounted to €18.7 million.

Summary of restructuring and write-down expenses recognised:

in € million	2021	2020
Production Optimisation Plan	(44.1)	(74.6)
Organisational restructuring	(4.7)	(22.2)
Divestment Norway and Ireland	(9.9)	(19.5)
Other	(0.1)	2.5
Restructuring and write-down expenses	**(58.8)**	**(113.8)**

39. Other income

The individual components of other income are:

in € million	2021	2020
Amortisation of Oberhausen provision	7.5	13.1
Result from deconsolidation incl. recycling of OCI components to P&L	6.8	0.0
Income from the disposal of non-current assets	6.2	1.8
Result from derivatives from supply contracts	1.6	0.0
Reversal of provisions	0.5	0.5
Miscellaneous income	6.5	4.3
Other income	**29.1**	**19.7**

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.

40. Other expenses

Other expenses include:

in € million	2021	2020
Expenses for strategic projects	(4.7)	(6.9)
Losses from the disposal of non-current assets	(2.6)	(6.4)
Result from deconsolidation incl. recycling currency translation differences	(1.6)	(0.3)
Result from derivatives from supply contracts	0.0	(9.6)
Miscellaneous expenses	(5.6)	(3.0)
Other expenses	**(14.5)**	**(26.2)**

Expenses for strategic projects amounting to €4.7 million (2020: €6.9 million) mainly include legal and consulting fees related to organisational streamlining and M&A. Miscellaneous expenses mainly consist of expenses related to prior years.

41. Interest income

This item includes interest income on securities and shares amounting to €0.6 million (2020: €0.7 million) as well as on cash at banks and similar income amounting to €13.6 million (2020: €5.2 million) of which €10.9 million are related to the successful judicial proceeding against tax authorities in Brazil. Additional information is provided under Note (18).

42. Foreign exchange effects and related derivatives

The net gain and expense on foreign exchange effects and related derivatives consists of the following items:

in € million	2021	2020
Foreign exchange gains	119.7	147.1
Gains from related derivative financial instruments	9.2	1.9
Foreign exchange losses	(121.7)	(190.4)
Losses from related derivative financial instruments	(4.4)	(1.4)
Net gain (expense) on foreign exchange effects and related derivatives	**2.8**	**(42.8)**

The net gain on foreign exchange effects in the current reporting period resulted mainly from the revaluation of the US Dollar against the Euro.

43. Other net financial expenses

Other net financial expenses consist of the following items:

in € million	2021	2020
Interest income on plan assets	4.7	5.9
Interest expense on provisions for pensions	(8.9)	(11.2)
Interest expense on provisions for termination benefits	(0.4)	(0.6)
Interest expense on other personnel provisions	0.0	(0.2)
Net interest expense personnel provisions	**(4.6)**	**(6.1)**
Unwinding of discount of provisions and payables	(6.8)	(9.6)
Interest expense on non-controlling interests	(5.2)	(3.7)
Interest expense on lease liabilities	(1.1)	(1.3)
Reversal of impairment losses on securities	0.2	0.0
Impairment losses on securities	0.0	(0.2)
Income/Expenses from the valuation of NCI put options	1.1	(1.6)
Other interest and similar expenses	(4.8)	(7.2)
Other net financial expenses	**(21.2)**	**(29.7)**

44. Income tax

Income tax consists of the following items:

in € million	2021	2020
Current tax expense	(43.2)	(27.1)
Deferred tax (expense)/income relating to		
temporary differences	(12.2)	(3.7)
tax loss carryforwards	16.0	16.9
	3.8	13.2
Income tax	**(39.4)**	**(13.9)**

The current tax expense of the year 2021 includes tax expenses for previous periods of €3.8 million (2020: €2.5 million) and income from income tax relating to prior periods of €12.2 million (2020: €8.3 million).

In 2021 the income tax for prior periods mainly includes an income resulting from tax audits of RHI Magnesita Group amounting to €9.2 million. In 2020 the income tax for prior periods mainly included income from revised tax returns in the Netherlands amounting to €3.8 million and income from a change in estimate of prior-year tax provisions in Germany amounting to €1.4 million.

Regarding the recognition of tax expenses, deferred tax assets, and deferred tax liabilities, RHI Magnesita has evaluated the impacts of the economic scenario arising, mainly, out of COVID-19's potentially delayed global recovery. In this context, the relevant uncertainties and potential negative effects of the downturn for the Group's financial results were taken into consideration when evaluating the recoverability of the tax assets. Special focus was given to working with the latest forecasts and assumptions to minimise the effects of economic uncertainty to reach an assessment that reflects the best analysis possible, considering the circumstances and information available. Based on this analysis it was concluded that there is no need for an impairment of deferred tax assets. Information on tax contingencies is provided under Note (57).

In addition to the income taxes recognised in the Statement of Profit or Loss, a tax expense totalling €3.1 million (2020: income totalling €41.1 million), which is attributable to other comprehensive income, was also recognised in other comprehensive income.

The reasons for 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 are shown below:

in € million	2021	2020
Profit before income tax	**289.1**	**41.5**
Income tax expense calculated at 25% (2020: 25%)	**72.3**	**10.4**
Different foreign tax rates	5.1	0.3
Expenses not deductible for tax purposes, non-creditable taxes	17.6	14.6
Non-taxable income and tax benefits	(17.2)	(5.0)
Tax losses and temporary differences of the financial year not recognised	0.0	6.4
Utilisation of previously unrecognised loss carryforwards and temporary differences	(4.0)	(3.4)
Recognition of previously unrecognised loss carryforwards and temporary differences	(37.9)	(14.2)
Change in write down on deferred tax assets	1.0	0.3
Deferred taxes not usable due to plant sale or closure	8.2	16.0
Deferred tax expense due to tax rate changes	(0.2)	(6.6)
Deferred income tax relating to prior periods	2.6	0.4
Current income tax relating to prior periods	(8.4)	(5.9)
Other	0.3	0.6
Recognised tax expense	**39.4**	**13.9**
Effective tax rate (in %)	**13.6%**	**33.5%**

In 2021 expenses not deductible for tax purposes included non-deductible personnel related expenses in Austria of €1.4 million, non-creditable withholding taxes of €1.8 million, non-deductible expenses for a debt waiver of€ 1.6 million, IT costs recharged from subsidiaries being non-deductible of €1.8 million, €2.6 million in Brazil relating to Transfer Price adjustments and non-deductible expenses due to thin capitalisation of €1.2 million in Argentina. In 2020 expenses not deductible for tax purposes included non-deductible voluntary leave payments in Austria of €1.7 million, nondeductible expenses for a share sale of €0.2 million, €4.9 million in Brazil, mainly due to taxation on foreign income of Brazilian controlled subsidiaries and non-deductible expenses due to thin capitalisation of €1.1 million in Argentina.

Non-taxable income and tax benefits include non-taxable income from restructuring of €1.3 million in Austria, income of foreign permanent establishments non-taxable in Austria of €1.8 million, tax incentives from the SUDENE tax regime in Brazil of € 1.6 million and a tax depreciation of €7.5 million. In 2020 non-taxable income and tax benefits included non-taxable portions of a capital gain of €0.8 million or statutory adjustments of €0.7 million.

Previously unrecognised temporary differences of €3.4 million could be utilised in Norway due to an asset sale. Furthermore, a deferred tax asset of €37.7 million was recognised resulting from a tax depreciation for future periods. On tax losses and temporary differences €9.1 million of potential deferred tax assets have not been recognised in China, thereof relating €8.2 million to a plant closure creating deferred tax assets not usable anymore due to limited planned taxable income in future years or leading to the write down of existing deferred tax assets. In 2020 the major effects include €9.4 million of deferred tax assets being recognised due to increased planned taxable income due to a restructuring and €16.0 million impairment of deferred tax assets in Norway due to the sale of the company holding those tax assets.

Due to tax rate changes in Argentina from 30% to 35% an amount of €0.3 million increased the income from deferred income taxes in 2021. In 2020 due to tax rate changes in Brazil from 15,25% to 34% in relation to the SUDENE tax regime an amount of €6.5 million increased the income from deferred income taxes.

45. 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 2021 and the previous year:

in € million	2021	2020
Changes in inventories, own work capitalised	(259.0)	19.3
Cost of materials	1,414.9	1,013.1
Personnel costs	547.6	575.6
Depreciation and amortisation charges	131.1	139.7
Write-down expenses	41.3	52.1
Other income	(41.2)	(32.4)
Other expenses	502.9	371.0
Total cost of sales, selling and marketing, administrative and restructuring expenses	**2,337.6**	**2,138.4**

Cost of materials includes expenses for raw materials and supplies and purchased goods of €1,189.4 million (2020: €827.9 million) as well as expenses for services received, especially energy, amounting to €225.5 million (2020: €185.2 million).

Amortisation charges of intangible assets are largely recognised in cost of sales. Other expenses mainly include freight costs, commissions, travel costs as well as consulting and other outside services.

46. Personnel costs

Personnel costs consist of the following components:

in € million	2021	2020
Wages and salaries	415.2	443.3
Pensions		
Defined benefit plans	4.4	5.1
Defined contribution plans	4.8	6.2
Termination benefits		
Defined benefit plans	1.2	1.7
Defined contribution plans	1.4	1.4
Other expenses	7.8	19.1
Social security costs	86.6	73.7
Fringe benefits	26.2	25.1
Personnel expenses (without interest expenses)	**547.6**	**575.6**

Personnel costs do not include amounts resulting from the interest accrued on personnel provisions. They amount to €4.6 million (2020: €6.0 million) and are recorded in other net financial expenses.

The expenses for wages and salaries include €6.2 million (2020: €-3.0 million) for share based payments.

NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS

The Statement of Cash Flows shows how cash and cash equivalents of the Group change through cash inflows and cash outflows during the reporting year. In accordance with IAS 7, cash flows from operating activities, from investing activities and from financing activities are distinguished. Cash flows from investing and financing activities are determined on the basis of cash payment, while cash flow from operating activities is derived from the Consolidated Financial Statements using the indirect method.

The respective monthly changes in items of the Statement of Financial Position of companies that report in foreign currencies are translated at the closing rate of the previous month and adjusted for effects arising from changes in the group of consolidated companies or in other businesses. Therefore, the Statement of Cash Flows cannot be derived directly from changes in items of the Consolidated Statement of Financial Position. As in the Statement of Financial Position, cash and cash equivalents are translated at the closing rate. The effects of changes in exchange rates on cash and cash equivalents are shown separately.

47. Cash generated from operations

in € million	2021	2020
Profit after income tax	249.7	27.6
Adjustments for		
income tax	39.4	14.0
depreciation	108.7	120.3
amortisation	22.4	19.4
write-down of property, plant and equipment and intangible assets	41.3	46.8
income from the reversal of investment subsidies	(0.9)	(0.6)
write-ups / impairment losses on securities	(0.2)	0.2
gains / losses from the disposal of property, plant and equipment	(6.3)	0.1
gains / losses from the disposal of subsidiaries	(5.2)	0.3
net interest expense and derivatives	24.4	36.0
result from joint ventures and associates	(100.2)	(7.6)
other non-cash changes	(12.7)	23.2
Changes in working capital		
inventories	(474.3)	64.2
trade receivables	(132.6)	35.9
contract assets	(1.6)	(0.1)
trade payables	314.8	(5.8)
contract liabilities	10.7	3.1
Changes in other assets and liabilities		
other receivables and assets	(56.9)	13.1
provisions	(49.0)	(4.1)
other liabilities	(24.8)	(19.4)
Cash (used in) / generated from operations	**(53.3)**	**366.6**

In 2021 cash generated from operations was negative due to the supply chain disruptions impacting the business, which resulted in increased working capital, especially in increased level of inventory of raw materials and finished goods. This is a non-recurring effect, as supply chains are expected to stabilise im 2022.

Other non-cash expenses and income include mainly the net interest expenses for defined benefit pension plans amounting to €4.6 million (2020: €6.1 million), net remeasurement gains of monetary foreign currency positions and derivative financial instruments of €6.4 million (2020: €-4.3 million), foreign exchange effects and the amortisation of Oberhausen provision (see Note 39).

48. 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:

in € million	31.12.2020	Cash changes	Non-cash changes: Changes in foreign exchange rates	Reclass	Interest expense and other changes	Additions and modifications of leases (IFRS 16)	31.12.2021
Liabilities to financial institutions	1,105.6	390.1	15.0	0.0	23.4	0.0	1,534.1
Lease liabilities	56.8	(17.4)	1.6	0.0	1.1	13.4	55.5
Liabilities to fixed-term or puttable non-controlling interests	38.8	(1.3)	3.7	(8.8)	27.6	0.0	60.0
Other financial liabilities and capitalised transaction costs	8.9	(5.4)	0.3	0.0	1.2	0.0	5.0
Changes of financial liabilities and assets arising from financing activities	**1,210.1**	**366.0**	**20.6**	**(8.8)**	**53.3**	**13.4**	**1,654.6**

in € million	31.12.2019	Cash changes	Non-cash changes: Changes in foreign exchange rates	Disposal group IFRS 5	Interest expense and other changes	Additions and modifications of leases (IFRS 16)	31.12.2020
Liabilities to financial institutions	1,043.1	51.1	(15.1)	0.0	26.5	0.0	1,105.6
Lease liabilities	61.9	(17.1)	(6.7)	(9.6)	1.3	27.0	56.8
Liabilities to fixed-term or puttable non-controlling interests	35.8	(1.6)	(0.8)	0.0	5.4	0.0	38.8
Other financial liabilities and capitalised transaction costs	11.9	(2.6)	(1.7)	0.0	1.3	0.0	8.9
Changes of financial liabilities and assets arising from financing activities	**1,152.7**	**29.8**	**(24.3)**	**(9.6)**	**34.5**	**27.0**	**1,210.1**

The reconciliation of the cash impact of net financing in 2021 and 2020 is shown in the tables below:

2021		Reconciliation to cash net finance cost		
in € million	Profit or loss	financing cash movements	other cash and non-cash movements	Cash impact of net financing costs
Interest income	14.2	0.0	11.5	2.7
Interest expenses on borrowings	(20.7)	(4.4)	(4.4)	(20.7)
Net expense on foreign exchange effects and related derivatives	2.8	0.0	1.9	0.9
Other net financial expenses	(21.2)	(1.3)	(16.6)	(5.9)
Net finance costs	**(24.9)**			**(23.0)**

2020		Reconciliation to cash net finance cost		
in € million	Profit or loss	financing cash movements	other cash and non-cash movements	Cash impact of net financing costs
Interest income	5.9	0.0	(0.1)	6.0
Interest expenses on borrowings	(20.1)	(4.2)	(4.4)	(19.9)
Net expense on foreign exchange effects and related derivatives	(42.8)	0.0	(44.3)	1.5
Other net financial expenses	(29.7)	(3.1)	(22.2)	(10.6)
Net finance costs	**(86.7)**			**(23.0)**

Non cash-movements in interest income mainly consist of accrued interest on a tax benefit that was recognised as a result of a successful judicial proceeding against tax authorities in Brazil relating to revenue based taxes. Non-cash movements in other net financial expenses are mainly related to net interest expenses on personnel provisions and non-controlling interests as well as to expenses from the discount on provisions.

49. Total interest paid and interest received

Total interest paid amounts to €29.8 million in the reporting period (2020: €31.7 million), of which €0.0 million (2020: €1.0 million) is included in cash flow from operating activities, €3.2 million (2020: €0.2 million) in cash flow from investing activities and €26.6 million (2020: €30.5 million) in cash flow from financing activities.

Total interest received amounts to €2.7 million for the financial year 2021 (2020: €6.1 million), of which €0.0 million (2020: €0.2 million) are included in cash flow from operating activities and €2.7 million (2020: €5.9 million) in cash flow from investing activities.

OTHER DISCLOSURES

50. Segment reporting

Segment reporting by operating company division

The following tables show the financial information for the operating segments for the year 2021 and the previous year:

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
Investments in property, plant and equipment and intangible assets (according to non-current assets statement)	196.0	83.5	279.5

2020 in € million	Steel[1]	Industrial[1]	Group 2020
Revenue	**1,569.9**	**689.1**	**2,259.0**
Gross profit	**367.8**	**182.3**	**550.1**
EBIT			**120.6**
Net finance costs			(86.7)
Result from joint ventures and associates			7.6
Profit before income tax			**41.5**
Depreciation and amortisation charges	(98.5)	(41.2)	(139.7)
Segment assets 31.12.2020	1,514.7	553.9	2,068.6
Investments in joint ventures and associates 31.12.2020			16.3
Reconciliation to total assets			967.8
			3,052.7
Investments in property, plant and equipment and intangible assets (according to non-current assets statement)	127.1	47.7	174.8

1) Adjusted to reflect the changes in presentation.

No single customer contributed 10% or more to consolidated revenue in 2021 and in 2020. Companies which 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 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	**1,822.9**	**728.5**	**2,551.4**

In 2020, revenue was classified by product group as follows:

in € million	Steel[1]	Industrial[1]	Group 2020
Shaped products	738.5	484.3	1,222.8
Unshaped products	279.1	143.9	423.0
Management refractory services	481.2	0.0	481.2
Other	71.1	60.9	132.0
Revenue	**1,569.9**	**689.1**	**2,259.0**

1) Adjusted to reflect the changes in presentation.

Total revenue includes revenue from Solution Business amounting to €749.2 million (2020: €618.3 million). Thereof, €659.9 million (2020: €537.5 million) are attributable to Segment Steel and €89.3 million (2020: €80.8 million) are attributable to Segment Industrial. Solution Business is a customer classification, where RHI Magnesita sums up all customer relations in which we enable our customers to focus on their core competences. It is typically characterised by sales of end-to-end solutions covering large parts of the customer process chain. Examples of this would be CPP/FLS, but also customers where we focus on technological development of bespoke products or where we are a strategic partner.

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 €48.0 million (2020: €55.2 million) is transferred over time and an amount of €82.6 million (2020: €76.8 million) is transferred at a point of time.

Segment reporting by country

Revenue in 2021 is classified by customer sites as follows:

in € million	Steel	Industrial	Group
Netherlands	6.0	2.2	8.2
All other countries			
USA	364.1	52.7	416.8
India	221.3	34.1	255.4
Brazil	191.5	60.5	252.0
PR China	73.8	127.4	201.2
Mexico	89.1	40.7	129.8
Germany	78.9	45.6	124.5
Italy	73.8	23.6	97.4
Canada	45.8	41.5	87.3
Russia	52.7	21.6	74.3
Other countries, each below €44.3 million	625.9	278.6	904.5
Revenue	**1,822.9**	**728.5**	**2,551.4**

Revenue in 2020 is classified by customer sites as follows:

in € million	Steel[1]	Industrial[1]	Group
Netherlands	6.3	6.0	12.3
All other countries			
USA	323.8	60.5	384.3
Brazil	173.8	56.3	230.1
India	161.7	25.9	187.6
PR China	67.2	99.9	167.1
Mexico	82.6	31.4	114.0
Germany	68.4	45.2	113.6
Italy	61.5	24.5	86.0
Russia	59.5	17.9	77.4
Canada	39.5	35.5	75.0
Other countries, each below €55.6 million	525.6	286.0	811.6
Revenue	**1,569.9**	**689.1**	**2,259.0**

1) Adjusted to reflect the changes in presentation.

The carrying amounts of goodwill, other intangible assets and property, plant and equipment are classified as follows by the respective sites of the Group companies:

in € million	31.12.2021	31.12.2020
Brazil	396.5	338.2
Austria	331.4	259.4
USA	229.3	220.5
PR China	161.8	177.4
Germany	149.9	139.6
India	71.0	61.6
Mexico	35.7	34.9
France	32.9	27.5
Turkey	27.8	28.5
Other countries, each below €16.8 million (31.12.2020: €15.9 million)	50.4	47.5
Goodwill, intangible assets and property, plant and equipment	**1,486.7**	**1,335.1**

51. Earnings per share

In accordance with IAS 33, earnings per share are calculated by dividing the profit or loss attributable to the shareholders of RHI Magnesita N.V. by the weighted average number of shares outstanding during the financial year.

	2021	2020
Profit after income tax attributable to the owners of the parent (in € million)	243.1	24.8
Weighted average number of shares for basic EPS	47,629,647	49,075,426
Effects of dilution from share options	519,546	363,519
Weighted average number of shares for dilutive EPS	48,149,193	49,438,945
Earnings per share basic (in €)	**5.10**	**0.51**
Earnings per share diluted (in €)	**5.05**	**0.50**

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 2021, there are 554,238 diluting options (31.12.2020: 363,519).

52. Dividend payments and proposed dividend

The proposed dividend is subject to the approval of the Annual General Meeting on 25 May 2022 and was not recognised as a liability in the Consolidated Financial Statements 2021. Together with the already paid interim dividend of €0.50 per share in September, the final proposed dividend for 2021 will amount to €1.00 per share (2020: €1.50 per share).

In line with the Group's dividend policy the Board paid out an interim dividend in September 2021 of €0.50 per share for the first half of 2021 amounting to €24 million.

Based on a resolution adopted by the Annual General Meeting of RHI Magnesita N.V. on 10 June 2021 the final dividend amounted to €1.00 per share for the shareholders of RHI Magnesita N.V for 2020. Together with the already paid interim dividend of €0.50 per share in December, the total dividend for 2020 amounted to €1.50 per share.

Dividend payments to the shareholders of RHI Magnesita N.V. have no income tax consequences for RHI Magnesita N.V.

53. 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 accordance with IFRS 13. In addition, carrying amounts are shown aggregated according to measurement category.

				31.12.2021		31.12.2020
in € million	Measurement category IFRS 9[1]	Level	Carrying amount	Fair value	Carrying amount	Fair value
Other non-current financial assets						
Interests in subsidiaries not consolidated	FVPL	3	0.6	0.6	0.6	0.6
Marketable securities	FVPL	1	13.2	13.2	13.0	13.0
Shares	FVPL	3	0.5	0.5	0.5	0.5
Other non-current financial receivables	AC	-	0.3	-	0.4	-
Trade and other current receivables	AC	-	414.4	-	255.6	-
Other current financial assets						
Derivatives	FVPL	2	2.5	2.5	0.3	0.3
Other current financial receivables	AC	-	0.4	-	0.0	0.0
Cash and cash equivalents	AC	-	580.8	-	587.2	-
Financial assets			**1,012.7**		**857.6**	
Non-current and current borrowings						
Liabilities to financial institutions	AC	2	1,534.1	1,551.6	1,105.6	1,118.3
Other financial liabilities and capitalised transaction costs	AC	2	5.0	-	8.9	-
Non-current and current other financial liabilities						
Lease liabilities	AC	2	55.5	-	56.8	-
Derivatives	FVPL	2	0.1	0.1	3.4	3.4
Interest derivatives designated as cash flow hedges	-	2	9.6	9.6	18.3	18.3
Liabilities to fixed-term or puttable non-controlling interests[2)4)]	AC	2/3	60.0	60.0	38.8	38.8
Power supply contract Norway[3)]	AC	2	0.0	0.0	15.5	15.5
Trade payables and other current liabilities	AC	-	688.5	-	337.6	-
Financial liabilities			**2,352.8**		**1,584.9**	
Aggregated according to measurement category						
Financial assets measured at FVPL			16.8		14.4	
Financial assets measured at amortised cost			995.5		843.2	
Financial liabilities measured at amortised cost			2,343.1		1,563.2	
Financial liabilities measured at FVPL			0.1		3.4	

1) FVPL: Financial assets/financial liabilities measured at fair value through profit or loss.
AC: Financial assets/financial liabilities measured at amortised cost.
2) Reclassification of puttable non-controlling interests amounting to €8.8m to non-controlling interest within equity upon completion of the merger of the Indian entities, see Note (5).
3) Relating to the termination of the power supply contract in the course of the sale of NORMAG; termination fee paid in January 2021.
4) Including the put option of the newly founded RHIMNGG amounting to €23.4 million, see Note (5).

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, as well as the market value of a short-term power supply contract. 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 and capitalised transaction costs, 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. Puttable non-controlling interests in the amount of €8.8 million have been reclassified to non-controlling interest within equity upon completion of the merger of the Indian entities. Further information is provided under Note (5). In December 2021, RHI Magnesita recognised a put option liability related to the newly founded group company RHIMNGG in China (see Note 5), amounting to €23.4 million. The fair value is based on the present value of performance-related contractual cashflows with a maturity in 2031. 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 2021 and 31 December 2020.

Net results by measurement category in accordance with IFRS 9

The effect of financial instruments on the income and expenses recognised in 2021 and 2020 is shown in the following table, classified according to the measurement categories defined in IFRS 9:

in € million	2021	2020
Net loss from financial assets and liabilities measured at fair value through profit or loss	7.2	(4.9)
Net loss from financial assets and liabilities measured at amortised cost	(20.9)	(73.9)

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 and interest income from securities.

The net loss from financial assets and liabilities measured at amortised cost includes interest income and expenses, changes in valuation allowances and losses on derecognition, foreign exchange gains and losses as well as expenses related to the measurement of put options. The net loss is mainly related to financial liabilities measured at amortised cost.

Net finance costs include interest income amounting to €14.2 million (2020: €5.9 million) and interest expenses of €33.0 million (2020: €32.6 million), which result from financial assets and liabilities which are not carried at fair value through profit or loss.

54. Derivative financial instruments

Commodity forward

RHI Magnesita Group terminated its energy supply contract following the closure of the fused magnesia plant in Porsgrunn, Norway. The original contract term was December 2023 and the settlement payment amounts to €24.0 million. The first payment installment was made in July 2020 (€8.5 million), the second in January 2021 (€15.5 million). Since 2015 this energy supply contract had been accounted for as a derivative financial instrument in accordance with IFRS 9, as the "own-use-exemption" was no longer applicable as the majority of the contracted electricity was sold on the market. From 30 June 2020 onward until final settlement, measurement of this financial instrument was based on the settlement payment and recognised as other financial liability.

In addition, Magnesita Refratários S.A., Contagem, Brazil signed a commodity forward contract for electricity in January 2012 which is accounted for as a financial instrument in accordance with IFRS 9 since 1 January 2020 as the "own-use exemption" no longer applied. The term of the contract expired in the fourth quarter of 2021 and the corresponding financial liability has been reduced to €0.0 million (31.12.2020: €1.6 million).

Interest rate swaps

RHI Magnesita has concluded interest rate swaps to hedge the cash flow risk associated to financial liabilities carrying variable 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, which result from the changes of the variable interest rates, are balanced out by the cash flow changes of the interest rate swaps. These hedging measures pursue the objective to transform variable-interest financial liabilities into fixed interest financial liabilities, thus hedging the cash flow from the financial liabilities. Potential hedge ineffectiveness could arise out of the credit value/debit value adjustment on the interest rate swaps which is not matched by the loan or 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 at RHI Magnesita as only first class international banks are involved.

In the year 2018, RHI Magnesita concluded an amortising interest rate swap with a nominal volume of €305.6 million maturing in 2023. As of December 2021, the outstanding amount of the interest rate swap was €259.7 million (31.12.2020: €290.3 million). The interest and compensation payments are due on a quarterly basis. Fixed interest rate amounts to 0.28%, the variable interest rate is based on the EURIBOR. Furthermore, one other interest rate swap has been concluded in 2018, with a nominal volume of USD 200.0 million and a term until 2023. The interest and compensation payments are also due on a quarterly basis. Fixed interest rate amounts to 3.1%, the variable interest rate is based on the USD LIBOR. In December 2021, RHI Magnesita hedged two of the floating tranches from the issued €250.0 million bonded loans ("Schuldscheindarlehen"). One interest rate swap amounting to €97.5 million maturing in 2027 was fixed at 0.38%, the other interest rate swap amounting to €12.0 million maturing in 2028 was fixed at 0.48%. The interest and compensation payments for both swaps are due on a half-year basis.

The fair values of the interest rate swaps totalled €-9.6 million at the reporting date (31.12.2020: €-18.3 million) and are shown in other non-current financial liabilities in the Consolidated Statement of Financial Position. For the reporting period 2021, €8.7 million (2020: €-3.6 million) have been recognised in other comprehensive income and an income amounting to €0.0 million (2020: €0.0) has been reclassified from other comprehensive to profit or loss and recognised within other net financial expenses. No ineffectiveness has been recognised in profit or loss.

The financial effect of the hedged item and the hedging instrument for the period 2021 and 2020 is shown as follows:

in € million	Carrying amount	Statement of Financial Position	Change in fair value used for measuring ineffectiveness	Nominal amount
2021	(9.6)	Other non-current financial liabilities	8.7	USD 200 million EUR 369.2 million
2020	(18.3)	Other non-current financial liabilities	(3.6)	USD 200 million EUR 290.3 million

in € million	Change in fair value used for measuring ineffectiveness	Change in fair value used to measure ineffetiveness net of deferred tax
2021	8.7	6.6
2020	(3.6)	(2.7)

Forward exchange contracts

A forward exchange contract was put into place as of 31 December 2020, selling USD 100.0 million against EUR. As of 31 December 2021 there is no USD/EUR forward exchange contract outstanding.

In addition, a forward exchange contract was put into place as of 30 June 2021 selling BRL 100.0 million against USD. The instrument has been rolled on a monthly basis, with a forward exchange contract in place as of 31 December 2021, in the amount of BRL 80.0 million, selling BRL against USD. Forward exchange contracts are renewed and rolled on a monthly basis depending on the current next exposure to the currency pairs.

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**

The nominal value and fair value of forward exchange contracts as of 31 December 2020 are shown in the table below:

			31.12.2020	
Purchase	Sale		Nominal value in million	Fair value in € million
EUR	USD	USD	100.0	0.3
Forward exchange contracts				**0.3**

55. 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 €1,012.7 million (31.12.2020: €842.2 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, letters of credit and bank guarantees, is shown by customer segment in the following table:

in € million	31.12.2021	31.12.2020
Segment Steel	300.4	183.3
Segment Industrial	103.3	71.0
Trade receivables	**403.7**	**254.3**
Credit insurance and bank guarantees	(206.2)	(83.2)
Net credit exposure	**197.5**	**171.1**

The following table shows the carrying amounts of receivables denominated in currencies other than the functional currencies of the Group companies. The carrying amounts of the receivables in the functional currency of the respective Group company are included under other functional currencies:

in € million	31.12.2021	31.12.2020
US Dollar	59.9	39.8
Euro	6.1	7.2
Pound Sterling	2.7	6.8
Other currencies	2.3	3.7
Other functional currencies	332.7	196.8
Trade receivables	**403.7**	**254.3**

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	2021		2020	
	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	**30.0**	**0.6**	**32.3**	**1.3**
Currency translation	0.3	–	(1.6)	–
Addition	3.5	–	7.7	–
Use	(5.2)	–	(6.3)	–
Reversal	(5.4)	–	(2.1)	–
Net remeasurement of loss allowance	0.0	–	0.0	(0.7)
Accumulated valuation allowance at year-end	**23.2**	**0.6**	**30.0**	**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						
31.12.2021	Not past due	less than 30 days	between 31 and 60 days	between 61 and 90 days	between 91 and 180 days	more than 180 days	Total
Expected credit loss rate in %	0.03-0.37%	0.06-0.86%	0.25-8.09%	0.52-17.84%	0.91-27.98%	3.01-50.55%	
Gross carrying amount	351.9	26.3	4.6	2.2	1.7	(1.3)	385.4
Life time expected credit loss	(0.4)	(0.1)	(0.1)	(0.1)	(0.1)	(0.2)	(1.0)

in € million	Trade receivables – days past due						
31.12.2020	Not past due	less than 30 days	between 31 and 60 days	between 61 and 90 days	between 91 and 180 days	more than 180 days	Total
Expected credit loss rate in %	0.02-0.53%	0.03-1.23%	0.08-9.46%	0.15-18.77%	0.26-26.25%	0.91-55.39%	
Gross carrying amount	222.8	13.3	2.80	1.30	2.00	0.2	242.4
Life time expected credit loss	0.30	0.04	0.02	0.03	0.05	0.20	0.6

Climate-related events or adverse changes in climate-related legislature could potentially affect the creditworthiness of customers, e.g. due to business interruption or lower profitability. RHI Magnesita has incorporated these considerations when incorporating forward-looking information into the expected credit loss estimation, and assessed that such events would have an immaterial impact on the estimated loss rates.

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 2021, RHI Magnesita has a committed Revolving Credit Facility (RCF) of €600.0 million, which was fully unutilised (31.12.2020: committed RCF was €600.0 million and was also unutilised). The €600.0 million committed RCF is a syndicated facility with multiple international banks and matures in 2027. The liquidity of the subsidiaries of the RHI Magnesita Group is managed regionally, continued 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:

in € million	Carrying amount 31.12.2021	Cash outflows	Remaining term: up to 1 year	2 to 5 years	over 5 years
Liabilities to financial institutions					
fixed interest	534.0	551.4	69.9	337.3	144.2
variable interest	1,000.1	1,022.9	154.3	706.7	161.9
Other financial liabilities and capitalised transaction costs	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	688.5	688.5	688.5	0.0	0.0
Non-derivative financial liabilities	**2,343.1**	**2,526.0**	**934.9**	**1096.7**	**494.4**

in € million	Carrying amount 31.12.2020	Cash outflows	Remaining term: up to 1 year	2 to 5 years	over 5 years
Liabilities to financial institutions					
fixed interest	135.0	144.7	2.7	106.2	35.8
variable interest	970.6	994.2	131.2	594.3	268.7
Other financial liabilities and capitalised transaction costs	8.9	11.3	4.4	6.9	0.0
Lease liabilities	56.8	61.8	14.2	32.3	15.3
Liabilities to fixed-term or puttable non-controlling interests	38.8	170.2	12.9	11.9	145.4
Power supply contract Norway	15.5	15.5	15.5	0.0	0.0
Trade payables and other current liabilities	337.6	337.6	337.6	0.0	0.0
Non-derivative financial liabilities	**1,563.2**	**1,735.3**	**518.5**	**751.6**	**465.2**

Derivative financial instruments
The remaining terms of derivative financial instruments based on expected undiscounted cash flow as of 31 December 2021 and 31 December 2020 are shown in the table below:

in € million	Carrying amount 31.12.2021	Cash flows	Remaining term: 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

in € million	Carrying amount 31.12.2020	Cash flows	Remaining term: up to 1 year	2 to 5 years	over 5 years
Receivables from derivatives with net settlement					
Forward exchange contracts	0.3	0.3	0.3	0.0	0.0
Liabilities from derivatives with net settlement					
Derivatives from supply contracts	1.6	1.6	1.6	0.0	0.0
Interest rate swaps	18.3	9.6	4.7	4.9	0.0
Derivatives in open orders	1.8	1.8	1.8	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 are created through financial instruments which are denominated in a currency other than the functional currency (in the following: foreign currency) and are monetary in nature. Important primary monetary financial instruments 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.

The majority of foreign currency financial instruments in the RHI Magnesita Group result from operating activities, above all from intragroup financing transactions, unless the foreign exchange effects recognised to profit or loss on monetary items, which represent part of a net investment in a foreign operation in accordance with IAS 21, are eliminated or hedged through forward exchange contracts. 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 2021:

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 foreign currency positions as of 31 December 2020 are structured as follows:

in € million	USD	EUR	GBP	INR	Other	Total
Financial assets	663.6	72.6	21.8	9.4	40.6	808.0
Financial liabilities, provisions	(358.1)	(98.2)	3.5	0.0	(32.9)	(485.7)
Net foreign currency position	**305.5**	**(25.6)**	**25.3**	**9.4**	**7.7**	**322.3**

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 2021 would have had the following effect on profit or loss and equity (both excluding income tax):

	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 hypothetical effect on profit or loss at 31 December 2020 can be summarised as follows:

	Appreciation of 10%		Devaluation of 10%	
in € million	Gain/(loss)	Equity	Gain/(loss)	Equity
US Dollar	(42.9)	(33.3)	52.4	40.7
Euro	2.0	12.0	(2.5)	(14.7)
British Pound Sterling	(2.0)	(2.0)	2.4	2.4
Indian Rupee	(0.9)	(0.9)	1.0	1.0
Other currencies	(0.7)	(0.7)	0.9	0.9

Net investment hedge
Non-current borrowings as of 31 December 2021 include USD 200.0 million which have been designated as a hedge of the net investments in two subsidiaries in the USA as of 1 July 2019. This borrowing is used to hedge the Group´s exposure to the USD foreign exchange risk on these investments. Gains or losses on the translation of this borrowing are reclassified to Other Comprehensive Income to offset any gains or losses on translation of the net investments in the subsidiaries.

There is an economic relationship between the hedged item and the hedging instrument as the net investment creates a translation risk that will match the foreign exchange risk on the USD borrowing. The Group has established a hedge ratio of 1:1 as the underlying risk of the hedging instrument is identical to the hedged risk component. Hedge ineffectiveness could arise when the amount of the investment in the foreign subsidiary becomes lower than the amount of the fixed rate borrowing. For the reporting period, there was no ineffectiveness to be recorded from net investments hedges.

The impact of the hedging instrument for the period 2021 and 2020 is shown as follows:

in € million	Carrying amount	Statement of Financial Position	Change in fair value used for measuring ineffectiveness	Nominal amount
2021	176.8	Non-current borrowings	(14.1)	USD 200 million
2020	162.6	Non-current borrowings	15.8	USD 200 million

The change in the carrying amount of the non-current borrowing as a result of the foreign currency movements since 1 July 2019 is recognised in Other Comprehensive Income within the currency translation differences.

The impact of the hedged item for the period 2021 and 2020 is shown as follows:

in € million	Change in fair value used for measuring ineffectiveness	Change in fair value used to measure ineffetiveness net of deferred tax
2021	14.1	(10.6)
2020	(15.8)	(11.9)

The hedging gain or loss recognised in the currency translation differences is also including the corresponding tax effect. The hedging gain or loss recognised before tax is equal to the change in the fair value used for measuring effectiveness.

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 2021, interest rate hedges amounting to a nominal value of €369.2 million (31.12.2020: €290.3 million) and a nominal value of USD 200.0 million (31.12.2020: 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 (54).

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 2021 had been 25 basis points higher or lower, equity would have been €1.1 million (31.12.2020: €1.9 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 2021 had been 25 basis points higher or lower, the interest result would have been €0.3 million (31.12.2020: €0.1 million) lower or higher.

Other market price risk
RHI Magnesita holds certificates in an investment fund amounting to €13.2 million (31.12.2020: €13.0 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.

56. 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.

The capital structure key figures at the reporting date are shown below:

	31.12.2021	31.12.2020
Net debt (in € million)	1,013.8	582.1
Net gearing ratio (in %)	123.3%	87.4%
Net debt to adjusted EBITDA	2.61x	1.53x

Net debt, which reflects borrowings and lease liabilities net of cash and cash equivalents and marketable securities, 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	31.12.2021	31.12.2020
EBIT	213.8	120.6
Amortisation	22.4	19.4
Restructuring and write-down expenses	58.8	113.8
Other operating income and expenses	(14.6)	6.5
Adjusted EBITA	**280.4**	**260.3**
Depreciation	108.7	120.3
Adjusted EBITDA	**389.1**	**380.6**
Total debt	1,539.1	1,114.5
Lease liabilities	55.5	56.8
Cash and cash equivalents [1]	580.8	589.2
Net debt	**1,013.8**	**582.1**
Net debt excluding IFRS 16 lease liabilities	**958.3**	**525.3**
Net debt to adjusted EBITDA	**2.61x**	**1.53x**
Net debt to adjusted EBITDA excluding IFRS 16 lease liabilities	**2.46x**	**1.38x**

1) thereof shown under assets held for sale € 2.0 million in 2020.

In both 2021 and 2020, all externally imposed capital requirements were met. The Group has sufficient liquidity headroom within its committed debt facilities.

RHI Magnesita N.V. is subject to minimum capital requirements according to its articles of association. The articles of association stipulate a mandatory reserve of €288,699,230.59 which was created in connection with the merger.

57. Contingent liabilities

At 31 December 2021, warranties, performance guarantees and other guarantees amount to €52.5 million (31.12.2020: €48.0 million). Contingent liabilities have a remaining term between two months and three years, depending on the type of liability. Based on experiences of the past, the probability that contingent liabilities are used is considered to be low.

In addition, contingent liabilities from sureties of €0.2 million (31.12.2020: €0.3 million) were recorded, of which €0.2 million (31.12.2020: €0.3 million) are related to contingent liabilities to creditors from joint ventures.

Individual administrative proceedings and lawsuits which result from ordinary activities are pending as of 31 December 2021 or can potentially be exercised against RHI Magnesita in the future. The related risks were analysed with a view to their probability of occurrence.

The calculation of income taxes of RHI Magnesita N.V. and its subsidiaries is based on the tax laws applicable in the individual countries. 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.

Since RHI Magnesita is continually adapting its global presence to improve customer service and maintain its competitive advantage, the Group leads open discussions with tax authorities, mostly about the transfer of functions between related parties and their exit value. 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, the Group's management judgements are based on a likely outcome approach based on in-house tax experts, 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 €200.8 million (31.12.2020: €169.1 million). These tax proceedings are as follows:

There are three proceedings in which Brazilian Federal Tax Authorities issued tax assessments rejecting the amortization of goodwill generated in two corporate operations executed between 2007 and 2008, which can be deducted for purposes of Corporate Income Taxes according to Brazilian laws and regulations. The first group of operations analysed involved the acquisition of shares of Magnesita S.A. by the GP Investment Group. The second group of operations analysed was the acquisition of companies outside of Brazil by the Group, whose control was then held by the Rhône Group. The Tax Authorities considered that the Group did not observe the formal and material requirements for the goodwill tax deductions, while the Group presented defenses in all proceedings claiming all requirements were met. The three proceedings are divided as follows:

- Proceeding 1 (31.12.2021: €61.2 million; 31.12.2020: €59.3 million) comprises the deductions executed in 2008 and 2009 and is currently under trial in the Federal Administrative Council of Tax Appeals ("CARF"). The latest decision issued cancelled more than 90% of the tax assessment but is still subject to appeals filed by both the Group and the General Counsel to the National Treasury ("PGFN"). The final ruling for this proceeding is expected within one to two years. After the administrative trial ends, the Group may still challenge any residual charges before Judicial courts according to its convenience.

- Proceeding 2 (31.12.2021: €40.6 million; 31.12.2020: €38.8 million) comprises the deductions executed in 2013, 2014, 2015, 2016, 2017 and 2018 and is currently under trial in CARF. The first CARF decision is expected within one to two years. After the administrative trial ends, the Group may still challenge any residual charges before Judicial courts according to its convenience.

- Proceeding 3 (31.12.2021: €28.8 million; 31.12.2020: €27.7 million) comprises the deductions executed in 2011 and 2012 and is currently under trial in CARF. The latest decision issued cancelled 100% of the tax assessment but is still subject to appeals filed by both the Group and PGFN. The final ruling for this proceeding is expected within two to three years. After the administrative trial ends, the Group may still challenge any residual charges before Judicial courts according to its convenience.

The Group is party to 42 proceedings where the Brazilian Mining Authorities ("ANM") challenge the criteria used for calculating and paying the Financial Compensation for Exploration of Mineral Resources ("CFEM"), which are mining royalties paid to the Brazilian Federal Government by every mining company. In essence, the Authorities claim that CFEM should be paid based on production costs incurred in a later stage of the mineral processing flow, while the Group defends that CFEM should be paid based on production costs incurred in a prior stage of the mineral processing flow. Based on the opinion of its technical and legal advisors, the Group has presented defenses against all assessments sent by ANM, and most of the procedures are still ongoing within ANM administrative courts. Final decisions of the first cases are expected within four to five years. As of 31 December 2021, the potential risk amounts to €23.6 million, including interest and penalties (31.12.2020: €10.6 million).

Furthermore, Brazilian Tax Authorities issued tax assessments against former Brazilian companies that were merged into Magnesita Refratários S.A., named Partimag and Edelweis. The assessments relate to the offsetting of federal tax credits and debts performed by such companies up to and including 2008, which have not been approved by Tax Authorities. Legal opinions demonstrate that the offsets executed are solidly based on supporting documentation and therefore the Group presented administrative and judicial defenses against the assessments in 17 procedures. The first final decisions are expected within three to four years. As of 31 December 2021, the potential risk amounts to €5.1 million, including interests and penalties (31.12.2020: €9.5 million).

In 2020, the Group received a tax assessment in which Brazilian Federal Tax Authorities claim that Social Security Taxes ("PIS/COFINS") were not correctly calculated in years 2017 and 2018. Authorities have stated that some financial revenues were not taxed and that some tax credits which were offset were not allowed. The Group presented its defense and currently the proceeding awaits trial in the first instance court of the Federal Revenue Service ("RFB"). A final decision is expected within four to five years. As of 31 December 2021, the potential risk amounts to €3.9 million, including interest and penalties (31.12.2020: €3.8 million).

In 2020, Brazilian Federal Tax Authorities sent a tax assessment to the Group stating that some financial revenues were not taxed in year 2016 when an entity of the Group altered its tax regime for financial revenues from a cash to an accrual-based regime. Based on opinion of its legal advisor, the Group presented defenses claiming the assessment was void and that the calculations of the authorities were wrong and currently the proceeding awaits trial in the first instance court of the Federal Revenue Service ("RFB"). A final decision is expected within four to five years. As of 31 December 2021, the potential risk amounts to €3.8 million, including interest and penalties.

In 2013, Brazilian Federal Tax Authorities raised a tax assessment affirming that the Group allegedly failed to pay Social Security Contributions ("INSS") in the period from January to December 2009. Such contributions are calculated based on certain amounts that are included in the payroll of companies in Brazil and the authorities claimed that some values paid to employees were unduly not taxed. Legal opinions demonstrate that the Group has grounds for reversing the assessment. In 2021 the administrative proceeding ended, and a minor part of the assessment cancelled, therefore the Group has decided to continue challenging the assessment before Judicial courts. The final decision is expected within five to six years. As of 31 December 2021, the potential risk amounts to €3.7 million, including interest and penalties (31.12.2020: €3.1 million).

In 2019, Brazilian Federal Tax Authorities rejected the offsetting of some federal tax debts with Corporate Income Tax credits the Group was entitled to in year 2015. Authorities claimed the credits were non-existent or did not comply with the formal requirements set for in Brazilian laws and regulations which allowed their utilisation. Legal opinions demonstrate that the Group and the tax credits are based on solid legal and material grounds. Therefore, the Company presented its defense and currently the proceeding awaits trial in the first instance court of the Federal Revenue Service ("RFB"). As of 31 December 2021, the potential risk amounts to €2.6 million, including interest and penalties (31.12.2020: €2.5 million).

Group entities in Brazil are also involved in other minor lawsuits totaling €27.5 million (31.12.2020: €23.3 million) which relate to several assessments concerning various taxes and related obligations.

Furthermore, Magnesita Refratários S.A., Contagem, Brazil, is party to a public civil action for damages allegedly caused by overloaded trucks in contravention with the Brazilian traffic legislation. In 2017, a decision was rendered in favour of Magnesita in the trial court considering the requests submitted by the Federal Public Attorney's Office to be completely devoid of legal merit. The decision taken by the trial court was subject to appeal by the Public Ministry of Minas Gerais. In 2021, a judgement was rendered by the Federal Regional Court, in favor of Magnesita, maintaining the understanding that the requests of the Federal Public Attorney's Office are devoid of legal merit. The final decision is expected in 5 years. The potential loss from this proceeding amounts to €11.6 million as of 31 December 2021 (31.12.2020: €10.6 million).

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

58. Other financial commitments

Capital commitments amount to €35.5 million as at 31 December 2021 (31.12.2020: €49.5 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 €410.8 million at the reporting date (31.12.2020: €219.2 million). The increase in other financial commitments in the current financial year compared to the previous year mainly results from energy supply contracts concluded or prolonged in 2021 as well as from increases in raw material and energy prices. 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.

59. Expenses for the Group independent auditor

The expensed fees for the activities of the Group independent auditor 'PricewaterhouseCoopers Accountants N.V.' that are included in the Consolidated Statement of Profit or Loss are shown in the following table:

in € million	2021	2020
Audit of the Financial Statements	2.8	2.6
thereof invoiced by PwC Accountants N.V.	1.2	1.2
thereof invoiced by PwC network firms	1.6	1.4
Tax compliance services	0.0	0.0
Other non-audit services	0.0	0.1
Total fees	**2.8**	**2.7**

In 2021, other audit related services, tax compliance services and other non-audit services amounting to €0.0 million (2020: €0.1 million) were performed and invoiced by PwC network firms outside of the Netherlands.

The expensed fees for the audited financial statements in 2021 and 2020 include the half year review procedures.

60. Annual average number of employees

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

	2021	2020
Salaried employees	5,720	4,733
Waged workers	6,564	7,831
Number of employees on annual average	**12,284**	**12,564**

108 full time equivalents of salaried employees work in the Netherlands. In 2020 98 full time equivalents of salaried employees worked in the Netherlands.

61. Transactions with related parties

Related companies include subsidiaries that are not fully 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, the personnel welfare foundation of Stopinc AG, Hünenberg, Switzerland, and Chestnut Beteiligungs GmbH, Germany also have to be 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. Since 26 October 2017, key management personnel comprises of members of the Board of Directors of RHI Magnesita N.V. and the Executive Management Team.

Related companies

In 2021 and 2020, the Group conducted the following transaction with its related companies:

	Joint ventures		Associates		Non-consolidated subsidiaries	
in € million	2021	2020	2021	2020	2021	2020
Revenue from the sale of goods and services	1.0	2.7	0.0	0.0	0.0	0.0
Purchase of raw materials	5.0	2.7	14.4	14.6	0.0	0.1
Interest income	0.1	0.1	0.2	0.8	0.0	0.0
Trade and other receivables	0.0	0.2	0.0	0.0	0.3	0.2
Loans granted	0.0	0.0	0.8	0.8	0.0	0.0
Trade liabilities	0.0	0.3	1.3	0.9	0.7	0.7
Dividends received	6.8	10.9	0.0	0.0	0.0	0.0

In 2021 and 2020, the Group charged electricity and stock management costs to the joint venture MAGNIFIN Magnesiaprodukte GmbH & Co KG, St. Jakob, Austria, and purchased raw materials. In 2021 and 2020, the associate Sinterco S.A., Nameche, Belgium, sold sintered doloma to the RHI Magnesita Group. Furthermore, the Group has a financing receivable of €0.8 million (31.12.2020: €0.8 million) from a loan agreement with Sinterco. The balances at the end of 2021 are unsecured and will be paid in cash.

In 2021 and 2020, 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 (27). At 31 December 2021, no current accounts receivable existed (31.12.2020: €0.0 million). In the past reporting period, employer contributions amounting to €0.6 million (2020: €0.6 million) were made to the personnel welfare foundation. At 31 December 2021 a net defined benefit liability of €0.8 million (31.12.2020: €0.9 million) is recognised.

Related persons

Remuneration of key management personnel of the Group, which is subject to disclosure in accordance with IAS 24, comprises the remuneration of the active Board of Directors and the Executive Management Team (EMT) in 2021, 2020, 2019 and in 2018 as well as the former Management Board and Supervisory Board of RHI AG until October 2017.

For the financial year 2021, expenses for the remuneration of the Executive Directors and EMT members, active in 2021, recognised in the Consolidated Statement of Profit or Loss total €10.4 million (2020: €9.8 million). The expenses, not including non-wage labour costs, amount to €9.4 million (2020: €9.1 million), of which €5.5 million (2020: €7.7 million) were related to current benefits (fixed, variable and other earnings) and €3.9 million (2020: €1.4 million) to share-based remuneration. At 31 December 2021, liabilities for performance-linked variable earnings and share-based payments for active members of the former Management Board of €1.1 million (2020: €2.5 million) are recognised as liabilities. There are no obligations arising from post-employment benefits and legally required termination benefits.

In addition to the variable remuneration, the members of the former Management Board of RHI AG active in 2017 were also entitled to share-based payments. The program was terminated after RHI AG merged with and into RHI Magnesita N.V and the provisioned amount was paid in 2021 (€1.0 million paid in 2020).

For Non-Executive Directors, remuneration totalling €1.2 million (2020: €1.1 million) was recognised through profit or loss in the year 2021. The compensation paid to the Non-Executive Directors only consists of short-term employee benefits.

Employee representatives acting as Non-Executive Directors of RHI Magnesita N.V. who are employed by the Group, do not receive compensation for their activity as Non-Executive Directors. For their activity as employees in the Company expenses of €0.4 million (2020: €0.2 million) are recognised.

No advance payments or loans were granted to key management personnel. The RHI Magnesita Group did not enter into contingent liabilities on behalf of the key management personnel.

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 96 to 121 of the Annual Report of the RHI Magnesita Group.

Earnings of former members of the former Management Board amounted to €0.6 million (2020: €0.7 million), of which €0.3 million (2020: €0.2 million) are related to share-based remuneration.

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.

In the ordinary course of business, RHI Magnesita had the following transactions with various organisations with which certain members of the Board of Directors are associated. All transactions with related parties are conducted on an arm's-length basis and in accordance with normal business terms.

Until December 2020, Karl Sevelda held a position as a supervisory board member at Siemens AG Austria. Siemens AG Austria is both a supplier and customer of the Group with only immaterial transaction volumes. The related party was not involved in the decision making of any of these transactions.

Furthermore, Fiona Paulus is an independent non-executive board member of Interpipe Group. RHI Magnesita supplied the Interpipe Group with refractory materials amounting to about € 2.6 million in 2021 (2020: € 1.9 million). However, the materiality of these sales is not significant for the Group.

Equity-settled share option plan (LTIP)

The Company implemented a share option plan for the members of senior management of the Group starting with 2018 which was approved by shareholders at the Annual General Meeting held on 7 June 2018. The Group currently operates three different share option awards, one applicable for the financial year 2021, 2020 and 2019 each. The plan for the financial year 2018 expired on 7 June 2021. None of the performance targets have been met and the awards have therefore lapsed. The amounts recognised in equity relating to market-related performance condition were not subsequently reversed.

Each share option converts into one ordinary share of the Company on exercise. No amounts are paid or payable by the recipient on receipt of the option. The options carry rights to dividends but no voting rights. Options may be exercised at any time from the date of vesting to the date of their expiry, except for members of the Executive Management Team who have a holding period of two years.

The number of options granted is approved by the Board in accordance with the Remuneration Policy, approved by the shareholders at the Annual General Meeting.

The formula rewards employees to the extent of the Group's achievements judged against quantitative criteria which are explained in detail in the Remuneration Committee report.

The vesting period for each share option plan is three years. If the options remain unexercised after a period of seven years from the vesting date the options expire. Options are generally forfeited if the employee leaves the Group before the options vest.

LTIP 2021	2021 Number of options	2020 Number of options
As at 1 January	0	0
Granted during the year	172,623	0
Exercised during the year	0	0
Forfeited during the year	(6,300)	0
As at 31 December	**166,323**	**0**
Vested and exercisable at 31 December	0	0

LTIP 2020	2021 Number of options	2020 Number of options
As at 1 January	363,519	0
Granted during the year	12,158	370,014
Exercised during the year	0	0
Forfeited during the year	(5,139)	(6,495)
As at 31 December	**370,538**	**363,519**
Vested and exercisable at 31 December	0	0

LTIP 2019	2021 Number of options	2020 Number of options
As at 1 January	169,517	179,775
Granted during the year	6,445	4,797
Exercised during the year	0	0
Forfeited during the year	(1,688)	(15,055)
As at 31 December	**174,274**	**169,517**
Vested and exercisable at 31 December	0	0

The options outstanding at 31 December 2021 have a weighted-average contractual life of 1.9 years.

The outstanding share options for the LTIP 2019, which were granted on 19 August 2019, will expire on 20 August 2022. The fair value at grant date for the 188,856 options was €46.32. The outstanding share options for the LTIP 2020, which were granted on 8 April 2020, will expire on 9 April 2023. The fair value at grant date for the 370,014 options was €18.31. The outstanding share options for the LTIP 2021, which were granted on 15 March 2021, will expire on 16 March 2024. The fair value at grant date for the 167,037 options was €42.55.

The assessed fair value at grant date of options of the LTIP 2019 granted during the year ended 31 December 2021 was €47.18 per option. The assessed fair value at grant date of options of the LTIP 2020 granted during the year ended 31 December 2021 was €19.70 per option. The assessed fair value at grant date of options of the LTIP 2021 granted during the year ended 31 December 2021 was €44.31 per option. The fair value of share options with non-market performance conditions has been calculated using the Black-Scholes option pricing model. The fair value of options with market-related performance conditions has been measured using the Monte Carlo model. The calculation takes into account the exercise price, the term of the option, the share price at grant date and expected price volatility of the underlying share, the expected dividend yield, the risk free interest rate for the term of the option and the correlations and volatilities of the peer group companies.

The inputs used in the measurement of the fair values at grant date of the equity-settled share-based payment plans for 2021, for 2020 and 2019 were as follows:

LTIP 2021 in € million	2021
Fair value at grant date	7.4
Expected volatility (weighted-average)	46.73%
Dividend yield	3.68%
Risk-free interest rate	0.41%

LTIP 2020 in € million	2021	2020
Fair value at grant date	7.3	6.6
Expected volatility (weighted-average)	41.75%	41.75%
Dividend yield	4.97%	4.97%
Risk-free interest rate	0.51%	0.51%

LTIP 2019 in € million	2021	2020
Fair value at grant date	8.2	8.3
Expected volatility (weighted-average)	30.36%	30.36%
Dividend yield	4.28%	4.28%
Risk-free interest rate	0.47%	0.47%

For LTIP 2019 none of the performance targets have been met and the awards are therefore expected to lapse. Amounts recognised in equity relating to market-related performance condition will not be subsequently reversed.

Expected volatility was determined by calculating the historical volatility of the Group's share price over the previous years. The expected life used in the model has been adjusted, based on management's best estimate, for the effect of non-transferability, exercise restrictions, and behavioural considerations.

Expenses for share based payments are disclosed in Note (46).

62. Board of Directors of RHI Magnesita N.V.

The members of the Board of Directors are as follows:

Executive Directors

Stefan Borgas

Ian Botha

Non-Executive Directors

Herbert Cordt

John Ramsay

Janet Ashdown

David Schlaff

Stanislaus Prinz zu Sayn-Wittgenstein-Berleburg

Fiona Paulus

Janice Brown

Karl Sevelda

Marie-Hélène Ametsreiter

Sigalia Heifetz

Wolfgang Ruttenstorfer

Employee Representative Directors

Karin Garcia

Martin Kowatsch

Michael Schwarz

63. Material events after the reporting date

RHI Magnesita has 63 staff based but no refractory production sites in Russia or Ukraine. Approximately 3.4% of Group revenues are from the CIS region in 2021. This business will be impacted by sanctions. Sanction escalation will be kept under close review to remain in full compliance. The main financial impact is estimated to come from higher energy costs.

After the reporting date on 31 December 2021, there were no events of special significance which may have a material effect on the financial position and performance of the RHI Magnesita Group.

Company Financial Statements of RHI Magnesita N.V.

Company Balance Sheet as at 31 December 2021

(before appropriation of result)

in € million	Note	31.12.2021	31.12.2020
ASSETS			
Non-current assets			
Property, plant and equipment		0.5	0.3
Non-current financial assets	(A)	644.8	480.6
Securities		0.5	0.5
Deferred tax assets		32.5	10.6
Total non-current assets		**678.3**	**492.0**
Current assets			
Receivables from group companies		138.1	165.8
Other current receivables		0.4	0.6
Cash and cash equivalents	(B)	0.6	3.5
Total current assets		**139.1**	**169.9**
Total assets		**817.4**	**661.9**
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)	84.3	25.7
Other reserves		164.7	206.3
Treasury shares	(F)	(117.0)	(21.5)
Result for the period	(I)	243.1	24.8
Shareholders' Equity		**785.9**	**646.1**
Non-current liabilities			
Non-current liabilities	(G)	2.0	0.0
Current liabilities			
Other current liabilities	(H)	29.5	15.8
Total liabilities		**31.5**	**15.8**
Total equity and liabilities		**817.4**	**661.9**

Company Statement of Profit or Loss for the period 1 January 2021 to 31 December 2021

in € million	Note	2021	2020
General and administrative expenses	(J)	(25.5)	(18.6)
Result before taxation		**(25.5)**	**(18.6)**
Net financial result	(K)	0.1	0.4
Profit before income tax		**(25.4)**	**(18.2)**
Income tax		29.3	2.3
Net result from investments	(L)	239.2	40.7
Net result for the period	**(M)**	**243.1**	**24.8**

Movements in Shareholders' Equity

in € million	Share capital	Treasury shares	Additional paid-in capital	Legal and mandatory reserves: Cash flow hedges	Legal and mandatory reserves: Currency translation	Legal and mandatory reserves: 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**

in € million	Share capital	Treasury shares	Additional paid-in capital	Legal and mandatory reserves: Cash flow hedges	Legal and mandatory reserves: Currency translation	Legal and mandatory reserves: Mandatory reserve	Other reserves: Retained earnings	Net result	Equity attributable to shareholders
31.12.2019	**49.5**	**(18.8)**	**361.3**	**(11.0)**	**(79.8)**	**288.7**	**95.0**	**139.0**	**823.9**
Appropriation of prior year result	–	–	–	–	–	–	139.0	(139.0)	–
Net result	–	–	–	–	–	–	–	24.8	24.8
Shares repurchased	–	(2.7)	–	–	–	–	–	–	(2.7)
Share-based expenses	–	–	–	–	–	–	(3.1)	–	(3.1)
Dividends	–	–	–	–	–	–	(24.6)	–	(24.6)
Net income / (expense) recognised directly in equity	–	–	–	(2.7)	(169.5)	–	–	–	(172.2)
31.12.2020	**49.5**	**(21.5)**	**361.3**	**(13.7)**	**(249.3)**	**288.7**	**206.3**	**24.8**	**646.1**

Notes

to the Company Financial Statements 2021

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, 1100 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.

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.

Fiscal Unity

For corporate income tax and sales 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
- Veitsch-Radex GmbH
- Radex Vertriebsgesellschaft GmbH
- RHI Refractories Raw Material GmbH
- Lokalbahn Mixnitz-St. Erhard Aktien-Gesellschaft

Pursuant to the Collection of State Taxes Act, the Company and its subsidiaries are both severally and jointly liable for the tax payable of the combination.

According to the group and tax compensation agreement, the members of the group have to pay a positive tax compensation of 20% of the taxable profit to the head of the Group if the result is positive, as long as tax loss carry forwards exist with the head of the group; subsequently 25% of the taxable profit have to be paid. In case of a tax loss of the group member, the head of the group has to pay a negative tax compensation to the member of the group, with a rate of 12.5% being applied insofar as the loss can be utilised within the group. In case the losses of a group member were compensated (negative tax allocation payment) and this group member generates taxable income within the next three years (after compensation), the positive tax allocation amounts to 12.5%. In case of a loss in the tax group, an unused tax loss of a group member is retained and offset against future taxable profits of the group member. When the contract is terminated, a compensation payment is agreed for unused tax losses of a group member, which were allocated to the head of the group, see Note (7).

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 receivable are measured at fair value and are subsequently measured at amortized 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:

Name and registered office of the company	Country of core activity	31.12.2021 Share in %	31.12.2020 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
RHI Magnesita Trading B.V., Rotterdam, Netherlands	Netherlands	0.0	100.0

As a result of the contribution of shares of RHI Magnesita Trading B.V. from RHI Magnesita N.V. to RHI Magnesita GmbH, the share in RHI Magnesita Trading B.V. was reduced to 0.0%.

The investments have developed as follows:

in € million	2021	2020
At beginning of year	480.6	815.3
Transactions with non-controlling interests without change of control	(21.7)	0.0
Capital contributions	70.0	0.0
Changes from currency translation and cash flow hedges	58.6	(172.1)
Changes from defined benefit plans	20.2	(0.2)
Equity settled transaction	(2.1)	(3.1)
Dividend distribution	(200.0)	(200.0)
Net result from investments	239.2	40.7
Balance at year-end	**644.8**	**480.6**

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% (with the exception of the RHISA Employee Trust):

		31.12.2021		31.12.2020	
Ser. no.	Name and registered office of the company	Share-holder	Share in %	Share-holder	Share in %
1.	RHI Magnesita N.V., Arnhem, Netherlands				
	Fully consolidated subsidiaries				
2.	Agellis Group AB, Lund, Sweden	52.	100.0	52.	100.0
3.	Baker Refractories Holding Company, Delaware, USA	39.	100.0	39.	100.0
4.	Baker Refractories I.C., Inc., Delaware, USA	3.	100.0	3.	100.0
5.	Baker Refractories, Las Vegas, USA	–	0.0	39.	100.0
6.	Betriebs- und Baugesellschaft mit beschränkter Haftung - Bebau, Wiesbaden, Germany	–	0.0	10.	100.0
7.	D.S.I.P.C.-Didier Société Industrielle de Production et de Constructions, Valenciennes,France	10.	100.0	10.	100.0
8.	Didier Belgium N.V., Evergem, Belgium	67.,103.	100.0	67.,101.	100.0
9.	Didier Vertriebsgesellschaft mbH, Wiesbaden, Germany	–	0.0	10.	100.0
10.	RHI Magnesita Deutschland AG, Wiesbaden, Germany	1.,52.	100.0	1.,52.	100.0
11.	Dutch Brasil Holding B.V., Arnhem, Netherlands	109.	100.0	107.	100.0
12.	Dutch MAS B.V., Arnhem, Netherlands	10.	100.0	10.	100.0
13.	Dutch US Holding B.V., Arnhem, Netherlands	109.	100.0	107.	100.0
14.	FE "VERA", Dnepropetrovsk, Ukraine	52.	100.0	52.	100.0
15.	Feuerfestwerk Bad Hönningen GmbH, Wiesbaden, Germany	114.	100.0	112.	100.0
16.	GIX International Limited, Dinnington, United Kingdom	115.	100.0	113.	100.0
17.	INDRESCO U.K. Ltd., Dinnington, United Kingdom	16.	100.0	16.	100.0
18.	Intermetal Engineers Private Limited, Mumbai, India	49.	99.9	49.	99.9
19.	INTERSTOP (Shanghai) Co., Ltd., Shanghai, PR China	–	0.0	106.	100.0
20.	Liaoning RHI Jinding Magnesia Co., Ltd., Dashiqiao City, PR China 1)	52.	83.3	52.	83.3
21.	LLC "RHI Wostok Service", Moscow, Russia	52.,70.	100.0	52.,70.	100.0
22.	LLC "RHI Wostok", Moscow, Russia	52.,70.	100.0	52.,70.	100.0
23.	Lokalbahn Mixnitz-St. Erhard Aktien-Gesellschaft, Vienna, Austria	94.	100.0	92.	100.0
24.	LWB Holding Company, Delaware, USA	53.	100.0	53.	100.0
25.	LWB Refractories Belgium S.A., Liège, Belgium	41.,114.	100.0	41.,112.	100.0
26.	LWB Refractories Beteiligungs GmbH & Co. KG, Wiesbaden, Germany	53.	100.0	32.,53.	100.0
27.	LWB Refractories Hagen GmbH, Wiesbaden, Germany	114.	100.0	112.	100.0
28.	LWB Refractories Holding France S.A.S., Valenciennes, France	114.	100.0	112.	100.0
29.	Magnesit Anonim Sirketi, Eskisehir, Turkey 2)	52.	100.0	52.	100.0
30.	Magnesita Asia Refractory Holding Ltd, Hong Kong, PR China	28.	100.0	28.	100.0
31.	Magnesita Finance S.A., Luxembourg, Luxembourg	11.	100.0	46.	100.0
32.	Magnesita Grundstücks-Beteiligungs GmbH, Wiesbaden, Germany	–	0.0	46.	100.0
33.	Magnesita International Limited, London, United Kingdom	46.	100.0	46.	100.0
34.	Magnesita Malta Finance Ltd., St. Julians, Malta	35.,114.	100.0	35.,112.	100.0
35.	Magnesita Malta Holding Ltd., St. Julians, Malta	41.,114.	100.0	41.,112.	100.0
36.	Magnesita Mineração S.A., Brumado, Brazil	46.	100.0	31.,46.	100.0
37.	Magnesita Refractories (Canada) Inc., Montreal, Canada	3.	100.0	3.	100.0
38.	Magnesita Refractories (Dalian) Co. Ltd., Dalian, PR China	31.	100.0	31.	100.0
39.	Magnesita Refractories Company, York, USA	24.	100.0	24.	100.0
40.	Magnesita Refractories Mexico S.A. de C.V., Monterrey, Mexico	3.,4.	100.0	3.,4.	100.0
41.	Magnesita Refractories GmbH, Wiesbaden, Germany	114.	100.0	112.	100.0
42.	Magnesita Refractories Ltd., Dinnington, United Kingdom	3.	100.0	3.	100.0
43.	Magnesita Refractories Middle East FZE, Dubai, United Arab Emirates	31.	100.0	31.	100.0
44.	Magnesita Refractories S.C.S., Valenciennes, France	28.,114.	100.0	28.,112.	100.0

		31.12.2021		31.12.2020	
Ser. no.	Name and registered office of the company	Share-holder	Share in %	Share-holder	Share in %
45.	Magnesita Refractories S.R.L., Milano, Italy	114.	100.0	112.	100.0
46.	Magnesita Refratários S.A., Contagem, Brazil	11.	100.0	11.	100.0
47.	Magnesita Resource (Anhui) Company. Ltd., Chizhou, PR China	71.	100.0	30.	100.0
48.	Mezubag AG, Freienbach, Switzerland	–	0.0	106.	100.0
49.	RHI Magnesita India Limited	11.,13.,115.	66.5	13.	66.5
50.	Premier Periclase Limited, Drogheda, Ireland	–	0.0	13.	100.0
51.	Producción RHI México, S. de R.L. de C.V., Ramos Arizpe, Mexico	87.,115.	100.0	85.,113.	100.0
52.	Radex Vertriebsgesellschaft m.b.H., Leoben, Austria	111.	100.0	109.	100.0
53.	Rearden G Holdings Eins GmbH, Wiesbaden, Germany	31.	100.0	31.	100.0
54.	Refractarios Argentinos S.A.I.C.M., San Nicolás, Argentina	11.,56.	100.0	46.,56.	100.0
55.	Refractarios Magnesita Chile S/A, Santiago, Chile	46.,54.	100.0	46.,54.	100.0
56.	Refractarios Magnesita Colombia S/A, Sogamoso, Colombia	11.	100.0	46.	100.0
57.	Refractarios Magnesita del Perú S.A.C., Lima, Peru	11.,56.	100.0	46.,56.	100.0
58.	Refractory Intellectual Property GmbH & Co KG, Vienna, Austria	59.,70.	100.0	59.,70.	100.0
59.	Refractory Intellectual Property GmbH, Vienna, Austria	70.	100.0	70.	100.0
60.	Reframec Manutenção e Montagens de Refratários S.A., Contagem, Brazil	46.	100.0	46.	100.0
61.	RHI Argentina S.R.L., Buenos Aires, Argentina	13.,115.	100.0	13.,113.	100.0
62.	RHI Canada Inc., Burlington, Canada	115.	100.0	113.	100.0
63.	RHI Chile S.A., Santiago, Chile	16.,115.	100.0	16.,113.	100.0
64.	RHI Clasil Private Limited, Mumbai India	–	0.0	113.	53.7
65.	RHI Dinaris GmbH, Wiesbaden, Germany	103.	100.0	101.	100.0
66.	RHI Finance A/S, Hellerup, Denmark	70.	100.0	70.	100.0
67.	RHI GLAS GmbH, Wiesbaden, Germany	103.	100.0	101.	100.0
68.	RHI India Private Limited, Navi Mumbai, India	–	0.0	11.,113.	100.0
69.	RHI ITALIA S.R.L., Brescia, Italy	70.	100.0	70.	100.0
70.	RHI Magnesita GmbH, Vienna, Austria	1.	100.0	1.	100.0
71.	RHI Magnesita China Ltd., Shanghai, China	52.	100.0	–	0.0
72.	RHI Magnesita (Chongqing) Refractory Materials Co., Ltd.	71.	51.0	–	0.0
73.	RHI Magnesita Distribution B.V., Rotterdam, Netherlands	74.	100.0	72.	100.0
74.	RHI Magnesita Trading B.V., Rotterdam, Netherlands	70.	100.0	1.	100.0
75.	RHI Magnesita Vietnam Company Limited, Ho Chi Minh City, Vietnam	85.	100.0	83.	100.0
76.	RHI Magnesita Services Europe Gerbstedt GmbH, Gerbstedt/Hübitz, Germany	77.	100.0	75.	100.0
77.	RHI Magnesita Services Europe GmbH, Kerpen, Germany	10.	100.0	10.	100.0
78.	RHI MARVO S.R.L., Ploiesti, Romania	52.,109.	100.0	52.,107.	100.0
79.	RHI Magnesita Properties MO, LLC, Missouri, USA	110.	100.0	108.	100.0
80.	RHI Normag AS, Porsgrunn, Norway	–	0.0	52.	100.0
81.	RHI Refractories (Dalian) Co., Ltd., Dalian, PR China	52.	100.0	52.	100.0
82.	RHI Refractories (Site Services) Ltd., Dinnington, United Kingdom	17.	100.0	17.	100.0
83.	RHI Refractories Africa (Pty) Ltd., Sandton, South Africa	52.,106.	100.0	52.,104.	100.0
84.	RHI Refractories Andino C.A., Puerto Ordaz, Venezuela	115.	100.0	113.	100.0
85.	RHI Refractories Asia Pacific Pte. Ltd., Singapore	70.	100.0	70.	100.0
86.	RHI Refractories Egypt LLC., Cairo, Egypt, i.l.	52.,109.	100.0	52.,107.	100.0
87.	RHI Refractories España, S.L., Oviedo, Spain	–	0.0	10.,12.	100.0
88.	RHI Refractories France SA, Valenciennes, France 3)	107.	100.0	105.	100.0

		31.12.2021		31.12.2020	
Ser. no.	Name and registered office of the company	Share-holder	Share in %	Share-holder	Share in %
89.	RHI Refractories Ibérica, S.L., Oviedo, Spain	107.	100.0	105.	100.0
90.	RHI Refractories Italiana s.r.l., Brescia, Italy	–	0.0	105.	100.0
91.	RHI Refractories Liaoning Co., Ltd., Bayuquan, PR China 1)	52.	66.0	52.	66.0
92.	RHI Refractories Mercosul Ltda., Sao Paulo, Brazil	109.,115.	100.0	107.,113.	100.0
93.	RHI Refractories Nord AB, Stockholm, Sweden	107.	100.0	105.	100.0
94.	RHI Refractories Raw Material GmbH, Vienna, Austria	1.,52.,70.	100.0	1.,52.,70.	100.0
95.	RHI Refractories Site Services GmbH, Wiesbaden, Germany	10.	100.0	10.	100.0
96.	RHI Refractories UK Limited, Bonnybridge, United Kingdom	10.	100.0	10.	100.0
97.	RHI Refratários Brasil Ltda, Contagem, Brazil; i.l.	13.,46.	100.0	13.,36.	100.0
98.	RHI Sales Europe West GmbH, Urmitz, Germany	10.,107.	100.0	10.,105.	100.0
99.	RHI Trading (Dalian) Co., Ltd., Dalian, PR China	52.	100.0	52.	100.0
100.	RHI Ukraina LLC, Dnepropetrovsk, Ukraine	52.,109.	100.0	52.,107.	100.0
101.	RHI United Offices America, S.A. de C.V., Monterrey, Mexico	74.,87.	100.0	85.,100.	100.0
102.	RHI Refractories España, S.L., Lugones, Spain	10.,12.	100.0	85.	100.0
103.	RHI Urmitz AG & Co. KG, Mülheim-Kärlich, Germany	10.,95.	100.0	9.,10.	100.0
104.	RHI US Ltd., Delaware, USA	13.	100.0	13.	100.0
105.	RHI-Refmex, S.A. de C.V., Ramos Arizpe, Mexico	87.,115.	100.0	85.,113.	100.0
106.	RHISA Employee Trust, Sandton, South Africa 4)	–	0.0	–	0.0
107.	SAPREF AG für feuerfestes Material, Basel, Switzerland	115.	100.0	113.	100.0
108.	RHI Magnesita Interstop AG, Hünenberg, Switzerland	10.,52.	100.0	10.,52.	100.0
109.	Veitscher Vertriebsgesellschaft m.b.H., Vienna, Austria	70.	100.0	70.	100.0
110.	Veitsch-Radex America LLC., Delaware, USA	104.	100.0	102.	100.0
111.	Veitsch-Radex GmbH & Co OG, Vienna, Austria	70.,112.	100.0	70.,110.	100.0
112.	Veitsch-Radex GmbH, Vienna, Austria	70.	100.0	70.	100.0
113.	Veitsch-Radex Vertriebsgesellschaft m.b.H., Vienna, Austria	70.	100.0	70.	100.0
114.	Vierte LWB Refractories Holding GmbH, Wiesbaden, Germany	26.,53.	100.0	26.,53.	100.0
115.	VRD Americas B.V., Arnhem, Netherlands	52.,70.	100.0	52.,70.	100.0
116.	Zimmermann & Jansen GmbH, Wiesbaden, Germany	10.	100.0	10.	100.0
	Subsidiaries not consolidated due to minor significance	.		.	
117.	Dr.-Ing. Petri & Co. Unterstützungsgesellschaft m.b.H., Wiesbaden, Germany	10.	100.0	10.	100.0
118.	Guapare S.A, Montevideo, Uruguay	–	0.0	46.	100.0
119.	Magnesita Refractories A.B., Stocksund, Sweden	114.	100.0	112.	100.0
120.	Magnesita Refractories PVT Ltd, Mumbai, India	53.,114.	100.0	53.,112.	100.0
121.	Magnesita Refractories S.A. (Pty) Ltd., Sandton, South Africa	41.	100.0	41.	100.0
122.	MAG-Tec Participações Ltda. Ltda., Contagem, Brazil; i.l.	46.	98.7	46.	98.7
123.	MMD Araçuaí Holding Ltda., São Paulo, Brazil	–	0.0	46.	100.0
124.	Refractarios Especiales Y Moliendas S.A., Buenos Aires, Argentina; i.l.	54.	100.0	54.	100.0
125.	Refractarios Magnesita Uruguay S/A, Montevideo, Uruguay	46.	100.0	46.	100.0
126.	RHI Réfractaires Algérie E.U.R.L., Sidi Amar, Algeria	86.	100.0	86.	100.0
	Equity-accounted joint ventures and associated companies	.		.	
127.	Chongqing Boliang Refractory Materials Co. Ltd, Chongqing, China	71.	51.0	–	0.0
128.	Magnesita Envoy Asia Ltd., Kaohsiung, Taiwan	3.	50.0	3.	50.0
129.	MAGNIFIN Magnesiaprodukte GmbH & Co KG, St. Jakob, Austria	–	0.0	52.,128.	50.0
130.	Sinterco S.A., Nameche, Belgium	53.	70.0	53.	70.0
	Other immaterial investments, measured at cost	.		.	
131.	MAGNIFIN Magnesiaprodukte GmbH, St. Jakob, Austria	–	0.0	52.	50.0

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 Aktien-Gesellschaft and Veitscher Vertriebsgesellschaft mbH.
3) Further shareholders are RHI Magnesita Deutschland AG, RHI Dinaris GmbH and RHI GLAS GmbH.
4) Controlling influence due to contractual terms and conditions.
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 2021, RHI Magnesita N.V.'s issued and fully paid-in share capital consists of 46,999,019 ordinary shares (31.12.2020: 49,008,955 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 (55) of the Consolidated Financial Statements.

Currency translation

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.

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.

(F) Treasury shares

In the course of the share buyback program which was initiated on 16 December 2020, completed on 13 April 2021, extended on 5 May 2021 and completed on 4 August 2021 the Company acquired additional 2,078,686 shares in treasury, Thereof 2,009,936 shares in treasury equalling €95.5 million in 2021 and 68,750 shares in treasury equalling €2.7 million in 2020.

Non-current liabilities

(G) Other non-current liabilities

in € million	31.12.2021	31.12.2020
Personnel provisions	1.7	0.0
Other non-current financial liabilities	0.3	0.0
Total non-current liabilities	**2.0**	**0.0**

Current liabilities

(H) Other current liabilities

in € million	31.12.2021	31.12.2020
Trade payables	1.6	1.0
Payables to group companies	21.5	9.4
Accrued liabilities	6.4	5.4
Total current liabilities	**29.5**	**15.8**

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.

Employee benefits

in € million	31.12.2021	31.12.2020
Wages and salaries	19.7	9.5
Social security charges	2.0	1.0
Pension contributions	0.5	0.4
Other employee costs	0.7	0.3
Total wages and salaries	**22.9**	**11.2**

(J) General and administrative expenses

in € million	31.12.2021	31.12.2020
External services/consulting expenses	2.6	3.7
Cost for principal services Austria	(3.0)	2.2
Personnel expenses	22.9	11.2
Other expenses	3.0	1.5
Total general and administrative expenses	**25.5**	**18.6**

(K) Net financial result
The 2021 net financial result mainly consists of €0.1 million dividends received on shares held (2020: €0.3 million).

(L) Net results from investments
In year 2021 the full year results of the investments amount to a profit of €239.2 million (2020: €40.7 million) and are recognised in the Company Statement of Profit or Loss.

(M) Net result for the period
In 2021, 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	2021
Profit attributable to shareholders	243.1
In accordance with Article 27 clause 1 to be transferred to reserves	0.0
At the disposal of the General Meeting of Shareholders	**243.1**

For 2021, the Board of Directors will propose a dividend of €1.00 per share for the shareholders of RHI Magnesita N.V. The proposed dividend is subject to the approval by the Annual General Meeting on 25 May 2022.

Other notes

Number of employees
The average number of employees of RHI Magnesita N.V. during 2021 amounts to 67 (2020: 48).

Off balance sheet commitments
RHI Magnesita N.V. as an ultimate parent company provided a corporate guarantee of €1.530,3 million (31.12.2020: €1,086.5 million) for the borrowings of the Group. The Borrowings are as disclosed in Note (25). Additionally €79.2 million (31.12.2020: €36.0 million) of corporate guarantees are issued in favor of customers and suppliers of the Group. The increase results from the inventory ramp-up and the increase in demand following energy price highs.

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 (59), (60) to (62) 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 (63) of the Consolidated Financial Statements.

Vienna, 27 February 2022

Board of Directors

Executive Directors

Stefan Borgas

Ian Botha

Non-Executive Directors

Herbert Cordt

Janet Ashdown

Stanislaus Prinz zu Sayn-Wittgenstein-Berleburg

Janice Brown

Marie-Hélène Ametsreiter

Wolfgang Ruttenstorfer

John Ramsay

David Schlaff

Fiona Paulus

Karl Sevelda

Sigalia Heifetz

Employee Representative Directors

Karin Garcia

Michael Schwarz

Martin Kowatsch

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 2021

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 2021 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 2021 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 2021 of RHI Magnesita N.V., Arnhem. The financial statements include 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 2021;
- the following consolidated statements for the year 2021: 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 2021;
- the company statement of profit or loss for the period 1 January to 31 December 2021;
- the notes, comprising 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.

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 in the context of our audit of the financial statements as a whole and forming our opinion thereon. The information in support of our opinion, e.g. comments and observations regarding 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 of refractory products. The Group comprises 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, and factors listed below.

The adverse effects of the COVID-19 pandemic on the global economy diminished during 2021 with a steep increase in demand across multiple sectors, including the steel and industrial businesses. This created global supply chain challenges, resulting in higher logistics costs, raw materials scarcity, and the need to pass on those costs to customers through price increases in the latter half of the year. In addition, the second half of the year showed significant unforeseen increases in energy costs. Management considered these developments when preparing its financial statements.

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. We paid attention to, amongst others, the assumptions underlying the physical and transitional climate change related risks.

In Note 9 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 (due to higher complexity and subjectivity of assumptions) and related higher inherent risks of material misstatement in the impairment assessment of goodwill and other intangible assets, and the recognition and recoverability of deferred tax assets, we considered these matters as key audit matters as set out in the section 'Key audit matters' of this report.

Other areas of focus, that were not considered as key audit matters, were the accounting of factoring agreements, accounting for the production optimisation program, application of the own use exemption on physical delivery of CO_2 certificates, valuation of a put option liability and valuation of uncertain tax positions. In addition, we performed audit procedures on the items marked 'audited' in the remuneration report such as reconciling the disclosed remunerations to underlying supporting documents.

In executing our audit, we ensured that the audit teams at both group and component levels included the appropriate skills and competences which are needed for the audit of an international industrial products company. We therefore included experts in the areas of valuations, and employee benefits, as well as built our team with specialists in IT and corporate income taxes.

The outline of our audit approach was as follows:

Materiality

- Overall materiality: €12.6 million.

Audit scope

- We conducted audit work in 14 locations.
- Site visits were conducted to Austria and Brazil. We have also performed remote file reviews for India, Austria, Brazil China and the USA and held periodic video conferences with teams in Turkey, Switzerland, Italy, Germany and Spain.
- Audit coverage: 85% of consolidated revenue, 85% of consolidated total assets and 72% of consolidated profit before tax.

Key audit matters

- Recognition and recoverability of deferred tax assets
- Valuation of goodwill and other intangible assets

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	€12.6 million (2020: €9.7 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 expenses, certain impact of purchase price allocation from acquisitions, disposal of assets held for sale) as the primary benchmark, based on our analysis of the common information needs of users of the financial statements. On this basis, we believe that profit before tax adjusted for exceptional items is an important metric for the financial performance of the Company.
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 €1.0 million and €12.5 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 misstatements, identified during our audit, above €0.7 million (2020: €0.6 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.

The group audit included 12 components which were subject to audits of their complete financial information, selected on the relative size of their operations. Out of twelve, three components are individually financially significant to the Group and on which primarily focused:

- RHI Magnesita GmbH, Austria
- RHI US Ltd, USA; and,
- Magnesita Refratários S.A., Brazil.

Additionally, we selected nine components for full scope audit procedures to achieve appropriate coverage on financial line items in the consolidated financial statements.

In total, in performing these procedures, we achieved the following coverage on the financial line items:

Revenue	85%
Total assets	85%
Profit before tax	72%

None of the remaining components represented more than 5% 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 scope of the work. We explained to the component audit teams the structure of the Group, the main developments that are 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 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 from their audit procedures and other matters, which could be of relevance for the consolidated financial statements.

The group engagement team visits the component teams and local management on a rotational basis, to the extent permitted by COVID-19 or other travel restrictions. In the current year the group audit team visited RHI Magnesita GmbH (Austria) and Magnesita Refratários S.A. (Brazil) given the judgements involved in valuation of deferred tax assets (refer to key audit matter recognition and recoverability of deferred tax assets) as well as visited Austrian operating locations. During our visits we met with local management as well as component auditors, discussed significant business developments, accounting matters and the areas of significant risks. Furthermore, we reviewed selected working papers of four component auditors in India, Austria, Brazil, China 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 the audit work over the headquarter related activities in Vienna. This includes 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 above at components, combined with additional procedures at group level, we have been able to obtain sufficient and appropriate audit evidence on the Group's financial information, as a whole, to provide a basis for our opinion on the financial statements.

The impact of climate change on our audit

In 2021 management of RHI Magnesita N.V. further expanded the climate change related risk assessment. We refer to section 'Principal Risks' on page 47, 'Progress against sustainability targets' on page 59 and 'Climate and environment' on pages 60 – 63 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 since prior year due to the increasing regulatory complexity and stakeholders' expectations. Therefore, the potential reputational and financial impact of this risk further crystalized and increased in the reporting period. Climate change initiatives and commitments impact the preparation of the Group's financial statements in a variety of ways, all with inherent uncertainties. In note 9, 'Critical accounting judgments and key sources of estimation uncertainty', management highlighted that it expects additional sources of estimation uncertainty regarding climate change to have impact on the net realizable value of inventories through the stricter regulatory sustainability requirements to the quality; and on the useful lives and residual values of assets that could become physically unavailable or commercially obsolete earlier than initially expected. Management considers those effects of climate risks on the financial statements 2021 to be immaterial, however concluded that due to the high degree of estimation uncertainty this may change in the future.

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 have 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.

Audit approach 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 system of internal control, including the risk assessment process and management's process for responding to the risks of fraud and monitoring the system of internal control and how the supervisory board exercises 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 further 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:

- 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 Head of Internal Audit, Risk and Compliance about fraud cases identified throughout the year and reviewed the reports of 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 executive management, 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.

Based on fraud risk factors identified we performed the following specific procedures over the identified fraud risk factors:

Identified fraud risks	*Audit procedures*
Risk of management override of controls	• To address this specific risk, we executed the following strategy:
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 controls that otherwise appear to be operating effectively.	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 considered the outcome of our audit procedures over the estimates and significant accounting areas and assessed whether control deficiencies and misstatements identified were indicative of fraud. Where necessary, we planned and performed additional auditing procedures to ensure that fraud risk is sufficiently addressed in our audit.
Upfront and updated throughout the year, the board of directors provides guidance to the market on revenue and (adjusted) EBITDA. Lagging actuals provide a risk of override or bypassing of controls as management may be inclined to ensure meeting guidance as communicated to the market.	We evaluated key accounting estimates and judgements used in key accounting areas (like goodwill valuation, valuation of assets and liabilities) for biases, including retrospective reviews of prior year's estimates where available. Further reference is made to key audit matters in this auditor's report.

Identified fraud risks	*Audit procedures*
	We performed data analysis and focused on journal entries related to the fraud risk factors identified during fraud risk assessment. Where we identified instances of unexpected journal entries, we performed additional audit procedures to address each identified risk.
In this context, we paid specific attention to non-routine transactions and areas of significant management estimations where management bias may result in fraudulent reporting, i.e. valuation of goodwill, intangible and tangible assets and liabilities.	We evaluated whether the business rationale (or lack thereof) of the significant transactions concluded in 2021 suggests that the Group may have been entered into 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 procedures. We performed substantive testing procedures over the consolidation entries. Our audit procedures did not lead to specific indications of fraud or suspicions of fraud with respect to management override of the internal controls.
Risk of fraud in revenue recognition	To address this specific risk, we executed the following strategy:
Upfront and updated throughout the year, the board of directors provides guidance to the market on revenue and (adjusted) EBITDA. In 2021, lagging actuals provide a risk of override or bypassing of well-established controls as management may be inclined to ensure meeting guidance as communicated to the market to meet shareholders expectations.	We discussed with the Audit Committee and executive management (e.g. the chief executive, finance and sales officers) the increased risk of overriding or bypassing controls when sales targets were increased. We discussed and inquired with the Group's sales officer, and local sales managers into the tone at the top, to assess to what extent not meeting targets have an impact on career opportunities or bonuses within the Company, and whether they have any knowledge of (suspected) fraud. In our conversations we addressed their views on overall fraud risks within the Group and their perspectives on the Groups mitigating controls addressing the risk of fraud in revenue.
In 2021, the Company faced pressure from decreasing margins and volumes and at the same time started a price increase strategy. Therefore, identified fraud risk factors pertain to risk of management override of controls and possible revenue overstatement through the recording of non-existent revenue or premature revenue recording following that the Company is under the pressure to achieve targets and meet shareholder expectations.	We updated our understanding of the revenue and receivable process through performing an end-to end walkthrough of the process whereby identifying individual revenue streams applicable to the Company and its subsidiaries. We assessed the IT environment around key systems, including IT dependent controls related to the revenue and receivables cycle. We also assessed the design and effectiveness of the internal control measures related to revenue recognition and processing journal entries related to revenue. We examined whether changes were made to internal control measures in the last months of the year. We paid attention to whether deficiencies in controls may create additional opportunities for fraud and incorporated respective corroborative procedures in our audit approach. We performed disaggregated revenue analytical procedures at significant components and planned additional audit procedures where unusual fluctuations were noted. No particular fraud matters were identified as a result. Using data analysis, we identified revenue entries with a credit impact to revenue accounts and non-regular off-sets and substantively tested them to verify that their nature did not represent fraudulent transactions or reporting. We performed substantive audit procedures to assess whether IFRS 15 criteria for recognising revenue in 2021, were met. We also performed substantive audit procedures over the credit notes issued to customers after year end (where material) to verify that no transactions were recorded in 2021 that were subsequently reversed through credit notes in 2022. Where material, our component auditors were required to test rebate accruals.

Our audit procedures did not lead to specific indications of fraud or suspicions of fraud with respect to the accuracy of the revenue reporting.

Audit approach going concern

As disclosed in section 'Principles and methods' on page 129 in the financial statements, Management prepared the financial statements on the assumption that the entity is a going concern and that it will continue its operations for the foreseeable future. Our procedures to evaluate management's going concern assessment included, amongst others:

- Review of management's going concern assessment. We corroborated management's analysis with the approved budget 2022, 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 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 per 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 judgments 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.

Since the amount of new restructuring efforts decreased significantly in 2021 compared to 2020, the accounting for the production optimisation program was removed from the list of key audit matters.

Key audit matter	*Our audit work and observations*
Recognition and recoverability of deferred tax assets	
Refer to note 7, 9, 16 and 44 of the consolidated financial statements The Group recorded deferred tax assets for tax loss carryforwards and deductible temporary differences arising on various items for the amount of €102.3 million. Reference is made to note 16 of the financial statements.	We have requested and obtained evidence for the existence and accuracy of the tax loss carryforwards and assessed the expiration dates per jurisdiction. Where there was uncertainty around the acceptance of losses by the tax authorities, we requested and received a tax opinion from the Group's tax advisors.
Deferred tax assets are capitalised based on the assumption that sufficient taxable income will be generated against which loss carry-forwards 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.	Where significant management estimates and judgements involved is susceptible to management bias, we have critically reviewed the underlying facts to assess recognition and assessed the recoverability of deferred tax assets. 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.
The Group's principal functions are based in Austria. Consequently, after applying transfer pricing policies, certain residual profits will be taxed in Austria.	In addition, we have considered the local remaining carry-forward period together with any applicable restrictions in recovery for each individual jurisdiction.
Due to the inherent level of uncertainty, the potential limitations in the recoverability of deferred tax assets and the significant judgement involved, we considered the recoverability of deferred tax assets to be a key audit matter	We assessed and corroborated the adequacy and appropriateness of the disclosure made in the consolidated financial statements. Based on the audit procedures performed, we found the Group's estimates

Key audit matter	*Our audit work and observations*
for our audit.	and judgment used in the recognition and recoverability assessment of the deferred tax assets to be supported by the available evidence.
Valuation of goodwill and other intangible assets	
Refer to note 7, 9, 10, 11, and 38 of the consolidated financial statements	
The Group capitalized goodwill of €114.4 million, mainly related to the acquisition of the Magnesita Group in 2017. In addition, the company capitalised intangible assets of €282.6 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 for 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 analyses are carried out regarding any accounting effects. The assessment did not result in an impairment. As disclosed also in note 7 'Principles of accounting and measurement' of the financial statements, the Group has considered raw material pricing and carbon emission pricing scenarios in assessing the impact of climate change on the results of impairment testing of goodwill and intangible assets with indefinite useful life. Management acknowledges the potential impact of climate change related risks on future costs and expects to invest €50 million over the next four years for research and development of new technologies to reduce and capture CO2 emissions. This is not expected to have a material impact on impairment assessment and therefore is not included in the valuation. We understood that during the preparation for compliance with TCFD, the Group has identified and modelled possible risks and opportunities related to climate change. As it is unlikely that these materialise before 2025, management did not include them in the impairment test and the Strategic planning that covers the period until 2025. We identified the impairment assessment as a key audit matter due to significant estimates and assumptions about the discount rates, profitability as well as 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, calculate the recoverable amount, test for impairment, calculate 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 is 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 analyses to assess the reasonableness of forecasted revenues, margins and expenditures in line with the level of activity forecasted and corroboration to contracted revenue for the coming years and price trends and obtained further explanations when considered necessary. We compared the long-term growth rates used in determining the terminal value with economic and industry forecasts. We have re-performed 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 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;
- 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 that marks '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 are 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 shareholders and now represents a total period of uninterrupted engagement of 5 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 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 59 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, 27 February 2022
PricewaterhouseCoopers Accountants N.V.

Original has been signed by E.M.W.H. van der Vleuten RA MSc

Appendix to our auditor's report on the financial statements 2021 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.

Alternative performance measures ("APMs")

APMs used by the Group are reviewed below to provide a definition from each non-IFRS APM to its IFRS equivalent, and to explain the purpose and usefulness of each APM.

In general, APMs are presented externally to meet investors' requirements for further clarity and transparency of the Group's underlying financial performance. The APMs are also used internally in the management of our business performance, budgeting and forecasting.

APMs are non-IFRS measures. As a result, APMs allow investors and other readers to review different kinds of revenue, profits and costs and should not be used in isolation. Commentary within the Half Year Results, 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 that affect our business. We strongly encourage readers not to rely on any single financial measure, but to carefully review our reporting in its entirety.

Return on invested capital (ROIC)

ROIC is calculated as adjusted net operating profit after tax (NOPAT), divided by total invested capital for the year. Invested capital is a sum of non-current assets including deferred tax assets, trade and other current receivables, inventories and income tax receivables less other non-current financial assets, deferred tax liabilities, trade and other current liabilities, income tax liabilities and current provisions. Adjusted net operating profit after tax (NOPAT) is calculated as sum of Adjusted EBITA, amortisation expense and result from joint ventures less income taxes paid.

Liquidity

Liquidity comprises cash and cash equivalents and undrawn committed credit facilities of €600 million.

EBITA

EBIT, as presented in Consolidated Statement of Profit and Loss, excluding amortisation and impairments.

EBITDA

EBIT, as presented in Consolidated Statement of Profit and Loss, excluding depreciation, amortisation and impairments.

Adjusted EBITDA and EBITA

To provide further transparency and clarity to the ongoing, underlying financial performance of the Group, adjusted EBITDA and EBITA are used. Both measures exclude other income and expenses as presented in Consolidated Statement of Profit and Loss.

Adjusted earnings per share ("EPS")

Adjusted EPS is used to assess the Company's operational performance per ordinary share outstanding. It is calculated using adjusted EBITA (as described above) and removes the impact of certain foreign exchange effects, amortisation, one-off restructuring expenses and impairments, other non-cash financial income and expenses, that are not directly related to operational performance. Effective tax rate for adjusted EPS is calculated by applying the effective tax rate normalised for restructuring expenses and impairments.

Operating cash flow and free cash flow

Alternative measures for cash flow are presented to reflect net cash inflow from operating activities before certain items. Free cash flow is considered relevant to reflect the cash performance of business operations after meeting the usual obligations of financing and tax. It is therefore measured before all other remaining cash flows, being those related to acquisitions and disposals, other equity-related and debt-related funding movements, and foreign exchange impacts on financing and investing activities.

Working capital

Working capital and intensity provides a measure how efficient the Company is in managing operating cash conversion cycles. Working capital is the sum of manageable working capital, composed of inventories, trade receivables and trade payables and other receivables and payables. Working capital intensity is measured as a percentage of last three months annualised revenue.

Net debt

We present an alternative measure to bring together the various funding sources that are included in the Consolidated Balance Sheet and the accompanying notes. Net debt is a measure defined in the Group's principal financing arrangements and reflects the net indebtedness of the Group and includes all cash, cash equivalents and marketable securities; and any debt or debt-like items.