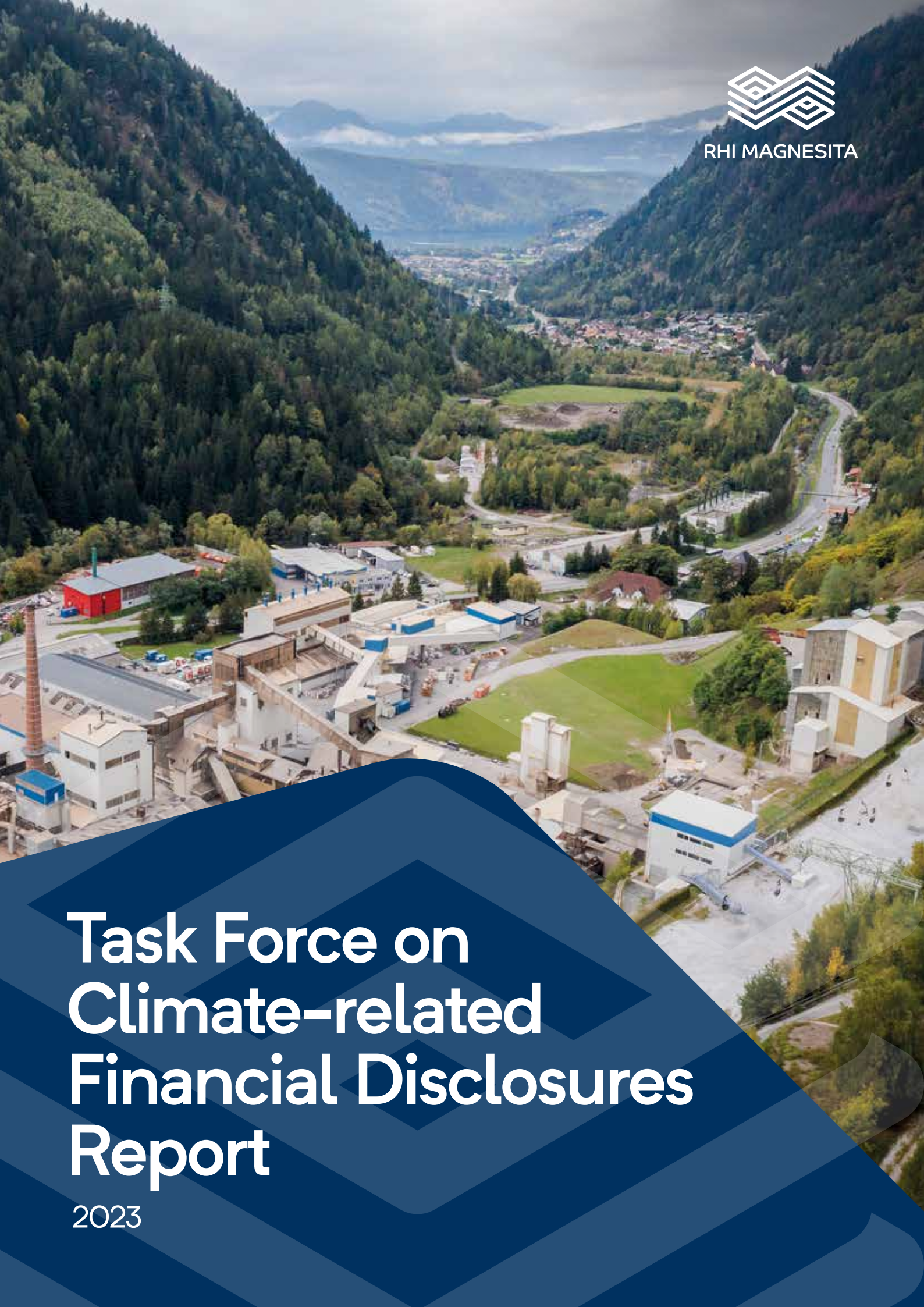

RHI MAGNESITA

Task Force on Climate-related Financial Disclosures Report

2023

Task Force on Climate-Related Financial Disclosures (TCFD) introduction

Contents

RHI Magnesita is committed to transparency about its climate-related risks and opportunities. In line with this commitment, we support the Task Force on Climate-related Financial Disclosures (TCFD) and the EU Taxonomy. We have made it a priority to identify, evaluate, and manage climate-related risks and opportunities, and we are always striving to improve our process while providing essential information to our stakeholders to make informed decisions.

RHI Magnesita has reported according to the TCFD Recommendations since 2019 and has updated its climate related risk assessment, including the newly acquired sites in China, India, Europe and USA and enlarged its disclosure in 2023.

The Group submits annual climate reports to CDP and in 2023 the Group has maintained an A- rating, which underscores Group's leadership on climate action.

The TCFD Recommendations are the world's most commonly accepted standard for disclosing climate-related risks and opportunities. They focus on four key pillars of Governance, Strategy, Risk Management and Metrics and Targets.

Table 1. TCFD Recommendations

Pillar of TCFD Recommendations	Description	Page
Governance	• Describe the Board's oversight of climate-related risks and opportunities	2
	• Describe the Management's role in assessing and managing climate-related risks and opportunities	3
Strategy	• Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term	4
	• Describe the impact of climate-related risks and opportunities on the organisation's business, strategy and financial planning	5
	• Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	5
Risk Management	• Describe the organisation's processes for identifying and assessing climate-related risks	7
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Metrics and Targets	• Disclose the metrics used by the organisation to assess climate-related risks and opportunities, in line with its strategy and risk management process	12
	• Disclose Scope 1, Scope 2 and if appropriate Scope 3 greenhouse gas (GHG) emissions, and the related risks	12
	• Describe the targets used by the organisations to manage climate-related risks, opportunities, and performances against targets	12

Decarbonisation is a big trend in the industry. We all have to abide by the global mission of eliminating carbon emissions."

Stefan Borgas
Chief Executive Officer

Governance

Board oversight

The Board of RHI Magnesita guides the development of our strategy and appetite towards risk. It also has oversight of other material matters such as regulatory developments or reputational and financial topics. Responsibility for and oversight of climate-related risks and opportunities has been assigned to the Corporate Sustainability Committee (CSC).

The Chairman of the Committee, who is responsible for overseeing RHI Magnesita's climate strategy, engages directly with RHI Magnesita managers and employees on climate topics as required between the regular Committee meetings. Certain members of the Executive Management Team regularly attend the Committee meetings. The Committee Chairman reports to the Board on climate-related matters on a regular basis. The CSC regularly reviews climate risks and opportunities, strategy and performance, while the Remuneration committee reviews and approves bonus payment linked to climate. Climate-related progress is discussed at every CSC meeting, with the Chair engaging directly with those driving the CO_2 strategy in between CSC meetings as needed. Recommended disclosures are presented on Table 1. The Audit & Compliance Committee oversees any material ESG risks, including climate-related risks.

In 2023, the corporate Sustainability Committee (CSC) met five times and addressed the following issues related to Climate Change:

- Reviewed progress against 2025 Targets including the CO_2 emissions intensity reduction targets.
- Received reports on the methodology of the CO_2 Roadmap, which is based on three pillars: Carbon Avoidance, Carbon Capture Storage & Utilization and Scope III emissions reduction, highlighting RHI Magnesita's strategies for reducing carbon emissions and adopting sustainable practices.
- Received reports on the Group's participation in carbon capture technology initiatives and strategic partnerships such as its investment in and co-operation with MCi Carbon, a technology provider specialising in the mineralisation of CO_2 emissions.
- Received reports on the Carbon Border Adjustment Mechanism (CBAM), an important climate protection instrument of the European Union (EU), and its associated potential impacts on RHI Magnesita's operations.

Additionally, the corporate Sustainability Committee (CSC) met five times and addressed the following issues related to Sustainable Procurement:

- Received an overview of RHI Magnesita supply chain due diligence that includes the country-specific risk assessment tool, EcoVadis supplier assessments, and on-site supplier ESG audits and risk mitigation efforts.
- Reviewed the status quo of data gathering for product carbon footprint (PCF) data and the outlook for 2024.
- Reviewed, endorsed and recommended for the Board's approval, the Modern Slavery and California Transparency in Supply Chains Act statement.

Management

At Management level, in the C-Suite, the CTO reports regularly to both the CEO and Board CSC on a quarterly basis and anytime in-between as necessary. The CTO is also on the Executive Management Team. He directly oversees the development of the company's CO_2 strategy and its implementation across the organization. The Global Sustainability Team reports to CTO and manages and facilitates sustainability across RHI Magnesita.

Driven by our Board and led by our Executive Management Team, we engage widely with stakeholders, investigate risks, and identify opportunities aligned with our sustainability strategy. Our climate governance is outlined on the Figure 1.

In 2023 we further integrated carbon considerations into key processes:

- 25% of the Long-Term Incentive Plan (LTIP) payout criteria is linked to the Group's target to reduce CO_2 emissions per tonne against 2018 baseline year.
- Increase the use of secondary raw material accounts for 10% of the annual bonus for all eligible employees.
- Enhanced monthly monitoring of CO_2 emissions (Scope 1 and 2) was integrated into the Group's enterprise resource planning tool.

In addition to that, we are continuously evolving our approach to engage with suppliers to fully integrate sustainability aspects— including emission transparency, into our procurement process.

Our goal is that by 2025 two-thirds of our suppliers will be rated by EcoVadis. Engagement on the subject of emission transparency is ongoing, particularly with our raw material suppliers, which accounts with approx. 70% of our scope 3 emissions. Through meetings, follow up calls, the Group highlights to potential suppliers that reducing CO_2 emissions is a key priority for the Group, which is expected to drive changes in supplier behaviour and energy use in the long term.

Strategy

Climate strategy

Driving down carbon emissions is a key priority for RHI Magnesita. Besides mapping out our own transition path, we would like to be a reliable ally to our customers as they venture into a carbon-reduced economy.

Our climate strategy is based on:

1) reducing the carbon footprint of our raw materials, including through the increased use of circular raw materials;
2) increasing energy efficiency in our operations;
3) reducing the carbon intensity of our energy sources; and
4) providing innovative solutions to reduce customer emissions.

In 2023, the Group has updated the modelling and analysis of climate related transitional risks and opportunities that are foreseen to impact the Group over the short, medium, and long-term horizons.

Short term (2025)

For short-term risks (between 0-2y, 2025), Group's first set of sustainability targets are planned within this timeframe. In addition, we are actively monitoring emerging trends and opportunities that may require us to adjust our strategic plans. We are committed to staying agile and adapting our plans as needed to ensure that we remain competitive in the marketplace and continue to meet our sustainability targets, specially our 2025 climate-related ones.

In 2023, total CO_2 emissions (Scope 1, 2 and 3 — raw materials) were 4.6 million tonnes and our emissions intensity has reduced by 12%. Since the baseline year of 2018, the Group has exceeded its initial targets in recycling, offset by delayed progress in switching to alternative fuels. Biofuel switches have progressed but the original strategy to convert from solid fuels to natural gas is now being reassessed due to capital expenditure constraints, infrastructure availability, changes in the market outlook for natural gas and new possibilities for cost-effective carbon capture and sequestration which offer much higher CO_2 savings. Achieving our short term objectives is therefore reliant on the continued success of our recycling initiatives.

The Group is currently pursuing a substantial M&A programme, in line with its growth objectives. In the short term, acquisitions can present a potential downside for sustainability targets such as recycling rates or CO_2 emissions intensity until they are integrated. Harmonising diverse standards, supply chains, and operational processes poses challenges and can affect overall environmental KPIs in the short term. To mitigate this impact, the Group seeks to align sustainability practices and implement efficient transition strategies as soon as possible following acquisition.

Medium term (2030)

For Medium term risks (between 2-5y, 2030), it is the most likely horizon for the regulatory frameworks (such as the EU Emissions Trading System and Carbon Border Adjustment Mechanism) currently operative in a 3 year transition periods and is set to expand to other sectors in the future thus having partial effect on to RHI Magnesita's operations due to the gradual phase out of free allocations. We are anticipating and considering major adjustments to our industrial footprint.

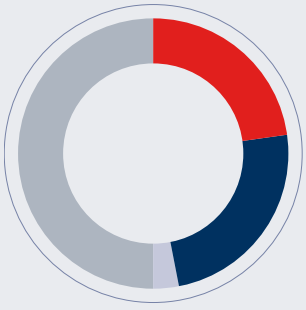
Long term (2050)

For the long-term risks, the Group took into consideration the Paris Agreement and many policy-making bodies to set decarbonisation goals and deadlines for the year 2050.

During 2021 and 2022, we completed a detailed assessment of all possible measures to reduce CO_2 emissions in our operations based on proven technology and available financial resources. Whilst it may be possible to reduce emissions in line with a "well below 2 degrees" scenario, it is our current assessment that it is not possible to set a target that is aligned with a 1.5-degree scenario which is not dependent on the development of as-yet unknown technologies or significant external financial and infrastructure support.

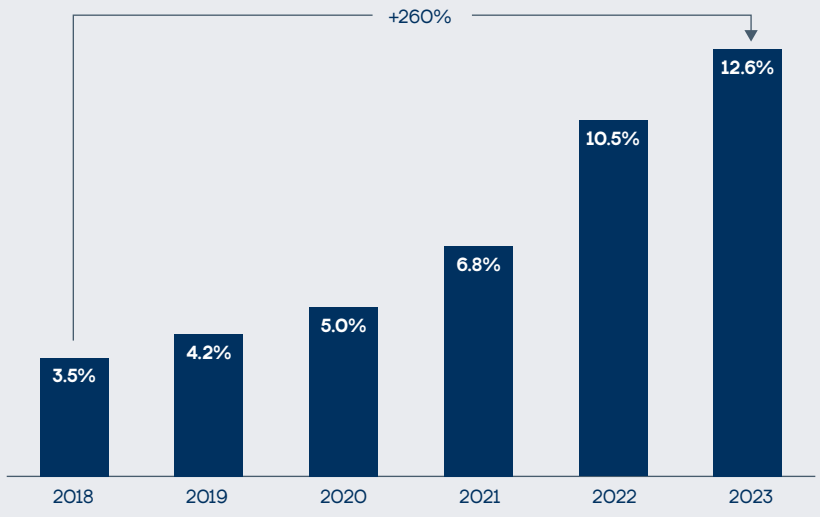
We are committed to reduce our carbon footprint and we will continue to monitor the variables which support this conclusion and update our transition plan accordingly if the Group's own R&D activities result in the development of new technologies that could deliver a faster reduction in CO_2 emissions that is financially achievable.

2023 CO_2 absolute emissions, per scope



- Scope 1: of which geogenic emissions
- Scope 1: of which fuel-based emissions
- Scope 2: electricity
- Scope 3: emissions only Raw Material

Use of circular raw material



Impact of climate-related risks on the Group's strategy

RHI Magnesita defines "substantive financial or strategic impact" as impact which is classified as "high" (score 4) or "critical" (score 5) impact.

RHI Magnesita defines the impact of a risk, including those related to climate change, on a scale of 1 (minor) to 5 (critical). Each of these five ratings has specific definition and quantifiable indicators based on the potential to compromise the ability of RHI Magnesita in achieving its strategic, operational, financial and compliance goals.

- A score of 1 represents minor impact on our ability to achieve these goals.
- A score of 2 represents low impact in achieving such goals.
- A score of 3 represents moderate impact (for example the potential for one strategic deliverable to be slightly delayed).
- A score of 4 represents high impact on the achievement of our goals, which might result in one objective not being achieved or being significantly delayed.
- Finally, a score of 5 represents a critical impact on RHI Magnesita's ability to deliver more than one goal.

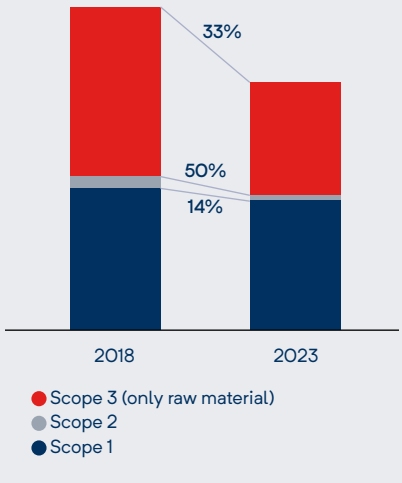
With specific reference to climate-related risks, the following four quantifiable indicators are used by RHI Magnesita to define a substantive strategic or financial impact:

- An impact that would compromise the ability of RHI Magnesita to achieve (or achieve in a timely fashion) one or more objectives defined in the Group's 2025 company strategy, which includes climate-related targets. RHI Magnesita's climate-related objectives include the reduction of CO_2 emissions by 15% per tonne of product — Scope 1,2,3 (raw materials), a 5% increase in energy efficiency tonne of product, and the increase use of secondary raw materials to 15%.
- An impact that would compromise our ability to achieve our financial objectives by more than 15% group budgeted EBITA.
- An impact that would compromise our ability to meet climate regulatory requirements applicable to our company resulting in negative international media attention and/or reputational damage to RHI Magnesita.
- An impact that would create a substantial disruption to a) our plants (i.e., the inability to continue operations in more than one of RHI Magnesita key locations across four global regional areas) and b) our ability to fulfil contracts with customers comprising a negative impact of more than 15% group budgeted EBITA for the year and/or c) compromise the safety of our employees.

We have conducted our analyses across three different time horizons. The short-term (2025) sits within our short-term business plan, while the medium (2030) and long-term (2050) time horizons are oriented towards the broader international policy developments, including the Paris Agreement and the EU Green Deal.

Having reviewed the analysis, the Group believes and endorsed by CSC that it is well positioned to mitigate the risks and embrace the opportunities associated with the climate-change related developments across the different scenarios. These could range from disruptive regulatory developments, physical hazards for our operations or new business opportunities, for example, to earn a Green Premium for low/no-CO_2 refractories. The Group believes that through monitoring market developments and enhancing its business adaptability, innovation and planning, RHI Magnesita can maintain a strong level of climate resilience over the short, medium and long-term across different scenarios. We remain committed to supporting our customers' decarbonisation efforts as well as actively managing our own climate-related risks and opportunities.

Carbon Emission Reduction 2018 vs. 2023



Decarbonisation of refractory production

Refractory production is a "hard to abate" industry. Raw material processing generally uses fossil fuels for ignition and burning of carbonate rock, which results in significant geogenic CO_2 emissions. These geogenic emissions are classified as Scope 1 when resulting from the Group's own production or Scope 3 in the case of externally purchased raw materials.

Significant energy is also required for firing of products in the refractory manufacturing stage. Further emissions are generated in the shipping and distribution of refractory products to customers worldwide.

Through its investment in research and development of emissions avoidance or reduction technologies, the Group has developed a theoretical pathway to decrease its Scope 1, Scope 2 and Scope 3 (raw materials) carbon emissions from refractory production to close to zero. Figure 2 displays the RHI Magnesita theoretical pathway for CO_2 reduction. Stage 1 (red) shows the CO_2 reductions that can be achieved through measures taken by the Group itself. Stage 2 (dark grey) estimates the reduction that would be achieved by the implementation of CCSU measures. Stage 3 (medium-dark grey) estimates the reduction of CO_2 emissions that would be achieved by the implementation of green energy use, including hydrogen. Lastly, stage 4 (very light grey) estimates the reduction of CO_2 emissions in the supply chain related to the Group's raw materials. The required measures have been prioritised in order of deliverability, with those the items that are fully within the control of the Group to be expedited.

The first stage of CO_2 emissions reduction is to be delivered through measures which can be implemented by the Group without significant external support, including increased use of recycled raw materials, fuel switches and energy efficiency measures. It is estimated that these measures could deliver an absolute reduction of around one and half million tonnes of CO_2 emissions, or 24% of the baseline total by 2035. Beyond this initial reduction, decarbonisation measures become progressively harder to deliver. Recycling has a natural ceiling since refractories are consumed during use and only residual materials can be reclaimed, whilst fuel switches to natural gas only offer a partial reduction. The pathway for stages 2 to 4 is reliant on the provision of (i) new infrastructure or renewable energy sources such as hydrogen by outside parties; (ii) the use of technologies which do not yet exist or are not proven at pilot or production scale and (iii) significant capital expenditure, which may not be possible for the company to generate from its existing operations, obtain from its finance providers or receive via government funding.

The costs of emitting carbon, which could provide an incentive to accept higher capital expenditure and operating costs for the purposes of reducing CO_2 emissions, apply in certain jurisdictions and provide a business case for reducing emissions in those geographies. Estimates of future potential CO_2 costs are built into the Group's financial forecasts and planning decisions. However, the Group has a global production and customer network and competes with other refractory producers who are not subject to additional CO_2 costs.

Our decarbonisation commitment

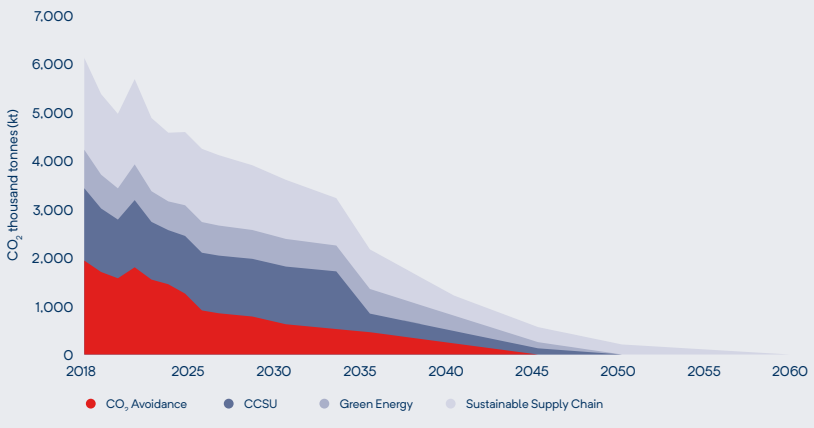
Working within these limitations, the Group is committed to:

1. Leading the refractory industry by decarbonising its operations as fast as sustainably possible.
2. Annually updating its decarbonisation pathway based on the latest developments in technology, infrastructure and estimated capital expenditure.
3. Continuing to invest in the development of new technologies to avoid CO_2 emissions, proving our technical readiness to use alternative low-carbon energy sources and to capture CO_2 emissions for storage or utilisation.
4. Offering our customers enabling technologies for their own low-carbon production technologies together with low-carbon products and heat management solutions (with full transparency on carbon footprint) to enable them to reduce their Scope 3 CO_2 emissions from the purchase of refractories.
5. Lobbying governments to invest in the necessary infrastructure to decarbonise the refractory industry and other energy intensive industries, including additional renewable energy generation, hydrogen supply networks, CO_2 transportation and storage and carbon capture and utilisation technologies.
6. Working with partners in the private sector to develop new renewable energy solutions, hydrogen energy networks and carbon capture and utilisation technologies.

Offsetting carbon emissions

The Group has significant CO_2 emissions within its own value chain and there are large emissions savings that can be delivered for its customers through improved heat management or other solutions. The Board therefore considers that the priority should be to allocate capital and other resources to reducing the Group's own CO_2 footprint and the emissions of its customers rather than investing in carbon offset projects. The Board believes that taking this approach will deliver a faster, greater and more sustainable decrease in net CO_2 emissions than could be delivered by allocating capital to offsets.

Theoretical decarbonisation pathway



Risk management

Climate risks management

The Group has an established risk management approach with the objective of identifying, assessing, mitigating, monitoring and reporting uncertainties and risks that could impact the delivery of RHI Magnesita's strategy. Since the environment and climate change represents both strategic and operational risk to our business, they are considered as RHI Magnesita's principal risks (see our risk management approach on our Annual Report 2023, on pages 45–57.). Several mitigation measures are in place to ensure that the risk is appropriately managed and within the Group's risk appetite.

The risk management process at RHI Magnesita combines top-down, bottom-up and subject-specific risk assessments. The top-down risk assessment is performed by the Executive Management Team and reviewed by the Audit Committee, and reporting against these risks is included in Board meetings, Executive Management Team meetings and strategic reviews. The bottom-up risk assessment is based on operational sites that maintain ongoing risk management activity and is linked to the quality management-based governance practices. Subject-specific risk assessments are performed for areas of emerging or important risks such as climate change. These risk assessments are reviewed by the CEO, the Executive Management Team and the Audit Committee.

Climate change represents both strategic and operational risks to our business. These are grouped as physical risks and transitional risks.

Physical risks include greater severity of flooding, droughts or other extreme weather events which could disrupt our operations or supply chain.

Transitional risks arise from the uncertainty in the global move towards a more sustainable, low carbon economy. These risks involve shifts in the regulations, market dynamics, technology and investor expectations related to climate change.

The process of identifying and assessing all company risks, including climate-related risks, is as follows.

Starting from the risk universe (comprising all risk categories that could impact businesses in the next ten years), categories which are not applicable to our business are excluded from the risk analysis. Categories of risks identified as applicable to our company are analysed to identify specific risks that impact (or potentially impact) our business. These are linked to potential root-causes and assessed for their inherent likelihood, impact, and velocity.

For climate-change risks, the following categories are considered: acute and chronic physical risk, legal, current and emerging regulations, technology, market, and reputational risks. Within each category, specific risks impacting direct operations, downstream and upstream, are identified and assessed based on the Company's risk management processes.

Risk impact is evaluated based on a scale of 1 (minor) to 5 (critical). Each rating has a specific definition based on the impact of the risk on RHI Magnesita's strategic, operational, financial and compliance goals.

Risks are also rated according to their inherent likelihood on a scale of 1 (rare) to 5 (very likely) based on their probability or expected frequency.

Once likelihood, impact and velocity of a risk have been assessed, an appropriate response is determined. This ranges from mitigating the risk to transferring or avoiding the risk based on the level of "risk appetite" defined by the Board.

Appropriate initiatives to reduce the level of inherent risk are then identified and implemented. The level of residual likelihood and impact after mitigation is assessed for each risk using the scoring system above (i.e. impact on a scale of 1 "minor" to 5 "critical" and likelihood on a scale of 1 "rare" to 5 "very likely").

The overall level of residual risk is evaluated to ensure that it is aligned with the Company's risk appetite and risk tolerance. Effectiveness of mitigating measures is monitored over time and risks are re-assessed at least on an annual basis and as needed in the case of significant changes in the risk landscape.

Risks

The Group has updated the modelling and analysis of climate related transitional risks and opportunities that are foreseen to impact the Group over the short, medium, and long-term horizons.

RHI Magnesita's main risk is the additional operating expense resulting from carbon pricing developments. The financial impact of this risk has increased due to implementation of CBAM in Europe, which is an EU policy instrument designed to level the playing field for domestic producers subject to carbon pricing by implementing a carbon-based import tariff on goods from countries without equivalent carbon pricing.

The CBAM is designed to protect domestic producers from competitive disadvantages resulting from carbon pricing by making imports from countries without equivalent carbon pricing more expensive. This mechanism would help to ensure that domestic producers and consumers are not put at an economic disadvantage by having to bear the cost of carbon pricing, while their international competitors do not. The CBAM is intended to incentivise countries to adopt similar carbon pricing policies, thereby reducing the global emissions of greenhouse gases.

The implementation of the Carbon Border Adjustment Mechanism (CBAM) is expected to have a financial impact on the Group from 2030 onwards as free carbon allowances under EU-ETS are phased-out. This is due to levies on imported materials, which are designed to protect the EU domestic business. This is expected to increase refractory pricing for all suppliers selling into the EU. Additionally, products manufactured in the EU and then exported will incur higher costs, as there are currently no compensation mechanisms for exporters. The financial impacts of the CBAM have been included in the Group's updated TCFD modelling, resulting in impact on equity value ranging from €180 million to €350 million.

In addition to that, in 2023, RHI Magnesita has undertaken a comprehensive update of its physical climate-related risk assessment to cover newly acquired sites. The climate scenarios considered are based on the Intergovernmental Panel on Climate Change Fifth Assessment Report. The scenarios consider greenhouse gas concentration trajectories in the atmosphere and relate to a below 2°C temperature increase, approximately 2°C above the modern climate normal, global temperature rise by about 3—4 °C by 2100 and above 4°C temperature increase in the global average surface temperature in 2100.

The assessment focused on evaluating future exposure of RHI Magnesita sites to climate-related hazards across temperature, wind, water, and solid matter, encompassing a total of 29 categories.

Results reveals some sites within its industrial footprint are susceptible to physical climate hazards. The Group will perform a further detailed risk assessment for red flagged sites (32) in 2024 — see more details on Table 3. This proactive approach underscores our commitment to addressing climate-related risks and ensuring the resilience of our operations.

Opportunities

Three opportunities were identified (i) increased demand for products that customers will require for technology transition, e.g. EAF refractories, and (ii) increased demand for low-carbon refractory products containing recycled raw materials and (iii) increase the recycling rate and absorption of carbon expenses via recycling for EU operations.

The steel industry is undergoing a decarbonisation process which is predicted to continue into 2050 and beyond. This megatrend has led to an increased demand for electric arc furnaces (EAF) and electric smelter furnaces. As the pressure to reduce carbon emissions intensifies, RHI Magnesita is well-positioned to benefit from this growing trend. With its vertically integrated model, RHI Magnesita has access to the raw material required for an electric arc furnace from its European mines in Austria, Hochfilzen and Breitenau. This gives RHI Magnesita a competitive edge and makes it the leading refractory partner of choice in the green transition of the steel industry.

RHI Magnesita maintains its industry leadership in utilising recycled minerals and recycling has been the major contributor to the Group's CO_2 emissions reductions to date. Moreover, recycling also has significant waste management and circular economy benefits for Group's customers. RHI Magnesita's joint venture with Horn & Co., MIRECO, combines recycling activities in Europe and increases the production, use and offering of secondary raw materials. This results in a significant decrease in CO_2 emissions. MIRECO is well positioned at the forefront of the circular economy, providing services to customers in steel, cement, glass and other process industries (read more on recycling and circular economy on pages 72-73 of Group's Annual Report 2023).

The net impact on equity value of these opportunities combined is +€388 million (2022: +123 million; 2021: +€352 million).

Climate related transitional risks and opportunities

Operating in an emissions intensive industry, it is likely that RHI Magnesita's business model will be affected by the transition to a low-carbon economy. As well as risks, there are a number of significant opportunities that the Group is well positioned to benefit from.

Table 2 illustrates the material climate-related risks and opportunities selected for quantitative scenario analysis.

2023 Valuation Bridge

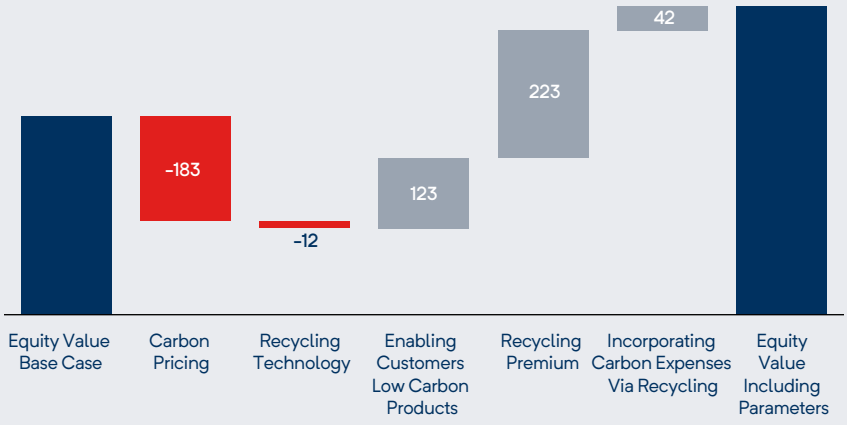


Table 2. Climate-related transitional risks and opportunities

Climate Drivers	Risk/Opportunity	Category	Impact (see reference table)	RHI Magnesita response and strategy	Main affected Time Horizon	Related metrics and targets
Policy-Making & Regulatory Pressure	Carbon Pricing	Risk	RHI Magnesita foresees an impact due to the increase in operating costs because of increase in level or scope of carbon pricing ●●●●●	• The Group integrates carbon permit price projections into its financial planning and has a hedging programme in place to fix future exposures • RHI Magnesita supports industry partnerships for the development of carbon capture and usage technologies. These include the K1-MET consortium in the Austrian steel industry and the Industrial Advisory Board of the EU-funded MOF4AIR project, a development of the new Metal Organic Framework for capturing CO_2. The Group also progressed a joint programme with the University of Leoben to research the possibility of re-mineralisation of captured CO_2. • The Group aims to increase the use of secondary raw materials which will reduce CO_2 emissions compared to the mining or purchase of fresh raw material • We will continue to invest in fuel switching, renewable energy and energy efficiency as additional mitigation measures to reduce our carbon intensity	Medium-Long Term	• We have set a 15% emissions intensity reduction target by 2025 on a 2018 baseline of Scope 1, 2 and 3 raw materials emissions. By end of 2023, our emissions intensity was 12% lower than 2018 baseline
Market & Customers	Increased demand for the Group's products arising from the development of or transition to lower-carbon emitting industrial processes by our customers	Opportunity	RHI Magnesita foresees a low financial impact regarding the increased demand from customers for refractory products that help them reduce their emissions is considered low (e.g. EAF) ●●●●●	• We are already providing our customers with refractory products that support low carbon production processes. This includes our steel and cement customers who account for 80% of our business. For example, we provide products supporting electric arc furnaces for the steel industry, which is an enabling technology for CO_2 emissions reduction • RHI Magnesita has a higher market share in lower CO_2 emitting applications (such as EAF) and a lower relative market share in high emitting applications (e.g. BOF, Blast Furnace) • We will continue to offer our low energy and carbon services and product offering including process optimisation, recycling services, coating technologies and digital solutions	Short-Medium-Long Term	• Sales of refractory products supporting EAFs, associated with the lower carbon production of steel, was 577 million in 2023
Market & Customers	Increased demand for RHI Magnesita products that are produced with lower carbon footprint	Opportunity	Higher revenue due to increased demand for low-carbon (e.g. recycled) refractory products ●●●●●	• In the short term, increasing the share of secondary raw material (SRM) in our products will help us to reduce our geogenic emissions from raw materials and create attractive low-carbon products • In the longer term, if the Group is successful at developing and operating carbon capture and sequestration or utilisation technologies and switching to renewable energy sources, refractory products could be manufactured with low or potentially zero CO_2 emissions • This is expected to translate into a pricing and/or market share advantage compared to competitor products with high emissions, particularly as customers focus more on their Scope 3 emissions	Short-Medium-Long Term	• We have set a new target of 15% SRM content in refractory products by 2025. We achieved 12.6% of SRM content in 2023 (2022: 10.5%) • Over €4 million has been invested in capital expenditure projects related to recycling to date, focused on adopting new technologies and upgrading collection, sorting and storage facilities.

Opportunities		
High	>€875m	●
Medium	€175m-€875m	●
Low	<€175m	●

Risks		
High	>€875m	●
Medium	€175m-€875m	●
Low	<€175m	●

Climate related physical risks

The Group has undertaken a comprehensive update its production sites across a broad range of physical climate hazards to cover newly acquired sites. The analysis considered 70 sites, covering all production sites, recycling facilities and mining locations.

The assessment considered four distinct climate scenarios — RCP2.6, RCP4.5, RCP6.0, and RCP8.5 — taken from the findings of the Intergovernmental Panel on Climate Change Fifth Assessment Report. These scenarios project varying greenhouse gas concentration trajectories, indicating potential outcomes such as staying below a 2°C temperature increase, reaching approximately 2°C above the modern climate baseline, a global temperature rise of about 3—4 °C by 2100, and an exceeding 4°C increase in the global average surface temperature by 2100.

The assessment focused on evaluating future exposure of RHI Magnesita sites to climate-related hazards across temperature, wind, water, and solid matter, encompassing a total of 29 categories. The study compared the current climate (2011-2030) to the future climate (2031-2050) and considered various emission scenarios (RCP2.6, RCP4.5, RCP6.0, and RCP8.5). Due to data availability, some climate dimensions had risks calculated over different time periods. The estimation of future climate-related risks was rooted in probability, gauging the likelihood — expressed as the relative number of years in the data ensemble — that future climate values would surpass the mean values of the current climate at specified locations.

Results reveals some sites within its industrial footprint are susceptible to physical climate hazards. The Group will perform a further detailed risk assessment for these identified sites (32) in 2024. This proactive approach underscores our commitment to addressing climate-related risks and ensuring the resilience of our operations. Moreover, a three-year program dedicated to ongoing assessment of physical risks associated with our assets is implemented across the Group. This involves site visits by experts to evaluate preparedness for various risks, encompassing structural conditions, geographical exposure to extreme weather events such as storms, hurricanes, and earthquakes. Newly acquired sites are seamlessly integrated into the three-year program. Furthermore, our insurance policies provide comprehensive coverage, encompassing 100% protection for our assets against physical damage and losses, particularly those arising from natural catastrophes.

Risk management continued

Legend
No risk
Low risk
Medium risk
High risk
Red flag
No data

Table 3. Climate-related physical risks

			2030–2050			
Country	Climate Hazards High Risk Exposure	Site	RCP 2.6	RCP 4.5	RCP 6.0	RCP 8.5
Brazil	Heat stress	Brumado	Low risk	High risk	High risk	Red flag
	Sea level rise	Terminal Aratu	Red flag	Red flag	Red flag	Red flag
	Soil erosion	Contagem	High risk	High risk		Red flag
		Coronel Fabriciano	Red flag	Red flag	Red flag	Red flag
		Fazenda Funchal	Red flag	Red flag	Red flag	Red flag
		Retiro Pd Domingo	Red flag	Red flag		Red flag
		Fazenda Serra dos Ferreiras	High risk	High risk		Red flag
	Changing air temperature	Uberaba	Low risk	High risk	High risk	Red flag
	Heat stress	Uberaba	Low risk	High risk	High risk	Red flag
	Soil erosion	Uberaba	High risk	High risk		Red flag
China	Flood	Chizhou	Red flag	Red flag	Red flag	Red flag
	Changing air temperature	Chongqing	Low risk	Medium risk	High risk	Red flag
	Soil erosion	Chongqing	Red flag	Red flag	Red flag	Red flag
		Jinan	Red flag	Red flag		Red flag
Germany	Flood	Niederdollendorf	Red flag	Red flag	Red flag	Red flag
		Urmitz				Red flag
India	Changing air temperature	Venkatapuram	Medium risk	Red flag	Red flag	Red flag
		Rajnandgaon	Low risk	High risk	High risk	Red flag
	Soil erosion	Dalian	High risk	High risk		Red flag
	Drought	Devbhumi	Red flag	Red flag	Red flag	Red flag
	Changing air temperature	Jamshedpur	Medium risk	Red flag	Red flag	Red flag
	Heat stress	Jamshedpur	No risk	Medium risk	High risk	Red flag
	Soil erosion	Jamshedpur	High risk	High risk		Red flag
	Changing air temperature	Katni	Low risk	High risk	High risk	Red flag
		Bhikampali	High risk	Red flag	Red flag	Red flag
		Cuttack	High risk	Red flag	Red flag	Red flag
		Patrapalli, Mine	Medium risk	High risk	Red flag	Red flag
		Dalmiapuram		Medium risk	Medium risk	Red flag
		Visakhaptnam	Medium risk	Red flag	Red flag	Red flag
		Maharashtra	Medium risk	High risk	High risk	Red flag
	Water stress	Maharashtra		Red flag		Red flag
	Heavy precipitation	Maharashtra				Red flag
	Soil erosion	Maharashtra	Red flag	Red flag		Red flag
Kosovo	Water stress	Decan		Red flag		Red flag
Mexico	Changing air temperature	Tlalnepantla	Low risk	High risk	High risk	Red flag
Switzerland	Water stress	Pfäffikon/Interstop				Red flag
Türkiye	Water stress	Sörmas		Red flag		Red flag
	Water stress	Eskisehir		High risk		Red flag
US	Soil erosion	Pevely	High risk	High risk		Red flag
	Changing air temperature	York	Medium risk	Medium risk	Medium risk	Red flag

Metrics and targets

The Group's emission reduction plans target a 15% reduction in CO_2 emissions intensity for Scope 1, 2 and 3 (raw materials) emissions by 2025, compared to 2018.

In 2023, total CO_2 emissions (Scope 1, 2 and 3 — raw materials) were 4.6 million tonnes and our emissions intensity has reduced by 12%. Since the baseline year of 2018, the Group has exceeded its initial targets in recycling, offset by delayed progress in switching to alternative fuels. Biofuel switches have progressed but the original strategy to convert from solid fuels to natural gas is now being reassessed due to capital expenditure constraints, infrastructure availability, changes in the market outlook for natural gas and new possibilities for cost-effective carbon capture and sequestration which offer much higher CO_2 savings. Achieving our short term objectives is therefore reliant on the continued success of our recycling initiatives.The Group is currently pursuing a substantial M&A programme, in line with its growth objectives. In the short term, acquisitions can present a potential downside for sustainability targets such as recycling rates or CO_2 emissions intensity until they are integrated.

Harmonising diverse standards, supply chains, and operational processes poses challenges and can affect overall environmental KPIs in the short term. To mitigate this impact, the Group seeks to align sustainability practices and implement efficient transition strategies as soon as possible following acquisition.

In addition to that, in 2023, the Group increased transparency for its customers by disclosing the carbon footprint of its c.200,000 refractory products in the Customer Portal. The calculations follow the principles of ISO 14067 standard and include all scope 1 and 2 emissions, as well as relevant scope 3 emissions related to the manufacturing process (known as "cradle-to-gate" greenhouse gases from raw material extraction to production and packaging).

Additionally, in 2023, the Group achieved a recycling rate of 12.6%, representing a 20% increase from 2022. This significant progress has been driven by continuous efforts and substantial investments in recycling infrastructure and translates to a CO_2 annual emission savings of 393 thousand tonnes.

Tracking our progress

We use metrics and targets to track our progress in relation to our material climate-related risks and opportunities.

Outlook

We recognise the importance of understanding our risk and opportunity landscape in guiding our climate strategy. In addition to charting our own transition, we want to be a trusted partner to our customers on their journey to net zero. We will further deepen our climate-related initiatives in the coming years to help us to continue to be sustainability leader within the sector.

Table 4. Metrics and Targets[1]

	Absolute emissions (thousand tonnes of CO_2)					
	2018	2019	2020	2021	2022	2023
Scope 1	2,540	2,151	2,113	2,643	2,347	2,191
of which geogenic emissions	1,305	1,066	1,075	1,277	1,124	1,052
of which fuel-based emissions	1,184	918	873	1,146	1,223	1,138
of which other emissions	50	168	165	220	—	—
Scope 2	240	223	177	147	120	119
Scope 3 (only raw materials)	3,389	3,008	2,682	2,901	2,420	2,272
Total	**6,169**	**5,382**	**4,973**	**5,691**	**4,887**	**4,583**
Carbon Intensity (t CO_2/t product)[2]	1.84	1.82	1.86	1.76	1.71	1.62
Biogenic Scope 1 emissions	5	8	10	13	13	17

1. Historical CO_2 emission data were revised to reflect new acquisitions and changes that were made following an external verification process that took place in July 2022. All sites acquired in 2023 are considered except three minor production sites (Huron, Bussalla and Bochum).
2. Adaptations in line with the Greenhouse Gas protocol and refinement in reporting result in updated CO_2 and energy efficiency figures for 2018-2023.

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