



ArcelorMittal

# Driving forward

Smarter steels for people and planet

ArcelorMittal Integrated  
Annual Review 2022

# About this report

Our Integrated Annual Review 2022 describes the context for, and progress of, ArcelorMittal as the world's leading steel and mining company. Sustainability is at the heart of our purpose – smarter steels for people and planet – our reporting reflects this by outlining our key considerations in creating value for our stakeholders now and in the future, both financial and non-financial.

Our Integrated Annual Review covers the 12 months from 1 January 2022 to 31 December 2022.

In our 2022 Integrated Annual Review, we have purposefully evolved to be more factual and structured, presenting more a balanced approach to our reporting. We do cover our achievements, but also give an honest account of the challenges ahead and the significant strides we need to take to deliver our part in creating a more sustainable future.

This direction starts to evolve us towards the Corporate Sustainability Reporting Directive (CSRD), which will support our journey to full integration. We have also applied the Task Force on Climate-related Financial Disclosures (TCFD) approach in each chapter. The aim is to show our stakeholders how we are organised and that our management systems are set up to meet the requirements (governance), what improvements we are making to respond to changes (strategic actions), what the challenges and opportunities are to deliver the strategy (risk management) and measurable progress we have been making to achieve the strategic objectives (performance).

We continue to reflect the guiding principles of the most respected and influential organisations and frameworks. For full details, see chapter 1, 'Our approach to reporting'.

[Reporting Index](#)

[Climate Action Report 2](#)

[Fact Book](#)

[Basis of Reporting](#)

[Form 20-F](#)

[Annual Report](#)

[annualreview2022.arcelormittal.com](https://annualreview2022.arcelormittal.com)

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## Chapter 0 – Overview and highlights

ArcelorMittal at a glance

### Performance highlights

Ebitda<sup>1</sup>

# \$14.2bn



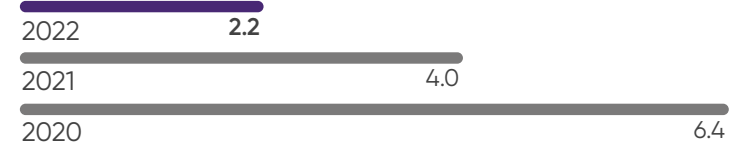
Free cash flow<sup>4</sup>

# \$6.4bn



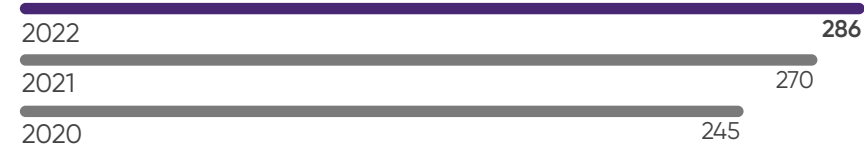
Net debt

# \$2.2bn



Investment in Research and Development (R&D)

# \$286m



1. Ebitda – operating results plus depreciation, impairment items and exceptional items.
2. Based on the ArcelorMittal portfolio in the reporting year.
3. Each year health and safety data we publish is provisional with the best available data at the time of publication.

Steel shipments<sup>2</sup>

# 55.9Mt



Net income

# \$9.3bn



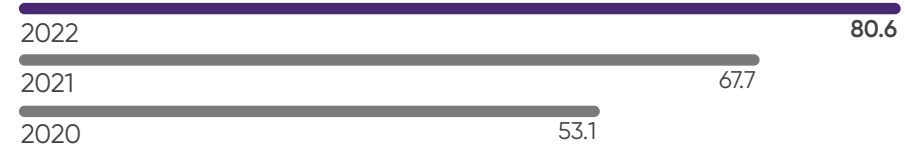
Capex

# \$3.5bn



Estimated direct economic contribution<sup>6</sup>

# \$80.6bn

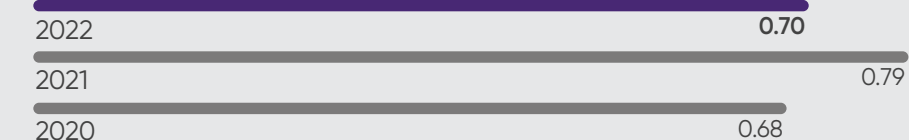


4. Free cash flow (FCF): refers to net cash provided by operating activities less capex less dividends paid to minority shareholders.
5. CO<sub>2</sub>e intensity (Steel) – for details on how it is calculated see the Basis of Reporting.
6. For the definition see the Basis of Reporting.

### Non-financial results in 2022

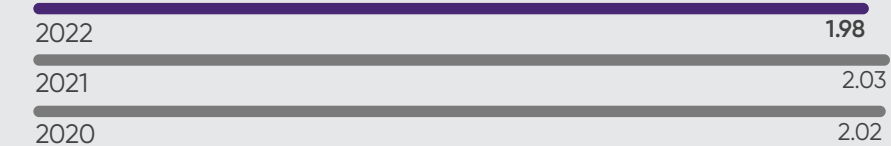
Safety – LTIFR<sup>3</sup> (incidents per million hours worked)

# 0.70



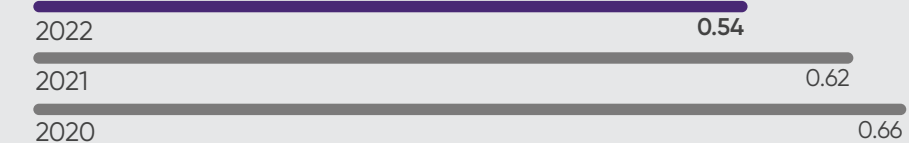
CO<sub>2</sub>e intensity (steel Scope 1+2+limited Scope 3)<sup>5</sup> (tonnes per tonne of steel)

# 1.98



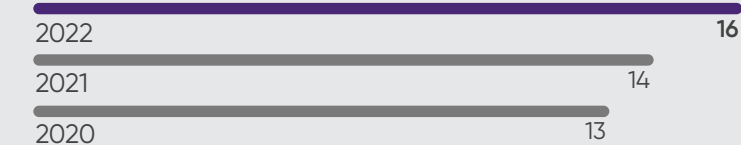
Dust intensity (kg per tonne of steel)

# 0.54



Women in management (managers and above)

# 16%



➔ Full performance data in our [Fact Book](#)

# Welcome to ArcelorMittal's 2022 Integrated Annual Review



Lakshmi N. Mittal  
Executive chairman

Dear stakeholders,

**Our Integrated Annual Review aims to provide our stakeholders with a clear understanding of how we manage our business, and how we seek to build and protect sustainable value. It provides an overview of the company's performance, not just financially, but against our broader strategic priorities and our sustainability goals. In this respect it takes account of our focus on safety, our actions to reduce carbon emissions, our people values, and our concerted efforts to working sustainably within the natural environment, and with our local communities and society at large.**

We welcome recent developments in sustainability regulations aiming to improve the quality and scope of ESG reporting, and to provide investors, regulators, and other stakeholders with the data they need to make informed decisions on sustainability. With this year's review, we are taking the opportunity to start aligning our reporting with the concepts and principles set out by the new Corporate Sustainability Reporting Directive (CSRD).

Alongside this new framework we also report on the issues that are most material to our stakeholders and impactful to the company. In 2021 we undertook a double materiality assessment which addresses both internal and external impacts and risks. This process identified the priority issues for focus in our sustainability planning, grouped under three core pillars – People, Planet and Products & Supply Chain.

Together they are informed by our fundamental purpose of 'smarter steels for people and planet'.

You can read more about our approach to materiality on page 11.

## **The role of steel in a sustainable, circular world**

As we transition to a more sustainable, circular world, steel has a central role to play in delivering low carbon, long-lasting and ultimately reusable infrastructure for this new economy.

The challenge of achieving our own targets and meeting society's expectations is significant. This report demonstrates how seriously we take those challenges.

We have made encouraging advances in some areas, including in our own decarbonisation plans and our transition to lower-carbon operations and other innovations. But we also recognise the enormity of transitioning our whole supply chain to net-zero status and associated wider standards of responsibility. The title of this year's review is 'Driving forward', and this reflects our view that we need to show leadership in driving the fundamental changes required for an achievable and just energy transition.

Circularity goes hand in hand with decarbonisation, and we are making significant strides in delivering both the products and life-cycle thinking that enable our customers to achieve the circular economies that they need. Whether it is automotive OEMs, construction firms and developers, or major infrastructure companies, our steel is a vital material for energy transition and there is a wave of increasing demand for low-carbon steels supported by full Life Cycle Assessments (LCAs) and Environmental Product Declarations (EPDs). We have a wealth of expertise in delivering these, evidenced for example in our XCarb™ products and low-carbon solutions for the construction market such as Steligence®.

## **Driving forward through innovation**

The strength and breadth of our R&D teams and the innovations they achieve is a source of our long-term competitive advantage. Developing smarter steels sits at the heart of our purpose and is one of the

## Chapter 0 – Overview and highlights continued

### Executive chairman's statement

reasons why customers choose our products. We are increasingly turning our R&D focus to deliver more sustainable life cycles and infrastructure, but we are also using our technology to find ways of using 'waste' materials, eliminating landfill and limiting the environmental impact of our activities. Operationally our R&D teams are set to deliver significant advances in achieving economic production of low-carbon steel through hydrogen and electrolysis; and they are making good progress towards delivering impressive new techniques to identify, track and mitigate diffuse emissions, which will be a major step forward in reducing our environmental impact.

In 2022, our commitment to innovation was globally recognised when LexisNexis® identified ArcelorMittal as one of the Top100 Innovators thanks to our exceptionally high-performing and well-maintained patent portfolios. We were the only steel company on the list and we are proud to be listed alongside firms such as Alphabet, Apple and Intel. In 2022, we invested \$286 million in R&D activities and you can read more about the output of this investment in chapter 5.

#### A fundamental focus on our safety culture and risk management

While leading on decarbonisation, circularity and technology are essential priorities for ArcelorMittal, improving our safety performance is our most fundamental focus. The safety and well-being of our people is core to our ethos and values. We are disappointed with the results we delivered in 2022.

It is clear we must work harder to deeply embed and integrate a much stronger safety culture into all aspects of our operations, across all our geographies. To this end, we have put in place an intensive programme of risk assessment, mitigation

and training across all our sites, with a particular focus on the CIS region.

That being said I must acknowledge the progress that has been made on safety in 2022. There has been notable improvement in some segments as a direct result of the very considerable efforts already made that have led to them comparing favourably with the worldsteel average.

We must take satisfaction from this progress and work hard to ensure it is replicated across every business in the group. We hope to see strong progress over the coming year. Nothing will give me greater personal satisfaction than achieving and sustaining our goal of zero fatalities.

#### Building our diversity, talent and transition skills and Just Transition

Our future is our people, and in a highly competitive employment and skills market, it is crucial that we are seen to be offering exciting and rewarding careers that respond to the needs of the younger generations. This means ensuring our brand conveys our values both internally and externally, what our purpose is, and how these fit into the world of transition that we are facing.

Diversity and opportunity are central to these values, since we believe diversity strengthens our capabilities, provides different perspectives and deepens our resilience. Innovation is likely to best thrive through a diversity of thought and creativity. We are making progress toward our 2030 goals on diversity, but we need to move faster. You can read in this review the many initiatives that we are taking on that front.

The energy transition will fundamentally require us to change how we work and the technology and infrastructure we use. This means that we need to build a wide swathe of new skills and talents that will support ArcelorMittal as increasingly also a technology-based company. Our HR and talent management programmes are orienting themselves to delivering this pipeline of talent, through recruiting expertise in engineering, data and AI, and indeed enabling existing personnel to build their knowledge base so that they can adapt to the new needs of our industry.

The transition to a low-carbon, climate-resilient economy could also exacerbate existing inequalities and vulnerabilities in society, heightening perceptions of social injustice and prompting social unrest. For these reasons, the European Green Deal seeks to achieve a sustainable economy, including leaving no-one behind. To contribute towards this approach, ArcelorMittal is developing its Just Transition strategy for the group. You can read more about it in chapter 8.

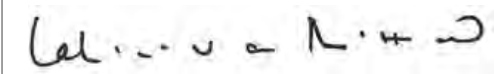
#### A strong financial year of performance

2022 was an exceptionally challenging year operationally with the war in Ukraine disrupting energy markets, legacy supply chain challenges from Covid, higher inflation and interest rates, and significant customer destocking. Against this backdrop the company delivered a good performance, generating Ebitda of US\$14.2bn and continuing to invest strategically to both capture opportunities and address challenges. The company ended 2022 with record low net debt of \$2.2bn (versus \$4.0bn at the end of 2021). Our business is stronger and more resilient than at any time during my five decades in the steel industry.

As we enter a second year of the war in Ukraine, I must reiterate our admiration for the strength and resilience shown by our colleagues there in an environment of physical devastation and emotional pain. We stand firm with them and continue to help in whatever ways we can, including keeping a minimum level of activity going.

In conclusion I would like to take this opportunity to thank the Board of Directors, the Management Committee and all employees of ArcelorMittal for the role you all play in keeping us at the forefront of our industry. Our strong 2022 results are testament to the experience, energy and enthusiasm of our people – who work hard every day to produce smarter steels for people and planet.

I hope you enjoy reading about our progress and find our 2022 integrated annual review to be an interesting and informative document.



**Lakshmi N. Mittal**  
Executive chairman

# Welcome from the chief executive officer



Aditya Mittal  
Chief executive officer

Dear stakeholders,

**Welcome to ArcelorMittal's 2022 Integrated Annual Review. I hope you will find it an interesting, informative, and honest read.**

It is increasingly difficult to characterise a year in one or two sentences, reflecting the dynamic, complex world we live in. This was even more marked in 2022 where purely from an ArcelorMittal perspective we celebrated several significant strategic milestones while simultaneously having to manage a major asset through the realities of war.

On 24 February 2022, our 22,923 employees in Ukraine along with every Ukrainian, woke up to find their country had been invaded. We all hoped and prayed for a swift resolution. It has not materialised, and the war rages on. Thousands have died. We meanwhile have lost 67 of our own people, who were either called up or who felt compelled to fight for their country.

ArcelorMittal's purpose is "smarter steels for people and planet." The war in Ukraine certainly focused our attention on our people. We did whatever we could to support them, including offering to bring women and children across the border to safety. The humanity and generosity from our people across the group also came to the fore – over €5 million was

donated to UNICEF's Ukrainian relief efforts, including match funding by the company. From an operational perspective, we kept whatever we could going. Our people wanted normalcy to the greatest extent possible and that included being able to continue to come to work, despite that work being regularly interrupted by the sound of air raid sirens.

The war in Ukraine has naturally had repercussions beyond Ukraine's borders – significantly impacting global energy markets and putting energy security right at the top of the political agenda, particularly in Europe where hundreds of millions of people have faced rapidly rising energy prices. This has further exacerbated the already rising inflationary environment in which we were operating.

Against this context the year became particularly challenging as it progressed – and this is visible in our financial results. The first half was much stronger than the second in terms of profitability. While there were undoubtedly challenges, it was also a year of good progress, where important milestones were achieved, and the overall financial resilience of the company is clearly apparent.

We have worked very hard in recent years to ensure the company has a strong financial core. Reducing net debt was a clear priority. Having a strong balance sheet would enable us to generate free cash flow throughout the cycle – something the steel industry has struggled to do historically – and continue to deliver on our commitment to return cash to shareholders through both dividends and our share buy-back programme. As of the end of 2022, the company has the lowest net debt since its creation. That we have been able to achieve this since the global economic crisis, the Eurozone crisis and Covid-19 is a testament to the focus of our people.

Unfortunately, we have not made the progress we wanted when it comes to safety. We have been very clear with everyone from our leadership to the shop floor, that safety is the most important thing we do and our performance must improve. A considerable amount has been done in this regard over the course of 2022 – but this is not yet reflected in our results. 22 people died working for the company last year – 14 of those were in Kazakhstan where our biggest safety challenge lies, nine of which occurred in two accidents.

As CEO of this company there is not a single priority on which I am more focused than improving our safety results. For the group to deliver every segment must deliver. So, while I know you are ultimately focused on the group results and while I am the first to acknowledge the group results are unacceptable, it is also important to appreciate every segment apart from CIS has made meaningful progress in 2022.

We are implementing a dual-pronged strategy focused on the two fundamental safety pillars of culture and risk. To support the cultural transformation, we have relaunched our health and safety policy, we have strengthened safety training, we have mandated new levels of shop-floor leadership presence, and we have integrated safety performance into every aspect of our annual appraisal system. Simultaneously, using external help, we have assessed each asset and supported them with the development of best-in-class plans to deliver improvement along the Bradley curve. The aim for every asset is to ultimately reach the interdependent stage.

We know where we stand today, and we know we have a lot of work to do. But I am quietly optimistic we will be able to demonstrate further significant progress when I write to you this time next year.

## Chapter 0 – Overview and highlights continued

### Chief executive officer's statement

We are very clear that we cannot consider ourselves the world's leading steel company if we are not also the safest. It is important we achieve this, because I see considerable opportunities for steel companies in the coming decades. We are confident that steel is not only going to remain in high demand, but that demand is going to grow. 1.9 billion tonnes of steel were used in 2022 – while estimates vary, it is not inconceivable that demand will grow to 2.6 billion tonnes in 2050. That represents an exciting opportunity – but we must ensure we understand what our stakeholders want from the materials of the future. More yes, but not more of the same. Steel yes, but low-carbon and ultimately near-zero steel.

As a company in a recognised hard-to-abate sector, climate is our most material sustainability issue. We have a genuine desire to lead the decarbonisation of the steel industry and have worked hard in 2022 to give our stakeholders greater insight into all aspects of our decarbonisation journey.

At a headline level, we have commissioned our first carbon capture and utilisation plant, broken ground on a new DRI-EAF investment that will replace existing blast furnaces – and announced several acquisitions in the areas of low-carbon metallics and renewable energy. Our XCarb™ Innovation Fund continues to invest in exciting technologies for the future. And we have been working hard on other less prominent but still relevant areas such as a definition for low-carbon steel and evolving our TCFD alignment. Retaining our A minus CDP rating in Climate Change assessment and being ranked #2 by Bloomberg New Energy Finance for having the business model prepared for a low-carbon world, brings external validation that our efforts are recognised and continue in the right direction.

This is all good and useful progress, but I must also be honest: the tipping point that will lead to accelerated investment in low-carbon steel-making has not yet been reached. We spend a lot of time thinking about what more we can contribute to speeding this up. The Inflation Reduction Act in the United States has been an important marker in the sand. Under the terms of the IRA low-carbon technologies, including green hydrogen and CCS, start to look commercially viable within a far shorter timeframe than was previously the case. As a result, Europe is re-looking at its industrial strategy and has recently unveiled details of its EU net Zero Industry Act.

This is vitally important, especially for the hard-to-abate sectors. Two-thirds of the investment required to take the steel industry to net-zero is in the enabling infrastructure – in other words renewable energy, green hydrogen and CCS.

It is a matter of fact that some regions will move faster than others. It is also a matter of fact that the regions that are currently moving slower are those that are likely to see a faster demand growth for steel. This raises an interesting conundrum. As a global company, how do we grow to satisfy our customer's evolving expectations while at the same time reducing our emissions intensity and in line with our objective of achieving net-zero by 2050 target.

In developing economies like Brazil or India, we have plans to grow to support these countries' development. We recently completed our acquisition of CSP, now renamed ArcelorMittal Pecem, in Brazil. And our joint venture in India with Nippon Steel, will increase capacity significantly in support of India's growing economy. If low-carbon technologies are not yet economically viable across Europe, they are certainly not viable in these types

of developing countries, which unlike the United States do not have the financial strength to put in place supportive incentive mechanisms like the Inflation Reduction Act.

The longer-term outlook for these countries to align with a net-zero economy is very positive. Brazil already has high levels of renewable energy. India has ambitions to become a leader in green hydrogen and the Pecem region in Brazil has become the focus for the main green hydrogen developments in the country based upon its strategic location infrastructure and access to competitive renewables. The biggest challenge will be in the next decade as the predictability of the regulatory environment and business environment needs to evolve.

These are the types of conundrums we will continue to have to navigate. I hope in 2023 we will see further policy evolution that helps accelerate the road to near-zero steelmaking. Our India joint venture with Nippon Steel, AM/NS India will soon be publishing its first climate action report in which it will set out plans to reduce its emissions intensity by 2030.

Stakeholders have worked hard to understand the challenges and opportunities that the energy transition brings for companies – including the financial implications both positive and negative. Now we see that approach being rolled out to other ESG issues through the introduction of the new corporate sustainability reporting directive (CSRD) as well as specific frameworks such as the task force for nature related disclosures (TNFD). This will enable our stakeholders to understand in more detail how compatible companies are not just with the Paris Agreement but also the broader transition to a sustainable economy, in-line with the United Nations development goals.

It is undoubtedly a major transition. But one in which we are confident steel, and ArcelorMittal, will have the opportunity to thrive. Ultimately it is our people that will enable us to do so. It is therefore vital we continue to attract the brightest, smartest talent to our company. In pursuit of this, last year we launched a new people strategy based on three pillars: Leadership that inspires excellence; Talent to thrive for the future; and Diversity and inclusion that engages everyone.

The areas of diversity and inclusion certainly need more active focus. We are naturally very culturally diverse, given how the company has grown through global acquisitions, but we are much less strong when it comes to gender diversity. For the first time we have set targets to increase the number of women in management. We have a lot of highly capable, qualified female talent within the group, and I hope our new approach and stated targets will also encourage more women to pursue fulfilling careers at ArcelorMittal.

We need the best, diverse talent to achieve our purpose of smarter steels for people and planet. It is ambitious we know but within our grasp. Steel has for decades helped improve people's lives through the products it helps make. Increasingly, given its natural circular properties and its potential to ultimately be produced with near-zero carbon emissions, it has a great opportunity to also contribute to a better healthier, planet. This is what drives us every day.



**Aditya Mittal**  
Chief executive officer

# Forging ahead – a message from the chief financial officer



Genuino M. Christino  
Executive vice president  
– chief financial officer

Dear stakeholders,

**2022 was a year of significant strategic progress for ArcelorMittal, despite the challenges created by higher energy costs and the war in Ukraine. We invested in our decarbonisation and growth agendas and continued to deliver strong shareholder returns.**

## Resilient financial performance

Financially, 2022 was a year of two halves. The strong market conditions and exceptional financial performance of 2021 continued into the first half of 2022. The rest of the year was weaker as inflationary pressures, higher energy prices and destocking hit steel demand and pricing.

Against this increasingly challenging backdrop, our results demonstrate the benefits of the actions taken to strengthen the asset portfolio and improve the cost base over recent years. Ebitda was \$14.2bn in 2022 and on an adjusted basis (excluding \$1.0bn impairment charges and \$0.3bn exceptional item) 2022 net income was \$10.6bn. While profitability fell

during the second half, free cash flow was strong through the year and – at \$6.4bn – was only \$0.2bn lower than 2021. These results supported our shareholder returns programme and enabled us to continue deleveraging, closing the year with net debt of just \$2.2bn – a record low for ArcelorMittal.

## Strategic growth

The resilience of our business and the strength of our balance sheet supports our ability to invest in the most compelling projects that reside in our global asset portfolio. Over the next two years we plan to invest \$3.3bn across nine projects, bringing the total investment in these projects to \$4.2bn. Our investments are focused on: enhancing our ability to produce higher-added value products in high-growth markets such as Brazil and Mexico; providing solutions for new end markets such as electromobility; and developing our vertical integration. These projects are estimated to deliver significant incremental value – adding potential annual Ebitda of \$1.3bn at normalised steel spread levels.

We are also investing in our joint ventures. To meet demand for high-quality steel in India, we recently broke ground on a major expansion project that will increase capacity at AM/NS India from 9 million tonnes to 15 million tonnes by the start of 2026. And at AM/NS Calvert, a new 1.5 Mt EAF is expected to complete by the end of this year.

Our balance sheet strength allows us to take advantage of M&A opportunities. In July 2022, we agreed to pay \$2.2bn for CSP in Brazil, an ultramodern plant that will expand our footprint in the country's high-growth steel industry.

## Continuing to reward shareholders

Rewarding shareholders is a core pillar of our strategy. We are committed to paying half of our post-dividend free cash flow to shareholders and, throughout the year, we returned \$3.3bn through dividends and share buybacks. This continues the programme we started in 2020 that has now seen us repurchase around 30% of the company and, together with dividends, return over \$10bn to investors.

## Vital progress on decarbonisation

Since we established our new carbon emissions intensity targets in 2021, our focus has been on turning these plans into action and working to deliver visible progress year-after-year. Our 2022 performance in this area is covered extensively elsewhere in this report. Major highlights include breaking ground on a CAD\$1.8bn project at ArcelorMittal Dofasco that will transform its carbon footprint and the inauguration of a \$200 million 'Steelanol' carbon recycling plant at ArcelorMittal Ghent in Belgium. We also acquired an 80% stake in voestalpine's state-of-the-art DRI plant in Texas and four scrap recycling businesses in Europe, enhancing our ability to secure the metallics needed for low-carbon emissions steelmaking.

Our ambition is to progress major DRI projects while continuing to explore smart carbon solutions that reduce emissions from blast furnace.

We are also striving to be an industry leader in terms of our target-setting, performance and disclosure. In 2021, we reported on our climate risks and opportunities in our Climate Action Report 2, in line with many recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). In 2022, we assessed the resilience of our business against different transition and physical climate



## Chapter 0 – Overview and highlights continued

### Chief financial officer's statement

scenarios. This has allowed us to complete a high-level assessment of transitional and physical climate-related risks and opportunities that may impact the business. The next phase of the project is expected to provide more understanding on the potential financial implications of these risks and opportunities, with the goal of informing and improving our climate strategy. This work will support our preparations for the EU Corporate Sustainability Reporting Directive (CSRD) and the US Securities and Exchange Commission (SEC) climate disclosures which use TCFD recommendations as a foundational basis.

In 2023, companies need to report on the proportion of their turnover, capex and opex that is EU Taxonomy-aligned for climate change mitigation and climate change adaptation. In this report we have disclosed the extent to which our economic activities are in scope of the EU Taxonomy (eligibility assessment) and substantially contribute to an environmental objective while doing no significant harm to other environmental objectives and meeting minimum human rights and labor standards (alignment assessment). Full details are published in the annex.

#### Facing the future

Although there remain risks to the economic outlook in 2023, we believe that the impact of customer destocking will be less pronounced – as a result, we are currently forecasting growth in apparent steel consumption in 2023 in all our core markets. Improvement in apparent demand is already visible in the recovery of prices and steel spreads from the unsustainable lows of the fourth quarter of 2022.

In volatile times, ArcelorMittal's balance sheet is a very important asset for the company. It allows us to maintain our strategic focus on growing and decarbonising our business, while remaining competitive on costs, sustaining positive cash flow and delivering strong returns to shareholders.

We have a clear plan on all these issues and look forward to another year of strategic and financial progress.



**Genuino M. Christino**

Executive vice president – chief financial officer

Toronto Yonge-Dundas Square →



## Chapter 1

# Our business and material issues

In our Integrated Annual Review, just as we do in business, we aim to stay ahead of the curve and deliver to high standards. This year we have purposefully evolved to be more factual and structured, presenting a more balanced approach to our reporting. We do cover our achievements, but also give an honest account of the challenges ahead and the significant strides we need to take to deliver our part in creating a more sustainable future.

This direction starts to evolve us towards the Corporate Sustainability Reporting Directive (CSRD), which will support our journey to full integration. We also apply the Task Force on Climate-related Financial Disclosures (TCFD) approach in each chapter.

“

Our integrated reporting demonstrates the linkages between our governance, strategy, risk, performance and the social, environmental and economic context within which we operate. By reinforcing these connections, integrated reporting helps us better communicate to our investors and other stakeholders how our company is performing across all these dimensions.

”

Nicola Davidson  
Vice president, communications and sustainable development

Final inspection of part  
made by wire and arc  
additive manufacturing →



# Our approach to reporting

## The changing reporting landscape

The creation of the International Sustainability Standards Board (ISSB), by the IFRS Foundation Trustees at the end of 2021, signalled the start of unprecedented change and consolidation in the reporting landscape. The ISSB was formed as a response to the urgent demand for transparent financial-related sustainability disclosures by companies. The IFRS Trustees agreed it was important to build on existing disclosure standards. During 2022, the IFRS Foundation brought together the Climate Disclosure Standards Board (CDSB), which had previously formed the basis for the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), and the Value Reporting Foundation (VRF), which, in turn, was formed by the merger of the SASB Foundation and the International Integrated Reporting Council (IIRC). In the same year, the GRI standards were updated. In our new approach this year, we start by mapping our material issues to CSRD topics and then use the TCFD model to explain and highlight our progress in 2022.

## Moving towards CSRD

In April 2022, the European Financial Reporting Advisory Group (EFRAG) released 12 Exposure Drafts of proposed European Sustainability Reporting Standards (ESRS) in accordance with the Corporate Sustainability Reporting Directive (CSRD). Whilst we acknowledge that the EU Parliament adopted the directive in November and the standards are undergoing final stages of approval, we felt that it was appropriate to start planning for its formal adoption into regulation in the coming months. Thus, for the first time this year we have reflected the guidance and direction that the CSRD consultation

documents (issued in March and updated in November 2022) are pointing EU-based organisations towards. We undertake to continue to shape the guidance ESRS sets as the process continues.

## Applying the TCFD model

Having honed our TCFD approach for the last three years, we have applied the principles of the model to our integrated reporting. This approach brings more transparency and consistency to the various chapters of our Integrated Annual Review.

The aim is to show our stakeholders how we are organised and how our management systems are set up to meet the requirements (governance), what improvements we are making to respond to changes (strategic actions), what the challenges and opportunities are to deliver the strategy (risk management) and measurable progress we have been making to achieve the strategic objectives (performance).

## EU Taxonomy

In 2023, companies need to report on the proportion of their turnover, capex and opex that is EU Taxonomy-aligned for climate change mitigation and climate change adaptation. See our EU Taxonomy report in the annex.

## Mapping the approaches

Our reporting is in transition. CSRD requirements demand a highly structured, data-led approach. We intend to adopt the guidance and regulations as they evolve. To help readers navigate our new



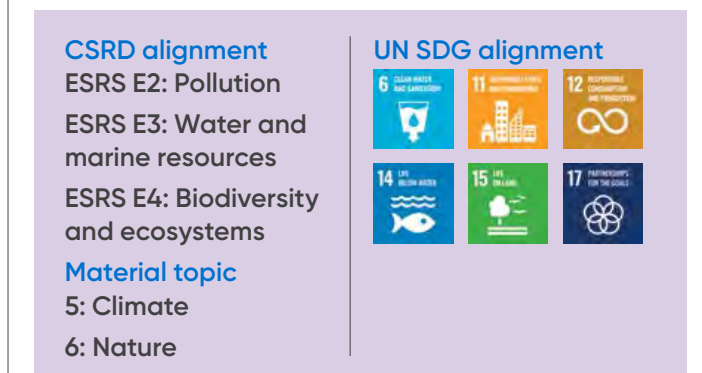
approach and make referencing to previous reports easier, at the start of each chapter, we have created a device that summarises how the content for that chapter broadly maps to (a) CSRD’s ESRS codes, (b) our own material topics and (c) the UN SDGs. In addition, we have applied the rigour of the TCFD approach, so each chapter follows the same structure.

## Continuing to reference the UN SDGs

The UN SDGs were launched to address the major challenges the world faces and fast-track progress towards a better and more sustainable future for everyone. We have identified which of the SDGs we are contributing to with our sustainability agenda.



## Alignment example



# Materiality

## Materiality overview

The starting point for our sustainability reporting and planning is to assess the issues that are most material in their impacts for external and internal stakeholders, against the issues that are seen by the company as having the most actual or potential impact on its business and value. This allows us to identify priority issues and those that are increasing or decreasing in importance. It provides the basis for our sustainability planning and programmes, and serves as a benchmark to assess our progress.

We identify and rank material issues from our intensive engagement with stakeholders throughout the year, from investor feedback to liaison with lobby groups and local community forums.

We last undertook this material assessment process in 2021, using a 'double materiality' approach – this plots the potential impact of each material issue on society and the environment, against the potential impact of this issue on ArcelorMittal. The issues are grouped under three core pillars of People, Planet and Products & Supply Chain. Within these pillars are eight themes which are aligned with our sustainable development outcomes, as follows:

### People

- Safety: the physical safety of our employees
- Work and life: the health and fulfilment of our employees
- Gender: the equal representation, development and remuneration of women
- Community: the approval of our communities and our perception as a welcome member of the community

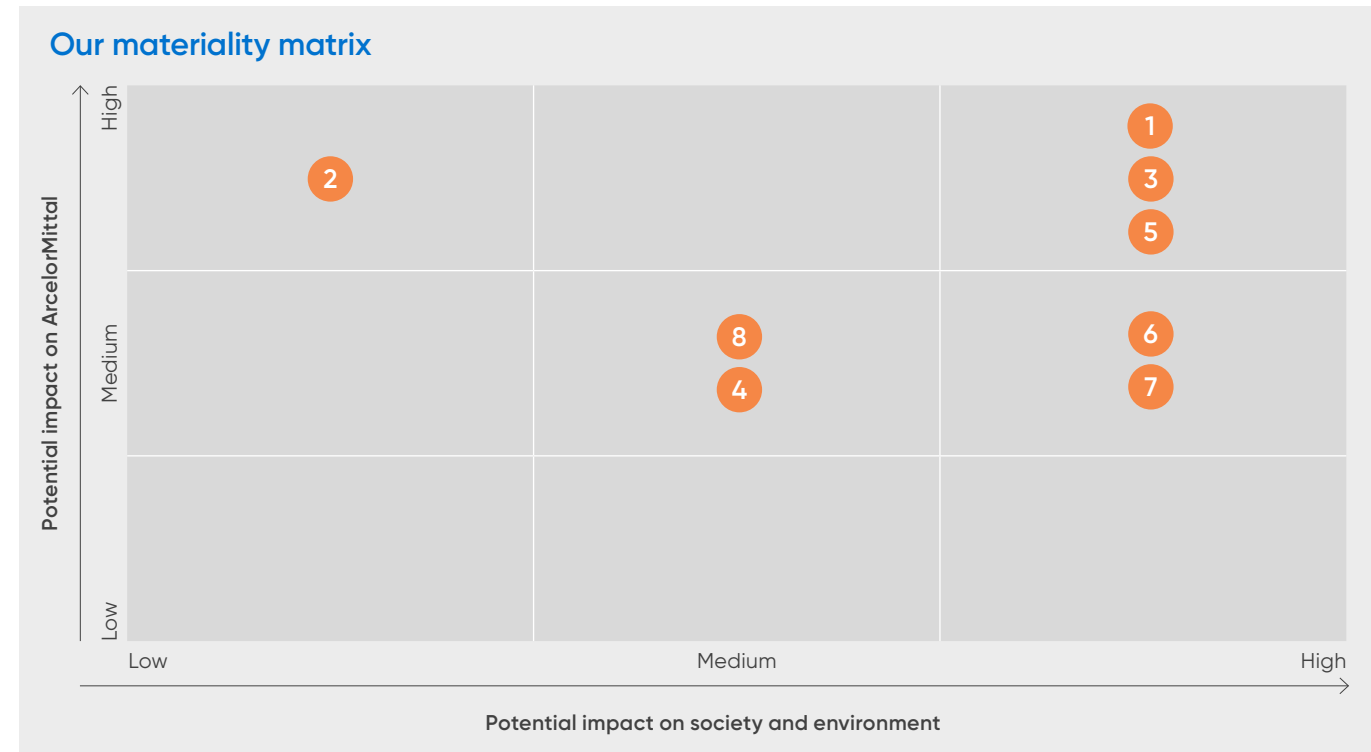
### Planet

- Climate: meeting the goals of the Paris Agreement
- Nature: acting as a trusted steward of air, land, water, biodiversity and ecosystems.

### Products and supply chain

- Products: the value of our products to a circular economy
- Customer reassurance: supply chains that are responsible and that meet customer expectations.

The findings from the materiality matrix in 2021 were that climate strategy; employee health and well-being; listening to, respecting and protecting communities and air emissions, represented the highest potential impacts on both stakeholders and the company. These findings and the other key challenges and opportunities identified from the materiality assessment are raised and discussed by the Board-level Sustainability Committee (BSC), and by the Climate Change Panel (CCP) and the Sustainable Development Panel (SDP) at the executive level. The matrix also enables us to identify 'watchlist' issues that require particular monitoring or action, and 'hidden value creators' that represent opportunities for the group.



### Our material issues

- 1 Safety: the physical safety of our employees
- 2 Work and life: the health and fulfilment of our employees
- 3 Gender: the equal representation, development and remuneration of women
- 4 Community: the approval of our communities and our perception as a welcome member of the community
- 5 Climate: meeting the goals of the Paris Agreement
- 6 Nature: acting as a trusted steward of air, land, water, biodiversity and ecosystems
- 7 Products: the value of our products to a circular economy
- 8 Customer reassurance: supply chains that are responsible and that meet customer expectations

### Five steps in materiality assessment

- 1 Mapping and prioritisation of stakeholders
- 2 Mapping and selection of materiality issues based on internal and external research, stakeholder trends and peer group monitoring
- 3 'Double' assessment of the selected issues on the basis of risk and opportunity to society and environment, and to the company
- 4 Plotting the issues on the materiality matrix
- 5 Conducting a strategic assessment of the ranking of each material issue and its place in our sustainable development framework and programmes – and developing new goals targets and action plans accordingly

# Our business model

We are transforming how steels are made and used. Because while the world needs more steel, a sustainable world needs smarter and decarbonised steels. ArcelorMittal is using innovative processes to make cleaner and stronger steels that use less energy and emit significantly less carbon. We are driven by an entrepreneurial spirit, a passion for excellence, with R&D at the heart of our operations.

## Our material issues

### People

- Safety: the physical safety of our employees
- Work & life: the health and fulfilment of our employees
- Gender: the equal representation, development and remuneration of women
- Community: the approval of our communities and our perception as a welcome member of the community.

### Planet

- Climate: meeting the goals of the Paris Agreement
- Nature: acting as a trusted steward of air, land, water, biodiversity and ecosystems.

### Products and supply chain

- Products: the value of our products to a circular economy
- Customer reassurance: supply chains that are responsible and that meet customer expectations.

## Creating a sustainable future

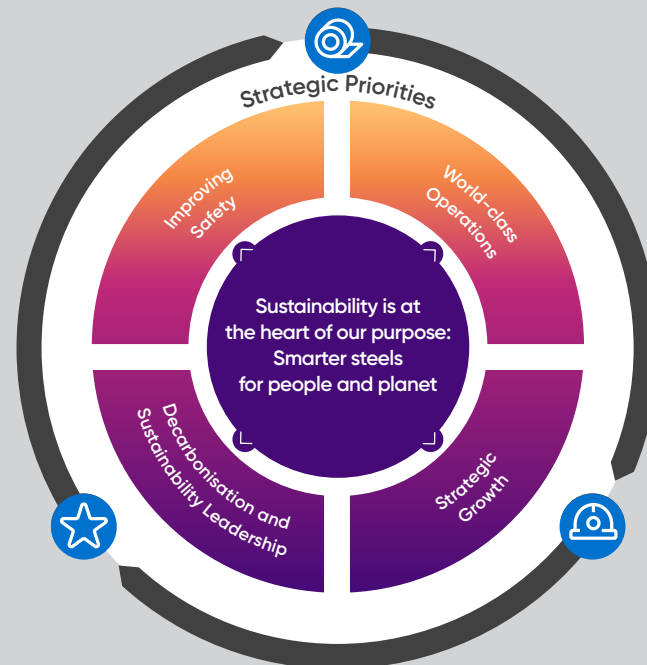


### Key enablers

- Clear licence to operate
- Strong balance sheet
- Leaders in attractive product-market segments
- Vertically integrated business
- R&D advantage
- Best talent and technology.

### Guiding principles

- Governance
- Strategy
- Risk management
- Performance and metrics.



### Steel

Focused on sustainable value creation.



### Mining

Delivering integrated value.



### Operational excellence

Continuous improvement delivering transformational initiatives.

## Creating long term value



## Key outcomes

### People

- LTIFR – 0.70
- To improve safety performance we have moved to a 'predict and prevent' culture, implementing tailored risk control and mitigation strategies
- Remuneration linked to H&S strengthened
- 2030 target: double woman in management to 25%
- Women in management positions – 16%
- 22.6m total community investment spend
- Estimated direct economic contribution – 80.6bn.

### Planet

- 25% reduction in CO<sub>2</sub>e emissions intensity by 2030
- 1st smart carbon CCU project inaugurated in Ghent
- 1st low-carbon emissions steelmaking project in Dofasco
- Texas HBI plant acquired, securing high-quality metallics for low-carbon steelmaking
- 4 specialist scrap metal recyclers acquired in Europe
- Progressing on key European decarbonisation projects
- \$0.6bn investment in 1GW renewable energy project in India underway
- Invested \$158.5m in XCarb™ Innovation fund.

### Products and supply chain

- First deliveries of XCarb™ Recycled and renewably produced flat steel from ArcelorMittal Stesdao in 2022
- Investment in R&D – \$286m
- By end of Q1 2023, 32 of our sites have been certified under ResponsibleSteel™
- Products and solutions to accelerate sustainable lifestyles launched – 28
- Products and solutions to support sustainable construction, infrastructure and energy generation – 13
- LCA's – 62, EPDs – 12.

# Our strategy

Our strategy aims to maintain our long-term position as the world's leading steel and mining business, meet rising global demand for steel in a sustainable way while supporting the broader transition to a more circular, decarbonised economy, and in so doing deliver value to all stakeholders – including shareholders – throughout the economic cycle.

Our strategic priorities are key to achieving these goals and driving sustainable value creation:

- Improve safety
- Strategic growth
- Decarbonisation and sustainability leadership
- World-class operations.



Dąbrowa Górnicza, Heavy Section Mill ↑

## Improve safety

Safety is our number one priority and we are determined to achieve a transformational approach to our safety culture and risk management. During the year we have put in place the additional governance, structures, processes and external support to achieve this.

In 2022, ArcelorMittal's health and safety strategy was updated to reflect the additional emphasis on creating an effective safety strategy culture throughout the company and to put in place the risk management structure and procedures needed to deliver improved safety performance. Actions include strengthening our governance of health and safety, benchmarking our safety culture, enhanced training programmes and extending both quarantine protocols and management's presence on the shop floor.

During the year, we also worked to evolve all our operations to a 'predict and prevent' culture by focusing mainly on detecting and reducing the precursors of fatalities and severe injuries, that we call 'potential severe injuries and fatalities'. More details of our health and safety initiatives can be found in chapter 2.

## Strategic growth

ArcelorMittal has a unique global presence, with market-leading operations in each of the markets where we operate. We are active in all parts of the steel value chain, from the raw materials we need, to creating sophisticated, high-value steel products.

We are present in developed markets – which benefit from higher per capita steel demand – and developing markets – which offer strong long-term growth potential.

With global steel demand expected to increase from around 1.9 billion tonnes in 2022 to 2.6 billion tonnes in 2050, our growth plans are designed to ensure we capture the most attractive opportunities, tapping the strong growth in developing markets – where steel demand is growing faster – as well as in new product categories that will be required for the energy transition. We will achieve this through strategic organic growth investments, technology leadership and value accretive M&A.

In 2022, we continued to progress several organic growth projects which enhance our ability to produce higher-added value steel in high growth markets, such as our new hot strip mill in Mexico which ramped up throughout 2022. In total we have a strategic capex envelope of \$4.2bn through to 2025, covering 9 projects in Mexico, Brazil, India and Liberia. Our joint ventures in India and the US (AM/NS India and Calvert) are supporting these efforts, and the acquisition of CSP further reinforces our leading position in the Brazilian market.

Research and development sits at the heart of our operations and we are using our R&D leadership to leverage the unique advantages of steel – such as its ability to be completely reusable and recyclable – to create new products, solutions, business models and develop production processes that use less energy, emit less carbon and reduce costs.

## Decarbonisation and sustainability leadership

Decarbonisation is our most material sustainability issue and we are committed to being a leader in this area. We are pursuing two technology routes – innovative DRI and smart carbon – with a third, direct electrolysis, in the research and development phase. We have set out a clear roadmap for achieving our medium-term 2030 CO<sub>2</sub>e targets with anticipated cost of \$10bn, and our goal to achieve net-zero steelmaking globally by 2050.

In 2022, we made further progress with our decarbonisation goals – including the acquisition of an HBI plant in Texas and four scrap processing companies in Europe. We closed out the year by breaking ground on a transformational DRI plant at ArcelorMittal Dofasco in Canada and the inauguration of the European steel industry's first carbon capture and utilisation plant in Ghent.

Our low-carbon XCarb™ products continue to prove popular and, in 2022, we had first deliveries of XCarb™ recycled and renewably produced flat steel from ArcelorMittal Sestao. Our XCarb™ innovation fund has now committed over \$150 million to foster the development of technologies that will support both our own and the steel industry's decarbonisation goals. This includes investment in Boston Metal, which is developing molten oxide electrolysis technology to produce near-zero steel.

## Chapter 1 – Our business and material issues continued

### Our strategy

More generally, steel needs to continue to evolve to become smarter and more sustainable. This is at the heart of our purpose, “smarter steels for people and planet.” Steel has some natural sustainability properties that make it an ideal material for a circular, low-carbon future – not least the fact it is the most easily recycled material. But with a growing population on a planet with only limited resources, consistently improving sustainability performance in line with the UN Sustainable Development Goals (SDGs) is a vital part of achieving our long-term vision of remaining the world’s leading steel company.

Our sustainability focus also encompasses environmental and social initiatives. We also recognise the importance of investing in our people, embracing diversity and attracting the leaders of tomorrow.

We are focused on developing industry standards designed to ensure steel customers can be confident the steel they use has been produced responsibly. We have worked closely with ResponsibleSteel™ since it was launched in 2015 and have by the end of Q1 2023 achieved ResponsibleSteel™ certification at 32 sites in Europe and Brazil.

### World-class operations

We need to ensure we operate our facilities to the highest quality standards. On the shop floor it is about ensuring we are applying world-class equipment and procedures that achieve our objectives in the safest and most efficient ways. We also need to maintain our cost competitiveness – no other steel company has the scale, geographic exposure and end-market diversity that we have. We must use this unique asset base wisely and efficiently to achieve optimum productivity. In 2022, with productivity gains, footprint optimisation and other measures, we achieved \$0.4bn of our three-year \$1.5bn Value Plan, which includes significant cost savings. For our customers, who expect world-class performance from us, this means consistently meeting and exceeding their expectations, and leaving no stone unturned in setting higher standards and delivering better solutions for them, as demonstrated in the development of our XCarb™, Steligence® and Magnelis® offerings.

Model of Greenko acquisition in India. This will deliver a 24 hour renewable energy plant featuring a combination of solar, wind and hydro power →



Chapter 2

# Driving change in our safety performance

Our first priority in all that we do is to protect the safety, health and wellbeing of all our people. It ranks as one of the most important material impacts for all our stakeholders. We are therefore deeply saddened to report that during 2022 a further 22 people, colleagues and friends lost their lives in our operations. While we have made some significant advances in our practices, the evidence of which is visible in the performance in some parts of the group, any fatalities, are not acceptable. We are determined to achieve a transformational approach to our safety culture and risk management, and during the year have put in place the additional governance, structures, processes and external support to achieve this.

### KPIs highlights

#### LTIFR

↓ 0.70

2021: 0.79

#### Fatalities

↓ 22

2021: 29

#### Proactive PSIFs

↑ 5,731

2021: 4,279

CSRD alignment  
ESRS S1: Own workforce

Material topic  
1. Safety



Varnished electrical steel coils, Saint-Chély-d'Apcher →



## Chapter 2 – Driving change in our safety performance



Within the group we have put in place the policies, the processes, the knowledge, the experience and the capabilities to address our safety challenges. But to make real progress, we need to radically transform our safety culture and our attitude to risk.

In every plant we operate, every component of our safety management system and culture needs to be rigorously implemented.

Nothing is dispensable, nothing is inter-changeable, nothing is optional. Belief, commitment, hard work and unflinching awareness is essential, and we are leaving no stone unturned in training and coaching our people accordingly.



**Aditya Mittal**  
Chief executive officer



### Governance

Governance of safety is overseen at the most senior level by the CEO, supported by the Board Sustainability Committee (BSC). The BSC reviews safety performance on a quarterly basis, with deep dives on safety scheduled between regular meetings as required.

The head of corporate health and safety, who is also a member of the Management Committee, reports to the EVP, head of corporate business optimisation, who in turns reports to the group CEO.

A new Integrated Safety Culture and Risk Management framework, and associated training and coaching programme has been rolled out at segment and site level.

Further oversight of safety is provided by the Global Health & Safety Committee (GHSC) which shares and promotes best practice and is chaired by the head of corporate health and safety.

The group's health and safety policy, standards and lifesaving golden rules were refreshed and implemented across the Group in 2022.

Highlights of the new policy are as follows:

1. Placing more focus on the role our leaders must play while at the same time reinforcing how all employees need to be actively involved in health and safety management.
2. Making clear that working safely is a condition of employment for everybody at ArcelorMittal.

3. Explicitly stating that everyone is empowered to take action and stop work if they see a situation which they deem to be unsafe.
4. Stressing the need to report and analyse all incidents, so we learn from them across our entire group.
5. Highlighting the role effective systems management and sharing of best practice has in driving continuous improvements.

We continue to implement our quarantining procedure across the group, which requires management's shop floor presence at a plant to be doubled for a specified amount of time whenever a seriously unsafe incident takes place that could have resulted in a serious injury or fatality.

In addition to the quarantining procedure, all segments and sites performing below group average are now required to implement management actions such as external expert assessments and additional reviews at EVP or CEO level.

In line with the group's move to focus more on leading KPI indicators, the executive Short-Term Incentive Plan (STIP) has been changed from June 2022 to be linked to the frequency of proactive potential serious injuries or fatalities (PSIFs), and no longer on the lagging KPI of lost time injury frequency rate (LTIFR). The proportion of bonuses linked under this scheme to safety was increased from 10 to 15% in 2021. Safety also represents 10% of the Long-Term Incentive Plan.

### Lifesaving golden rules



1. I will report to work in a 'fit and able' condition



2. I will use fall prevention or protection whenever and wherever required



3. I will follow the isolation procedure whenever and wherever required



4. I will follow the confined space procedure to enter and during the full duration of the task



5. I will respect all rules of load handling and never stand under a suspended load



6. I will respect all traffic rules



7. I will respect rail priority and stay out of close clearance areas



8. I will respect the rules for entering and working in hazardous gas areas



9. I will not disable safety devices



10. I will respect all the H&S rules, standards and signals and I will wear the required PPE

## Chapter 2 – Driving change in our safety performance continued



### Strategy

In the context of the further tragic fatalities and serious injuries experienced in 2022, our health and safety strategy has been updated to reflect the additional emphasis required on creating an effective safety culture throughout the company, and to put in place the highest quality risk management structure and procedures that are essential to deliver much better safety performance.

Further strategic actions on improving health and safety performance include:

- Strengthening our governance of health and safety
- Benchmarking our safety culture and developing local plans to move the culture along the Bradley Curve
- Moving to a 'predict and prevent' culture
- Designing and implementing tailored risk control and mitigation strategies
- Executing enhanced training and coaching programmes
- Extending the practices of quarantine and increased shop floor presence.

#### Strengthening our governance of health and safety

Much of the challenge of changing our safety culture and attitudes to risk is about ensuring that everyone in the company takes ownership of the issue. This is being actioned at management level by requiring increased shop floor presence, and at the employee level through more training and empowering people to call out poor safety conditions or non-compliances. For more information, see governance section.

#### Benchmarking our safety culture

To categorise and benchmark our safety progress in 2023, we will complete a Global Safety Perception Survey using external consultant's survey questions across 220,000 personnel including operational contractors, in 52 clusters of operations and in 30 different languages. This will assess all our operations against the safety culture maturity model (known as the Bradley Curve), and guide us on specific action plans and strategies for the different parts of the business, depending on where they are along the curve, i.e. reactive, dependent, independent and inter-dependent. A key objective is to transition the poorer performing parts of the company from externally motivated compliance based on simply responding to rules and procedures, to internally motivated commitment based on strong leadership and collaboration.

#### Moving to a 'predict and prevent' culture

Achieving safe working operations is a function of a safety culture maturity and appropriate risk management. Alongside the actions we have already taken, we are now seeking to move from what has, in our most challenged locations, been a 'find-and-fix' culture to a 'predict-and-prevent' culture, seen already in our best-performing operations where we identify and mitigate risks before they happen. We will do this through more professional application of risks management tools such as Hazards Identification and Risk Assessment (HIRA), Pre-Task Risks Assessment (PTRA also called HIRA-lites) Bow Ties analysis, Checking Controls relevance, effectiveness and reliability on the shop floor.

#### Designing tailored risk control and mitigation strategies

We are working closely with a leading safety consultancy to better understand the interaction of risks arising from behaviour, working with machinery and from asset integrity in terms of their respective contributions to serious injuries and fatalities, so that we can develop better controls and mitigation actions.

#### Executing enhanced training and coaching programmes

We have significantly enhanced our training and coaching regimes and committed to rolling out intensive programmes harnessing external experts, with mandatory coaching provided for those who are not at the required level.

#### Extending the practices of quarantine and increased presence on shop floor

The quarantining protocol that we have previously initiated for sites experiencing safety challenges will be more formally prescribed from 2023.

We have also tightened guidelines for increased shop floor presence.



### Risk management

By its very nature as a heavy industrial company involving mining and steelmaking operations, ArcelorMittal's workforce is exposed to health and safety hazards. In addition to being subject to strict health and safety legislation in its countries of operation, the company is committed to improving safety performance. The company recognises that

managing these risks is the right thing to do for its workforce and adjacent communities.

Our biggest challenges are based around changing the safety culture across the group, especially in specific regions, and putting in place the necessary structures and systems in risk management to minimise the occurrence of potential risk circumstances.

ArcelorMittal has identified and has been working to address the following circumstances:

- Leadership's engagement, management or supervisor's commitment to maintain a safety culture
- Planning and allocation of resources to address the hazards and fix the potential unsafe situations as soon as they are detected/reported
- Appropriate maintenance to assets
- Risk management awareness
- Communication and engagement with workers, communities and regulators
- Compliance with regulatory requirements and corporate health and safety management approaches
- Monitoring and assurance of performance
- Building employees' skills, knowledge and experience to manage their work safely
- Proper reporting of unsafe actions or conditions and effective alerts to stop working under those unsafe conditions.

While some actions relating to governance and assurance can be implemented relatively quickly, actions relating to cultural factors can take longer to implement. For example, our training programmes are being rolled out to thousands of workers and while these programmes are on track there are some constraints on the availability of expert safety coaches, mentors and trainers in the locations where we need them.

Chapter 2 – Driving change in our safety performance continued



Risk management continued

There can also be constraints related to procurement of new and improved machinery associated with the speed at which the OEMs can supply the equipment to the operations due to supply chain issues post-Covid.

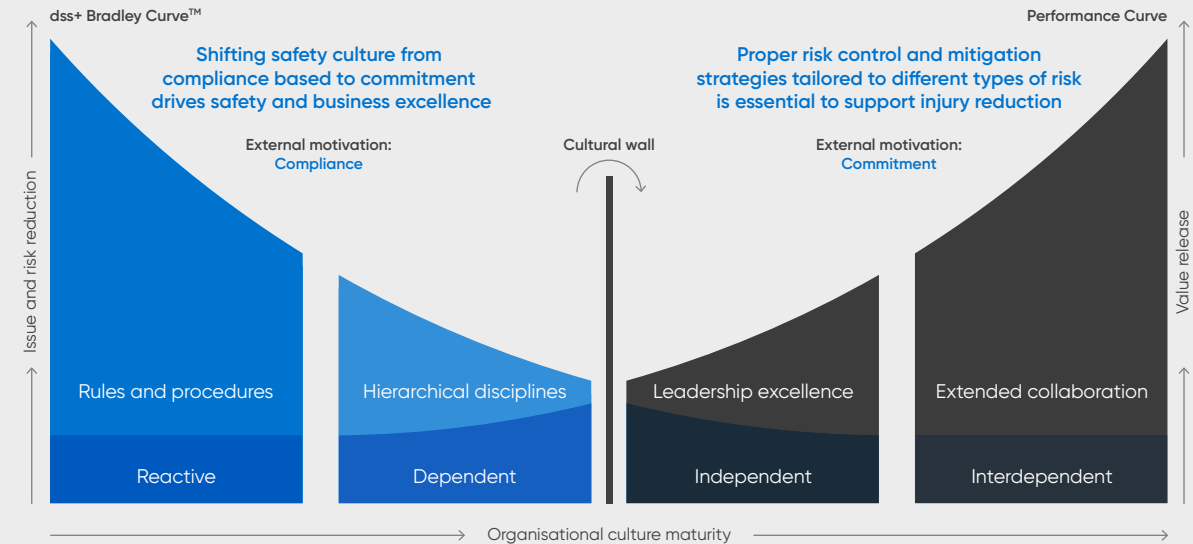


Performance and targets

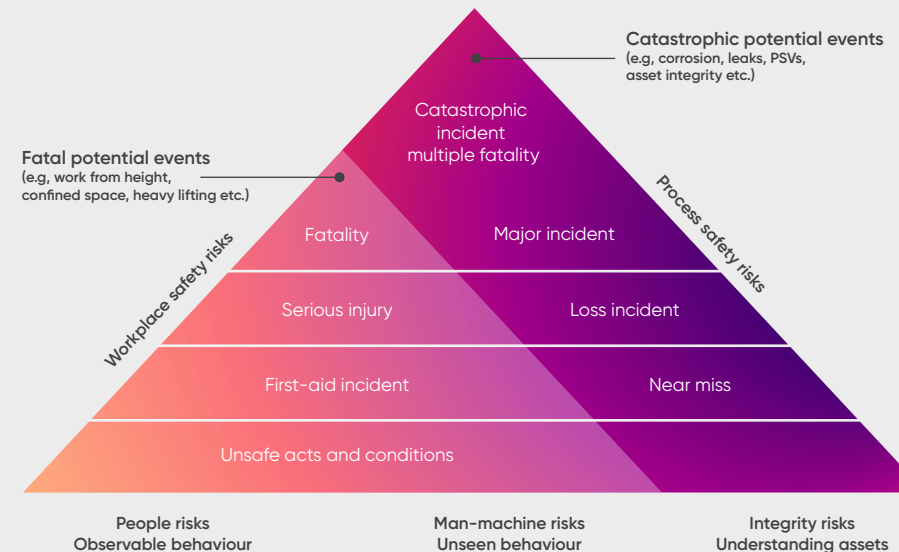
For the year ended 31 December	LTIFR 2021	LTIFR 2022	Fatalities 2021	Fatalities 2022
Mining	0.32	0.84	0	2
NAFTA	0.4	0.25	0	0
LATAM	0.22	0.10	1	1
Europe	1.19	1.07	6	2
ACIS	0.94	0.74	22	17
Total	0.79	0.70	29	22

For the year ended 31 December	2021	2022
Proactive PSIFs	4,279	5,731

Integrated safety culture and risk management framework



Organisations need a strong safety culture and proper risk control strategies to thrive



dss+ model. Safety management is a combination of culture maturity and risk management

Our performance in 2022

2022 has seen a modest overall improvement in the group's fatalities and LTIFRs. The group's LTIFR improved to 0.70 from 0.79 in 2021. The steel business LTIFR improved to 0.71 from 0.82 in 2021 versus the World Steel Association average figure of 0.81 for 2021. Europe's segment LTIFR improved to 1.07 from 1.19 in 2021 versus WSA average figure of 3.88 for 2021. NAFTA's segment LTIFR improved to 0.25 from 0.4 in 2021 versus WSA figure of 0.94 for 2021. Our Mining segment's Recordable Injury Rate improved to 2.04 from 5.03 in 2021 versus International Council on Mining and Metals (ICMM) figure of 2.90 for 2021.

In the context of our new focus on PSIFs, we proactively detected and treated 5,731 of these events in 2022, a 34% increase versus 2021, which demonstrates that we are identifying proactively more risks precursors and putting in place measures to minimise or mitigate their potential impacts, before anything bad could happen. However, we consider that these results, not least the fatalities incurred, continue to be unacceptable, and provide greater urgency to our focus on safety culture and risk management.

Some significant improvements were seen in most segments, with our European operation achieving its best improvement in performance to date. Our NAFTA segment was fatality free in 2022; ArcelorMittal Dofasco and ArcelorMittal Contrecoeur in particular have had no fatality since 2018. In LATAM, ArcelorMittal Tubarao and Vega have been fatality free since 2016.

However, the significant efforts being undertaken in our Kazakhstan operations have not yet translated into performance improvements. Kazakhstan safety performance will remain a key focus of the group's safety strategy to deliver what we know can be achieved in other parts of the business.

Chapter 2 – Driving change in our safety performance continued



**Performance and targets continued**

**Moving to a ‘predict and prevent’ culture**

Moving to ‘predict-and-prevent’ culture involves moving our attention to proactive rather than reactive KPIs, with a particular focus on reporting proactive PSIFs. We have found that our previous prioritisation of LTIFR, whilst important in recording the outcome of health and safety actions, does not provide sufficient opportunity to proactively identify and prevent the risks of serious injury and fatality.

Identifying precursor hazard events provides a far clearer view of risk of severe injury or death. Circumstances such as the potential to be hit by a falling object or by a vehicle or item of equipment are not always obvious, and personnel need to be trained to perceive the danger and take preventative measures. At the same time controls need to be put in place to ensure that personnel are not put in harm’s way.

Consequently from 2023, the percentage of proactive PSIFs tackling the top fatality causes will become a key new KPI followed at segment level, together with the setting of associated targets to bring the number of these events down. We will also track the completion of actions taken to eliminate those events, and the number of risks that have been reviewed in each plant or site. As outlined above, in 2022 we detected 5,731 proactive PSIF events, significant increase on 2021, showing that this approach is identifying more risk situations, enabling corrective actions.

**PSIFs**

**5,731**

+34% vs 2021

**Designing tailored risk control and mitigation strategies**

Risks and risk events vary across the group according to the nature of local operations, assets and working culture. We are working with a leading external consultancy to better understand the interaction of risks, circumstances and behaviours, so that we can put in place tailored risk control and mitigation strategies.

Currently, the top three causes of fatalities within the group, representing 52% of fatalities (2017-2022), include:

- Crushed or rolled by vehicle
- Crushed by moving machinery
- Falling from height.

Specific mitigation measures are being put in place to minimise these events occurring. These include machine upgrades, asset integrity improvements and tailored training and coaching.

Also, sites will reassess themselves against the Fatality Prevention Standards (FPSs) related to the top risks in 2023. They will build or strengthen on-the-field trainings with certification on the top risks.

**Executing our safety training and coaching programmes**

We have been rolling out intensive training and coaching programmes in the regions with poorer safety performance. Working with our external safety consultant, we have conducted pilot studies at selected plants where their personnel are assisting and coaching management and teams for periods of six months, and then these sessions will be repeated across all relevant personnel. This may take up to three years to achieve comprehensive coverage across the group.

These programmes, comprising highly focused on-the-job coaching, cover integrated risk and culture governance, management accountability, shop floor interactions, effective implementation of the Fatality Prevention Standards and other management routines fundamental to improve our safety performance. These will be supported through the leading KPIs being developed.

In Kazakhstan, a local consultancy, together with international safety consultant, have been contracted to work with the steel and coal operations respectively. Both are focusing on ‘on-field’ training and coaching to address priority issues as they arise and taking appropriate remedial action. Consideration is being given to rolling out the same consultant’s programme as in Europe.

**Formalisation of quarantining policy and increased shop floor presence**

The quarantining policy that we have previously initiated for sites experiencing safety challenges has continued in 2022. The process is triggered by a reactive PSIF event, which initiates a quarantining for up to six months, requiring management’s shop floor presence doubled, including an assessment and response to the event, and an increase in the

number of management shop floor interactions. In 2022 we had 121 reactive PSIFs.

This protocol will be more formally prescribed from 2023, but we are already starting to see the benefits coming through in our consolidated safety data. This will include closer monitoring and reporting of management interactions on the shopfloor, that we believe to be critical to demonstrating the importance of our safety procedures and culture.

Top causes of fatality 2017-2022	Measures to address these
Crushed or rolled by vehicle	Focus on proactive potential serious injury and fatality (PSIF) detection, strengthening the effectiveness of controls as part of the Company’s risk management, modification and update of the Fatality Prevention Standard (FPS) relating to vehicles and driving, mandatory alarms for safety belts and parking brakes, mandatory proximity detectors for specified industrial vehicles, and improved procedures relating to wheel and tyre maintenance.
Crushed by moving machinery	Focus on proactive PSIF detection, focus on isolation FPS, strengthening the effectiveness of controls as part of the risk management, review of the global Hazard Identification and Risk Assessment (HIRA) tool on an annual basis, with adaptation at site level for local conditions and mandatory ‘Stop, Think & Act’ measures and implementing control measures before any unusual/nonstandard task or job.
Fall from height	Focus on proactive PSIF detection, strengthening the effectiveness of the controls as part of risk management, modification and update of the FPS relating to working at height, strengthening requirements for roofing activities, integrating learning points from related fatalities, and integrating fatality prevention requirements for dock. Reinforced rules on fixed ladders, banned rope ladders, and aligned rules related to floor installation and repairs at the same level as the ones concerning roof repairs.

## Chapter 2 – Driving change in our safety performance continued



### Performance and targets continued

There is also a mandatory leadership shop floor presence guideline, and all leaders must now spend a minimum amount of time on the shop floor every week – when they must carry out a layered safety evaluation, which is a systematic auditing technique of critical safety systems conducted by employees representing various levels within the organisation.

#### Focus on Kazakhstan

ArcelorMittal’s operations in Kazakhstan face safety challenges, with 14 of the group’s fatalities in 2022 occurring in the country. Nine of these fatalities occurred in two accidents – one in steel and one in mining operations.

ArcelorMittal Temirtau has built a strong safety programme in face of these safety challenges. In 2023, our investment programme will focus on the purchase of roadheaders to replace the current fleet, and a comprehensive mine degassing and relaxation drilling programme. Concurrently, we are continuing to pay attention to shopfloor training and

#### A focus on Kazakhstan: Initiatives that are ongoing

Cultural change	Structural change	Reliability and operations
<ul style="list-style-type: none"> <li>Steering Committee by local CEO</li> <li>Mentoring and coaching from external coaches and consultants</li> <li>Step IOSH training from consultants</li> <li>Safety improvement contractors</li> <li>Continuous internal training courses</li> </ul>	<ul style="list-style-type: none"> <li>Health &amp; Safety digital signage where assessed as appropriate</li> <li>Video camera installation where assessed as appropriate</li> </ul>	<ul style="list-style-type: none"> <li>Investment in new tools and equipment</li> <li>Additional tools and equipment where assessed as appropriate (e.g. defect detectors, thermal vision system) and, in relation to underground coal mines, road headers, degassing and drilling equipment</li> <li>Works in regard to local facilities e.g. canteens, toilets and shower facilities</li> </ul>

safety culture, providing guidance and coaching on awareness, identification and visualisation of key hazards, such as moving vehicles, unprotected machinery and working at height.

The mines in Kazakhstan are some of the most gaseous worldwide and the climate is harsh, with temperatures typically reaching minus 30°C in the winter. Our investment programme includes the installation of equipment and assets as well as worker facilities which will benefit health & safety and the environment. These investments are expected to yield strong positive results and transform the safety culture over the short to medium term. More broadly, working conditions for our Kazakhstan employees and contractors are being improved through the construction of new high-quality catering and hygiene facilities, which are expected to bring positive changes in self-perception and behaviour.

In addition, 5,797 employees from steel and mining operations participated in the safety leadership training completed in May 2022 and 2,300 employees are being targeted for a ‘Managing Safely’ course, certified by the UK Institute of Occupational Safety & Health (IOSH) which will amongst other things seek to foster safety through cultural transformation.

### Key actions in ArcelorMittal Europe to improve safety performance in 2022

- Significant increase in management’s presence and interactions on the shopfloor. 2023 focus – better detection of Possible Serious Occurrences (PSOs) related to the key main causes of fatalities.
- Take Care 2 training (TC2T) – 100% completion rate; in 2023 training will focus on Isolation, Hazard Identification and Risk Assessments, Crane & Lifting, Vehicles & Driving and Working at Heights.
- Safety campaigns: Helmet chin strap campaign – more than 90% of plants successfully implemented (ArcelorMittal Long Europe); ‘Foremen health and safety’ programme (ArcelorMittal Flat Europe).
- With support of external consultant we embarked on implementing the necessary actions needed to bring a new cultural change in our approach to safety including sustainable ‘care’ approach on the shopfloor, with the aim of embedding use of our safety tools and processes in daily operations. In 2023 focus on five of our key sites to train and coach the teams on various aspects of safety management.
- Fatality Preventions Standard (FPS) level 5 certification for Gijon (Long Products), Belval, Differdange, Rodange, Long plants in Poland and Zenica.
- Fatality Preventions Standard (FPS) level 3 certification for Olaberria-Bergara, Duisburg, Sheffield, Perigueux and Sycow, for achieving FPS level 3 certification.
- Implementation of the iAuditor platform in ArcelorMittal Downstream Solutions (safety inspection, issue capture and corrective action platform) – to ensure that all our safety information from various safety audits are available and tracked on one unique platform, allowing to undertake analysis to develop robust preventive actions.
- Focus on improving both preventive and reactive health and safety indicators.

### Examples of actions in ArcelorMittal Mining to improve safety performance

In addition to the safety measures implemented across our global business, ArcelorMittal has implemented further measures to improve safety outcomes across mining operations. We have improved our geotechnical and operational standards to ensure we have consistency in execution, across the globe. We have furthermore focussed on improving incident analysis and control verification across our big four risk areas: human and vehicle interactions, working at height, isolation and falling objects in addition to implementing the lifesaving golden rules.

Our mines have also implemented specific programmes to improve local risks. Examples:

#### 1. Machine Guarding Programme in ArcelorMittal Mining and Infrastructure Canada

As part of our risk assessment processes, in close collaboration with the local unions and our employees in Canada, we developed and implemented a Machine Guarding Programme. The purpose of this programme was to maintain and enhance the effectiveness of our machine guards and ensure compliance with local legislation. We assessed high risk equipment and redesigned guarding. This programme has been effective in reducing workplace injuries.

#### 2. Rail Safety Programme in ArcelorMittal Liberia

ArcelorMittal Liberia rail runs north-south between Buchanan and Tokadeh connecting our operations between the port and the mines. To improve rail safety, we embarked on a rail safety capital expenditure programme. We developed this programme to improve the rail control system, staff training, signalling, and signage. This programme has been integral to reducing safety incidents across the rail.

Chapter 3

# Responsible energy use and lower-carbon futures

Today, the steel industry represents approximately 7%<sup>1</sup> of global carbon emissions. The industry's transition to net-zero by 2050 will make a significant contribution to meeting the 2015 Paris Agreement, which aims to limit the global average temperature increase to 1.5°C above pre-industrial levels. The extent to which ArcelorMittal reduces its own emissions and strives to play a key role in the decarbonisation of our industry is our most material sustainability issue.

This transition also takes place against rising steel demand, driven by its properties which make it ideal for building much of the world's infrastructure needs. The demand for steel is expected to further increase in developing countries seeking to achieve similar levels of development as the developed nations.

As one of the world's leading integrated steel and mining companies, we recognise that we must play our part in both reducing our own emissions and driving the systems change required globally to achieve net-zero carbon emissions by 2050. We also acknowledge the increased interest of our stakeholders in understanding both our plans and progress in this important area.

1. Making Net-Zero Steel Possible – An industry-backed, 1.5°C aligned transition strategy, Mission Possible Partnership, September 2022.

### KPIs highlights

Europe carbon reduction target:  
35% reduction in carbon emissions intensity by 2030 (scope 1 and 2) tCO<sub>2</sub>e/tonne of steel\*

↓ 1.67

2020: 1.68  
2021: 1.68  
2030 target: 1.11

Group carbon reduction target:  
25% reduction in carbon emissions intensity by 2030 (scope 1 and 2 steel and mining) tCO<sub>2</sub>e/tonne of steel\*

↓ 2.00

2020: 2.11  
2021: 2.05  
2030 target: 1.52

\* These figures have been adjusted for structural changes to the ArcelorMittal portfolio in the previous 12 months to enable a like for like annual comparison.

CSRD alignment  
ESRS E1: Climate change

Material topic  
5. Climate  
6. Nature

### UN SDG alignment



Scrap steel →

## Chapter 3 – Responsible energy use and lower-carbon futures



Decarbonisation is at the heart of ArcelorMittal's sustainable development strategy, and we strive to be an industry leader in terms of target-setting, performance and disclosure.

In 2022, ArcelorMittal continued to achieve progress towards the medium-term 2030 carbon emissions reduction targets and our longer-term objective to achieve net-zero carbon emissions globally by 2050.

During the year, we broke ground on a transformational project at our Dofasco site in Canada that will fundamentally change the way steel is made at the plant. We also acquired a state-of-the-art HBI plant in Texas to secure high-quality metallics for low-carbon steelmaking. In Europe, we inaugurated Europe's first carbon capture and utilisation facility at ArcelorMittal Ghent.

We saw increased demand across all segments for our XCarb™ low-carbon steel solutions and also published a concept for a low-carbon emissions steel standard to help incentivise the decarbonisation of steelmaking globally and support the creation of a market for low- and near-zero carbon emissions steel products.



**Brad Davey**

Executive vice president, business optimisation



### Governance

ArcelorMittal's climate-related activity and progress is overseen by the Executive Office (Executive Chairman Mr Lakshmi N. Mittal and Chief Executive Officer Aditya Mittal), supported by an executive-level Climate Change Panel (CCP) and Board-level Sustainability Committee (BSC). The CCP guides engagement and advocacy with external stakeholders on climate change and decarbonisation and supports the business in understanding the risks and opportunities associated with the transition to a low-carbon economy. The CCP meets quarterly and raises key issues to the Executive Office and group Management Committee. The BSC reviews the company's climate change strategy and makes recommendations to the main Board. It does a deep dive on climate once a year.

Having set a 2030 group target on carbon emissions intensity reduction in 2021, the Board decided to link executive remuneration to the achievement of this objective. Decarbonisation now forms part of the performance criteria for vesting of the performance share units in the Long-Term Incentive Plan.

In terms of investment decision-making, each major capital expenditure project proposal is required to demonstrate its carbon impact to the Investment Allocation Committee (IAC). The IAC makes all necessary considerations to maximise the business' chances of achieving its targets while ensuring each project is economically justifiable and earns its cost of capital.

In 2022, ArcelorMittal updated its environmental policy, which sets out the Company's key environmental principles, including implementing a long-term GHG emissions reduction strategy with the goal of achieving absolute net-zero carbon emissions by 2050.



### Strategy

As the world's leading steelmaker, ArcelorMittal represents a microcosm of the global steel industry. Like the global steel industry, we are currently weighted 75% towards primary steelmaking. Our primary steelmaking capacity is largely BF-BOF, although we also lead the world in installed DRI production. We are similarly leaders in installed EAF capacity and have a vertically integrated business that includes scrap metal which is the feedstock for electric arc furnaces. Our challenge is to decarbonise multiple assets in multiple geographies with entirely different economic, social and environmental policy contexts which are moving at different speeds and under varying steel demand trajectories. We believe that this operating context affords us a perspective like no other steel company.

Our decarbonisation roadmap is based on the following key strategic actions:

- Developing technology that is capable of taking the industry to net-zero
- Setting ambitious but achievable targets, given supportive policy
- Engaging with policy makers and other key stakeholders
- Progressing investments that reduce emissions
- Driving demand for low-carbon emission steel

- Evaluating the physical climate risk to our assets
- Conducting a TCFD-aligned risk assessment.

As the regulatory backdrop becomes more stringent and reporting requirements increase, it is important that our reporting complies with disclosure requirements like the EU CSRD, EU Taxonomy and the proposed SEC Climate Disclosure Rule.

#### Developing technology that is capable of taking the industry to net-zero

Today, there are two main methods of steelmaking: (1) primarily ore-based, or primary, steelmaking which uses a BF-BOF production route, and (2) scrap-based, or secondary, steelmaking which uses an EAF. Ore-based steelmaking has a substantially higher carbon emissions profile compared with scrap-based steelmaking.

Our roadmap features five sets of actions and initiatives that act as stepping-stones toward the goal of achieving net-zero carbon emissions by 2050:

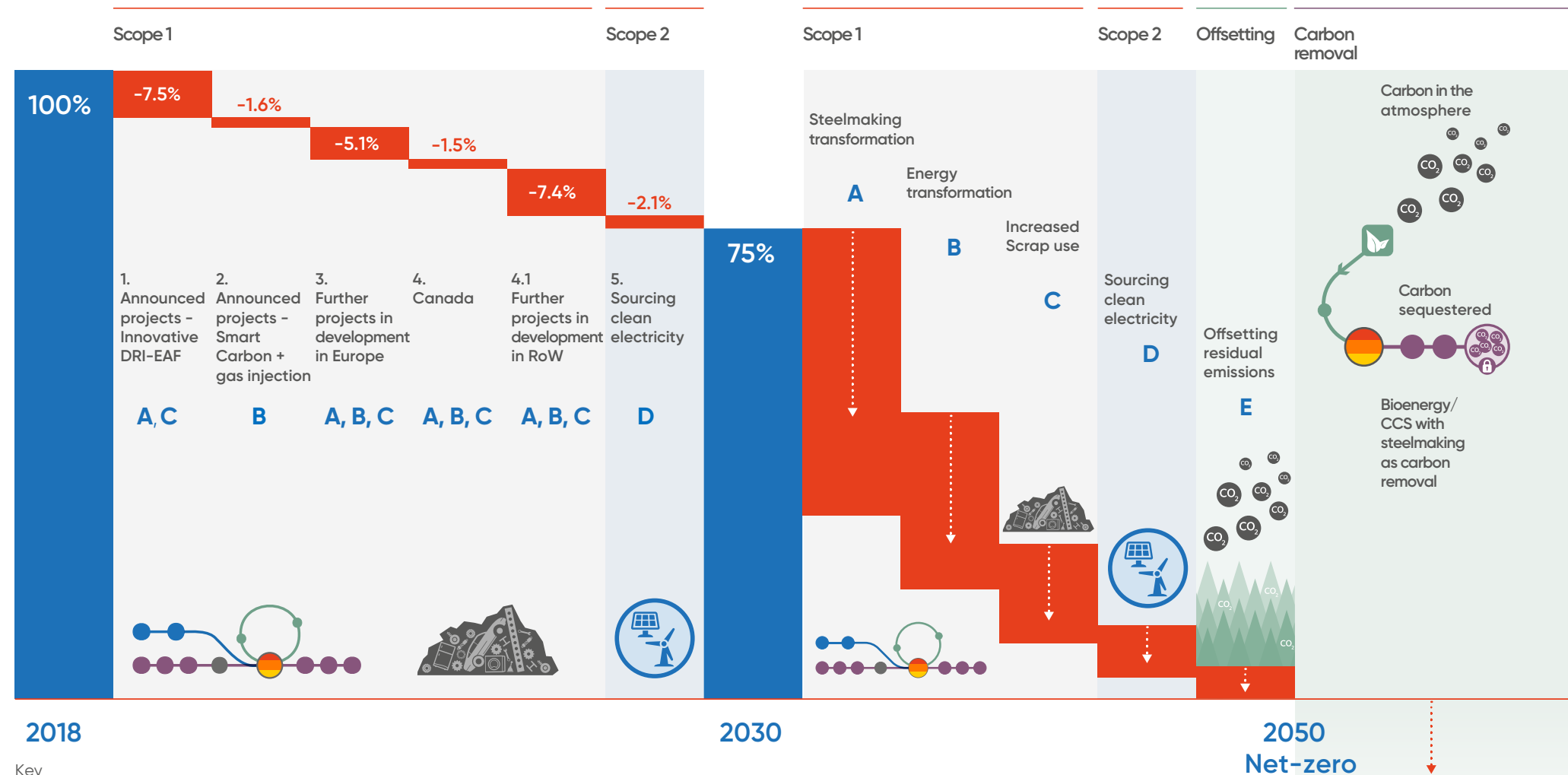
- Transforming our steelmaking assets
- Transforming the energy used in the steelmaking process
- Increasing the proportion of scrap used in the steelmaking process
- Investing in clean electricity used in the steelmaking process
- Offsetting residual emissions.

Chapter 3 – Responsible energy use and lower-carbon futures continued



Strategy continued

Up to 2030, the waterfall chart shows a breakdown of the 25% global reduction in CO<sub>2</sub>e emissions intensity we are targeting, taking into account announced projects and initiatives we expect to announce over the coming years.



- Key
- A. Steelmaking transformation (footprint change, energy efficiency, pellets)
  - B. Energy transformation (CCUS, hydrogen, bioenergy)
  - C. Increased scrap use
  - D. Sourcing clean electricity
  - E. Offsetting residual emissions

Transforming our steelmaking assets

In the coming decades, the steel industry will undergo a transformation of the assets used to make steel on a scale not seen for over a century. This includes switching ironmaking from the BF-BOF (Blast Furnace-Basic Oxygen Furnace) route to the DRI (direct reduced iron) route, and from iron ore preparation in the sinter plant (using heat or pressure to compact a material) to the pellet plant (which compresses or moulds the iron material into the shape of a pellet). Ironmaking with pellets in the DRI is usually coupled with an EAF (Electric Arc Furnace).

Historically there has been limited use of the DRI-EAF route except in regions with a very low natural gas price. However, given the increasing cost of carbon and the requirement to reduce emissions, transitioning to natural-gas based DRI-EAF can be a first step with a proven technology that has the potential to further innovate and decarbonise using green hydrogen.

The company is seeking to further ensure it has access to high quality ore-based metallics through the development of DRI-ready pellet plants and DRI modules including Hot Briquetted Iron (HBI) and is looking at a combination of options including building its own facilities, acquiring facilities and working in partnership with iron ore suppliers to develop new facilities, including through joint ventures.

The introduction of new methods of steelmaking typically depends on the age of the assets and the economic, environmental, and social policy environments in which they operate. Where assets are nearing the end of their useful life, or the policy environment is conducive, traditional BF-BOF operations are more likely to be replaced by an EAF which can be fed with a combination of direct reduced iron (DRI) and scrap. Where BF-BOF assets



## Chapter 3 – Responsible energy use and lower-carbon futures continued



### Strategy continued

still have a significant useful life or the policy environment is not conducive, it may be more appropriate to ensure any new blast furnaces are best in class technology with the potential for carbon emissions can be captured for utilisation (CCU) or stored underground in geological formations (CCS).

#### Transforming the energy used in the steelmaking process

Over recent decades, the steel industry has made enormous efficiency improvements in the efficient use of energy in BF-BOF steelmaking via multiple technologies. Further innovations continue to evolve which reduce carbon emissions, such as the use of coke oven gas in the tuyeres of the blast furnace, drawing on the rich hydrogen content of the gas. However, these innovations continue to rely significantly on the use of fossil fuels.

The energy used to make steel in future years is expected to undergo a further and more radical transition of the industry to cleaner forms of energy, as we have described in our previous climate action reports. This is expected to involve shifting to one or a combination of three alternatives: clean electricity (which could be in the form of green hydrogen), continued use of fossil carbon coupled with CCS to ensure no carbon is emitted, and use of circular carbon either through natural or synthetic carbon cycles. Natural carbon cycles include use of sustainable forestry and agriculture residues, to produce bioenergy for use in steelmaking. Emissions from use of this bioenergy will be captured by the regrowth of the biomass waste used. Synthetic carbon cycles rely on the use of waste plastics

as an energy source, transforming the carbon in waste gases through CCU into equivalent new plastics, and ensuring no emissions are generated.

#### Increasing the proportion of scrap used in the steelmaking process

BF-BOF and EAF routes can both use a combination of ore-based and scrap-based feedstocks although the BF-BOF route is limited to the proportion of scrap it can use (c. 20 to 30%). Switching all ore-based steelmaking to scrap-based steelmaking today is not possible because there is insufficient scrap available globally to meet the demand for steel and, because of scrap contamination issues, certain grades of steel still require ore-based steelmaking to achieve the metallurgical properties required. However, we can increase the use of low-quality scrap in the BF-BOF steelmaking process by improving steel scrap sorting and classification, installing scrap pre-melting technology, and adjusting the steelmaking process to accommodate scrap. The company is also seeking opportunities to secure the supply of scrap needed for the future through the acquisition of metal recycling facilities. Four such acquisitions were announced in 2022 – John Lawrie Metals, Alba International Recycling, Riwald Recycling and Zlomex.

#### Investing in clean electricity used in the steelmaking process

Reducing the business' Scope 2 emissions means mainly focusing on sourcing low-carbon electricity. This will be an increasing challenge as the company seeks to move from BF-BOF to DRI-EAF which moves emissions away from direct Scope 1 emissions from fuel use towards indirect Scope 2 emissions derived from electricity. The company plans to look for more and varied opportunities in the renewables sector to provide sufficient access to clean energy at affordable prices, purchase renewable energy

certificates and make more use of direct power purchase agreements (PPA) with suppliers from renewables projects.

#### Offsetting residual emissions

While ArcelorMittal aims ultimately to achieve net-zero carbon emissions from its operations, residual emissions may remain for which either there will be no feasible technological solution, or the solution involves excessively high economic or social costs. For these residual emissions, which today we estimate will be 5%-10% of today's emissions, we plan to buy high-quality offsets or launch projects to generate high-quality carbon credits that would not have happened without the company's intervention. We are working on developing our voluntary carbon offset strategy to understand and progress what options we may have to develop ourselves, purchase or invest in to ensure that we have access to the right approaches at the right time. Mitigation of carbon emissions is our overarching priority. However, some customers are interested in offering net-zero products today while the technology still does not exist for us to abate our emissions fully. In response to such requests, we are investigating options for beyond value chain mitigation offsets to neutralise the carbon emissions of some products after we have reduced our emissions to the extent possible with existing technology. We plan to document and publicly disclose any such offsets should we proceed.

ArcelorMittal is also investing, through internal R&D expenditure and the XCarb™ Innovation Fund, in breakthrough decarbonisation technologies with the potential to support and accelerate the transition to net-zero carbon steelmaking. For more information see page 30.

#### Setting ambitious but achievable targets, given supportive policy

Decarbonisation is at the heart of the company's climate action strategy, aiming to have a leadership position within the steel industry in terms of target-setting, performance and disclosure. In 2021, we set out our new target to reduce carbon emissions intensity by 25% globally by 2030, and by 35% in Europe. Both targets cover Scopes 1 and 2 for steel and mining per tonne of crude steel.

The 2030 group carbon emissions intensity reduction targets reflect the unequal pace of change of the world's decarbonisation journey. In Europe and Canada, where the promise of supportive policy is more advanced, we can be more ambitious. In other regions, the pace of change is likely to be slower as the regulatory system is less evolved. Policymaking has a crucial role to play, and we will continue to advocate for policies that support the acceleration of this transition.

To achieve its 2030 global carbon emissions intensity reduction target of 25%, covering the Scope 1 and 2 emissions attributable to the company's operations, ArcelorMittal has estimated the gross capital cost required to be approximately \$10bn, with the expectation that public funding covers 50% of the total cost of decarbonisation, addressing both capital expenditures and the higher operating expenditures, so that we are not rendered uncompetitive during this transition period.

The lack or insufficiency of public funding for projects relevant to our decarbonisation objectives could call in question our ability to meet the above targets.

## Chapter 3 – Responsible energy use and lower-carbon futures continued



### Strategy continued

#### Engaging with policymakers and other key stakeholders

A supportive climate policy framework is critical for facilitating the transition to net-zero. Coal-based steelmaking has been around for over a century and has evolved into a highly cost-efficient process. New steelmaking technologies require substantial capital and structurally higher operating expenditures with some organisations, such as the Mission Possible Partnership (MPP) estimating that transitioning the global steel asset base to net-zero-compliant technologies will require an additional \$8–\$11bn investment annually – equal to \$235–\$335bn of additional investment cumulatively by 2050<sup>2</sup>.

As one of the world's leading integrated steel and mining companies, we are determined to play a significant part in the steel industry's role in decarbonisation. This means we actively engage with policymakers and other key stakeholder groups (such as investors, the steel industry, trade associations, trade unions, communities, customers, suppliers, public organisations, and NGOs) to facilitate a smooth transition to a low-carbon economy in a way that brings environmental, social and economic benefit for all.

We believe policy instruments need to deliver five market conditions to ensure that low- and zero-carbon emissions steelmaking is at least as competitive as higher carbon-emissions steel:

1. Measures to incentivise the transition to low and zero carbon-emissions steelmaking
2. A fair competitive landscape that accounts for the global nature of the steel market, ensuring domestic production and imports are subject to equivalent GHG reduction regulations and incentives, such as a fairly and internationally applied Emissions Trading Scheme (ETS)
3. Financial support to innovate and make long-term investments and neutralise the higher operating costs of low and zero carbon-emissions steelmaking
4. Access to sufficient clean energies at affordable price levels
5. Incentives to encourage the consumption of low- and zero-carbon emissions steel over higher carbon emissions steel.

The investor community is a key stakeholder that has the opportunity to finance the transition to net-zero. Many investors are actively engaged in this process and consequently increasing their scrutiny of companies' carbon emissions reduction commitments and performance, with many investors seeking to align their portfolios with the goals of the Paris Agreement, often using third-party ratings and proxies to do so. These include initiatives such as Climate Action 100+ (CA100+), Net Zero Benchmark, the Sustainable Steel Principles (SSP), Climate Bonds Initiative (CBI), annual CDP climate survey and the Science Based Targets initiative (SBTi). We continue to engage with such initiatives to ensure that the challenges and opportunities associated with transitioning multiple steelmaking routes across multiple regions are clearly understood and that the approaches adopted are realistic and pragmatic.

We are focused on engaging with numerous other important strategic initiatives that gather key stakeholders to identify the main challenges and requirements for the steel sector's transition.

These include the Energy Transition Commission (ETC), the World Economic Forum (WEF), Rocky Mountain Institute (RMI), Mission Possible Partnership (MPP), the International Energy Agency (IEA), World Business Council for Sustainable Development (WBCSD), Organisation for Economic Cooperation and Development (OECD), World Trade Organisation (WTO), World Steel Association, American Iron and Steel Institute (AISI), ResponsibleSteel™, the United Nations Industrial Development Organisation (UNIDO), and the Industrial Deep Decarbonisation Initiative (IDDI), amongst others.

ArcelorMittal is also actively engaging with trade associations to advocate for the climate policies and conditions that will enable steel to accelerate and achieve its net-zero transition globally while remaining competitive. We periodically publish the results of our engagements through our climate advocacy reports on our website.

#### Driving demand for low-carbon emission steel

Demand for low-carbon emission steel is critical for steelmakers to have confidence in making the investments necessary to transform their assets. Given the higher costs of producing lower carbon emission steel, it is important that steelmakers receive a price premium compared with steel with higher embedded carbon emissions to compensate. While we see an increase in demand for low-carbon emission steel, there is currently no commonly agreed definitions of what constitutes low-carbon emission steel. In anticipation of legislation being introduced on this topic in some home markets, we are engaging with several different initiatives being

led by organisations including ResponsibleSteel™, German Steel Federation, Eurofer, AISI, OECD and the WTO, amongst others.

This is complicated by the existence of two fundamental routes to make steel (so-called primary and secondary) and the fact that emissions associated with these routes differ quite considerably. We are firmly of the view that any approach must serve to decarbonise the entire industry, given there will not be nearly enough scrap to transition the entire steel industry to secondary-based steelmaking by 2050. As such, they should abide by the following principles that will drive standardisation and comparability for evaluation by stakeholders:

1. Defining a consistent steelmaking system boundary to ensure comparability of embedded carbon emissions
2. Measuring and incentivising the level of decarbonisation progress of steelmakers
3. Measuring and disclosing the embedded carbon emissions of finished products.

In 2022, ArcelorMittal also published a concept for a low-carbon emissions steel standard to help incentivise the decarbonisation of steelmaking globally and support the creation of market demand for low and near-zero carbon emissions physical steel products.

#### Defining a consistent steelmaking system boundary

Not all steelmakers operate all the same production steps involved in the steelmaking process with some being more vertically integrated than others. As a result, traditional carbon accounting methods such as the World Resources Institute's Greenhouse Gas Protocol – measuring direct (Scope 1) and indirect (Scope 2 and 3) emissions – are not directly suitable for comparing products or levels of decarbonisation

2. Making Net-Zero Steel Possible – An industry-backed, 1.5°C aligned transition strategy', Mission Possible Partnership, September 2022.

## Chapter 3 – Responsible energy use and lower-carbon futures continued



### Strategy continued

progress. It is essential that a clearly defined steelmaking boundary captures all the steelmaking processes generating material carbon emissions, irrespective of whether a steelmaker makes or buys the feedstocks or intermediate products (e.g. sinter, pellets, coke, DRI, HBI, pig iron etc.) from these processes. This will ensure clear comparability and a level playing field for all steelmakers.

#### Measuring and incentivising the level of decarbonisation progress of steelmakers

While carbon emissions from scrap-based production methods are substantially lower than ore-based production methods, it is imperative to incentivise all steelmaking routes to decarbonise if we are to reduce the global contribution to emissions from steelmaking. The availability of scrap in various parts of the world varies significantly with the developed economies tending to be more self-sufficient compared with developing economies. Systems that focus on driving scrap-based steelmaking only will only result in reducing carbon emissions where sufficient scrap is available (e.g. Europe and North America) with steel made with higher carbon emissions in regions where the climate policy context is not as advanced. Any definition should therefore include an ability to measure the level of progress steelmakers are making towards decarbonising their production processes through investment in technology shifts in addition to increasing scrap consumption using

existing technologies. Such measures can then be used by policymakers to set and incentivise a minimum level of decarbonisation progress in public procurement over time.

#### Measuring the embedded carbon emissions of finished products

Customers will continue to tend to buy steel based primarily on the embedded carbon emissions of finished products from cradle-to-gate using a Life Cycle Assessment (LCA) value, or Environmental Product Declaration (EPD) value for construction products, undertaken in accordance with internationally recognised methodologies. Any approach must continue to ensure customers are able to do this irrespective of which steelmaking route has been used to produce the finished product.

While discussions on how to achieve agreement on these definitions across the steel industry are being developed, we launched our own XCarb™ range of reduced, low- and near-zero carbon emission products in the form of XCarb™ Green Steel Certificates and XCarb™ Recycled and Renewable Produced (RRP) products to test the appetite for low-carbon emission steel with our customer base. Although initially developed in Europe, we continue to develop our offerings to support our customers net zero ambitions and expand our approach into other geographies.

#### Evaluating the physical climate risk to our business

Physical climate risks may be either short- or longer-term and related to temperature, wind, water or solid mass. These short-term or acute impacts are the significant weather events we notice (e.g. heat wave, wildfire, tornado, drought, flood or landslides) as they may have an immediate impact on our business, but their frequency and specific geographic occurrence are hard to predict. Understanding the longer-term trends is a more useful way to understand the likelihood and probability of short-term events occurrence. Combining this analysis with an understanding on the material impacts to the business will allow us to make better decisions on what actions to take and when. Physical climate risk analysis was recommended by the TCFD and has now been captured in climate legislation including CSRD, EU Taxonomy and the proposed US SEC climate disclosure although they can have different definitions and requirements. We are working to develop our understanding to comply with all these requirements and determine the most useful way for us to operationalise the findings in our decision-making.

#### Conducting a TCFD aligned risk assessment

We are using a temperature scenario analysis approach, as recommended by the TCFD, to enhance our understanding of the transition (policy, legal, technology, market, reputation) and physical (acute, chronic) risks associated with our strategy (see Risk Management section).

#### Complying with climate change legislation

The regulatory backdrop is developing rapidly to implement the requirements of the Paris Agreement and the TCFD recommendations. This new legislation will transform the way global multinational companies listed in the EU and US disclose the impacts that climate change has on their business and how they are responding to decarbonise their operations and value chains. We are working to ensure compliance with all these regulations, which include:

- The EU CSRD, which came into force in January 2023 this year, which includes disclosure on climate change such as a 1.5°C aligned transition plan, absolute carbon emission reduction targets for at least 2030 and 2050, and the financial effects of climate change on the business in line with the recommendations of the TCFD.
- From 2023, EU corporates must report on the activities that are aligned with the EU Taxonomy Regulation, a classification system that clarifies the degree to which investments can be considered environmentally sustainable in the context of the European Green Deal. In particular, corporates are required to disclose the share of their turnover, capital and operational expenditure associated with environmentally sustainable economic activities (as defined in the EU Taxonomy Regulation).
- In the US, a proposed SEC Climate Disclosure Rule – expected to be finalised in 2023 – will require companies to report on climate-related material risks and strategic implications including risks from physical climate-related hazards.

Chapter 3 – Responsible energy use and lower-carbon futures continued

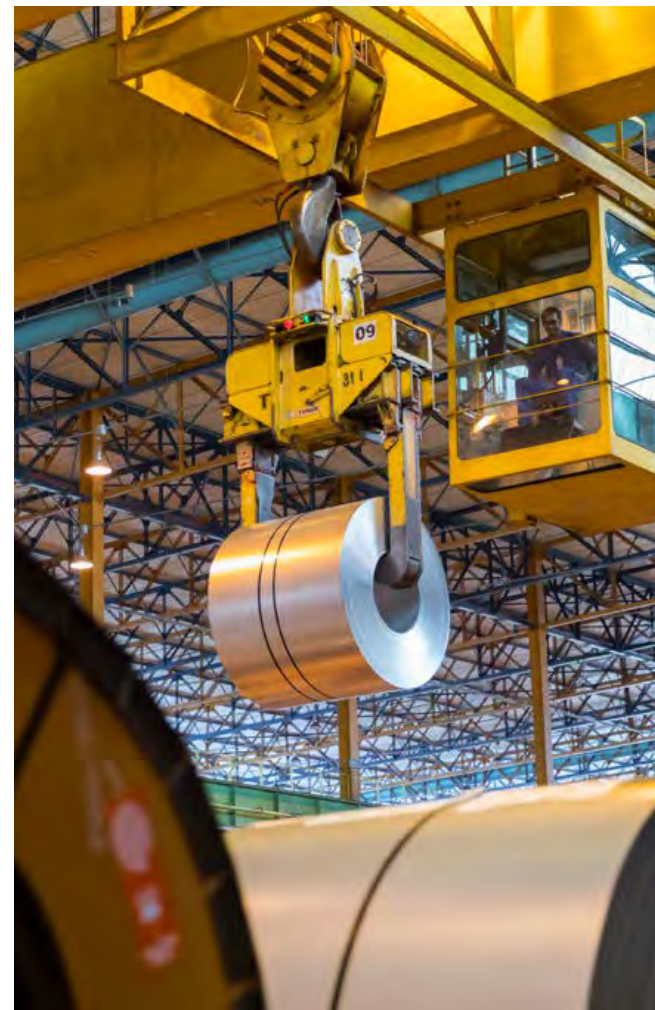
 Risk management

Potential risks to implementing our decarbonisation roadmap include:

- Unequal pace of regional decarbonisation
- Failure to secure sufficient and timely funding for decarbonisation projects
- Clean energy (renewable electricity, green hydrogen and its related infrastructure) is not timely available or affordable)
- Lack of scrap availability affects decarbonisation rate
- Inability to secure the skills we need for the transition
- Existing assets, supply chains, logistic routes, and planned decarbonisation projects do not evaluate and implement adaptation to meet acute and/or chronic physical risks of climate change
- Significant stakeholder opposition to decarbonisation projects
- CCUS cannot be built at scale within a reasonable timeframe
- Breakthrough technologies take longer to become available
- Decarbonisation delayed for example for economic reasons
- Customers unwilling to pay price premium for low-carbon steel
- Insufficient availability and affordability of raw material feedstocks, clean electricity, green hydrogen, OEM equipment or contractors.

Aligning with TCFD

The development of temperature scenarios is one of the key recommendations of the TCFD. The purpose is to test the resilience of organisations' preparedness against different climate-related scenarios and identify physical and transition risks and opportunities, together with their financial



Coils moved by crane, Vega, Brazil ↑

impacts. In line with the TCFD recommendations, we assessed the resilience of the business in 2022 to different transition and physical risks against four climate scenarios, including a below 2°C and a 1.5°C, to establish initial, high-level, qualitative conclusions.

Some of the scenarios selected were externally designed, based on plausible assumptions or TCFD recommendations, while others are customised publicly available scenarios with some improved assumptions for greater alignment with ArcelorMittal's modelling and market expectations. These included:

Benchmark indicator	1.5°C scenario	Central (base case) scenario	Stated policies	High emissions
Temperature increases above pre-industrial levels in 2100	1.5°C	Below 2°C	>2°C	4.4°C
External reference scenario	IEA NZE	IPCC SSP1-2.6 (Similarities with IEA SDS)	Similarities with IEA STEPS	IPCC SSP5-8.5
Selection rationale	(1) Aligns with the TCFD recommendation to consider a 1.5°C scenario for the '2°C or lower' scenario, (2) and is recognised by investors as an external, reputable scenario.	(1) Possible decarbonisation path for the steel sector considering forward looking technology, market and policy developments, and (2) meets the TCFD recommendations for considering '2°C or lower' scenario.	(1) Assesses performance in a context where decarbonisation policies do not progress beyond current levels, and (2) incorporates other uncertainties such as energy security priorities.	(1) SSP5-8.5 is considered by the TCFD to be best-practice scenario to understand stressed exposure to plausible physical risks.
Description	Holds warming to approximately 1.5°C, aligned with the Paris Agreement. Advanced economies reach net zero in advance of others and the scenario accounts for SDGs. Global steel emissions fall to around 0.22Gt by 2050.	Below 2°C scenario, exploring regional variations in low-carbon policies. Europe, US and Canada are ahead of the decarbonisation trend; China achieves carbon neutrality by 2060; India by 2070, Russia follows limited climate targets.	Scenario aligned with current policies, assuming limited additional policy support for decarbonisation of the steel sector.	A high reference scenario with no additional climate policy – current CO <sub>2</sub> levels double by 2050.
Used for physical risks and opportunities assessment	No	Yes	No	Yes
Used for transition risks and opportunities assessment	Yes	Yes	Yes	No

Chapter 3 – Responsible energy use and lower carbon futures continued



Risk management continued

For the transition risk screening assessment, we used the 1.5°C, central (below 2°C) and stated policies (above 2°C) scenarios to stress-test the exposure to transition climate risks, as per TCFD guidance. The risks of highest strategic importance were identified as follows:

- Carbon policy and regulations not being equally applied to all market participants (e.g. ineffective CBAM), reducing the cost competitiveness of steel produced in regions with a higher cost of carbon. On the other hand, there is an opportunity to use policy support to reduce the cost of green energy and decarbonise ahead of competitors.
- Restrictions on clean energy scalability increasing decarbonisation costs in some regions (e.g. Europe). However, higher demand created for clean energy is driving opportunities for building economies of scale.
- Decrease of steel demand compared to business as usual, due to increased material efficiency and increased product lifetimes. In contrast, there could be higher sales volumes or increased revenue due to increased demand and price premium for low carbon steel, as well as demand for steel products supporting the decarbonisation of other sectors (e.g. automotive). There are also significant opportunities for lower cost of capital (higher capital availability) for low-carbon steel projects.
- Inability to meet stakeholder expectations either due to delayed decarbonisation or lack of commitment to climate justice, eroding trust of customers, regulators, governments and investors. On the other hand, meeting stakeholder expectations on decarbonisation and climate justice will provide leadership opportunities.

Physical climate risk screening was undertaken across the company’s automotive and construction sector value chains against the central (below 2°C) and the high emissions (4.4°C) scenarios. As shown in the table below, the result of the screening assessment indicated that all operational assets may be negatively impacted by some form of acute physical risk, impacting steel production capacity either directly or in the value chain. Of these, rainfall flooding and wildfires presented the highest risk. From an opportunity perspective, an increase in revenues was identified due to increased demand needed for strengthening infrastructure resilience in response to the impacts of these acute physical risks.

We aim to continue to conduct and improve our climate-risk assessment based on the best available information to build a robust risk response and risk monitoring systems. In the short term, we plan to conduct ‘deep dive’ physical risk assessments of a selection of key sites across our segments to help us identify and prioritise some of the business’ most at risk sites and develop suitable risk mitigation plans. Also, we intend to assess the financial impact of our climate-related risks in relevant financial indicators including capex, opex, revenue and access to capital, and to disclose the findings in our regulatory filings.

Physical risk item		Strategic implication	Strategic importance by 2050
Acute	Flooding, landslides, wildfires and storms	Disrupting supply and value chain transport routes	High (negative)
		Damaging equipment and infrastructure	High (negative)
		Disrupting operations and causing production delays or shutdowns	High (negative)
Chronic	Extreme weather events	Posing risk to personnel and impacting operations	Medium (negative)
		Coastal flooding, extreme heat and extreme cold	Medium (negative)
		Water stress & drought	Medium (negative)
Acute and chronic	Increased severity and frequency of destructive climate events	Increasing customer demand for steel to strengthen buildings	Medium (positive)



ArcelorMittal employee ↑

ArcelorMittal Temirtau

We have previously used some quantity of our metallurgical coal in our captive power plants which supplied power and heated water to Temirtau city and the ArcelorMittal steel plant. From 2023, we can confirm that we are not using our metallurgical coal in the power plants.

## Chapter 3 – Responsible energy use and lower carbon futures continued



### Performance and targets

#### Commentary on carbon performance in 2022

We are focused on our global target KPI – reducing our CO<sub>2</sub>e intensity of our steel and mining operations (Scopes 1 and 2) – by 25% by 2030. In 2022, our adjusted group intensity target KPI was 2.00tCO<sub>2</sub>/tcs. Significant reductions are only likely

to be made with the successful deployment of steelmaking and energy transformation projects. In order to view the trend for CO<sub>2</sub>e intensity of steel only, we also report this data since 2018 in the table, adjusted for structural changes to our portfolio to enable a like for like annual comparison. This shows a reduction of 4.3% since 2018, from 2.07tCO<sub>2</sub>e/tcs to 1.98tCO<sub>2</sub>e/tcs.

For our European adjusted target KPI – CO<sub>2</sub>e intensity of our steel operations (Scopes 1 and 2) we saw a 1.8% improvement in 2022, down to 1.67tCO<sub>2</sub>e/tcs from the 2018 baseline of 1.70tCO<sub>2</sub>e/tcs.

The adjusted absolute emissions that correspond to our global target KPI (Scope 1 and 2, steel and mining) decreased by 22.2% compared with 2018.

#### Implementing our decarbonisation roadmap Key 2022 highlights of further progress with our decarbonisation goals

In October 2022, we broke ground on a CAD\$1.8 billion decarbonisation project to transition our plant in Hamilton, Ontario, Canada to DRI-EAF from BF-BOF. We are grateful to the federal and provincial governments of Canada and Ontario which have committed CAD\$400 million and

CAD\$500 million, respectively, to the overall project cost. The project is expected to contribute to a considerable reduction of CO<sub>2</sub> emissions and deliver other positive environmental impacts, including the elimination of emissions and flaring from coke making and iron-making operations.

In 2022, we tested hydrogen injection in the DRI unit of our Long Carbon plant in Contrecoeur, Quebec. We are evaluating the possibility of carrying out further tests in 2023 by increasing the use of green hydrogen at the DRI plant. This could eventually reduce CO<sub>2</sub> emissions in Contrecoeur by several hundred thousand tonnes a year.

In 2022, we secured high-quality metallic feedstock and purchased a majority shareholding in a world-class hot briquetted iron (HBI) plant in Texas. HBI is a high-quality feedstock made through the direct reduction of iron ore which is used to produce high-quality steel grades in an EAF, but which can also be used in blast furnaces, resulting in lower coke consumption.

The following KPIs are used to measure and monitor our progress against our decarbonisation targets:

Metric	Unit	Scope + perimeter	2018	2019	2020	2021	2022	Target % improvement 2018-2030	2030 equivalent
Adjusted absolute CO <sub>2</sub> e footprint <sup>1</sup>	Million tonnes	ArcelorMittal Scope 1+2	151.4	144.3	122.9	139.3	117.8	–	–
Adjusted absolute CO <sub>2</sub> e footprint <sup>1</sup>	Million tonnes	Europe Scope 1+2	67.4	63.9	51.3	59.9	53.3	–	–
Adjusted crude steel production <sup>1</sup>	Mt	ArcelorMittal	74.5	70.5	58.2	67.9	58.8	–	–
Adjusted Group CO <sub>2</sub> e intensity target KPI <sup>1</sup> (steel and mining)	tCO <sub>2</sub> e/tonne of steel	ArcelorMittal Scope 1+2	2.03	2.05	2.11	2.05	2.00	25%	1.52
Adjusted Europe CO <sub>2</sub> e intensity target KPI <sup>1</sup> (steel)	tCO <sub>2</sub> e/tonne of steel	Europe Scope 1+2	1.70	1.71	1.68	1.68	1.67	35%	1.11
CO <sub>2</sub> e intensity steel only <sup>2</sup>	tCO <sub>2</sub> e/tonne of steel	Steel Scope 1+2+ limited scope 3	2.09	2.06	2.02	2.03	1.98	–	–
Adjusted CO <sub>2</sub> e intensity <sup>1,2</sup> steel only	tCO <sub>2</sub> e/tonne of steel	Steel Scope 1+2+ limited scope 3	2.07	2.05	2.04	2.02	1.98	–	–

1. These figures have been adjusted for structural changes to the ArcelorMittal portfolio in the previous 12 months, and reflect emissions and production for ArcelorMittal's site portfolio as at December 2022 to enable a like for like annual comparison. See the Basis of Reporting for more explanation.

2. This indicator includes those emissions from purchased goods that a steelmaker would normally be expected to produce, such as coke, slabs, burnt lime in order to maintain a consistent system boundary and so a like for like comparison – see the Basis of Reporting for more explanation.

## Chapter 3 – Responsible energy use and lower carbon futures continued



### Performance and targets continued

In December 2022, we inaugurated our 'Steelanol' project in Ghent, Belgium. The €200 million Steelanol project is a first of its kind for the European steel industry. Utilising cutting edge carbon recycling technology developed by our project partner LanzaTech, the CCU plant uses biocatalysts to transform carbon-rich waste gases, from one of the two BF-BOF production routes, and from waste biomass into advanced ethanol, which can then be used as a building block to produce a variety of chemical products including transport fuels, paints, plastics, clothing and even cosmetic perfume, hence helping to support the decarbonisation efforts of the chemical sector.

The advanced ethanol will be jointly marketed by ArcelorMittal and LanzaTech under the Carbalyst® brand name. Once production reaches full capacity the Steelanol plant will produce 80 million litres of advanced ethanol, almost half of the total current advanced ethanol demand for fuel mixing in Belgium. Other partners involved in the Steelanol project are Primetals Technologies and E4tech.

ArcelorMittal has also started a feasibility study for the Ghent Carbon Hub project in partnership with North Sea Port and energy infrastructure group Fluxys. The Ghent Carbon Hub will be an open-access hub to transport and liquefy CO<sub>2</sub> from emitters, provide buffer storage and load the CO<sub>2</sub> onto ships for onward permanent storage. The project should have the capacity to process 6 million tonnes of CO<sub>2</sub> a year – equivalent to around 15% of Belgium's industrial CO<sub>2</sub> emissions. North Sea Port, a

60km-long cross border port in Belgium and the Netherlands, is home to a cluster of energy intensive industries with a significant CO<sub>2</sub> footprint. In late 2022, the project was awarded a €9.6 million grant from the EU Commission's Connecting Europe Facility for Energy (CEF-E) funding programme.

In France, ArcelorMittal announced an investment of €0.5bn, with the support of the French government, to create a 170,000-tonne electrical steel production unit at its Mardyck site in the north of France. The electrical steels will be used in electric motors including electric and hybrid vehicles. The project will create 100 direct jobs and is scheduled to start in 2024.

In 2022, ArcelorMittal acquired four scrap metal recycling businesses across Europe (including Scotland, Germany, Netherlands and Poland) to significantly increase the security of our scrap supply. These acquisitions represent 1.2 million tonnes of scrap production a year.

ArcelorMittal acquired Companhia Siderúrgica do Pecém (CSP), a world-class operation producing high-quality slab at a globally competitive cost in the state of Ceará in north east Brazil. The acquisition brings several strategic benefits to ArcelorMittal, including the potential to capitalise on the significant planned third-party investment to form a clean electricity and green hydrogen hub in Pecém.

The Pecém Green Hydrogen Hub, a partnership between the Pecém Complex and Linde, is a large-scale green hydrogen project at the Port of Pecém which is targeting to produce up to 5GW of renewable energy and 900 kt/y of green hydrogen in a series of phases. The first phase, which the partnership

currently expects to be completed over the course of the next five years, targets the construction of 100-150MW of renewable energy capacity.

Since the second half of 2021, ArcelorMittal South Africa has made significant progress on developing various roadmap options to achieve a material reduction in carbon intensity by 2030 and net-zero by 2050. ArcelorMittal South Africa and Sasol have announced a partnership to develop carbon capture and utilisation (CCU) technology using process carbon produced at ArcelorMittal's Vanderbijlpark Works plant and to advance the production of low carbon intensity steel using green hydrogen.

We are working on a range of additional announced projects to replace blast furnaces in Europe with new, lower carbon DRI-EAF installations. During 2022, we continued to engage with relevant country governments as well as the European Commission to unlock funding, assure guarantees on energy costs, and gain greater clarity on the pathway towards green hydrogen, that will enable these projects to move into the next phase. Progress is slower than we had hoped, not made easier by the energy crisis, but we are fully engaged in dialogue with the respective stakeholders and we hope for positive progress in 2023.

### Breakthrough decarbonisation technologies

Since we launched the XCarb™ Innovation Fund in March 2021, we have committed to invest over \$150 million in six companies covering a range of decarbonisation technologies: renewable energy (Heliogen), long-term battery storage (Form Energy), carbon capture and reuse (LanzaTech), hydrogen electrolysis (H2Pro), nuclear energy (TerraPower) and direct iron ore electrolysis (Boston Metal). The Fund is also an anchor partner in Breakthrough Energy's Catalyst programme, having committed to investing \$100 million over a five-year period.

In May 2022, we also launched the XCarb™ Accelerator Programme aimed at finding the best start-up companies focused on breakthrough technologies that have the potential to accelerate the decarbonisation of the steel industry. In addition to financial support, winning applicants will be given access to ArcelorMittal's advice and expertise in innovation, R&D, technology commercialisation and business mentorship.

### Investing in clean electricity for use in the steelmaking process

In 2022, we agreed a strategic partnership with Greenko Group, India's leading energy transition company, to develop a round-the-clock renewable energy project in India with 975MW of nominal capacity. The \$0.6bn project will combine solar and wind generating assets, supported by Greenko's hydro pump storage facility to overcome the intermittent nature of wind and solar generation.

## Chapter 3 – Responsible energy use and lower carbon futures continued



### Performance and targets continued

AM/NS India will enter into a 25-year off-take agreement with ArcelorMittal to purchase 250MW of renewable electricity annually. This will supply 20% of the Hazira plant's electricity requirement, reducing carbon emissions by around 1.5Mtpa whilst also providing an attractive return on investment for ArcelorMittal. Project commissioning is expected by mid-2024, while we are currently studying a second phase that would double installed capacity.

We have signed an MoU with energy Company RWE to develop, build, and operate offshore wind farms and hydrogen facilities in Germany.

ArcelorMittal South Africa is in the process of developing two 100MW renewable energy projects, planned for Gauteng and the Western Cape. The two 100MW renewable energy plants are intended to supply existing facilities within ArcelorMittal South Africa, using available ArcelorMittal South Africa land. ArcelorMittal South Africa expects to benefit from the projects by early 2025, subject to the outcome of a feasibility study.

### Engaging with policy makers and other key stakeholders

#### Engaging with policymakers

Policy has a key supporting role to play in transitioning the global economy to net-zero. We have been actively engaging with policymakers and organisations around the policies and conditions that will enable steel to accelerate and achieve its net-zero plans while remaining competitive.



We've learned a huge amount in the two years since we launched the XCarb® Innovation Fund and have been bombarded with hundreds of new ideas and investment opportunities. As well as committing over \$150 million to breakthrough technology investments, we've established ArcelorMittal as a valued and strategic investor in this space. We're also collaborating with universities and, in many cases, the Fund's investments are helping our investee companies to attract additional capital to fuel their growth.



**Irina Gorbounova**  
VP M&A and head of the XCarb™ Innovation Fund

A fundamental requirement is to address not just the significant capital expenditure needed to transition to net-zero carbon technologies, but also the considerably higher operating costs associated with these technologies in their early stages of implementation.

Policy instruments such as the Carbon Border Adjustment Mechanism (CBAM), taking effect between 2023 and 2026, will play an important role in ensuring a level playing field during the transition period. We were an early supporter of the CBAM, and it is encouraging that it is being implemented as part of the European Green Deal. We will have to see how it works in practice and there will undoubtedly be challenges in its implementation and compliance. But it is positive that the European Commission has taken seriously industry's concerns on competitiveness and are introducing groundbreaking measures to help address this.

We are also encouraged by the response we have seen from the EU in terms of the draft EU Green Deal Industrial Plan which it announced in January 2023, which sets out four key pillars:

1. Predictable and simplified regulatory environment
2. Faster access to sufficient funding
3. Development of appropriate skills
4. Open trade for resilient supply chains.

The proposals, if ratified, would make €250bn available from existing EU funds for the greening of industry, including offering tax breaks to businesses investing in net-zero technologies. The low-carbon emissions technologies we are developing all assume an abundant and affordable supply of clean energy. On a first read, the primary beneficiaries of the EU Green Deal Industrial Plan are likely to be the renewables value chain – from developers through to users – of which we are an important part. It is early days, but we believe this is very much a step in the right direction and an appropriate European response to the US Inflation Reduction Act.

### Investor benchmarks and frameworks

The finance community is increasing its scrutiny of companies' carbon emissions reduction commitments and performance, with many investors seeking to align their portfolios with the goals of the Paris Agreement. Key 2022 highlights include the Climate Action 100+ (CA100+) Net-Zero Benchmark, the Sustainable Steel Principles and CDP climate.

- Through their Net-Zero Benchmark, CA100+ positively assessed ArcelorMittal in four key areas: net-zero ambition by 2050, long-term targets, climate governance and climate policy engagement. The company is working towards strengthening climate-related financial disclosures to improve its performance in the other areas assessed by this initiative.
- ArcelorMittal participated with the Center for Climate Aligned Finance (CCAF) in the development of the Sustainable Steel Principles (SSP), launched on 23 September 2022 in New York as part of Climate Week. CCAF was established by Rocky Mountain Institute (RMI) to help the financial sector transition the global economy toward a zero-carbon emissions future. Through its work on steel, CCAF supported a coalition of six signatory banks to establish a sector-specific measurement and disclosure framework for banks, enabling them to support the decarbonisation of the steel sector and assess their own climate progress in line with Net-Zero Banking Alliance (NZBA) guidance.
- ArcelorMittal received an A- score in its response to the 2022 CDP climate assessment survey and B in the 2022 CDP Water assessment which indicates the level of progress a company has made in its response to climate change and related aspects of sustainable development on water and forestry.



## Chapter 3 – Responsible energy use and lower carbon futures continued



### Performance and targets continued

#### Science-Based Target initiative

ArcelorMittal has been an active and engaged member of the SBTi expert advisory group which has been working to develop a credible sector decarbonisation approach (SDA) for the industry. We participate, together with other steelmakers and civil society organisations, to develop the level of climate ambition required for the sector to meet the 1.5°C goal of the Paris Agreement, considering the constraints of its hard-to-abate processes and the different steelmaking routes.

To ensure that the iron & steel SDA is based on consistent GHG emissions accounting and creates a level playing field for both integrated and non-integrated companies, the current proposal from the SBTi provides a standardised core SDA boundary for iron & steel, and a scrap-input-dependent pathway, to account for the vastly different emission profiles of ore- and scrap-based steelmaking. The publication of the SDA is expected to be available in the third quarter of 2023.

Developing Scope 3 reporting and targets will be an important component of establishing a science-based target. According to the SBTi's Corporate Net-Zero Standard, targets for Scope 3 emissions need to be set, following a well-below 2°C pathway, when these represent over 40% of total emissions. However, the steel-specific guidance currently being developed considers some Scope 3 emissions within the Sector Decarbonisation Approach (SDA) boundary and thus, a different target-setting methodology will need to be used.

During 2022, in parallel to the SBTi engagement, we completed a study on Scope 3 at the Europe segment level to increase our understanding of available data and improve its quality, with a focus on material upstream categories. This has involved engaging closely with upstream and downstream supply chain stakeholders and transport networks to work on a comprehensive and aligned approach to carbon emissions across the complete value chain. During 2023, we will work to expand our understanding of the company's full scope 3.

#### Driving demand for low carbon emission steel

We continue to work with numerous stakeholders to develop a definition for low-carbon emission steel, including Eurofer, German Steel Federation, IEA and ResponsibleSteel™. Of these, the approaches being developed by German Steel Federation, IEA and ResponsibleSteel™ demonstrate a lot of alignment with the core principles we believe are necessary to effectively decarbonise the steel industry. The ResponsibleSteel™ approach has been developed in conjunction with business and civil society organisations that include Climate Group, Clean Air Task Force, Ceres, WWF amongst others. Engagement with Eurofer is ongoing.

In the interim, we continue to seek to find solutions for our customers. We have been pleased with the response we have seen from the market for our XCarb™ green steel certificates and XCarb™ recycled and renewably produced solutions that are the result of decarbonisation efforts in both our blast furnace and electric arc furnace operations. The demand for these solutions has been strong and broad based.

#### Complying with climate change legislation

In 2022, we made significant progress towards full disclosure in accordance with the TCFD recommendations including assessing risks and opportunities against several temperature scenarios.

This work will support our preparations for the CSRD and the US SEC climate disclosures, which both use TCFD recommendations as a foundational basis.

The EU Taxonomy Regulation requires us to report on the Taxonomy-alignment of our activities. The EU Taxonomy-eligible activities identified can be classified as Taxonomy-aligned if they make a substantial contribution to climate change mitigation and do no significant harm (DNSH) to other environmental objectives and, at the same time, ensure minimum social safeguards.

ArcelorMittal has identified a substantial contribution to climate change mitigation for the manufacture of iron and steel under the technical screening criteria. However, our alignment with the EU Taxonomy is 0% at this stage due to some gaps. The main one relates to the "Do no significant harm" to climate adaptation criterion, which is applicable to all activities considered eligible and sets specific requirements for the identification of physical climate risks and vulnerability assessments.

Although this area has benefited from the TCFD physical risk assessment that ArcelorMittal carried out in 2022, the TCFD exercise does not fully overlap with the requirements of the EU Taxonomy on this matter, as it excludes several physical climate hazards from the risk screening process. ArcelorMittal is working towards closing these gaps.



We welcome greater transparency and accuracy of greenhouse gas (GHG) emissions measurement in the steel value chain and regard it as a critical enabler for effective GHG emissions reduction. Appropriate sharing and use of actual and verified GHG emission data is a step forward from the use of average industry factors which is what is used by some today. ArcelorMittal and BHP are working together to support more accurate and transparent reporting of GHG emissions and we look forward to this work contributing towards the transition to net zero emissions.



**Graham Winkelman**  
Head of Carbon Management, BHP

## Chapter 3 – Responsible energy use and lower carbon futures continued



### Performance and targets continued

An example of the green steel certificates in use is the Guardini new baking range, XBake.



XCarb™ gave us the edge. We could openly and reliably tell our customers that the steel was sustainably produced. Our calculations show that by using ArcelorMittal steel with XCarb™ green steel certificates, we are reducing the CO<sub>2</sub> impact of our products. That's very significant and has attracted significant interest from our customers.



**Marco Guardini**  
Managing Director of Guardini

Barrett Steel, one of the UK's largest steel suppliers, selected XCarb™ recycled and renewably produced steel sections for the construction of its new 18,500m<sup>3</sup> distribution centre at Groveport in the UK – providing a CO<sub>2</sub> saving of over 1,400 tonnes. XCarb™ recycled and renewably produced can have a footprint of as low as 0.3t CO<sub>2</sub> per tonne of steel.



Being able to deliver the project using a low embodied carbon structural steel frame, the first of its kind in the UK, not only demonstrates our commitment to our own net zero goals but also showcases a tangible solution to the questions being raised by clients and contractors in the industry.



**Guy Barrett**  
Group Purchasing Director at Barrett Steel

Also in 2022, Morand Constructions Métalliques purchased XCarb™ recycled and renewably produced steel for a major project in Rossens, Switzerland. The Dimab car dealership will be the biggest BMW and MINI showroom in Switzerland and the country's first steel structure to use low CO<sub>2</sub> emissions steel.



We discovered XCarb™ recycled and renewably produced a little over a year ago... Offering it to our customers was an obvious choice and is part of our environmental and sustainable development policy.



**Jean-François Suchet**  
Managing Director of Morand Constructions Métalliques

The progress we have made in 2022 towards full disclosure in accordance with the TCFD recommendations will support our preparations for the CSRD and the US SEC climate disclosures, which both use TCFD recommendations as a foundational basis.

Chapter 4

# Air, water, land, biodiversity and ecosystems

Protecting the environment and natural resources is a key element of our business objectives. It is reflected in four of our eight materiality issues, relating to emissions, air quality, water resources, land stewardship, biodiversity and ecosystems. Our operations around the world have direct and indirect impacts on all of these natural assets, which can in turn trigger impacts for their local communities. We seek to identify our actual and potential impacts, and minimise, mitigate, restore and offset these where possible; and more positively to look for net benefit or improvement opportunities that we can bring about through an enlightened, sustainable development approach.

### KPIs highlights

#### Dust intensity (steel)

kg/tonne of steel

↓ **0.54**

2021: 0.62

#### NOx intensity (steel)

kg/tonne of steel

→ **1.11**

2021: 1.11

#### SOx intensity (steel)

kg/tonne of steel

→ **1.82**

2021: 1.82

#### Net water use (steel)

m<sup>3</sup>/tonne of steel

↑ **3.7**

2021: 2.7

#### CSRD alignment

ESRS E2: Pollution

ESRS E3: Water and marine resources

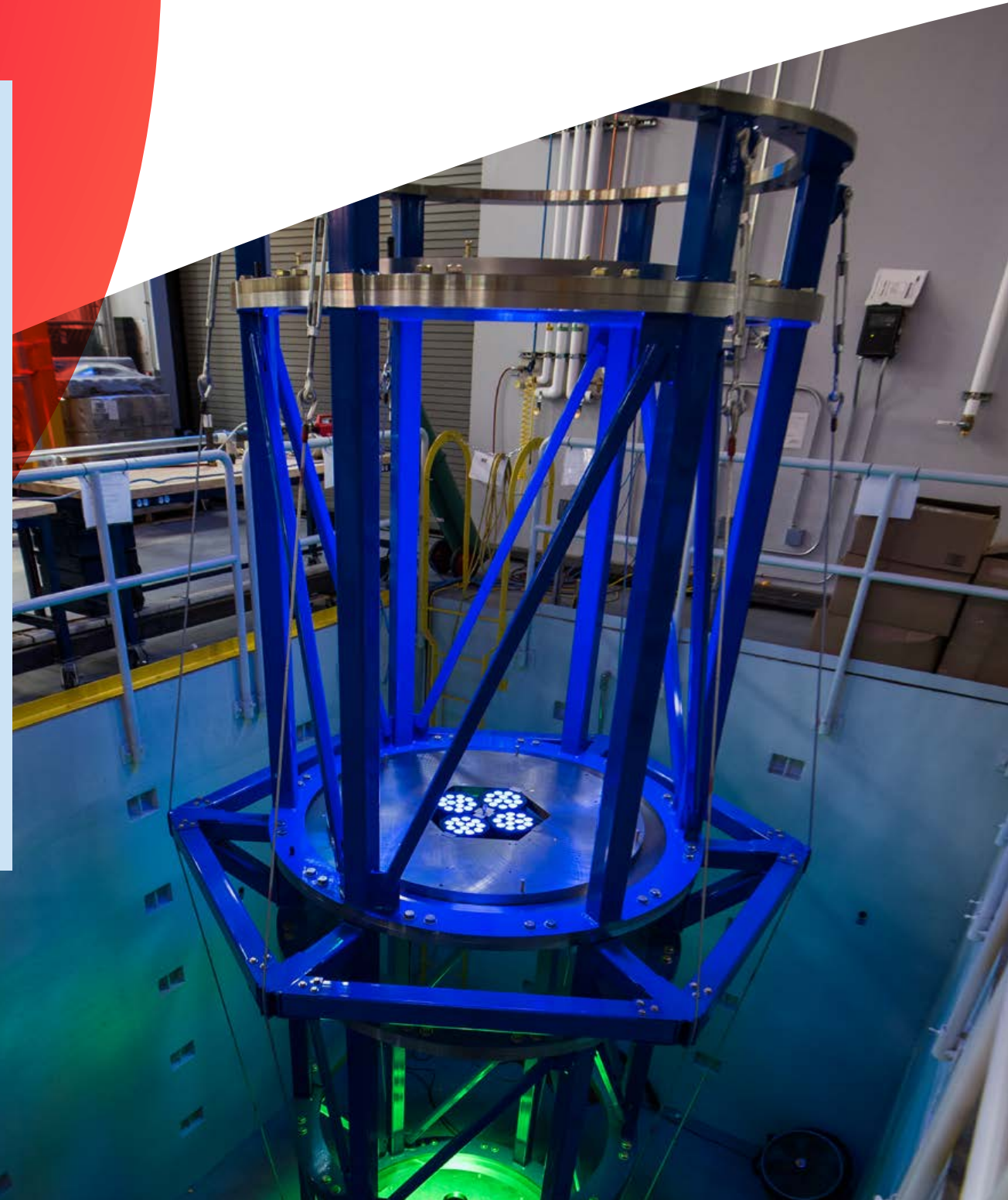
ESRS E4: Biodiversity and ecosystems

#### Material topic

5. Climate

6. Nature

#### UN SDG alignment



Fuel assembly test stand →

## Chapter 4 – Air, water, land, biodiversity and ecosystems



2022 has been a year of preparation for the onset of much more rigorous environmental reporting in line with the new CSRD legislation. We have launched a comprehensive new Environmental Policy across the group, and are undertaking an assessment of the new KPIs we need to put in place to benchmark our progress and drive our environmental improvement programmes.



**Anne van Ysendyck**

Vice President, head of government affairs and environment



Manager inspecting production line, Vega Brazil ↑



### Governance

#### Strengthened Board and management oversight on environmental compliance

Globally, the regulatory backdrop to environmental compliance in the steel industry is developing rapidly and becoming more stringent, notably through the roll-out of Corporate Sustainability Reporting Directive (CSRD) reporting requirements. Environmental impacts such as that of air emissions are coming under greater scrutiny as evidenced by the updated air quality guidelines issued by the World Health Organisation (WHO) in September 2021, the ongoing revision of the Industrial Emissions Directive (the EU's instrument regulating pollutant emissions from industrial installations in the EU), and the updated Best Available Techniques Reference Document (BREF) for the Ferrous Metals Processing Industry. These changes will result in stricter environmental norms concerning pollution (emissions to air, water and land), energy efficiency and resource efficiency, as well as promote more sustainable industrial production (part of the European Commission's Green Deal for a climate-neutral continent).

In 2021, the company introduced several changes to enhance its environmental governance. Board committee oversight was strengthened by creating a dedicated Board Sustainability Committee allowing increased time to be devoted to sustainable development issues including environmental matters. The executive level Sustainable Development Panel also increased its focus on this material issue. Segment environmental performance is also discussed with the Executive Office during quarterly Business Area Reviews.

The group environmental policy which sets out all our environmental governance for management and employees was revised in 2022.

The company has an environmental expert network that covers a diverse range of fields. It meets quarterly to share best practice and discuss matters related to environmental governance. Each quarter the network focuses on a particular issue for deeper discussion and analysis.

Environmental governance is further supported through the ResponsibleSteel™, IRMA and ISO 14001 certification processes, which enables our key steel and iron ore mining sites to verify the robustness of their environmental and stakeholder management systems.



### Strategy

Our overarching aim in relation to the environment is to be a trusted user of resources and the natural environment, and to be responsible stewards of the land and ecosystems around our operations. We seek to minimise environmental impacts, mitigate any residual effects and seek where possible to deliver a net benefit.

The strategic actions we are taking to achieve our environmental aim includes:

- Launching a revised environmental policy
- Preparing for the EU CSRD
- Upgrading the company's environmental data management system
- Making progress with the five-year environmental improvement plans
- Building greater expertise in EIA, LCA and EPD

- Reducing emissions to air
- Protecting and enhancing water resources, biodiversity and ecosystems
- Remaining vigilant on tailings dam safety
- Protecting land and reducing waste by repurposing by-products

#### Updated environmental policy

As part of its environmental goals and preparation for new reporting regulations, the executive management of the company approved an updated environmental policy at the end of 2022, which was launched in February 2023.

The policy provides the environmental framework by which all parts of the business are expected to abide. The key principles are:

- Compliance with all relevant environmental laws and regulations
- Implementation of environmental management systems including ISO 14001 certification for all production facilities
- Conducting environmental impact assessments for major capital projects in accordance with good international industry practice
- Continuous improvement in environmental performance, taking advantage of systematic monitoring and aiming at pollution prevention, and use of Best Available Techniques (BAT)
- Implementing a long-term greenhouse gas (GHG) emissions reduction strategy to achieve net-zero
- Development of low impact, environmental production methods and local sourcing
- Development and manufacture of environmentally friendly products with a focus on end-of-life recycling or reuse
- Supplier and contractor awareness and respect for the company's policy
- Employee commitment and responsibility in environmental performance

## Chapter 4 – Air, water, land, biodiversity and ecosystems continued



### Strategy continued

- Respect protected areas and manage adverse impacts on biodiversity and ecosystem services in accordance with good international industry practice
- Efficient use of natural resources, raw materials, energy, land and water
- Open communication and dialogue with all affected stakeholders.

It is applicable to all operations.

### Preparing for the EU CSRD

The European CSRD was approved by the European Parliament in November 2022, published in the EU Official Journal and came into force on 5 January 2023. It transforms corporate sustainability reporting for large companies from 2025, reporting on the 2024 financial year, by requiring a higher degree of disclosure by affected companies' dependencies and impacts on all aspects of the natural environment as well as the financial effects this will have on the companies themselves.

In preparation, ArcelorMittal is developing its understanding of the nature-based information it will need to collect to identify and proactively manage nature-related impacts, dependencies, risks and opportunities. Pilot studies using the approach proposed by the Task Force on Nature-related Financial Disclosure (TNFD), as set out in the draft European Sustainability Reporting Standards (ESRS), are being planned for selected mining and steel operations to form the foundation of a wider group-level assessment.

### Upgrading the environmental data management system

The company's existing environmental data management system needs to adapt to meet the increase in reporting demands. Enhanced systems and tools are required to put the appropriate monitoring and action plans in place. A new technology partner and platform have been selected to provide our ongoing environmental data reporting requirements. It will enhance our data acquisition, provide greater quality control, enable automated data gathering and drive more timely reporting. At corporate level, we expect it to go live in the second quarter of 2023. The roll out to sites will follow.

### Building greater expertise in EIA, LCA and EPD

Under our new environmental policy, Environmental Impact Assessments (EIAs) are mandatory for all our major capital projects. We will use qualified environmental impact assessment specialists wherever needed.

Life Cycle Assessments (LCAs) and Environmental Product Declarations (EPDs) are increasingly necessary for the specification and validation of our products, particularly for key industries such as automotive and construction as they are transparent and objective evaluations of the potential impact of products on people and planet. Our expertise is an important asset for us and we continue building greater expertise in EIA, LCA and EPD.

### Reducing emissions to air

Emissions to air remain one of our greatest environmental challenges, and one that is naturally of particular concern to local communities. It was the most highly ranked environmental issue for both stakeholders and the company in our most recent

materiality assessment. We want to be seen as a 'trusted user of air' and are dedicating significant resources to tackle air emissions in the five-year environmental improvement plans for each business unit and site, particularly around ducted dust, SOx and NOx.

### Protecting and enhancing water resources, biodiversity and ecosystems

Water is a vital resource and we are aiming to reduce our water consumption. We are investing in innovative techniques for water recovery, water treatment and establishing alternative water sources and reduced energy usage.

We also aim to protect biodiversity in the environments within which we operate. Limiting our land use, reducing emissions and ensuring local water supply and quality all contribute to reducing biodiversity impacts, but we recognise that our involvement and work needs to go beyond the boundaries of our sites and extend into engagement with local communities and livelihoods.

### Remaining vigilant on tailings dam safety

Our strong governance model aims to ensure that our tailings storage facilities (TSFs) are structurally sound and safe in accordance with the latest internationally accepted guidance, with all efforts directed at minimising the risks of wet tailings.

### Protecting land, reducing waste and using by-products in the circular economy

Industrial use and degradation of land and its ecosystems is becoming an area of increasing environmental concern. ArcelorMittal is determined to reduce its impacts in these areas. This includes reducing unnecessary waste storage through innovative uses of slags, dust and sludges.



## Risk management

ArcelorMittal's environmental-related risks primarily relate to compliance with environmental legislation, potential changes to that legislation, impacts on the company's licence to operate and its reputation, and reducing emissions of greenhouse gases.

Key challenges for the company over the next few years revolve around transformational changes in legislation and reporting, most notably relating to CSRD and the Industrial Emissions Directive (IED).

The CSRD is one of the most complex and extensive sustainability reporting requirements to date. ArcelorMittal already reports against some of its requirements, but there remains a lot to be done. In addition to its complexity, the CSRD will require data tagging, whereby companies mark sustainability information in financial statements and management reports with a digital tag so that it is machine readable. The scale of the changes in the number of KPIs requiring reporting is further compounded by the truly global geographic scale of our operations and the unprecedented pace at which the EU expects companies to be able to report on these. Given these factors, ArcelorMittal began evaluating new systems to automate and expand the processes of data collection. Once these systems are in place, it is expected that we will be able to improve efficiency, reliability and visibility of reporting required by the CSRD. While we have been developing our thinking on climate in accordance with the TCFD recommendations, one of the more significant challenges of preparing for CSRD will be alignment with the newly proposed

## Chapter 4 – Air, water, land, biodiversity and ecosystems continued



### Risk management continued

TNFD approach that has been specified. This will require the development of natural capital measurement, valuation, accounting and disclosure systems that fully embrace all dimensions of natural capital – most notably to assess the true net impact that we potentially have on species and ecosystems, and our real dependency as a company on them.

Similarly, the European Commission has started the review of the IED, with a proposal published in April 2022, which aims at the strengthening of the permitting framework, to reduce industrial emissions, with revised BREF documents. As with CSRD, the new IED will require significant changes in assets, systems and monitoring to ensure compliance.

### Minimising and mitigating risk

The company's approach to environmental risk management is to regularly assess risks at a local, segment and group strategic level, and put in place measures to prevent risk events from occurring and mitigate their effects.

Key measures include:

- Regularly reviewing our responses and compliance with evolving legislation such as CSRD and IED
- Constantly improving our environmental performance and strengthening our governance
- Ensuring we have the right skills and capabilities in the company
- Revising our range of KPIs, data monitoring, collection and reporting systems.



### Performance and targets

The following KPIs are used to measure and monitor our progress.

KPI	Unit	2021	2022
LCA's developed	number	37	62
EPDs developed	number	4	12
Absolute dust emissions (steel)	thousand tonnes	41.9	31.9
Dust intensity (steel)*	kg/tonne of steel	0.62	0.54
Absolute NOx emissions (steel)	thousand tonnes	75.3	65.4
NOx intensity (steel)*	kg/tonne of steel	1.11	1.11
Absolute SOx emissions (steel) <sup>3</sup>	thousand tonnes	121.8	105.2
SOx intensity (steel)*	kg/tonne of steel	1.82	1.82
Net water use (steel)*	m <sup>3</sup> /tonne of steel	2.7	3.7
Blast furnace slag re-used (total)	million tonnes	13.4	13.7
BF slag to cement industry	million tonnes	9.6	11.1

Notes:

\* For details see the Basis of Reporting.

➔ See more in our [Fact Book](#) (Sustainability data section) and the [Basis of Reporting](#)

### Making progress with five-year environmental improvement plans

2022 saw progress with the implementation of the company's new five-year environmental improvement plans. The plans, which include compliance and reporting on KPIs such as ducted dust, SOx and NOx, are required to include actions, projects, timelines and expected emission reductions to be achieved by 2025 and then subsequently 2030.

In 2022, the Investment Allocation Committee approved expected capital expenditure totalling \$488 million for 30 projects with environmental benefits.

### Building greater expertise in LCAs and EPDs

ArcelorMittal has been developing expertise in LCA for over 15 years. This activity analyses the environmental impact of products throughout their production, use and disposal. In 2022, we undertook a total of 62 LCA studies related to steel products and the processes used to produce them, all guided by the relevant standards (ISO 14040-44).

Our expertise in LCA is an important asset for us. LCA is a requirement of Environmental Product Declarations (EPD) for construction products in Europe and our experience contributes to increasing our competitiveness in the construction sector. Similarly, in automotive, the current shift to electric vehicles is transforming the sector's contribution to climate change, mitigating tailpipe emissions, and pushing customers to scrutinise their supply chain and the role steel products can play in improving their LCA performance.

We are members of the CIRAI International Lifecycle Chair, an international reference centre for the lifecycle of products, processes and services, and the world's largest research centre on the topic.

Environmental Product Declarations (EPDs) are transparent, objective evaluations of the potential impact of products on people and the planet. They are becoming increasingly important in the specification of products and decision-making in supply chains. Information communicated in an EPD is based on LCA methodology and is aligned with the LCA standards (ISO 14040 & 14044) and also specific to EPDs ISO 14025 and EN 15804. An EPD effectively summarises the environmental performance and impact of different materials or products over the course of their lifetime. They are particularly applicable to the construction industry, where they support carbon emission reduction by making it possible to compare the impacts of different materials and products to select the most sustainable solution at building level. EPDs help to achieve credits in certification schemes such as LEED (Leadership in Energy and Environmental Design) and BREEAM (Building Research Establishment Environmental Assessment Methodology). In 2022 we issued 12 EPDs (for more information see chapter 5).

### Reducing emissions to air

Last year there has been some improvement in average emissions intensity levels of dust, and average emissions intensity levels of NOx and SOx remained the same. We are determined to improve our performance.

## Chapter 4 – Air, water, land, biodiversity and ecosystems continued



### Performance and targets continued

The company is running pilot programmes to test the effectiveness of automated monitoring equipment, including advanced sensors technology, aimed at giving better oversight of dust emissions and ad hoc emission events with the intention of rolling this capability out across priority sites. LIDAR (laser imaging, detecting and scanning) helps to detect diffuse air emission sources and to predict how they may develop due to changes in production, meteorological conditions, and other variables.

This enhances the selection of appropriate preventive or mitigating measures to be put in place. LIDAR has so far been tested at our sites in Fos-sur-Mer, Asturias, Ghent and Tubarão. Video monitoring of emissions is also proving very effective and the roll-out of cameras is underway across a range of sites enabling 24-hour dust emission detection.

### Protecting and conserving water resources

Water management is ranked highly as an important issue for the company and stakeholders in our materiality assessment. In 2022, net water use per tonne of steel was at 3.7 compared with 2.7m<sup>3</sup>/t in 2021. We are determined to make continuous

improvements in reducing our water consumption and enhancing water quality across our operations. Unlike carbon emissions, which are a global challenge, water use, availability and quality are more local, which require the business to work closely with local municipality, water authorities, non-profit organisations and communities.

In pursuing these goals, the company is investing significantly in innovative techniques for water recovery, water treatment, establishing alternative water sources and reduced energy usage.

In our mining operations, some sites are recycling as much as 98% of their water. At ArcelorMittal Mines

Canada, the operation is building a water treatment plant to prevent heavy metals dissolving out of excavated waste rock piles from entering adjacent surface waters. The investment for this plant has been just over \$52 million and is expected to be operational in 2023.

Newcastle, South Africa is investing \$8 million in a water treatment project by constructing a 460,000m<sup>3</sup> stormwater runoff dam and reducing the plant's overall water demand. It will include increased capacity stormwater interceptors integrated with existing water treatment facilities. It is due for completion in May 2023.

## Air quality improvement plans, Fos-sur-Mer and Temirtau

### Fos-sur-Mer

Over the 10 years from 2010-2020, ArcelorMittal invested in an extensive programme of more than €100 million to significantly reduce the environmental impacts. A range of environmental protection projects were undertaken, including the desulphurisation of coke oven gases, dust removal at the steel plant furnace, and low NOx burners on the slab furnace of the hot strip mill.

As a result, over the 2010-2020 period, emissions from the Fos-sur-Mer site were significantly reduced by:

- 45% for sulfur dioxides and nitrogen dioxides,
- 70% for dust,
- 79% for benzene and
- 85% for dioxins.

In parallel with this €100 million programme, the coking plant has also benefited from a complete renovation of its 126 ovens – a €150 million investment which has contributed to resolving different problems, and particularly the non-conformance of the benzene emissions at coke plant level. Since 2019 the coking plant has been in full compliance on this issue.

ArcelorMittal Méditerranée (Fos-Sur-Mer and Saint-Chély-d'Apcher) has developed an environmental improvement programme that is designed not only to meet the requirements

of our permit, but also to respond to the rising expectations from stakeholders. This programme will further increase environmental improvements with more than €50 million of investments dedicated to better environmental protection over the 2021-2023 period, with a specific focus on water and dust emissions, particularly in the vicinity of the sinter process.

The project currently underway is the installation of an innovative air emissions filter at the sinter plant, covering an area of 20,000 square meters, which will reduce dust emissions by 40% and overall channelled dust emissions by 15%. The first stage of this €20 million investment commenced commissioning in July 2022.

Other projects are also underway including enhancing the dedusting systems at the sinter plant with the first commissioned early 2023, the construction of a new blast furnace gas storage facility, the commissioning of a new charger at the coke plant, and many other smaller projects.

To reduce the environmental impact of incidental emissions, safety measures are implemented. The Fos-sur-Mer site made an investment of €1.45 million at the coke plant to ensure automatic ignition of 28 safety flares for combustion of coke oven gas in the event of an incidental release, e.g. caused by a power failure.

To create and maintain a close relationship with local stakeholders, site management regularly meets local residents to review results and explain environmental performance and projects implemented.

### Temirtau

Between 2011 and 2021, the ArcelorMittal Temirtau (AMT) site has seen an investment of \$240 million in environmental projects such as de-dusting filters, the first two phases of the ash pond extension, construction of a new chimney in the coke shop along with battery repairs, BOF technology improvements, a new dust extraction system in the mixer shop to reduce fugitive emissions, and concrete covered areas for temporary residue stock to prevent soil contamination.

The work to modernise AMT continues. In April 2021, the site unveiled its integrated strategy for air and carbon emission reduction. The strategy, which was revised in November 2021, is expected to reduce dust, NOx and SOx as outlined in the 2020 MoU that AMT signed with the government of Kazakhstan. It plans for an approximate 35% reduction of air emissions by 2025 and 52% reduction of air emissions by 2030 from base year of 2018.

The emission reduction strategy is a subset of a larger modernisation programme that AMT prepared and discussed with the government. Consequently, AMT signed an MoU with the government of Kazakhstan wherein it is planning to invest \$3bn in the next decade to upgrade the operation and its value chain. As part of this unprecedented investment, AMT has committed \$800 million exclusively for environmental projects in the next 10 years. A 2025 strategy programme recently developed by AMT is expected to provide for the reductions in dust, NOx and SOx emissions to exceed those outlined in the MoU.

The reductions should be achieved through several projects, including the application of ArcelorMittal's innovative hybrid filter technology at the sinter machines (improving both dust and SOx emissions), the upgrade of emission filters for power plant 1, the construction of two new boilers for power plants 1 and 2, a new coke gas cleaning plant, and the replacement of coal with natural gas for our upstream and downstream facilities.

## Chapter 4 – Air, water, land, biodiversity and ecosystems continued



### Performance and targets continued

#### Remaining vigilant on tailings dam safety

Given recent history in the mining sector, we have placed a fundamental focus on the safety and impact of tailings storage and dams across the group. We have developed a tailings strategy based on the leading industry guidelines from the Mining Association of Canada (MAC), the Canadian Dam Association (CDA) and the Global Industry Standard for Tailings Management (GISTM). The aim is to ensure that all group tailings facilities are structurally sound and safe, with all efforts directed at

minimising risk, including independent audits benchmarked against these international guidelines.

The company has 26 tailings storage facilities (TSFs) including conventional, paste, dry-stack and in-pit facilities, of which 15 are active, 10 are inactive and one is closed. To ensure their ongoing safety, a formal assurance process is in place that includes internal and external audits. This is supported by a continuous improvement programme that reduces the risk of our existing conventional operations by promoting reduced moisture disposal methodologies (e.g. high-density thickened tailings or filtered tailings where appropriate) and proven new technologies (e.g. high-precision radar, InSAR satellite monitoring and remote instrumentation) to monitor facilities

globally in real time. The company is assessing all its mining operations for transition in line with these principles and developing customised design solutions for non-conventional tailings system management. Tailings thickening steps have been implemented in assets in Mexico, reduced moisture disposal methodologies in Brazil and Canada, and further studies are ongoing across a range of operations.

#### Protecting land, reducing waste and using by-products in the circular economy

Industrial use and degradation of land and its ecosystems is becoming an area of increasing environmental concern. ArcelorMittal is determined to reduce its impacts in these areas. This includes reducing unnecessary waste storage through innovative uses of slags, dust and sludges – slag can be used in cement and asphalt for construction, fertiliser for agriculture, and ballast in offshore wind turbine foundations. In 2022 we reused 11.1 million tonnes of blast furnace slag as a raw material in cement production, saving a further 8.5 million tonnes of CO<sub>2</sub> emissions. This was an increase on the 9.6 million tonnes of slag reused in 2021.

We currently recycle most dust and sludges internally. With the help of an EU-funded project that started in 2020, our researchers are working on agglomeration solutions that will allow us to further use these materials as alternatives to natural resources.

These initiatives are very much part of our increased circular economy policies. Our goal is the 100% efficient use of raw materials, zero waste and increased availability of the critical minerals needed for the green transformation. This is reflected in the substantial advances we have made in scrap recycling and our plans for supporting a circular approach to sustainable EAF operations (see chapter 3 for more information).

#### Case study

### Reducing slag disposal in ArcelorMittal Temirtau

In Temirtau, Kazakhstan, work towards a circular economy progressed in 2022, focusing on reducing slag disposal and its reuse as a raw material. A comprehensive study of slag characteristics and behaviour was conducted in collaboration between ArcelorMittal R&D and Nazarbayev University in Nursultan. This resulted in three potential applications being identified: asphalt agglomerate, winter abrasive for roads and rail track ballast. The benefits of using steelmaking slag in these applications not only diverts waste from landfills, but also reduces raw material extraction and associated emissions. Work is ongoing in 2023 to determine the most cost-effective and beneficial solution for the slag reserves.

#### Case study

### Partnering with Nalco Water, Etxebarri, Spain

We constantly seek to improve discharge water quality, reduce water use and water-related GHG emissions. Our Etxebarri site in Spain partnered with Nalco Water to develop an advanced on-site water management programme to meet three key objectives: avoid environmental pollution, bring freshwater use to zero and limit the plant's river water intake.

Nalco Water implemented a Total Water Management programme that included managing, operating and optimising the whole water cycle 24/7 with on-site resources and automation, and designing, building and operating state-of-the-art solutions, such as a fully automated recycling plant.

By optimising water processes and implementing a water recycling solution, Nalco Water helped ArcelorMittal reduce freshwater and energy use. This enabled us to improve the environmental footprint at Etxebarri, while achieving operational and cost savings by lowering discharge fees

and eliminating the need to purchase potable water. By eliminating freshwater from our process, we have reduced pressure on the local drinking water supply, benefitting the residential area where the plant is located. The intervention also helped ensure that the wastewater treatment plant remained in compliance with local regulation and led to a significant reduction in energy use.



#### Case study

### Rehabilitating legacy areas in ArcelorMittal South Africa

ArcelorMittal works continuously to rehabilitate legacy areas and dams on its properties. In South Africa, in 2021, 13.4 hectares of land and 52 hectares of contaminated soil in legacy dams were remediated. To date, 211 hectares on land have been rehabilitated and 108 hectares under water. In addition, 290 hectares of the Thabazimbi iron ore mine have undergone rehabilitation. Work at this legacy site has translated into a rebound in biodiversity, including populations of antelope.



## Chapter 4 – Air, water, land, biodiversity and ecosystems continued



### Performance and targets continued

#### Protecting and enhancing biodiversity and ecosystem services

The recent COP15 Biodiversity Conference highlighted the ongoing damage being done to species biodiversity around the world.

Limiting our land use, reducing emissions to air and water, and minimising resource consumption, all contribute to reducing biodiversity impacts, but we recognise that our involvement and work needs to go beyond the boundaries of our sites, and extend into engagement with local communities. Like many other companies, we need to increase our capability

in measuring and monitoring key biodiversity and ecological indicators, so we can develop the appropriate mitigatory or beneficial actions. We plan to enhance our management approach in this area to align with the proposed TNFD approach.

Perhaps the most challenging location for the company in protecting biodiversity is its mining operations in the Nimba county of northern Liberia. Located to the east of its mining operations, the Eastern Nimba mountain range extends from Liberia into Guinea and the Ivory Coast, an area which is protected by conservation measures such as the East Nimba Nature Reserve (ENNR) in Liberia. Both it and the Western range have global conservation value and are home to a remarkable diversity of species and habitats, many of which are highly threatened.

As part of developing a biodiversity transition plan to meet EU CSRD requirement, we are planning to participate in the ICMM TNFD pilot programme with a study on our Liberian mining operations. The study will:

- Build awareness of nature-related impacts, dependencies, risks and opportunities
- Help to shape and organise future TNFD disclosure
- Provide the company with helpful insights ahead of the release of the final TNFD framework for application elsewhere in the group.

#### Case study

### ArcelorMittal BioFlorestas – a leader in the adoption of sustainable management models

ArcelorMittal BioFlorestas produces charcoal from eucalyptus forestry operations that is used to fuel its furnaces in Juiz de For and to exchange for pig iron with local producers. Based in the state of Minas Gerais, covering 16 municipalities, and distributed in five administrative regions, it has an area of 100,000 hectares of planted eucalyptus forests and 40,000 hectares of permanent conservation and legal reserve. It is a leader in the adoption of sustainable management models focused on socio-environmental responsibility and has an effective presence in the communities where it operates.

BioFlorestas is certified by international standards such as the FSC (Forest Stewardship Council) for planting, forestry development, harvesting and charcoal production.

Its Forestry Research and Improvement Center includes a study of forest genetic improvement with the objective of obtaining genetically superior seeds, pollens and grafts.



#### Case study

### Biodiversity programme in ArcelorMittal Liberia

ArcelorMittal Liberia and the Co-Management Committee of the East Nimba Nature Reserve (ENNR) signed a Memorandum of Understanding in 2022 to extend its existing support for biodiversity programmes and the conservation and protection of the ENNR. The MoU is designed to improve capacity building for the implementation of the Protected Area Management Plan, and provide additional technical and logistical support, surveillance and patrol measures and training of rangers and biologists.

ArcelorMittal Liberia (AML) participates in a Biodiversity Conservation Programme (BCP) to protect the ENNR and three community forests (Zor, Blei and Gbar), to compensate for biodiversity impacts from its mining operations that cannot at this time be avoided, minimised or restored. Designed to achieve a net gain for biodiversity, the BCP is multidisciplinary

in its approach, and founded on the principle of nature-based solutions (NbS). The main components include:

- Improving the management of the ENNR and three community forests
- Negotiating and managing conservation agreements with communities to reduce illegal activity and deforestation through an incentive-based scheme
- Promoting the uptake of sustainable agriculture to improve productivity and food security
- Education and awareness raising, wildlife assessments and research

AML has found that this multifaceted, collaborative, partnership approach is the most effective way to create lasting change and sense of ownership.



## Chapter 5

# Delivering a circular economy through innovation

Steel lies at the heart of a smarter and more sustainable future. Its durability, versatility and recyclability make it the perfect material for a low-carbon, circular economy.

Innovation and R&D are important areas of leadership for ArcelorMittal and a source of long-term competitive advantage. Developing smarter steels is fundamental to our purpose and one of the reasons why customers choose our products. But innovation can also eliminate waste, increase efficiencies, reduce our environmental impacts, and contribute significantly to a circular economy.

As a leading global steel manufacturer, ArcelorMittal aims to be at the forefront of cutting-edge developments in mobility, construction, infrastructure and the energy transition. Our Global R&D provides the technical foundation for the sustainability and commercial success of the company, by stimulating innovative thinking and the continuous improvement of our products and processes.

Horizontal continuous annealing line, Saint-Chély-d'Apcher →

## KPIs highlights

### Annual R&D expenditure

↑ **\$286m**

2021: \$270

### Products and solutions to accelerate sustainable lifestyles launched

↑ **28**

and progressing further on 16  
2021: 24

### Products and solutions to support sustainable construction, infrastructure and energy generation

↑ **13**

and progressing further on 20  
2021: 27

### LCAs

↑ **62**

2021: 37

### EPDs

↑ **12**

2021: 4

CSRD alignment  
ESRS E5: Resource use and circular economy

Material topic  
7. Products

UN SDG alignment



## Chapter 5 – Delivering a circular economy through innovation



Innovation is central to ArcelorMittal's success and ensuring we remain at the forefront of the evolution of steelmaking processes and products. Steel is a critically important material for future low-carbon buildings, infrastructure, energy, and mobility solutions, and our targets in this area are reflected in our purpose: 'smarter steels for people and planet'.



**Greg Ludkovsky Vice president**  
Head of research and development



A bridge in Poland built using XCarb™ recycled and renewably produced steel ↑



### Governance

R&D activities are governed by the global network of our business units and CRSP (Corporate Research Strategic Panel).

Special panels are also in place to steer strategic initiatives such as decarbonisation and automotive.

Tactical steering is done at the operational level in what we call the Plants Innovation Platforms.

Governance of our policies related to innovation is also covered under our existing sustainability policies and procedures, including Health and Safety, and Environment.

Reporting and disclosure are primarily through the corporate website and the company's sustainable development publications, including the Integrated Annual Review and Climate Action Reports.



### Strategy

Our overarching aim is to maintain our technology leadership and use our R&D capabilities to develop new business models, products, production methods and solutions that contribute to a low-carbon, circular and sustainable world.

To support this objective, the company operates cutting-edge R&D sites around the world, employing some 1,500 staff and spending \$286 million in 2022 (2021: \$270 million).

Our strategic focus is around: creating a robust and diverse portfolio of products to supply the transformations taking place in critical areas of the economy, including mobility, construction, infrastructure and energy; delivering decarbonising solutions for the energy transition both for our own operations and our customers; minimising broader emissions and particulates; reducing material and resource use in industry and manufacturing; enabling the circular economy; and making the most of digitalisation and artificial intelligence to optimise sustainability and efficiency.

The strategic actions we are taking to address these objectives, largely through the application of our R&D and innovation expertise, include:

- Reducing carbon emissions and energy use
- Developing innovative low-carbon steel solutions for key industries including automotive, construction, infrastructure and energy
- Developing a leadership position in additive manufacturing technology and materials
- Exploiting digitalisation and AI to transform our business
- Building our position in recycling and processing
- Leveraging our capabilities in Life Cycle Assessment (LCA) and Environmental Product Declarations (EPDs)
- Building technology and solutions for reducing and mitigating our environmental impacts.

### Reducing carbon emissions and energy use

Our global R&D is playing a major part in the group's roadmap towards carbon neutrality by 2050. R&D's role is to bring significant advances in our decarbonisation technologies, especially for the medium and long-term, while supporting the key short-term decisions.

### Developing low-carbon steel solutions for key industries

The automotive industry is undergoing transformative change as it transitions from the internal combustion engine to battery electric vehicles (BEVs). This means addressing the diverse needs of the legacy manufacturers and nimble start-ups. The predominant requirement has moved away from weight reduction to cost reduction and manufacturing efficiency. One of our key areas of focus is Multi-Part Integration (MPI), seeking to consolidate multiple parts into single parts, through laser welding and hot stamping, that can be delivered ready-finished for integration into a vehicle.

Buildings and construction account for some 40% of global energy-related carbon emissions, and the industry is increasingly looking for low carbon structures, efficient construction methods, low-maintenance buildings and recyclable components. Low-carbon steel is well positioned to deliver the circularity principles for which architects, engineers and developers are looking.

Increasingly, our construction customers are requiring detailed specification of Life Cycle Assessments (LCAs) and Environmental Product Declarations (EPDs) for our products. We are also focusing our attention on the higher-value-added products that meet our customers' complete needs.

As part of the global energy transition, there is a huge and growing demand for renewables infrastructure such as solar arrays, wind turbine units and for hydrogen infrastructure, which require new forms of high-strength steel. We are developing a series of new steel products and specifications to address these markets.

Chapter 5 – Delivering a circular economy through innovation continued



Strategy continued

**Developing a leadership position in additive manufacturing technology and materials**

Additive manufacturing (AdM) and 3D printing are technologies that offer the potential to totally transform industrial efficiency and revolutionise the supply chain, whilst significantly reducing material intensity. ArcelorMittal intends to achieve a similar level of leadership in the development and supply of steel-based substrates – metallic powders and wires – as it has in the conventional steel market.

**Exploiting digitalisation and AI to transform our business**

We believe that digitalisation and the corresponding onset of Artificial Intelligence (AI) are jointly going to have a disproportionate impact on everything we do as a business. Consequently, we are pursuing a total digital transformation and progressively becoming a data-driven company. We see this as a competitive advantage if we get this right.

**Building our position in recycling and processing**

During 2022 we made very significant progress in building our recycling capabilities through four acquisitions across Europe with 1.2 million tonnes of combined annual scrap processing capacity. These acquisitions are fully complementary taking in conventional iron and steel structures through to non-ferrous metals, white goods, appliances and electronics. We are conducting R&D projects to further improve the recycling efficiency of these plants.

**Leveraging our capabilities in LCAs and EPDs**

ArcelorMittal has developed over 15 years of expertise in LCA, which analyses the environmental impact of products during their lifetime from production and use to disposal. This is an important asset and differentiator for the company which we continue to develop and expand.

**Building technology and solutions for reducing and mitigating our environmental impacts**

Reducing and mitigating emissions of dust (including diffuse sources and chimneys) and gases such as NOx, SOx, methane from mining and steelmaking continues to be a major priority for us as a heavy industrial company. We are making significant progress in understanding sources of emissions, characterising them, predicting their appearance and movement, and creating mitigating solutions.



Risk management

Our performance on resource use and circular economy will be covered by CSRD reporting and, as with other material issues, we are scoping out the gaps in our reporting, data and capabilities.

From an R&D perspective the key risk is that we fail to achieve the level of innovation that is necessary to keep us at the forefront of our industry. This could be due to ongoing rapid changes in technologies and legislations.

We need to continuously and successfully adapt our products and customer solutions to increasingly lower carbon emissions intensities while meeting

customers' expectations; reduce the intensity of energy and materials used in our operations and products; and develop circular models of business that are attractive to our key industry sectors and partners.

**Minimising and mitigating risk**

The measures we are putting in place to reduce and mitigate risks include:

- Identifying and filling the gaps in our data and reporting that will be required to fulfil regulatory requirements
- Assessing the areas of resource use where we can have most impact in reductions and efficiency
- Identifying viable and achievable circular models that will be beneficial to our customers
- Pursuing greater engagement with customers and other industry partners to better understand their needs and work with them in facilitating these
- Assessing the areas of our R&D expertise, and those that we are missing, that will deliver most return for us in the short, medium and long-term.



Performance and targets

KPI	2021	2022
Annual R&D expenditure	270	286
Products and solutions to accelerate sustainable lifestyles launched	24	28 and progressing further on 16
Products and solutions to support sustainable construction, infrastructure and energy generation	27	13 and progressing further on 20
LCAs	37	62
EPDs	4	12

**Reducing carbon emissions and energy use**

In 2022 R&D prioritised research around the development of H2 DRI-EAF based steel production, together with work on electrolysis-based steel production (SIDERWIN). We launched the first large-scale trial of hydrogen-based injection in an industrial DRI plant at Contrecoeur (Canada) in 2022 (read more in climate chapter).

The first plates of metallic iron were produced in the SIDERWIN pilot with an energy consumption in line with the expected values, confirming the high potential of this direct electrolysis technology for our future decarbonisation plans.

We are also working on the decarbonisation of conventional blast furnaces to determine if hydrogen-based furnace can contribute to our overall decarbonisation strategy. Key missing technology pieces have been identified and a comprehensive development roadmap is under discussion.

Similarly, finishing operations from hot rolling onwards currently represent around 10% of our carbon footprint. This percentage is expected to rise to 30% with future DRI-EAF use. Several research initiatives have been launched focused on reheating and annealing, trialling hydrogen burners, induction heating and electrical resistance heating. Laboratory testing pilots have been developed and installed to compare these technologies and investigate the impact on steel products.

In 2022, R&D has been researching solutions to reduce natural gas consumption, replacing it with steel making gases. The company's R&D's 1.2MW laboratory furnace is working with real process gases and hydrogen. We have tested burners capable of replacing 70-90% natural gas with blast

## Chapter 5 – Delivering a circular economy through innovation continued



### Performance and targets continued

furnace gas, reducing at the same time NOx emissions by 50%. We have also tested in our laboratory a low-cost solution for burning 100% hydrogen in conventional burners.

The group is also investing significantly in the decarbonisation of pellet production through developing cold-bonded products (pellets & briquettes) and extruded products, and trialling pelletisation using hydrogen and biomass energy.

(Further details on the decarbonisation projects and our overall climate-related programme can be found in chapter 3).

### Developing low-carbon steel solutions for key industries

#### Transformation in the automotive industry

Our MPI solutions are showing substantial benefits in terms of carbon savings, costs and capex over aluminium alternatives, and are being used for a range of body architecture applications including front and rear floors, door rings, sunroofs and H-frames.

In 2022, ArcelorMittal Tailored Blanks North America and Gonvama (a 50/50 Gonvarri and VAMA joint venture) reached a production and delivery rate of 5 million MPI door rings. We are also seeing considerable interest in China, Europe and North America for H-frame and other floor structure parts for next generation vehicles.

We have continued to promote XCarb™ green steel certificates to our automotive customers, and in 2022 our Usibor® 1500 steel made with XCarb™ recycled and renewably produced was successfully

trialled with automotive component group, Gestamp. The XCarb™ recycled and renewably produced steel has a 70% lower carbon footprint than conventional steel.

#### Low-carbon steel and circularity in construction

2022 saw continued growth in our Steligence® offering – its key concept is to make buildings easier to assemble and dismantle, making them quicker to erect, providing significant efficiencies and cost savings, and the potential for reuse. A recent study of a 22-storey residential building in Greater Toronto showed considerable advantages of less construction time, reduced cost and lower life cycle environmental impacts for the steel-based building versus an equivalent concrete construction.

Through XCarb™ recycled and renewably produced steel, the company is able to offer steel produced with a carbon footprint as low as 0.33 tonnes of CO<sub>2</sub> per tonne of sections and merchant bars, 0.37 tonnes of CO<sub>2</sub> per tonne of the EcoSheetPile™ Plus

#### Case study

### Bridge in Poland built using XCarb™

A new bridge has been built in Poland using XCarb™ recycled and renewably produced and the company's weathering steel. The bridge was designed as a counterproposal to the cast-in-place concrete deck option. ArcelorMittal's weathering steel Arcorox® sections do not require any protective coating, either at the time of construction or subsequently. This saves costs, reduces safety risks and optimises long-term ease of use and maintenance. The use of XCarb™ Recycled and renewably produced will also deliver a very low carbon footprint over the full life cycle of the bridge.

brand and 0.53 tonnes of CO<sub>2</sub> per tonne for hot rolled coils. With these EPDs, the company is capable of supporting the construction industry to meet tougher requirements to reduce the embedded carbon footprint of buildings and infrastructure.

XCarb™ recycled and renewably produced steel is now in stock in Singapore and available for the South East Asian market. In 2022, Continental Steel, a major stockist in Asia, purchased 6000 tonnes of XCarb™ recycled and renewably produced HISTAR® high-strength steel sections. In Singapore, the demand for low-carbon steel in the construction industry is growing. Buildings account for over 20% of carbon emissions in the country, thus reducing CO<sub>2</sub> emissions in this sector is a key lever to drive large-scale decarbonisation.

#### High-spec steels for the energy transition

Notably, Magnelis® advanced coating combined with Hyper® high-strength steels, has become the material of choice for light weight solar structures. Extension of the solutions to heavy coating weights (ZM620) is now fully industrial over a large range of sizes (thin and thick gauges), and heavier weights are in their testing phase with certain customers. These solar steel solutions are being deployed globally in Europe, Americas and Asia.

The company is also working on the development of solutions suitable for the hydrogen economy, electricity grids, carbon capture, storage and use and bioenergy. Likewise, we are positioning ourselves to respond to the huge transition to electric motors and BEVs with the development of next generation, low-loss engines through the use of electrical steel solutions, namely our iCARE® range of electrical steels for automotive traction motors.

### Developing a leadership position in additive manufacturing technology and materials

In 2022, the company approved the construction of an atomiser with an initial 1,000 tonne capacity to supply significant volumes of steel powders to the market. It is expected to start sales in early 2024. Our R&D laboratory atomisation facility is in the meantime sampling powders enabling customers to pre-qualify our products. At the same time our R&D teams have successfully trialled wire-based AdM printing of high quality large parts using Directed Energy Deposition (DED) technology.

The web-like structures enabled by AdM can substantially reduce the weights of parts and components by around 30% or greater, whilst retaining the same strength characteristics. This offers huge reductions in materials usage and intensity, together with dramatic corresponding reductions in carbon emissions.

The Steel Printers, our AdM joint-venture with Frankstahl founded in 2018, now has operations in Avilés (Spain), Ghent (Belgium), Dunkirk (France) and Dabrowa Gornicza (Poland). We are currently producing parts for our own plants.

### Exploiting digitalisation and AI to transform our business

In 2022 we made real progress in the digitalisation of our sites. We see this bringing substantial gains in our commercial interactions, logistics, scheduling, quality, safety and maintenance effectiveness.

Our 2022 actions included:

- Continued developing global platforms (Big Data, Industrial Internet of Things (IIoT), collaborative digital product development

## Chapter 5 – Delivering a circular economy through innovation continued



### Performance and targets continued

- Continued digitalisation of our manufacturing including quality and maintenance enhancement, predictive operations and management
- Completed design of digital architecture and a map of R&D models for ArcelorMittal's new decarbonised footprint based on hydrogen DRI and EAF units
- Data-driven machine learning models to mitigate the impact of scrap residuals on the quality of high-added value products
- Increased number of decision-based tasks for ArcelorMittal's workforce are being taken by artificial intelligence algorithms, improving results and efficiency
- New mathematical techniques combined with AI to better deal with uncertainty management, for instance around raw material inventory, and prediction of electricity consumption peaks
- Digitalisation of our business methods – procurement, commercial supply chain, strategy, finance and HR
- Web sales platforms now offer additional products for immediate purchase and shorter lead-times.

### Building our position in recycling and processing

We are planning significant investment in advanced metal recycling and processing facilities that are capable of separating out plastics, non-ferrous and high-value metals.

Wider initiatives being considered include creating an attractive circular offering with leading OEMs, notably the automotive industry, with very high quality recycled metals with very low levels of

residuals and impurities. We recognise that a key component of targeting circular partnerships with international OEMs is providing high levels of service and precise logistics, for example, the timely collection of scrap from their sites but also offering a solution to recycle and reuse their products when they reach end of life.

Our overall goal is to get to zero waste to landfill, and running these operations to the highest ESG standards. Our acquisition in the Netherlands is the first recycling company in the country to achieve the highest level of CO<sub>2</sub> performance (i.e. Level 5 of the CO<sub>2</sub> Performance Ladder, a Dutch green public procurement instrument that serves as both a CO<sub>2</sub> management system and a procurement tool) for its Almelo and Beverwijk sites.

### Leveraging our capabilities in LCAs and EPDs

LCAs are a requirement for EPDs for construction products in Europe and our capabilities in this regard contribute to our competitiveness in the sector. Similarly in automotive, customers are increasingly scrutinising their supply chain and the role that steel can play in their LCA performance.

In 2022 we issued 12 EPDs including XCarb™ recycled and renewably produced hot dip galvanised steel with Magnelis® coating, XCarb™ recycled and renewably produced structural sections and merchant bars, and XCarb™ recycled and renewably produced hot rolled coils.

In 2022, we undertook 62 LCA studies related to steel products and the processes used to produce them, all guided by the relevant standards (ISO 14040-44).

LCA is also an integral part of our concept for a global low-carbon emissions physical standard,

since LCA results will be a critical part of the dual scoring of low-carbon products.

For more information see chapter 4.

### Building technology and solutions for reducing and mitigating our environmental impacts

Particular advances are being made in detection through laser and AI powered video surveillance, with the ultimate goal of defining what emissions are being released, in what volumes, from where, and with what trajectory and diffusion, such that they can be arrested, removed or mitigated.

During 2022, technology has been tested in four of our plants, as a step towards deploying tailored solutions across our operations.

In 2022 we implemented a sensor monitoring network at one of our sites. Advanced sensors and algorithms were tested to calculate the accuracy of measurements in the monitoring area and calibrate them to the industrial conditions. Using cutting-edge laser scanning we can now better assess the source of emissions and start to predict how they may develop given production metrics, meteorological conditions and other variables. This then enables appropriate preventative or mitigating measures to be put in place such as de-dusting and advanced filtration.

We are progressing in the industrialisation of advanced filtration technologies to reduce emissions at stacks. For diffuse dust emissions, R&D has developed a methodology to calculate technical requirements to capture the filtration requirements based in advanced CFD simulations, visual camera and measurements. It enables the correct dimensioning of equipment in critical hotspots such as the sinter coolers.

With our broader circularity strategy, we are looking closely at the reuse of what are currently 'waste' products such as slag, stone and sand, for applications such as cement, aggregate, ballast and gas capture.

In 2022, our longstanding commitment to innovation was globally recognised when LexisNexis® identified ArcelorMittal as one of the Top 100 Innovators thanks to our exceptionally high-performing and well maintained patent portfolios. ArcelorMittal was the only steel firm in the list and ranked #2 in the group of companies dedicated to materials and chemicals.



Research and development centre ↑

Chapter 6

# Value chains our stakeholders trust

Customers increasingly expect to buy products that are responsibly sourced and sustainable. They, together with broader stakeholders and civil society, are exerting these pressures across the whole value chain to ensure that we and our suppliers are committed to ensuring the respect of human rights and the environment, as well as addressing climate change.

Transformational legislation on value chain sustainability is increasingly coming into effect. With this increased scrutiny, respected, third-party, certified, multi-stakeholder standards are a key enabler in demonstrating strong environmental and social management within the value chain for workers, customers, industry partners, financial institutions and broader stakeholders.

ArcelorMittal is working towards certification with industry-leading standards, ResponsibleSteel™ and IRMA, as part of its approach to strengthening its sustainable value chain and legal compliance.

### KPIs highlights

#### KPI/target

Steelmaking sites in >50% of ArcelorMittal's operating countries being ResponsibleSteel™ certified by 2025

#### Progress in 2022

↑ 50%

#### KPI/target

First achievement level towards IRMA certification (Transparency level) by iron ore mines in Canada, Liberia, Brazil and Mexico by end of 2025

#### Progress in 2022

Operations in all countries have started the IRMA self-assessment

#### CSRD alignment

ESRS S2: Workers in the value chain  
ESRS S4: Consumers and end-users

#### Material topic

8. Customer reassurance

#### UN SDG alignment



Inspecting production line, Liège, Belgium →

## Chapter 6 – Value chains our stakeholders trust



Achieving industry-leading certification and assurance is crucial to our sustainability progress and performance. It is what customers and stakeholders are increasingly demanding. Simultaneously, a wave of recent and impending legislation is requiring due diligence across the whole value chain for sustainability and responsibility. Decarbonisation and ensuring that companies are compatible with transition to a sustainable economy, and with limiting global warming to 1.5°C in line with the Paris Agreement, is an important part of this requirement and we are committed to being a leader within steel industry in terms of target-setting, performance and disclosure.



**Brad Davey**  
EVP Business Optimisation



### Governance

Under the Board Sustainability Committee's oversight, the Executive-level Sustainable Development Panel (SDP) has management responsibility for overseeing the development and implementation of the company's approach to value chain sustainability, including compliance with various corporate sustainability due diligence laws. The Executive Office receives key information from the SDP and reviews all information provided to the Board Sustainability Committee.

Compliance with the evolving due diligence legislation (see Strategy below) is becoming a major aspect of our value chain assurance governance. Under the direction of the SDP, various corporate functions are addressing the requirements for own workers (HR), workers in the value chain (procurement, legal and compliance) and affected communities (sustainable development) with support from legal to ensure every business unit has a clear action plan to comply with legal requirements and voluntary standards, such as ResponsibleSteel™.

Governance of our value chain is covered under our existing sustainability and responsibility policies and procedures, such as Human Rights, Anti-Corruption, Conflict Minerals, Code of Business Conduct, Code of Responsible Sourcing, Health and Safety, and Environment.



### Strategy

Our aim is to operate responsibly across the whole value chain to meet stakeholder and civil society's expectations and earn our licence to operate.

The strategy involves:

- Continuing to certify our operations to third-party industry leading multi-stakeholder standards
- Encouraging our key raw material suppliers to certify to industry leading ESG standards
- Responding to sustainability due diligence legislation.

#### Continuing to certify our operations to third party industry leading multi-stakeholder standards

Assurance, certification and compliance is about taking a more outward-looking view of our business, how we operate and how we impact the society and environment around us. Taking this strategic perspective helps us make better, long-term decisions and thereby build and protect value for the future.

ArcelorMittal is seeking to be at the forefront of the steel industry in assuring its customers and stakeholders through continuing to align its business with the key industry-leading standard-setting industry bodies, ResponsibleSteel™ and the Initiative for Responsible Mining Assurance (IRMA).

ArcelorMittal was a founding member of ResponsibleSteel™ and has a seat on the Board representing business members. The Company also has a steering committee seat at IRMA. The values and missions of both correspond closely to our company's own purpose and our desire to minimise

risk, improve performance and surpass our stakeholders' expectations. There is also an alignment with the increasing legislative developments to assure our stakeholders that we operate responsibly. Our strategic actions on this include:

- Continuing to self-assess and certify our major steelmaking sites to ResponsibleSteel™
- Completing IRMA self-assessments at the company's iron ore mining operations.

The company also remains committed to the Mining Association of Canada's Towards Sustainable Mining (TSM) initiative at its mines in Canada. ArcelorMittal Mining Canada has implemented TSM protocols since 2004 and is both TSM-assured and five-star rated.

#### IRMA certification covers over 400 ESG requirements and draws on the following sources and standards:

- Mining in conflict-affected areas (OECD due diligence)
- Human rights due diligence, stakeholder grievance mechanism (UN Guiding Principles on Business and Human Rights)
- Resettlement, cultural heritage (IFC performance standards)
- Revenue and payments transparency (EITI)
- Security (Voluntary Principles on Security and Human Rights)
- Labour Rights and Worker Health & Safety (ILO conventions)
- Tailings management (Mining Association of Canada)
- Biodiversity management (IFC, ICMM, IUCN and others)



Chapter 6 – Value chains our stakeholders trust continued



Strategy continued

The IRMA and TSM initiatives give the business high-quality, rigorous assessment tools, that help demonstrate how it is managing social and environmental performance at its mines. Both IRMA and TSM have been formally recognised by ResponsibleSteel™ as meeting the criteria for its 'Certified Steel' responsible sourcing requirements released in 2022.

Encouraging our key raw materials suppliers to certify to industry-leading ESG standards

The company is also working increasingly closely with suppliers of iron ore and other raw materials to support the wider adoption of higher sustainability standards – to facilitate their achievement of ResponsibleSteel™, IRMA and TSM standards. It is doing this through setting an example itself, engaging with suppliers, and setting standards in its procurement requirements, namely through its Code for Responsible Sourcing.

Responding to sustainability due diligence legislation

There is a growing momentum internationally amongst governments, investors and civil society, particularly in Europe, to require companies to demonstrate that they are putting in place sustainable and just value chains.

This is reflected in legislative developments, namely the French Duty of Vigilance Law (2017), the adoption of the German Supply Chain Due Diligence Act 2022 which both focus on the supply chain, and the impending EU-wide Corporate Sustainability Due Diligence Directive (CS3D) (expected to come into

force in 2024) which proposes to extend due diligence to the whole value chain. CS3D addresses wider due diligence on sustainability human rights, environmental impacts and climate change in own operations, supply chain and downstream. The CS3D requirements are also reflected in the reporting requirements of the Corporate Sustainability Reporting Directive (CSRD).

We have identified a set of strategic actions to strengthen our existing compliance and procurement processes for our supply chains and we are working on their implementation (see Risk management below).



Risk management

The risk in the company's assurance and value chain considerations primarily relate to effective implementation of our plans, and management of actual and potential adverse impacts on human rights and environment across the company's complex value chain, which comprises over 40,000 direct suppliers across the globe. Developing and implementing these systems to achieve full coverage, and engaging suppliers to adopt higher standards could take several years to achieve.

The Company operates in, and procures from, a number of higher risk geographies and sectors and will need to develop an increasingly sophisticated approach to identifying and addressing ESG issues throughout its value chains. However, as a global leader in the steel industry we expect to support the inclusion of stronger sustainable development practices in these geographies over the longer term which will improve labour conditions, environmental

management and reduce adverse impacts on affected communities.

In terms of compliance, the company also recognises the challenges of resourcing its personnel with the right expertise and training to address these assurance requirements. It is important that all relevant personnel in business leadership, HR, procurement, commercial and community relations roles receive training on the legislation and the company's processes for managing value chain sustainability as appropriate.

Mapping the full value chain will take time and need to be conducted on a risk-prioritised basis to establish areas of high environmental, social and governance (ESG) risk. This will initially need to focus on value chain partners with direct business relationships before moving up and down the value chain as the understanding of ESG risk is increasingly developed.

In particular, many value chain partners outside of Europe will not be familiar with the legislation requirements and will need to be educated on a risk-prioritised basis in relation to the company's approach.

Minimising and mitigating risk

During 2022, we completed a comprehensive gap analysis against the various corporate sustainability due diligence laws that are already in force and those that are pending. From this, the company identified a set of strategic actions to strengthen its existing business processes for managing its value chains to cover core requirements of such laws while supporting specific reporting requirements in certain geographies.



Performance and targets

KPI/target	Progress in 2022
Steelmaking sites in >50% of ArcelorMittal's operating countries being ResponsibleSteel™ certified by 2025	50%
First achievement level towards IRMA certification (Transparency level) by iron ore mines in Canada, Liberia, Brazil and Mexico by end of 2025	Operations in all countries have started the IRMA self-assessment
Human Rights training of personnel in key functions	Certified Human Rights Officer training for 16 leaders within key corporate functions and business units

Continuing to certify our operations to third-party industry-leading multi-stakeholder standards

We commenced our Certified Site certification process with ResponsibleSteel™ in 2020, and in 2022 we actively participated in a consultation by ResponsibleSteel™ to develop additional GHG emission and responsible sourcing requirements for being able to make claims in relation to the sale of crude steel from Certified Sites.

By the end of Q1 2023, 32 of our sites have been certified under ResponsibleSteel™'s core ESG management standards. These included the first sites ever certified by ResponsibleSteel™ worldwide, during 2021 in Belgium (Geel, Genk, Gent, and Liège), Luxembourg (Esch-Belval, Differdange and Rodange) and Germany (Bremen and Eisenhüttenstadt). Further sites were certified during 2022 in Spain (Asturias, Etxebarri, Lesaka and

## Chapter 6 – Value chains our stakeholders trust continued



### Performance and targets continued

Sagunto), France (Fos-sur-Mer, Saint-Chély-d'Apcher Dunkerque, Mardyck, Desvres, Montataire, Florange, Mouzon and Basse Indre), Poland (Dąbrowa Górnicza, Kraków, Zdzeszowice, Świętochłowice, Sosnowiec, Chorzów, Warszawa) and Brazil (Tubarão, Monlevade, Vega). Tubarão was the first site to be certified anywhere in the Americas.

Further sites in Europe, Brazil and NAFTA have also commenced the audit process and are expected to be certified during 2023. We are planning that by 2025 major steelmaking sites in more than 50% of our operating countries will have such certifications.

#### Case study

### Preparing ArcelorMittal Germany for the German Due Diligence Act

In Germany, where the German Due Diligence Act is already in place, we have undertaken specific gap analysis between the legislative requirements and the ResponsibleSteel™ standards with which we are complying and implemented a set of compliance actions.

We appointed three Human Rights Officers; set up C-suite accountability, extended local risk analysis towards human rights and environmental due diligence; we have put in place new policy statements; and updated whistleblowing policy and grievance mechanisms, amongst other actions.

The company's commitment to ESG extends to cover the extraction of raw materials. ArcelorMittal benefits from controlling much of its own supply chain through supplying around two-thirds of its own iron ore needs – giving it the opportunity to manage the social and environmental performance at its own mines.

Most of the company's iron ore mining operations are working towards certification against IRMA, the leading multi-stakeholder, standard-setting organisation focused on socially and environmentally responsible mining. IRMA is recognised by several of the business' major customers, which have also joined the initiative. IRMA certification is demanding, covering over 400 ESG indicators and draws from wide-ranging sources and standards such as the OECD, UN, IFC, ILO and IUCN.

The company's iron ore mining operations in Canada, Liberia, Brazil, and Mexico are aiming to achieve the first level of IRMA certification (IRMA Transparency) by the end of 2025 and are currently completing a self-assessment against IRMA's standards.

### Responding to transformational corporate sustainability due diligence legislation

During 2022, we have completed a comprehensive gap analysis against impending corporate sustainability due diligence legislation. From this, the company identified a set of strategic actions to strengthen its existing compliance and procurement and sales processes for its value chains including:

- Designating C-suite accountability for value chain compliance
- Establishing an overall management system approach to value chain sustainability due diligence
- Building internal capacity for corporate sustainability due diligence including responsible sourcing
- Adding digital ESG risk assessment solutions

#### Case study

### ResponsibleSteel™ certification at ArcelorMittal Brazil

ArcelorMittal Monlevade and Tubarao were certified by ResponsibleSteel™ in 2022 and ArcelorMittal Vega was certified in Q1 2023.

Tubarão and Monlevade were audited by DNV Brazil in a three-phase process: Phase 1: readiness assessment (not mandatory); Phase 2: document assessment; Phase 3: face-to-face assessment.

Prior to the DNV audit, the sites hired a consulting company specialised in the ResponsibleSteel™ standard that conducted internal training and a face-to-face gap analysis for thorough preparation of the working group and the industrial area.

ArcelorMittal Tubarão was the first industrial plant in the Americas and outside Europe to obtain sustainability certification of its operations by ResponsibleSteel™ standards in February 2022, after a rigorous auditing process in 2021. As in all pioneering ventures, the challenges for the operations' certification were many, both for the site

and for the certifying company, which was also making its debut in this type of audit.

The lessons learned at Tubarão, Monlevade and Vega units are already being disseminated to the other units of the Group in Brazil that will undergo the certification process in the coming months.



- Mapping value chain partners and prioritising high risk value chains
- Implementing a progressive, ESG risk-based assessment process across all the company's value chains
- Reviewing, and updating where appropriate, the processes we use to manage ESG issues within our own operations
- Extending our End-User Declaration process to include wider ESG considerations
- Reviewing, and updating where appropriate, our ESG due diligence processes for investments and potential acquisitions.

A detailed roadmap is being developed for each action point.

In November 2022 the company staged a three-day immersive training course for 16 selected personnel from key corporate functions (compliance, legal, sustainable development, human resources, procurement and internal assurance) and business units to become Certified Human Rights Officers (certification awarded by the ESCP business school based in Berlin). The course focused on human rights within the supply chain, and looked at internal roles, risk analysis, policies, preventative measures, remedial actions, grievance mechanisms and reporting, both from a regulatory and business strategy perspective.

Chapter 7

# Attracting, retaining and developing our people

Attracting and retaining a diverse pool of talented and skilled people is fundamental to ArcelorMittal's future success. We want our workforce to thrive through a balanced, respectful culture of performance and well-being. Our stakeholders also believe that our employee's work experience is one of the most material issues in their view of the company. Against the backdrop of a job market that is increasingly competitive, we recognise the importance of strong interactive engagement with our workforce, constant building of their experience and know-how, and promoting our values to potential recruits to maintain and build our skills and knowledge base.

**CSRD alignment**  
ESRS S1: Own workforce

**Material topic**  
2. Work and life  
3. Gender

**UN SDG alignment**



**KPIs highlights**

Employees' participation in leadership programmes

↑ **800+**

2021: 329

Participation in the Speak Up +

↑ **88%**

2021: 72%

Women on the BoD (%)

↓ **30%**

2021: 36%

Women on the Group MC (%)

↑ **12.5%**

2021: 9%

Gender diversity leadership positions

↑ **16%**

2021: 14%



Mexico hot strip mill →

## Chapter 7 – Attracting, retaining and developing our people



Our company's purpose is to create "smarter steels for people and planet". This can only be achieved through the talent and commitment of our people. It is therefore critical that we continue to develop, retain and attract the best talent. Our new People strategy therefore focuses on three core pillars: 'Leadership that inspires excellence'; 'Talent to thrive for the future'; and 'Diversity and inclusion that engages everyone'. These pillars will drive our approach to boosting talent and creating a people-driven, safety-first culture, to support sustainable performance, so that we can continue to deliver on our purpose.



**Stephanie Werner-Dietz**

Executive Vice president, human resources



### Governance

Our People governance is primarily overseen by the Appointments, Remuneration and Corporate Governance Committee (ARCGC) and the Board Sustainability Committee (BSC). The ARCGC reviews the succession planning and the executive development programme for the members of the Executive Officers. Further details can be found in chapter 9.

The Human Resources Panel, composed of heads of HR for each segment, initiates policy, aligns approaches across the business, and follows up on corporate initiatives and strategic priorities. It meets every two months.

The Career Committee conducts performance reviews and succession planning and ensures the efficient management and development of people at ArcelorMittal.

Our diversity and inclusion (D&I) governance is led by the Global Diversity and Inclusion Panel, which was formed in 2021. It acts as an informed representative of the group, to promote D&I through:

- Leading our ambition to be an employer of choice
- Improving inclusion, growth and trust throughout the employee experience
- Providing guidance, sharing best practices and encouraging segments to develop their own D&I strategies and plans
- Challenging the status quo
- Promoting company-wide communication on D&I achievements

- Discussing and recommending appropriate KPIs and targets, and monitoring progress against these targets.

With 15 members, the D&I Panel itself is diverse in many ways, representing every part of the organisation, as well as comprising both senior and more junior people. When selecting members, we seek to include people who are passionate about diversity and inclusion and who can act as ambassadors in their local constituency. It meets at least once every two months. It is currently chaired by the director of people, health and wellbeing at ArcelorMittal Long LATAM & Mining Brazil. The D&I Panel is sponsored by the EVP human resources and VP corporate communications and sustainable development.

The company is culturally and geographically diverse. In terms of driving diversity, the company is currently focusing on gender diversity as a key KPI in the ESG component of our Long-Term Incentive Plan, based on achieving progress towards the company's target of 25% women management positions by 2030 from a baseline of 2020.



Sabar, Belo Horizonte, Brazil ↑

Key HR policies governing the business include the Human Resources, Employee Relations and Diversity and Inclusion policies.



### Strategy

Our new People strategy, launched in 2022, is based around our fundamental purpose which is to create smarter steels for people and planet. It seeks to boost our talent base to create a people-driven, safety-first culture that ensures sustainable performance. It is founded on three pillars:

- Developing leadership that inspires excellence
- Attracting and developing talent to thrive for the future
- Engaging all our workforce through implementing our D&I roadmap.

In addition, the company is also preparing for new disclosure and due diligence requirements under European legislation that will affect the company globally in the form of the CSRD and CS3D.

#### Developing leadership that inspires excellence

We believe we can enhance our organisational and operational performance through inspirational leadership. We regard good leaders as standard-setting role models: they are our multipliers, our advocates, and our strongest ambassadors, who have the biggest influence on the engagement level of all people. We need to make sure they are trained and best equipped to perform this role effectively. Our strategy involves a strong leadership development programme, building a pipeline of new leaders, and enhancing the skills and engagement of existing leaders.

Chapter 7 – Attracting, retaining and developing our people continued



Strategy continued

Attracting and developing talent to thrive for the future

Attracting and developing the right talent is key to successfully delivering our business strategy. In a competitive career market, we need to position ArcelorMittal as the employer of choice, seeking out purpose-driven people whose values align with ours. This means creating a culture that motivates and inspires people to make a difference, where they can grow both professionally and personally, and where they can develop new ideas and succeed. This culture also needs to be demonstrably caring and look after the wellbeing of individuals.

Our strategy to support this involves communicating a compelling Employee Value Proposition to existing and potential employees, and creating a learning culture, supported by a comprehensive educational and training resource through the ArcelorMittal University (AMU). Attracting a strong pipeline of STEM professionals to upgrade our technology, engineering and data capabilities is also crucial to our future.

Engaging all our workforce through our D&I roadmap

We need to engage and include every one of our employees, no matter what their background, to contribute towards a successful and rewarding workplace. We are seeking an environment that is completely free of bias, and promotes collaboration, team spirit, mutual respect and compassion, and ensures each employee’s safety, health and wellbeing.

With the importance of D&I to our overall People strategy, we have put in place a detailed roadmap that sets out the changes in processes, policies and mind-sets that are required to achieve the targets we have set ourselves. This includes engaging senior leaders to embrace D&I with a priority on gender diversity; establishing the D&I Panel as a critical driver of change; developing group-wide programmes through to local initiatives; and defining minimum standards of compliance. The aim is to ensure that everyone in the company understands the real business benefits of diversity, leveraging innovation, building mutual engagement, and increasing productivity to enable a high-performing organisation.



## Risk management

ArcelorMittal's key human capital risks are based around:

- Maintaining our ability to attract and retain talented people which in turn drives our performance
- Gaining access to and developing the right skills, knowledge and leadership to succeed as a company in the energy transition
- Preparing for the new CSRD legislation.

Attracting a strong pipeline of talented people into the business within a very competitive career and job market is becoming more challenging, and we accept that this means continuing evolving perceptions of both the company and the steel industry.

We recognise that creating a truly diverse and inclusive culture that engages all our workforce, across all our geographies, could take some time. Our initial focus is on gender diversity but we recognise that we need to address all forms of diversity and achieve it in a sensitive and culturally appropriate way.

The CSRD will require a higher degree of disclosure by affected companies' dependencies and impacts on all aspects of the human capital. In preparation, ArcelorMittal is developing its understanding of the relevant information it will need to collect to identify and proactively manage human capital related impacts, dependencies, risks and opportunities.

### Minimising and mitigating risk

Our risk management programme put in place to address these risks includes:

- Pursuit of an impactful D&I policy and implementation across the business to achieve real plurality of ideas and skills
- Effective implementation of our Employee Value Proposition, which represents our values, culture and the unique set of benefits ArcelorMittal has to offer our employees and potential candidates in return for the skills, capabilities and experience they bring to the company
- Roll-out of a new project to further integrate our purpose into our daily activities – linked to clear KPIs showing to employees how their work is directly contributing to better outcomes for people and planet
- Promotion of the wide range of career opportunities within the company, not least in new technologies, and presentation of ArcelorMittal as an employer of choice on a global scale
- Supporting people development, a learning culture and business transformation enhancement of the role of ArcelorMittal University to deliver world-class training and education
- Building a pipeline of talented scientists and engineers for tomorrow
- Building the ArcelorMittal performance culture and sharing of best practices
- Identifying and growing our own leaders
- Achieving excellence in functional expertise
- Developing plans to address the CSRD requirements.

## Performance and targets

KPI/target	2021	2022
Employees participation in leadership programmes	329	800+
Active learners	61,700	73,480
Participation in the Speak Up +	72%	88%
Women on the BoD (%)	36%	30%
Women on the Group MC (%)	9%	12.5%
Women recruited (exempt population)	25%	29.3%
Gender diversity leadership positions	14%	16%
Overall recruitment of female talents	2,251	3,336

### Developing leadership that inspires excellence

Steady progress has been made in 2022 in our leadership development programme. More than 800 participants attended AMU leadership programmes during the year versus 329 in 2021. We have stepped up efforts to identify and accelerate the development and readiness of our High Potential employees (HiPos) to take on increased responsibilities. This has been achieved by having the right people in the right place at the right time; identifying people for key succession plans; anticipating and filling vacancies; ensuring a healthy and diverse leadership pipeline; nurturing internally the generations of tomorrow and preparing future leaders; encouraging individual performance and making sustainable performance gains; and ensuring the retention of HiPos, through acknowledgement, empowerment, motivation and challenges.

The Talent Acceleration Pool (TAP) for HiPos has continued its 18-month programme, with the second cohort comprising 78 participants from 21 nationalities, of which 23 were women (30%).

A key component of this programme is our Leadership Pipeline Learning Journeys which continued in 2022 and was attended by more than 300 employees last year. These are rolled out across four levels of seniority and involve personalised programmes delivered through face-to-face and digital interactions:

- Aspire (preparing future General Managers) one cohort of 20 participants
- Connect (preparing future Managers) three cohorts with 96 participants
- Engage (preparing future Professionals) two cohorts with 85 participants
- Aware (preparing future Specialists) one cohort of 100 participants.

## Chapter 7 – Attracting, retaining and developing our people continued



### Performance and targets continued

#### Attracting and developing talent to thrive for the future

##### Launch of Employee Value Proposition (EmVP)

During 2022 we have been preparing for the launch of a new Employee Value Proposition to refresh our talent attraction and retention messaging and outreach – the campaign, which launched in February 2023, communicates the benefits, value and impact of working for ArcelorMittal.

##### Building a learning culture

We believe that building a learning culture within the company is fundamental to its future success. AMU is our main platform for educational training across the group at all levels. In 2022 we have improved the range of functional academies and boosted the university's digitalisation in the form of the virtual campus. In 2022 we had 73,480 active learners which is up 16% on 2021 with average hours of 5.1 per learner, an increase of 23%. There are now 1,368 courses available across the AMU. The Target 21 Safety Leadership course unit had 6,432 learners and Project Management 837 learners. 2022 also saw the launch of the Global Learning Hour, with live sessions every Wednesday, which achieved over 20,000 in attendance.

Separately, we recognise that mentoring has a significant role to play in the evolving know-how, experience and advice to personnel and management. In 2022 we had 181 mentors in place with some 375 mentees. This enables senior people from diverse levels and parts of the business, including segment CEOs, to share knowledge and support for more junior team members, to help build on the company's talents.

#### Active learners

# 73,480

2021: +16%

#### Courses available

# 1,368

#### Delivering a pipeline of STEM professionals and project managers

Finding and attracting a strong pipeline of STEM professionals continues to be a priority for our recruitment and career development programmes. To be ready for future challenges as a business, we need access to talented scientists and engineers, together with project management experts, especially in the light of our planned decarbonisation journey.

In 2022, we launched the TOP Women Tech international careers initiative supporting the teaching and development of STEM subjects at grassroots, school and university has been a priority, as well as positioning ArcelorMittal to be a company of choice for students and employees entering the career marketplace. Our refreshed EmVP has been supporting us in achieving our STEM goals.

#### Driving engagement and feedback through our Speak Up+ employee surveys

2022 was the first year of implementing our updated employee engagement tool called Speak Up +, which is now more dynamic, interactive and effective, providing insights and feedback from our employees throughout the year. The engagement level with Speak Up + is at 75%, which is fairly stable compared to 2021 globally, although there are considerable variations geographically that we are seeking to address. 30,000 employees were reached in the last survey. Whilst we are keen to optimise engagement, the most important consideration for our HR management is to fully understand the issues driving employee concerns and behaviour, so we can target measures and policies to enhance the working lives of our people, and thereby the performance sustainment of our business.

#### Engaging all our workforce through D&I

D&I has been a fundamental HR priority for the company in 2022. It not only brings richness of thinking, fosters continuous progress and innovation but also provides access to wider talent pool. It is therefore pleasing that we are on track with increasing the proportion of women in senior leadership positions, from 14% in 2021 to 16% in 2022, progressing towards our target of 25% by 2030. We currently have three out of ten women Board members and expect to make further progress in female representation on the Board in due course. With the appointment of a woman into the position of Executive vice president and global head of Human Resources in 2022, the number of women on the Group Management Committee increased from two to three, out of 24 members. We have also made advances in the assignment of women as potential successors in senior management roles, reporting 60% of roles in comparison to 56% last year.

## Helping our colleagues in Ukraine

With the year-end there has been no let-up in the hostilities in Ukraine set in motion by the Russian invasion on 24 February 2022. Despite the heroic and committed efforts of our Ukrainian employees and management, in the face of regular bombing and other threats, we have had to effectively idle our production operations, keeping just one blast furnace running and with mining operations running at 25% capacity. Our workforce has suffered considerably. We lost 67 of our people who went to fight for their country and 850 employees were forced to leave their homes and leave the country.

ArcelorMittal is channelling donations from ArcelorMittal employees worldwide via the United Nations humanitarian effort UNICEF, with the company matching donations made by employees. As of January 2023 €5,170,580 in total has been donated in this way. Wider initiatives have included the provision of ambulances for evacuation around Kryvyi Rih, donation of food aid and surgical equipment and medical supplies for local hospitals.

We remain fully committed to our Ukraine business and our people there. We will do everything in our power to assist our colleagues, and in the meantime will seek to maintain our asset integrity to enable a return to production as soon as the war is over.

## Chapter 7 – Attracting, retaining and developing our people continued



### Performance and targets continued

Overall recruitment of female talent has also improved from 2,252 in 2021 to 3,336 in 2022 (+48%).

In 2022, women accounted for 17% of our total workforce. We are strengthening our efforts to further improve this with wide-ranging initiatives and campaigns to attract female talent into the company at all levels.

During 2022, we started a D&I maturity assessment programme across all segments and geographies of the group, which will help identify where we are weak on diversity, where we need to do more, what the behaviours and structures are, and where we need more data and KPIs. The assessment, undertaken by HR consultants, Korn Ferry, has been completed in Europe, North America and Kazakhstan, and in 2023 we will cover off the remaining segments of the group. The diagnostic reports on the Flat Europe and NAFTA businesses concluded that D&I awareness is gaining momentum with gender representation consistently being referred to as a top priority for the business.

However, it has also been acknowledged that barriers to achieving a fully diverse, equitable and inclusive organisation include leaders not making D&I a business priority; a low level of diversity at the top of these organisations, hindering role modelling; inconsistent HR practices at segment level; and no formal rules, accountability or dedicated expertise to deliver the D&I strategy.

These findings are being used to refine and implement the new People strategy.

### Proportion of women in senior leadership positions

# 16%

2021: 14%

### Overall female talent recruited

# 3,336

2021: 2,252

#### Case study

### D&I at ArcelorMittal Dofasco

In 2022 our Dofasco business at Hamilton expanded its annual one week DE&I workforce education event to a three-week roadshow format. The Roadshow model allowed us to bring DE&I to a much greater number of employees across more business unit locations – delivering more sessions virtually and in-person.

The 2022 events reached another 30% employees making a total of circa 670 with 12 events and 19 webinars and workshops. 92% of survey respondents said they would apply what they had learned to their jobs/departments.

## Diverse talent makes smarter steel

The company has launched an internal and external information campaign to inspire our women employees and job candidates with the opportunities for achievement within our business. It features some of the many talented women working globally within ArcelorMittal today, as they tell their stories of personal growth, career progression, making their impact on the industry and the pioneering work they are undertaking to transform the company on its journey to net zero.



In ArcelorMittal we have space for personal and professional life. I have two kids, and it's possible to be the best mother, the best wife, the best leader.



**Tatiana Furtado Nolasco De Abreu**

General manager, Sul Fluminense, Long Carbon Brazil

The campaign is focusing on:

- Attracting and retaining the next generation of female talent into the business
- Demonstrating the breadth and depth of opportunities that ArcelorMittal has to offer
- Changing perceptions on the steel industry and subverting the expectations that our audience may have
- Highlighting some of the innovative, cutting edge and sustainably focused projects that ArcelorMittal is leading
- Bringing the focus on the decarbonisation of the steel industry into the spotlight
- Showcasing the value of having an inclusive and diverse culture



We need women because different backgrounds, different ways of thinking can definitely be beneficial for this industry.



**Dr Tannaz Javadi**

Phd, Senior research engineer, R&D, USA



Chapter 8

# Communities and Just Transition

It is part of our purpose that, through producing smarter steels, we make a positive contribution to our local communities. They regard this as one of the most material issues for the company. We want our employees, their families, and the local communities around them to thrive. We must demonstrate the value we create for them and listen to their needs and expectations.

With the coming challenges of the energy transition, we must also address how we will soften the impacts of adjustments in skills, resources, infrastructure and ways of working that will be required, in a just and considerate way across our value chains. Moreover, we should see and plan for the transition as a platform for delivering economic and social good.

**CSRD alignment**  
ESRS S3: Affected communities

**Material topic**  
4. Community

**UN SDG alignment**



### KPIs highlights

Community investment spend (including STEM)

↑ **\$22.5m**

2021: \$10.2m

Estimated direct economic contribution

↑ **\$80.6bn**

2021: \$67.7bn

Spent on STEM projects

↑ **\$4.3m**

2021: \$3.5m

Wind turbines →

## Chapter 8 – Communities and Just Transition



We play a significant role in the communities in which we operate and are committed to making a positive contribution. We want our communities to thrive and be a valued part of that success. This is a key aspect of our strategy for the future.

We must remember that people are one of the main reasons we are doing this... it's the opportunity to make a difference, the opportunity to be a force for good in helping our people come through this transition and be better off at the end of it.



**James Streater**

General manager, sustainable development



Launching a camera drone,  
Hamburg, Germany ↑



### Governance

Governance of our policies and performance related to communities and society is overseen by the Board Sustainability Committee (BSC). It meets quarterly to review sustainability matters and discusses specific topics such as social issues and performance. It provides its findings and recommendations to the Board.

Both the Sustainable Development Panel (SDP) and the Climate Change Panel (CCP), which are both executive-level groups, review respectively the relevant aspects of the company's engagement with and impact on communities and, in the CCP's case, the risks and opportunities of the energy transition. Key issues identified by the SDP and CCP are raised with the Executive Office and recommended topics are brought forward for discussion and action with the Group Management Committee. The SDP and CCP recommend topics for discussion with the BSC.

The Global HR Panel (GHRP) is also involved in governance around the issues of employment, recruitment, skills, resourcing and training related to the Just Transition.

Our audit and certification process with ResponsibleSteel™ and IRMA places considerable emphasis on our interaction with communities and provides assurance to stakeholders of our standards and commitments in this regard.

Governance of our policies related to communities and society is also covered under our existing sustainability and responsibility policies and

procedures, such as Human Rights, Code of Business Conduct, Whistleblower, Health and Safety, and Environment.



### Strategy

#### Listening, respecting and protecting our communities

Our reputation and licence to operate with local communities and broader civil society is based on the trust we build with our key local, national and international stakeholders. These stakeholders make their decisions on how they want to engage with us based on their views and perceptions of us and our actions or impacts. There is growing interest and concern from local communities on ESG matters. We recognise that we need to increasingly demonstrate why our key stakeholders should continue to trust us.

In 2021 we undertook a double materiality assessment to identify the issues that are most material to our stakeholders. "Listening, respecting and protecting communities" was one of the highest ranked issues for its potential impact both externally and internally.

We are currently undertaking the following strategic actions:

- Investing in our local communities through better stakeholder engagement, needs assessment and grievance management
- Preparing the company for increased levels of mandatory community and human rights disclosures (e.g. as required by EU CSRD and CS3D legislation)
- Developing and implementing a Just Transition management approach.

#### Investing in our local communities through better stakeholder engagement, needs assessment and grievance management

We consider that our communities are critical to our future; they provide us with the licence to operate in our locations, with the skills we need to produce our products; and the local infrastructure, goods and services we need to keep our operations running. We are grateful for their support and in return we have a responsibility to keep them informed of changes in our business; invest in improving the environment, education, health, culture, economic wellbeing around our locations; and live up to our side of any agreements we make with them.

We are working on improving our policies, guidance and frameworks to better ensure that we are listening carefully to the communities around our operations, investing in what they care about and effectively investigating any grievances they may have.

#### Preparing for increasing levels of mandatory community and human rights disclosures

New legislation such as the EU CSRD and CS3D will require a higher level of disclosure on all sustainability issues including how companies' impact affected communities and communities' influence on the business. In preparation for this new reporting landscape, ArcelorMittal is reviewing its existing reporting processes to identify gaps with the requirements, establish clear guidelines on data to be collected and provide clear guidelines and expectations to the business on how to proactively identify, manage and report on community-related impacts, risks and opportunities. This includes development of a central community-related reporting tool.

Chapter 8 – Communities and Just Transition continued



Strategy continued

We continue to invest in our communities which we do through providing direct and indirect employment, through the payment of taxes and royalties, and through investments in healthcare, culture and education. Investing in science, technology, engineering and mathematics (STEM) related subjects is particularly important to us because we need to ensure there is a pipeline of talented engineers and scientists ready to take on the world's most important challenges such as climate change, water scarcity and biodiversity loss. These issues are all relevant to a company such as ArcelorMittal and we want to be leading the development of the technical solutions to these issues for our industry.

Developing and implementing a Just Transition management approach

The transition to a low-carbon, climate-resilient economy can exacerbate the existing inequalities and vulnerabilities in society, which could lead to greater sense of social injustice and social unrest, and in turn adversely affect companies' operations and markets. For these reasons, the European Green Deal seeks to achieve a sustainable economy including leaving no-one behind. To contribute towards this approach, ArcelorMittal is developing its Just Transition strategy for the group. The four main components of our Just Transition strategy include:

- Establishing a climate change strategy including decarbonisation and adaptation activities to address transition and physical risks and opportunities
- Co-creating the steel company of the future, one which is innovative, safe, inclusive and sustainable

- Identifying and taking adequate measure to avoid causing or contributing to direct and indirect adverse impacts on fundamental human rights of workers, communities and suppliers, and
- Mitigating, compensating or offsetting actions against such adverse impacts where avoidance is not possible.

As the company plans for the transition of its overall business, and each of its steel making sites, it is developing a Just Transition Framework, aligned to the commitments, principles and indicators set out in the Paris Agreement, the International Labour Organisation's Just Transition Guidelines and considers key benchmarks such as the World Benchmarking Alliance Just Transition Assessment and the Climate Action 100+ Net Zero Benchmark.

The Framework will set out:

- What the Just Transition means to ArcelorMittal
- The company's Just Transition principles
- An asset level methodology to help manage the Framework implementation at asset and plant level
- Overarching governance to monitor and measure progress.

Our ecosystem approach

We must work with our key stakeholders and wider shared ecosystem to engage, partner and collaborate to find solutions that will deliver net-zero in accordance with our Just Transition principles.



Chapter 8 – Communities and Just Transition continued



Strategy continued

**Arcelormittal's Just Transition foundational principles/commitments**

ArcelorMittal defines Just Transition as a principles-based systematic, ongoing process which aims to ensure an effective and inclusive transition to a low-carbon economy, while adapting and building resilience of our business to climate change.

**ArcelorMittal is committed to delivering a Just Transition through the following foundational principles:**

- Achieving net zero GHG emissions and improving its environmental footprint
- Investing in skills for the future (e.g. sustainability, STEM and Industry 4.0)
- Providing decent (safe, healthy, clean, inclusive) work
- Investing in smarter steel products and innovative solutions
- Procuring goods and services in a sustainable, responsible and ethical manner
- Strive for tax transparency and making a transparent and fair contribution to society
- Implementing an ongoing human rights due diligence programme
- Enabling climate change adaptation opportunities and building climate change resilience
- Promoting social dialogue and meaningful engagement with key stakeholders
- Engaging with governments and regulators for public funding and to support economic and social policies for carbon reduction, clean energy and fair transition
- Maintaining access to global capital and responsible investment opportunities.



Steelanol, Ghent ↑

**ArcelorMittal's Just Transition operational principles to guide the business as it navigates the transition**

Stakeholder	Principles – ArcelorMittal will:
<p><b>Workforce</b></p>	<ul style="list-style-type: none"> <li>• Conduct its daily work in accordance with its 'Journey to zero' health &amp; safety management approach</li> <li>• Retain, develop and attract talent with the skills needed for the future in a talent scarce world</li> <li>• Co-create the steel company of the future</li> <li>• Provide workers with rights to freedom of association, collective bargaining, decent work and living wage conditions</li> <li>• Facilitate opportunities for employees to move into other sectors of the economy and remain economically active, when needed.</li> </ul>
<p><b>Customers</b></p>	<ul style="list-style-type: none"> <li>• Develop net-zero and circular products and business models</li> <li>• Secure premiums on low-carbon products to help fund the just transition, wherever possible</li> <li>• Provide transparent communications and claims on products</li> <li>• Reassure customers on their supply chain through human rights due diligence.</li> </ul>
<p><b>Suppliers</b></p>	<ul style="list-style-type: none"> <li>• Develop a net-zero and circular value chain</li> <li>• Undertake environmental and social due diligence of supply chains and engage suppliers to improve practices and performance where such risks are identified</li> <li>• Seek third-party certified, multistakeholder ESG management systems for own operations (i.e. ResponsibleSteel™) and encourage suppliers to do the same (e.g. IRMA for mined material suppliers).</li> </ul>
<p><b>Communities</b></p>	<ul style="list-style-type: none"> <li>• Actively engage communities on ArcelorMittal's approach and progress towards delivering a JT in a culturally appropriate manner</li> <li>• Transition towards net-zero in accordance with the company's net zero strategy, while considering stakeholder feedback</li> <li>• Strive for compliance with legal requirements and corporate environmental and social policies and procedures to reduce impacts to air, water, land, biodiversity and ecosystem services and affected communities</li> <li>• Strive for community health, safety, security and wellbeing</li> <li>• Work with partners to provide access to STEM, Industry 4.0 and sustainability education programmes for key stakeholder groups</li> <li>• Contribute to vulnerable groups access to key public services</li> <li>• Support regeneration and repurposing of land.</li> </ul>



## Risk management

It is clear that companies must maintain constructive and positive relationships with their community stakeholders. Failure to do so can lead to highly challenging operating environments that present a significant risk to their social licence to operate resulting in substantial investments in time, energy and resources to regain trust.

The quality of our community relationships and the processes used to monitor and manage their health will become more transparent through the mandatory CSRD and CS3D disclosure requirements. However, this also represents an opportunity to improve our management and reporting processes in relation to community engagement to better demonstrate our commitment to this critical stakeholder group.

Risks around the Just Transition are wide-ranging and relate to the need to successfully transition our business to a low carbon and climate resilient future by simultaneously decarbonising and adapting our assets, renewing our ways of working while navigating changes in our workforce's skills and know-how. These changes will have both positive and negative impacts on local communities. Positively, the transition should reduce carbon emissions, adapt operations and infrastructure to the most severe physical climate risks, improve safety, improve opportunities for greater inclusivity and improve local environmental quality around our plants. At the same time, and depending on the nature of the technology roadmap adopted, there may be a reduction in the number of carbon intensive activities across the value chain that lead

to changes in the numbers of workers employed in such activities. This is a societal shift and, as a responsible employer and community partner, we must work together with a broad ecosystem of partners at local, national and international levels to transform society in a way that seeks to leave no-one behind.



## Performance and targets

KPI/target	2021	2022
Community investment spend (including STEM)	\$10.2m	\$22.5m
Estimated direct economic contribution	\$67.7bn	\$80.6bn
Spent on STEM projects	\$3.5m	4.3m



Varnished electrical steel coil being moved by crane ↑

## Investing in our local communities through better stakeholder engagement, needs assessment and grievance management

The concerns felt by communities around the ArcelorMittal operations can be very specific to their locality, and range across employment, skills, social development, human rights, health, safety and the environment.

ArcelorMittal's community outreach work is driven largely by local teams, which are best placed to understand the needs of those who live near its operations. Some notable recent examples include:

### Turkey

In February 2023, ArcelorMittal donated \$5 million to support the humanitarian relief programme in Turkey and Syria, following the devastating earthquake there. We have business presence in Turkey through our sales office and joint-venture partners. Our donation includes \$2.5 million to the Disasters Emergency Committee (DEC) and a further \$2.5 million to Médecins Sans Frontières (MSF) to support the relief efforts in both countries. DEC is an umbrella group for 15 leading aid charities that coordinates fundraising for emergency aid and relief in disasters and humanitarian crises around the world. MSF is a non-profit organisation providing medical assistance internationally to people affected by disasters and conflict, through teams of health professionals, logistics and administrative staff.

Our colleagues in all three joint ventures did an amazing job in supporting the earthquake victims and leading and coordinating efforts to make the most of our presence and resources in Turkey. This included mobilisation of the search and rescue team, providing shelter to employees and their families and caring for hundreds of people.

### Ukraine

Following the Russian invasion of Ukraine in February 2022, our operations have been substantially impacted, but our people have suffered greatly.

Our support for our Ukrainian colleagues is summarised in more detail in chapter 7. We continue to support our people in whatever way we can.

ArcelorMittal is channelling donations from ArcelorMittal employees worldwide via the United Nations humanitarian effort UNICEF, with the company matching donations made by employees. As of January 2023 €5,170,580 in total has been donated in this way.

Wider initiatives have included the provision of ambulances for evacuation around Kryvyi Rih, donation of food aid and surgical equipment and medical supplies for local hospitals.

### Brazil

Based on an open dialogue with the communities where it is present, ArcelorMittal Brazil prioritises its community investment in the areas of education, culture, sport, corporate philanthropy and the creative economy. Initiatives include:

- 'Steel saves lives' campaign (#AçoSalvaVidas) mobilised employees, customers and the community, and raised more than R\$1.2 million, an amount that was doubled by ArcelorMittal Brazil and Belgo Bekaert, to R\$ 2.4 million. The support benefited more than 120,000 people in the communities around the company's sites and in other locations throughout Brazil

## Chapter 8 – Communities and Just Transition continued



### Performance and targets continued

- ArcelorMittal Environment Award: created to encourage the school community to propose scientific and innovative solutions to environmental issues, in addition to raising awareness of sustainability. The face-to-face classes were moved online during Covid, but even so, the project was carried out in 23 Brazilian cities, involving more than 1,800 teachers and 4,000 students.

#### Luxembourg

ArcelorMittal's activities in Luxembourg have a sizeable impact at the local and national level. The operation sponsors projects that encourage sustainable community programmes which support long-term economic and social growth. It also encourages community commitments made by its employees and encourages them to get more involved in local community life.

ArcelorMittal Luxembourg supports La Main Tendue (The Outstretched Hand). The association is a listening and support body for children, adolescents and adults who are victims of physical, mental, and sexual violence. It endeavours to provide support and information in a confidential manner.

#### Liberia

Since 2017, ArcelorMittal's Vocational Training Centre in Liberia has helped local young people to develop skills to provide them with opportunities that otherwise they would not have. In 2021-2022, 96 apprentices graduated from the three-year residential programme.

ArcelorMittal Liberia also launched a training and development programme for high-potential Liberian employees who will gain work experience and knowledge in ArcelorMittal Mining operations globally.

The employees will receive advanced training in the fields of mining production, operation optimisation, plant maintenance, planning and execution, plant electrical operation systems, and electrical maintenance.

#### Spain

In Spain, as in many other countries, there is a substantial gap between training in STEM disciplines and the demand from companies for STEM trained graduates, and this gap is expected to continue growing. To address this gap, ArcelorMittal Spain has invested 45% of its total budget in community investments dedicated to strengthening STEM training for students. This involves a number of initiatives:

- Scholarships – recognition for students for their final degree projects and best projects focused on the steel industry.
- Industry immersion programmes – programmes offering visits by secondary and university education students to plants to visualise the work environment of the future.
- Training practices in industrial environments – in most of the company's plants in Spain, a mixed programme is deployed that includes internships for university students and adherence to Dual Professional Training.
- Incentives to continue higher technical and scientific studies – this includes a local investment plan of donations to improve the equipment in vocational training centres.

The challenge is especially pronounced among the female population with enrolment for technical careers decreasing by 40% among women. The incorporation of young people, but especially women, to this field of study is an absolute priority.

#### Confidential reporting of breaches

Our employees and stakeholders can report any breaches of the company's policies and procedures through local grievance mechanisms.

Complaints received are investigated by appropriate management and necessary actions are taken by respective management, to address the concerns and to improve processes and governance. Management considers the grievance mechanism as a key tool, to identify potential concerns of the communities we operate in and to address these.

### ArcelorMittal becomes an Official Partner of the Paris 2024 Olympic and Paralympic Games

We will manufacture the Olympic torches which will bring the sacred fire from Olympia to Paris after going through France for two months, and the Paralympic torches which will be used for the relay from Stoke Mandeville to Paris. ArcelorMittal will also manufacture the Olympic and Paralympic cauldrons which will be lit during the opening ceremonies and will shine throughout the Paris 2024 Games, along with the large rings and agitos which will be installed in the host city, in locations to be disclosed in 2024.

The steel torches and cauldrons produced by ArcelorMittal – the design of which will be revealed later this year – will have a low CO<sub>2</sub> footprint, for instance through the use of recycled steel or low-carbon energy, thus contributing to the Paris 2024 Olympic and Paralympic Games environmental ambition. ArcelorMittal will draw on its expertise in the decarbonisation of steelmaking, using its strong track record in R&D, its technological edge, and the skills of its teams.

Chapter 9

# Governance and risk management

Achieving the highest standards of corporate governance, integrity and oversight is core to the management, performance and reputation of the company, and we believe it is fundamental to delivering long-term value and minimising risk. It is one of the key material issues for all our stakeholders, both internally and externally.

Governance measures and structures are constantly evolving, and 2022 has also seen further work on our preparation for greater sustainability scrutiny, reporting and compliance around the implementation of CSRD and CS3D.

**CSRD alignment**  
ESRS G1: Business conduct

**Material topic**  
Our commitment to sustainability requires careful and sensitive governance around the topics of environment, people and society, and the management of these issues.

**UN SDG alignment**  
8 GROWTH AND ECONOMIC QUALITY  
16 PEACE, JUSTICE AND STRONG INSTITUTIONS



## Chapter 9 – Governance and risk management

“Strong governance and risk management are crucial to maintaining and building our licence to operate, and gaining the full trust of our stakeholders and customers. Our commitment to sustainability requires careful and sensitive governance around the topics of environment, people and society, and the Board Sustainability Committee, the Climate Change Panel and the Sustainable Development Panel continue to evolve our oversight and management of these issues. In 2022, we have had a particular focus on the governance and risk reporting changes required by CSRD and CS3D, as well as our continuing pursuit of improved health & safety across the group.”



**Henk Scheffer**

Company secretary, Group compliance and data protection office

### Governance structure

ArcelorMittal S.A., the parent company of the group, is a public limited liability company (Société Anonyme) incorporated in Luxembourg. It is governed by a Board of Directors in accordance with the requirements set out in law and the Company's Articles of Association.

The Board oversees the governance and direction of the business. Responsibility for the implementation of the company strategy, the overall management of the business and all operational decision-making is delegated to the Executive Office, which comprises the Executive chairman, Lakshmi N. Mittal, and CEO, Aditya Mittal. The Executive Office is supported by other Executive Officers. Together, the Executive Officers are responsible for the implementation of the company's strategy, overall management of the business and all operational decisions.

The background and experience of each Board member is described in ArcelorMittal's Annual Report. The Board is of the view that its members have the appropriate range of skills, knowledge and experience, as well as the degree of diversity, to govern the business efficiently.

The Board's composition and its members' skills are reviewed on a regular basis and in line with the expected development of the business. We actively seek to strengthen Board knowledge on key issues, additional skills and experience when appropriate. The Board is also involved in succession planning.

The company secretary, Henk Scheffer, oversees compliance with statutory and regulatory requirements and acts as head of compliance and as secretary of the Board of Directors.

As part of its governance structure, the company is committed to increased gender diversity amongst its senior executives, both executive and non-executive. Whilst Suzanne P. Nimocks' term ended in May 2022, temporarily taking the number of women on the Board from four to three of the total of 10 Board members, the intention is to appoint more women to the Board over time.

For details of the composition of the Board of Directors and their remuneration, [see the Annual Report](#).

### The Board of Directors committees Audit and Risk Committee

The members of the Audit and Risk Committee are Karyn Ovelmen, Bruno Lafont, Karel de Gucht and Etienne Schneider, all of whom are independent under the company's corporate governance guidelines, the NYSE standards and the 10 Principles of Corporate Governance of the Luxembourg Stock Exchange. The chairwoman of the Audit and Risk Committee is Karyn Ovelmen.

The primary function of the Audit and Risk Committee is to assist the Board in fulfilling its oversight responsibilities by reviewing: the integrity of the financial reports and other financial information provided by the company to any governmental body or the public; the company's compliance with legal and regulatory requirements; the registered public accounting firm's (Independent Auditor) qualifications and independence; the company's system of internal control regarding finance, accounting, legal compliance, ethics, and risk management that management and the Board have established; the company's auditing, accounting, and financial reporting processes generally; the identification and management of risks to which ArcelorMittal is exposed. It also

examines the yearly, half-yearly and quarterly financial statements for the parent company and the group, and comments on accounting principles and rules and on the valuation, rules used by the company when compiling these financial statements.

Every year, the Audit & Risk Committee sits as Risk Committee and reviews the company's risk assessment process, as well as key risks identified. In addition the Committee reviews in depth presentations on key risks identified by the risk assessment process or Committee members.

The Audit and Risk Committee's meetings are convened by its chairman at least four times a year. It can also meet at the request of at least two of its members.

As part of its role to foster open communication, the Audit and Risk Committee meets at least annually with management, the head of the internal audit department and the company's independent accountants in separate executive sessions to discuss any matters that the Audit and Risk Committee or each of these persons believe should be discussed privately.

### Appointments, Remuneration and Corporate Governance Committee (ARCGC)

The current members of the ARCGC are Bruno Lafont, Tye Burt and Clarissa Lins, all of whom are independent under the company's corporate governance guidelines, the New York Stock Exchange (NYSE) standards and the 10 Principles of Corporate Governance of the Luxembourg Stock Exchange. The Committee is chaired by Bruno Lafont, who is also the Board's lead independent director.



## Chapter 9 – Governance and risk management continued

The Committee reviews and approves corporate goals and objectives relevant to the executive officers and senior management's compensation and evaluates performance considering these goals. It makes recommendations to the Board with respect to trends in Board remuneration, incentive compensation plans and equity-based incentive plans. It also identifies candidates qualified to serve as members of the Board and the executive officers, and recommends candidates to the Board for appointment by the general meeting of shareholders or for appointment by the Board to fulfil interim vacancies at the Board.

It develops, monitors, and reviews corporate governance principles applicable to the company. It facilitates the evaluation of the Board, reviews the succession planning and the executive development programme for the members of the Executive Officers. It reviews relevant policies and procedures relating to compliance and corporate governance, reports conclusions to the Board and makes recommendations for approval.

The ARCGC meetings are convened by the chairman at least four times a year. It can also meet at the request of at least two of its members.

### Board Sustainability Committee (BSC)

Fully integrating sustainable development into the business is essential to reach ArcelorMittal's aim of achieving long-term value for its shareholders and other stakeholders, while maintaining strong business performance and market share.

The Sustainability Committee comprises three members, appointed by the Board of Directors. The current members of the Sustainability Committee are Clarissa Lins, Tye Burt and Michel Wurth. Clarissa Lins and Tye Burt are independent under the

company's corporate governance guidelines, the NYSE standards and the 10 Principles of Corporate Governance of the Luxembourg Stock Exchange. The chairwoman of the Sustainability Committee is Clarissa Lins.

The Committee reviews group level frameworks, policies, standards and guidelines on sustainability matters. It reviews the company's sustainable development plans and associated management systems and ensures the group is well positioned to meet the evolving expectations of stakeholders, including investors, customers, regulators, employees, and communities. It also reviews the effectiveness of the company's process for assessing and managing catastrophic risks and coordinates the risk management work with the Audit and Risk Committee in relation to reporting to the Board.

It reviews the findings of Climate Action Reports and the management response. The Committee also supports and provides guidance to management in developing and updating policies and procedures relating to employee health & safety, environment, climate change and human rights. It monitors any current, pending or threatened legal actions with respect to safety, climate change, environment, and community relations. It produces a report on the sustainable development plans to be included in ArcelorMittal's Annual Report.

It reviews and recommends to the Board on the adequacy of the reporting on sustainability opportunities, risks and issues in the Annual Report, Sustainability Report, and other relevant public documents. It makes recommendations to the Board with respect to trends in results and programmes in all covered areas. The members have relevant expertise or experience relating to the objective of the Sustainability Committee.

The responsible senior managers pertaining to their respective areas of responsibility – health and safety, environment, climate change, community relations – are permanent invitees to the meetings of the Sustainability Committee. The Chairwoman of the Sustainability Committee makes a verbal report of the Committee's decisions and findings to the Board of Directors after each meeting.

Colleagues discussing robotic welding →



## Chapter 9 – Governance and risk management continued



Control room, Vega, Brazil ↑

The BSC meets four times a year and it also meets quarterly in between regular meetings for deep dives on specific topics.

### Executive-level committees Management Committee

It comprises senior managers with responsibility for various business divisions and functions in ArcelorMittal. For more information see the ArcelorMittal website.

### Corporate Finance and Tax Committee (CFTC)

It defines the principles for the ArcelorMittal finance community and presents and supports financial and business solutions for the ArcelorMittal group by providing the expertise, excellence in execution and stability for continuous, sustainable and competitive development of the Group while developing and promoting its people. The responsibilities of the CFTC extend across all finance and tax activities in the group and are not limited only to activities at corporate level. CFTC is chaired by CFO, Genuino Christino and has main responsibilities covering treasury, funding, taxation, accounting and performance management, SOX and insurance.

### Investment Allocations Committee (IAC)

Chaired by Brad Davey, executive vice president and head of corporate business optimisation. The Investment Allocations Committee (IAC) authorises large capex projects, including those designed to deliver safety, carbon and environmental improvements, and reviews the carbon emissions impact of all proposals.

Committee members include EVP and chief financial officer, Mr Genuino Cristino, chief technology officer, Mr Pinakin Chaubal, and VP head of corporate strategy, Mr David Clarke.

### Global Health and Safety Committee (GHSC)

Also at the executive level, the Global Health and Safety Committee (GHSC) is chaired by Robin Paulmier, General Manager, head of health and safety and a member of the group management committee. It is responsible for the development of a group-wide safety plan, conducting analysis to identify site-specific gaps; pairing high-performing sites with those that need more help; preparing detailed action plans to ensure quality and consistency when implementing "lifesaving golden rules" and the recently updated group safety policy; ensuring minimum requirements for in-house safety training; and carrying out close follow-up on leading KPIs to ensure improvement.

### Others

#### Group CTO Panel

Chaired by Pinakin Chaubal, it coordinates and oversees progress on the global technology roadmap through regional and project-based committees involving the CTO and R&D. The Panel reports to the IAC.

#### Climate Change Panel

Chaired by Nicola Davidson, VP – communications and sustainable development and member of the group management committee. The executive-level Climate Change Panel consists of senior managers from relevant corporate functions to ensure that their views on climate change are represented. Its overall mandate is to position ArcelorMittal as a global leader on climate change, particularly from the perspective of steelmaking and provide guidance that ensures a single approach across the value chain.

It guides the business in understanding the risks and opportunities associated with the transition to the low-carbon economy and adverse physical effects of climate change. It also discusses the company's overall policy and advocacy positions.

### Sustainable Development Panel

To complement the Board Sustainability Committee's work, ArcelorMittal also has an executive-level Sustainable Development Panel (SDP).

It is chaired by James Streater, general manager of sustainable development, who is a sustainability professional with more than 30 years of expertise in the subject.

The purpose of the Sustainable Development Panel is to strengthen the company's environmental, social and governance (ESG) oversight. It reviews and discusses quarterly developments on ESG matters across all operations including performance dashboards and KPI progress reports. It also discusses stakeholder expectations and business performance to help ArcelorMittal to decide which ESG issues are most material and require executive oversight. The Sustainable Development Panel meets on a quarterly basis between each standard Board Sustainability Committee meeting, enabling it to follow up and discuss issues raised there and ensure that the necessary work is undertaken before the next meeting of the Board Committee. Its chair ensures relevant ESG issues are discussed with the Executive Office and that recommendations are made when necessary for ESG topics to be discussed with the Group Management Committee.

## Chapter 9 – Governance and risk management continued

### *XCarb™ Technical Panel*

Chaired by Brad Davey, reporting to the IAC, which reviews requests from the network to have their products or projects appearing beneath the XCarb™ brand.

### *Group Diversity and Inclusion Panel*

Chaired by the director of people, health and well-being at ArcelorMittal Long LATAM & Mining Brazil to coordinate and drive progress in this priority area.

In addition, business segment area reviews are conducted regularly to enhance reporting to the Executive Office.

### Business ethics

ArcelorMittal encourages its employees to be responsible corporate citizens and act with integrity in everything they do. We strive to create a positive culture in which everyone wants, and knows how, to do the right thing.

This commitment to integrity is embodied in the company's Code of Business Conduct and supported by a comprehensive framework of policies and procedures in areas such as human rights, anti-corruption and insider dealing. These documents reflect the principles and concepts of the UN Global Compact, the OECD Guidelines on Multinational Enterprises and UN Sustainable Development Goal 16: peace, justice and strong institutions.

### Compliance and Code of Business Conduct

The company's Code of Business Conduct defines what acting with integrity means in practice. It applies to all directors, officers and employees of ArcelorMittal S.A. and its subsidiaries worldwide.

Employees take part in training programmes covering insider dealings regulations, code of business conduct, human rights, economic sanctions, anti-trust, anti-corruption and data protection.

In addition to the Code of Business Conduct, ArcelorMittal has developed a number of other compliance policies and procedures in more specific areas, such as anti-corruption (facilitation payments, extortion, solicitation, procurement and bidding, mergers and acquisitions, gifts and entertainment, political and trade unions contributions and charitable/corporate responsibility contributions) economic sanctions, insider dealing, data protection and the ArcelorMittal principles of integrity. Furthermore, ArcelorMittal's compliance programme also includes a quarterly compliance certification process covering all business segments and entailing reporting to the Audit & Risk Committee.

### Confidential reporting of breaches

Our employees and stakeholders can report any breaches of the company's policies and procedures through a confidential whistleblowing facility on the corporate website. ArcelorMittal also has confidential whistleblowing hotlines in all major countries where it operates and will take the necessary measures to protect employees and stakeholders who have, in good faith, made reports through the whistleblowing process, against any retaliation.

Allegations were referred to and duly investigated by the internal assurance department and/or appropriate management and the results were shared with appropriate senior management. Appropriate actions were taken on the basis of these investigations, including actions to strengthen and improve governance and processes.

### Human rights

We developed our first human rights policy in 2010 and review it regularly in line with the United Nations Guiding Principles on Business and Human Rights and the UK Modern Slavery Act. Our current policy was approved by the Board of Directors in May 2017. The policy draws on the UN Universal Declaration of Human Rights, the International Bill of Human Rights, the Core Conventions of the International Labour Organisation and the UN Global Compact. It also aims to incorporate UN SDG 8's focus on decent working conditions, including target 8.7 on eradicating modern slavery. The policy includes commitments to workers, local communities and business partners and covers health and safety, labour rights and the rights of indigenous peoples. The company is planning to launch a revised policy in 2023.

We require all employees in appropriate functions to undergo human rights training every three years.

We have also identified a set of strategic actions to strengthen our existing compliance processes in line with the impending CS3D and CSRD legislations and have been working on implementing them in 2023.

In November, 2022 the company staged a three-day immersive training course for 16 selected personnel from key corporate functions (compliance, legal, sustainable development, human resources, procurement and internal assurance) and business units to become Certified Human Rights Officers (certification awarded by the ESCP business school based in Berlin). The course focused on human rights within the supply chain, and looked at internal roles, risk analysis, policies, preventative measures, remedial actions, grievance mechanisms and reporting, both from a regulatory and business strategy perspective.

### ResponsibleSteel™ and IRMA certification

We also continued to progress ResponsibleSteel™ certification for our steel operations and IRMA certification programme for our mines. As the ResponsibleSteel™ certification process is being rolled out, our sites prepare for the rigorous audit against a range of ESG issues, such as human rights, health and safety and stakeholder engagement. This assures our stakeholders that we are operating sustainably, responsibly and to the highest standards.

In 2021 we revised our Code for Responsible Sourcing to include explicit references to our commitment to ResponsibleSteel™, IRMA and other industry initiatives. The Code sets out the minimum standards we expect from our core suppliers, in areas such as health and safety, human rights, ethics and environmental stewardship. The Code includes our expectations that suppliers will adopt practices in line with ResponsibleSteel™ standards. The Code will be revised in 2023 to ensure alignment with the impending legislations. You can read more about it in chapter 6.



Steel slab sample analysis ↑

## Chapter 9 – Governance and risk management continued

### Stakeholder engagement and transparency

We endeavour to be transparent and honest with all our stakeholders and do our best to disclose controversies, its remedial actions and address the issues that matter most to the communities living near our sites. We talk to stakeholders regularly, including through this and other local reports, ResponsibleSteel™ site certification audits, investor relations programmes, forums and engagement meetings.

### Risk management – overview

**ArcelorMittal pursues a rigorous approach to risk management across the business, to identify key threats to its operations, assets and people. It is regarded as part of our wider corporate governance structure to protect and build the value of the company.**

Management is responsible for internal control in the company and it has implemented a robust short, medium and long-term risk management and control system, which is designed to ensure the business is focused on achieving its objectives and that significant risks are identified and mitigated. The system is also designed to ensure compliance with relevant laws and regulations.

ArcelorMittal's risk management and internal control system is designed to determine risks in relation to the achievement of business objectives and appropriate risk responses. The establishment and maintenance of a risk identification and management process is the responsibility of site/segment/ corporate function management. Risks are owned and managed by the management. Risk officers designated by management, facilitate the conversations and help monitoring the action plans. Critical risks are escalated through existing reporting lines. Critical risk decisions are not dissociated from the other decisions.

Management analyses risks by building models and developing scenarios to understand potential financial impacts. Risks are identified through a defined process by respective management teams. Business segments/corporate functions consolidate the identified risks and report the top ones as part of the periodic reporting to key internal stakeholders. The company uses a risk management framework based on a blend of a COSO 2013 and ISO 31000. Management assesses risks by assigning them a probability of occurrence, potential financial impact and/or non-financial consequences. Global trends and the risks and opportunities identified as arising from them, are used to inform the Company's strategic outlook and planning.

Based on management reviews, reviews of the design and implementation of the company's risk management approach and business and functional risk committees, management provides an assessment each year, as required by law, of the effectiveness of the company's risk management process.

It should be noted, however, that the above does not imply that these systems and procedures provide certainty as to the realisation of operational and financial business objectives, nor can they prevent all misstatements, inaccuracies, errors, fraud and non-compliance with rules and regulations.

The Audit & Risk Committee assists the Board of Directors with the oversight of risks to which ArcelorMittal is exposed and in monitoring and review of the risk-management framework and process. The Global Assurance risk management function facilitates the risk management process and bi-annual consolidated risk reporting.

### TCFD-aligned risk management

As described in chapter 3, in 2022, the company has taken further expert advice to assess the resilience of the business against different transition and physical climate scenarios, so that it can consider the potential financial implications and risks in more detail, inform its strategy and manage its transition and physical climate risk exposure.

For instance, understanding the probability of extreme weather events or water scarcity is crucial for the sustainability of the business' operations. The first phase of this project has established initial, high-level, qualitative conclusions. The next phase of the project will provide more understanding on the potential financial implications of these risks and opportunities, with the goal of informing and improving our climate strategy.

### Assurance

ArcelorMittal believes that independent assurance leads to quality and process improvements, as well as reassuring stakeholders that the information that the company publishes is accurate and material. As such, this contributes to building trust, credibility and our licence to operate. This is the 13th year that our sustainable development reporting has received independent assurance. In 2022, we asked our group non-financial auditors, DNV, to provide limited assurance on the following ESG sustainability performance indicators, in accordance with the International Auditing and Assurance Standards Board's International Standard on Assurance Engagements – Revised (ISAE 3000 Revised):

- Group carbon reduction target: 25% reduction in carbon emissions intensity by 2030 (scope 1 and 2 steel and mining); tCO<sub>2</sub>e/tonne of steel
- Europe carbon reduction target: 35% reduction in carbon emissions intensity by 2030 (scope 1 & 2); tCO<sub>2</sub>e/tonne of steel

- CO<sub>2</sub>e intensity steel; tCO<sub>2</sub>e/tonne of steel
- Absolute CO<sub>2</sub>e footprint (steel and mining; million tonnes)
- Absolute CO<sub>2</sub>e footprint (steel; million tonnes)
- Absolute CO<sub>2</sub>e footprint (mining; million tonnes)
- Primary energy consumption (steel; petajoules)
- Dust intensity per tonne of steel (kg/tonne of crude steel)
- NO<sub>x</sub> intensity per tonne of steel (kg/tonne of crude steel)
- SO<sub>x</sub> intensity per tonne of steel (kg/tonne of crude steel)
- Net water use (steel; m<sup>3</sup>)
- Waste (non-used residues) landfilled (steel; tonnes)
- Waste (non-used residues) in storage (steel; tonnes)
- Fatalities (steel and mining)
- Lost-time injury frequency rate (steel and mining; per million hours worked)
- Industrial operations (including mining) certified to OHSAS 18001 (steel and mining; %)
- Women in management positions (percentage), manger and above, steel and mining)
- Women in key position succession plans (steel and mining), general manager and above.

DNV provides an independent third-party assurance statement, which covers the selected information outlined above in the Fact Book and on the relevant pages of this report. DNV's recommendations will be addressed in 2023. See DNV's assurance statement on pages 73-74.

# Annex: EU Taxonomy

The EU Taxonomy Regulation (EU) 2020/852 (Taxonomy) is a classification tool to determine whether an economic activity is environmentally sustainable. Economic activities are defined by the Taxonomy as environmentally sustainable if they:

- Meet the substantial contribution criteria to at least one of the six environmental objectives: 1) climate change mitigation; 2) climate change adaptation; 3) sustainable use and protection of water and marine resources; 4) transition to a circular economy; 5) pollution prevention and control; and 6) protection and restoration of biodiversity and ecosystems
- Meet the 'Do no significant harm' (DNSH) criteria for all the other environmental objectives
- Comply with the minimum safeguards criteria
- Meet the technical screening criteria.

In accordance with Article 8 of the Taxonomy and the supplementary delegated acts, we are required to disclose the proportion of our 2022 turnover (sales), capital expenditure (capex) and operating expenditure (opex) in the reporting period that is Taxonomy-aligned regarding the environmental objectives for climate change mitigation and climate change adaptation.

The wording and terminology used in the Taxonomy are still subject to some uncertainty in interpretation, which could lead to changes in the reporting when it is subsequently clarified by the EU. Our interpretation is set out below.

Our assessment of our global sites identified the following economic activities within the meaning of eligibility under the Taxonomy as relevant for ArcelorMittal:

- Manufacture of iron and steel
- Material recovery from non-hazardous waste
- Close to market R&D and Innovation
- Forest Management

Based on these economic activities, we analysed the turnover, capex and opex at an operational level and we have also included relevant distribution and downstream entities which are used as a sales channel for steel sales. The downstream and distribution entities are mainly located in our European segment and represent a significant percentage in our Taxonomy disclosure.

## Chapter 9 – Governance and risk management continued

## Annex: EU Taxonomy continued

## Turnover

The Company's turnover in 2022 was \$79.8bn of which \$75.4bn (94%) was Taxonomy-eligible. The Taxonomy-eligible turnover is primarily captured under the category of 'Manufacturing of iron and steel'. However, we note that we also have 'Material recovery from non-hazardous waste' which relates to our scrap metal processing businesses, but this represents a small proportion of our overall turnover (i.e. <1%). We have assumed this to be immaterial and have not included it in the table.

Economic activities	Turnover	Proportion of turnover	Substantial contribution criteria		Do no significant harm criteria						Minimum safeguards	Proportion of taxonomy-aligned capex in %	Category (enabling activity)	Category (transitional activity)
			Climate change mitigation	Climate change adaptation	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity & ecosystems				
Proportion of turnover	\$mn	in %	in %	in %	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	in %	Yes/No	Yes/No
<b>A. Eligible activities</b>														
<b>A.2 Eligible not Taxonomy-aligned activities</b>														
3.9 Manufacture of Iron and Steel	75,437	94%												
Total eligible not Taxonomy-aligned activities (A.2)	75,437	94%										0%		
<b>B. Non-eligible activities</b>														
Turnover of non-eligible activities	4,407	6%												
Total	79,844	100%										0%		

## Chapter 9 – Governance and risk management continued

## Annex: EU Taxonomy continued

## Capital expenditure

The Company's capex in 2022 was \$3.5bn of which \$2.4bn (70%) was Taxonomy-eligible. Capex that was not Taxonomy-eligible amounted to \$1bn (30%). The Taxonomy-eligible expenditure primarily related to 'Manufacture of iron and steel'. We note that the 70% eligible capex is lower than we previously reported in 2021 (82%). This was due to the mix of capex that included a higher proportion related to mining in 2022, and mining is a non-eligible economic activity. Some of our capex is related to 'Forest management' in our Brazilian operations and some to our 'Material recovery from non-hazardous waste' from our scrap metal processing business, but these are considered immaterial as a proportion of group capex (i.e. <1%).

Economic activities	Capex	Proportion of capex	Substantial contribution criteria		Do no significant harm criteria						Minimum safeguards	Proportion of taxonomy-aligned capex in %	Category (enabling activity)	Category (transitional activity)
			Climate change mitigation	Climate change adaptation	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity & ecosystems				
	\$mn	in %	in %	in %	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	in %	Yes/No	Yes/No
<b>A. Eligible activities</b>														
<b>A.2 Eligible not Taxonomy-aligned activities</b>														
3.9 Manufacture of Iron and Steel	2,434	70%												
Total eligible not Taxonomy-aligned activities (A.2)	2,434	70%										0%		
<b>B. Non-eligible activities</b>														
Capex of non-eligible activities	1,033	30%												
Total	3,468	100%										0%		

## Chapter 9 – Governance and risk management continued

## Annex: EU Taxonomy continued

## Operating expenditure

The Company's opex in 2022 was \$4.7bn of which \$3.9bn (84%) was Taxonomy-eligible. Non-eligible opex amounted to \$0.7bn (16%). Based on the consolidated statements of operations in our consolidated financial statements for the year ended 31 December, 2022, we have included the following non-capitalised items of cost and expense in our definition of opex: research and development expenses, short-term lease costs, maintenance and repair, and any other direct expenditures relating to day-to-day operational activities necessary for the continued and effective functioning of our iron and steel manufacturing, scrap metal processing and forest management assets. Based on materiality we have included only opex related to the manufacture of iron and steel.

Economic activities	Opex	Proportion of opex	Substantial contribution criteria		Do no significant harm criteria						Minimum safeguards	Proportion of taxonomy-aligned capex in %	Category (enabling activity)	Category (transitional activity)
			Climate change mitigation	Climate change adaptation	Climate change mitigation	Climate change adaptation	Water and marine resources	Circular economy	Pollution	Biodiversity & ecosystems				
	\$mn	in %	in %	in %	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No	in %	Yes/No	Yes/No
<b>A. Eligible activities</b>														
<b>A.2 Eligible not Taxonomy-aligned activities</b>														
3.9 Manufacture of Iron and Steel	3,906	84%												
Total eligible not Taxonomy-aligned activities (A.2)	3,906	84%										0%		
<b>B. Non-eligible activities</b>														
Opex of non-eligible activities	744	16%												
Total	4,650	100%										0%		



## Chapter 9 – Governance and risk management continued

### Annex: EU Taxonomy continued

#### EU Taxonomy alignment

The Taxonomy-eligible activities identified by ArcelorMittal can be classified as Taxonomy-aligned if they meet the following three conditions: 1) make a substantial contribution to climate change mitigation; 2) 'do no significant harm' to the other environmental objectives; 3) meet the minimum safeguards; 4) meet the technical screening criteria.

Our relevant economic activities in 2022 can potentially meet the substantial contribution criteria for both the climate change mitigation and climate change adaptation objectives. However, to avoid double counting within an indicator, we assessed substantial contribution only under the climate change mitigation objective.

We assessed whether the potentially taxonomy-aligned sites make a substantial contribution to climate change mitigation in accordance with the activity-specific criteria. Our analysis indicates that our scrap-based EAF and DRI-based steelmaking operations meet the substantial contribution criteria, but our integrated iron-ore based production sites do not. We expect the number of sites that meet the substantial contribution criteria will increase over time in line with our decarbonisation efforts to achieve our target of net zero carbon emissions by 2050. Outside of iron and steel manufacturing, our metal processing facilities also meet the substantial contribution criteria. Some of our R&D expenditure meets the substantial contribution criteria but we may need to adjust how we aggregate this data as it is embedded into projects.

The next step was to assess whether the production at the assets identified met the 'do no significant harm' criteria for any of the environmental objectives. This included contributions from local and corporate experts plus some external advisors. The assessment related to climate change adaptation required an analysis of physical risks arising from climate change using a climate risk and vulnerability assessment at a site level to ensure material risks had the relevant adaptation solutions. In this analysis, we also considered other investigation objects relevant to ArcelorMittal sites, like key suppliers of raw materials. We note that ArcelorMittal's assessment of physical climate risk has historically focused on the recommendations of the Task Force for Climate-related Financial Disclosure (TCFD), but the Taxonomy has a broader and stricter definition which includes additional hazards. As the climate risk analysis is relevant for the entirety of the Taxonomy-eligible activities, none of our Taxonomy-eligible activities can be reported as Taxonomy-aligned.

ArcelorMittal's policies on human rights, anti-trust, anti-corruption, and taxation reflect the principles and concepts of the UN Global Compact, the OECD Guidelines on Multinational Enterprises, UN Guiding Principles on Business and Human Rights, including the principles and rights set out in the eight fundamental conventions identified in the Declaration of the International Labour Organisation on Fundamental Principles and Rights at Work and the International Bill of Human Rights. Compliance with the minimum safeguards was examined at Group level, considering existing corporate policies and risk management processes. Read more in our Annual Report on how ArcelorMittal is enhancing its existing frameworks, page 91.



# Independent Limited Assurance Report to the Directors of ArcelorMittal Société Anonyme

DNV Business Assurance Services UK Limited (“DNV”, “us” or “we”) were engaged by ArcelorMittal Purchasing S.A.S. to provide limited assurance to ArcelorMittal Société Anonyme (“ArcelorMittal”) over Selected Information presented in the ArcelorMittal Fact book 2022 (the “Fact book”) for the reporting year ended 31 December 2022.

## Our Conclusion



**Our Conclusion:** Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Information is not fairly stated and has not been prepared, in all material respects, in accordance with the Criteria.

This conclusion relates only to the Selected Information, and is to be read in the context of this Independent Limited Assurance Report, in particular the inherent limitations explained overleaf.

## Our competence, independence and quality control

DNV established policies and procedures are designed to ensure that DNV, its personnel and, where applicable, others are subject to independence requirements (including personnel of other entities of DNV) and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. DNV holds other audit and assurance contracts with ArcelorMittal, none of which conflict with the scope of this work. Our multi-disciplinary team consisted of professionals with a combination of environmental and sustainability assurance experience.

**Our observations and areas for improvement will be raised in a separate report to ArcelorMittal’s Management. Selected observations are provided below. These observations do not affect our conclusion set out above.**

- Responding to our previous assurance findings, ArcelorMittal has begun the process to develop an online environmental data collection system. We recommend that ArcelorMittal establishes regular (i.e. quarterly) collection and internal verification, documenting all environmental KPI calculation methodologies and internal control arrangements in preparation for increasing reporting requirements such as SEC and CSRD.
- We noted non-material inconsistencies in the way primary energy consumption and associated carbon emissions are reported for power plants which are joint ventures (JV) with ArcelorMittal sites. We recommend ArcelorMittal Head Office provides further instructions to sites which operate a power plant in a joint venture on how to correctly account for these impacts.
- This year, we noted material variance across sites’ net water consumption, which could be caused by inherent inaccuracies of water flow measurement depending on the specific water balance of each site. We recommend ArcelorMittal Head Office documents manual corrections and internal controls.
- We noted that the boundary of GHG Scope 3 emissions excludes upstream emissions of raw material extraction and transportation, as well as the processing impacts of some purchased materials. We understand ArcelorMittal is currently working to expand the company’s full Scope 3 emissions based on SBTi guidance. We restate our recommendation to extend ArcelorMittal’s reporting of GHG Scope 3 emissions to include equity-based investments, upstream impacts of raw materials, transportation and processing of scrap metal to supply ArcelorMittal’s electric arc furnaces (EAF).
- We noted some joint ventures are included in ArcelorMittal’s gender diversity KPIs (e.g. AMNS India), whilst others excluded, as noted in ArcelorMittal’s Basis of Reporting. We recommend ArcelorMittal continues to align its reporting approach on joint ventures across ESG indicators.
- Following the acquisition of CSP Brazil (now known as ArcelorMittal Pecém), we recommend that ArcelorMittal reviews its Group level 2030 CO<sub>2</sub>e reduction target, to ensure that emissions from this, and other recent acquisitions, are consistently reflected in the baseline and future calculations.

## Selected information

The scope and boundary of our work is restricted to the following key performance indicators included within the Fact book on page 29, 30 and 31 (the “Selected Information”), listed below:

- Europe carbon reduction target: 35% reduction in carbon emissions intensity by 2030 (scope 1 & 2)
- Group carbon reduction target: 25% reduction in carbon emissions intensity by 2030 (scope 1 and 2 steel and mining)
- CO<sub>2</sub>e intensity (steel (tonnes of CO<sub>2</sub>e/tonne of steel)
- CO<sub>2</sub>e intensity (steel) – scopes 1,2,3 – adjusted to reporting year portfolio (tonnes of CO<sub>2</sub>e/tonne of steel)
- Absolute CO<sub>2</sub>e footprint (steel and mining; million tonnes)
- Absolute CO<sub>2</sub>e footprint (steel; million tonnes)
- Absolute CO<sub>2</sub>e footprint (mining; million tonnes)
- Primary energy consumption (steel; petajoules)
- Dust intensity (kg/tonne of steel)
- NOx intensity (kg/tonne of steel)
- SOx intensity(kg/tonne of steel)
- Net water use (steel; m<sup>3</sup>/tonne of steel)
- Waste (non-used residues) landfilled (steel; tonnes)
- Waste (non-used residues) in storage (steel; tonnes)
- Fatalities (total)
- Lost-time injury frequency rate (total; per million hours worked)
- Industrial operations (including mining) certified to OHSAS 18001 (Sites certified to ISO 45001:2018 included, excluding AMNS India) (steel and mining; %)
- Women in management positions (manager and above positions) (percentage, %)
- Women in key position succession plans (general manager and positions above (%)

To assess the Selected Information, which includes an assessment of the risk of material misstatement in the Report, we have used ArcelorMittal’s Basis of Reporting (the “Criteria”), which can be found [here](#). We have not performed any work, and do not express any conclusion, on any other information that may be published in the Report or on ArcelorMittal’s website for the current reporting period or for previous periods.

## Chapter 9 – Governance and risk management continued



### Standard and level of assurance

We performed a **limited** assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 revised – ‘Assurance Engagements other than Audits and Reviews of Historical Financial Information’ (revised), issued by the International Auditing and Assurance Standards Board. This standard requires that we comply with ethical requirements and plan and perform the assurance engagement to obtain limited assurance.

DNV applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17021:2015 - Conformity Assessment Requirements for bodies providing audit and certification of management systems, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement; and the level of assurance obtained is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. We planned and performed our work to obtain the evidence we considered sufficient to provide a basis for our opinion, so that the risk of this conclusion being in error is reduced but not reduced to very low.

### Basis of our conclusion

We are required to plan and perform our work in order to consider the risk of material misstatement of the Selected Information; our work included, but was not restricted to:

- Conducting interviews with ArcelorMittal’s management to obtain an understanding of the key processes, systems and controls in place to generate, aggregate and report the Selected Information;
- Onsite testing of the following sites to review process and systems for preparing site level data consolidated at Head Office for the Selected Information listed on the previous page. DNV were free to choose the sites on the basis of materiality and their contribution to the Group’s overall data.
  - Dunkerque, France (steel)
  - Temirtau, Kazakhstan (steel)
  - Vanderbijlpark, South Africa (steel)
  - Newcastle, South Africa (steel)
  - Monlevade, Brazil (steel)
  - Resende, Brazil (steel)
  - Andrade, Brazil (mining)
  - Saranskaya, Lenina, and Vostochnaya, Kazakhstan (mining)
- Performing limited substantive testing of Group-level data at Head Office for the Selected Information to check that data had been appropriately measured, recorded, collated and reported;
- Reviewing that the evidence, measurements and their scope provided to us by ArcelorMittal for the Selected Information is prepared in line with the Criteria;
- Assessing the appropriateness of the Criteria for the Selected Information; and
- Reading the Report and narrative accompanying the Selected Information within it, with regard to the Criteria.

### DNV Business Assurance Services UK Limited

London, UK  
25<sup>th</sup> April 2023



## WHEN TRUST MATTERS

### Inherent limitations

All assurance engagements are subject to inherent limitations as selective testing (sampling) may not detect errors, fraud or other irregularities. Non-financial data may be subject to greater inherent uncertainty than financial data, given the nature and methods used for calculating, estimating and determining such data. The selection of different, but acceptable, measurement techniques may result in different quantifications between different entities.

Our assurance relies on the premise that the data and information provided to us by ArcelorMittal have been provided in good faith. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Independent Limited Assurance Report.

### Responsibilities of the Directors of ArcelorMittal and DNV

The Directors of ArcelorMittal have sole responsibility for:

- Preparing and presenting the Selected information in accordance with the Criteria;
- Designing, implementing and maintaining effective internal controls over the information and data, resulting in the preparation of the Selected Information that is free from material misstatements;
- Measuring and reporting the Selected Information based on their established Criteria; and
- Contents and statements contained within the Report and the Criteria.

Our responsibility is to plan and perform our work to obtain limited assurance about whether the Selected Information has been prepared in accordance with the Criteria and to report to ArcelorMittal in the form of an independent limited assurance conclusion, based on the work performed and the evidence obtained. We have not been responsible for the preparation of the Report.

### DNV Business Assurance

DNV Business Assurance Services UK Limited is part of DNV – Business Assurance, a global provider of certification, verification, assessment and training services, helping customers to build sustainable business performance. [www.dnv.co.uk/BetterAssurance](http://www.dnv.co.uk/BetterAssurance)



ArcelorMittal

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