

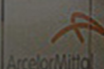


ArcelorMittal



# Shaping the future of steel

Integrated annual review 2017





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# Message from our Chairman and CEO

Lakshmi N Mittal



Dear stakeholders,

Welcome to ArcelorMittal's integrated annual review 2017. This marks the third year of our journey towards integrated reporting – something we've chosen to do because of the increasing importance of sustainable development to our business. This journey, which members of our Board of Directors have overseen, has given us the opportunity to reflect on the expectations our stakeholders have of us, and the long-term trends we must respond to if we are to remain at the forefront of the materials industry. It has enabled us to consider and explain the intrinsic links between our financial results and the social and environmental value we create, both now and in the future.

I am proud to say that this year, we have achieved a report that I believe aligns with the principles and concepts of integrated reporting. It delivers a balance between focusing on the key issues for our stakeholders and our business and reporting with completeness on those issues that affect our ability to **create value**. I am particularly pleased that we have been able to outline our strategic outlook on five themes that will shape **our future** business, not only over the next 12 months, but over the long-term as well.

## 2017: Significant progress in strengthening our business

2017 was a positive year for the global economy, the global steel industry, and for ArcelorMittal. The recovery in global GDP growth we saw last year, which was stronger than many anticipated, was broad-based with growth in both advanced and emerging economies. A robust and growing global economy is clearly a positive backdrop for the steel industry. Indeed, global steel demand growth in 2017 was the strongest since 2013, and we experienced expansion in all the markets in which we operate. This, alongside capacity rationalisation in China, led to better industry utilisation rates which supported the positive evolution of steel spreads throughout the course of the year.

The combination of these favourable market dynamics alongside our own internal strategic initiatives helped us to deliver a strong financial performance. Ebitda was \$8.4 billion and our net income of \$4.6 billion was the highest level since the financial crisis. We also delivered progress against our number one financial priority - deleveraging - with net debt reduced to \$10.1 billion, the lowest level in ArcelorMittal's history.

We have a lot to be pleased about in terms of our headline financial performance in 2017. Nevertheless, the threat posed by global overcapacity remains. Indeed, when the US Administration recently announced exemptions for several countries from its Section 232 tariffs, it emphasized that these exemptions were granted to allow, *'ongoing discussions regarding measures to reduce global excess capacity in steel and aluminum production by addressing its root capacity'*. Encouragingly, we have started to see tangible signs of steel-producing nations working together to address this issue. Discussions have been held between G20 nations, and there were tentative signs of progress at last November's Global Forum on Steel Excess Capacity, with members of the Forum agreeing on several guiding principles, including the removal of subsidies and other measures that distort steel markets, and regularly updating information on capacity and policy measures, so that a clear picture on progress can be ascertained.

This is all good news. However, our focus is on matters which we can control, namely ensuring our business is financially and operationally robust and can prosper in any market environment. This means: maintaining a strong balance sheet; structurally improving our business and maintaining strong cost control; ensuring our asset base is efficient, reliable and productive; leveraging our research and development capabilities and innovating to meet ever-changing customer demands and; focusing on higher-margin, higher added-value products.

Fundamentally, this is the focus of our **Action 2020** strategic plan which we launched in 2016 and through which we are targeting an additional \$3 billion



in Ebitda from volume growth, product mix improvement and cost savings. Its strategic purpose is to create a positive competitive gap between ArcelorMittal and our competitors, by taking measures only we can take. Two years into the five-year plan, we are already halfway to hitting our \$3 billion Ebitda target. Of the \$1.5 billion Ebitda contribution, \$0.6 billion of which came in 2017, the majority has been delivered through structural cost savings and product mix improvement. The third element of Action 2020 is volume improvement, from which we are targeting a \$1 billion Ebitda contribution. Ensuring we deliver on this objective is critically important. Given the current market demand environment is favourable we expect to make further progress in this area in 2018. To do so, we must ensure asset reliability and eradicate unplanned disruptions and maintenance. This will be a key focus in 2018.

## Investing in high-growth potential opportunities

Over and above our Action 2020 strategic initiatives, given the strong progress we have made in strengthening our balance sheet in recent years – more of which you can read about in our [CFO's statement](#) – we are now able to capitalise on opportunities, and deploy capital, in projects that offer the potential of exceptional returns.

A compelling example of this is our acquisition of Ilva, Europe's largest steel production facility. We are currently awaiting European Commission merger control approval, after which we hope to formally close the transaction as soon as possible. Ilva is a classic example of a steel facility that has fallen into environmental, operational and financial troubles due to a lack of operational control and mis-management. It is the type of turnaround opportunity in which ArcelorMittal excels. Fundamentally, Ilva's asset base is strong. It is also strategically well positioned and located in Italy, a country in which we have no primary steel production footprint. We believe Ilva adds significant strategic value to our European business. Turning its fortunes around will not be easy. Its environmental issues in particular are well documented, but we have outlined significant investment plans to address this, and to improve its industrial performance. Once the transaction completes, we have a lot of work to do, but I am confident the value Ilva will bring to our business will be substantial.

Overall, we are forecasting our capital expenditure to increase by \$1 billion in 2018, in part due to our investment plans for Ilva, but also to capitalise on organic growth opportunities within our existing business. Towards the end of last year, we announced a \$1 billion three-year capital expenditure programme in Mexico. This is a high return opportunity given the attractive market dynamics in Mexico and favourable investment climate at Lazaro Cardenas. We will also be investing in our downstream businesses in Europe and Canada to increase our high added-value product capacities to ensure we have the industrial capability to supply our customers with the solutions we are

developing, particularly in automotive.

## Delivering against our four priorities

We set ourselves four priorities at the start of 2017: improving our safety performance; achieving our financial targets; delivering our strategic Action 2020 plan and sustainable development. As I have outlined above, we met our financial target of further deleveraging and delivered strong progress against our Action 2020 initiatives in 2017.

With regard to our health and safety performance, I am pleased to report that we made further progress in 2017, with our lost time injury frequency rate reduced to 0.78x, marginally above our target but still the lowest level in our history. Disappointingly however, our rate of progress has plateaued in recent years. I have no doubt that the policies and processes we have put in place, alongside our flagship 'Take Care' training programme, are world-class. However, this is not yet delivering the results we need. We work continually to instill a safety-first culture in all our operations yet accidents and, tragically, fatalities, still occur in our business. I will not rest until we achieve our journey to zero fatalities and injuries. With this goal in mind, we are placing an increasing focus on accidents that have the potential to cause serious injury, so that we gain a more complete understanding of the incidents we need to eradicate. The initial findings from this approach have provided us with additional, valuable information from which to work. It is now essential we put this to effective use.

## Innovating to meet customer demands and responding to social and environmental trends

Our fourth priority – sustainable development – means innovating to meet long-term customer demands and responding to social and environmental trends. This is becoming an increasingly important focus to our daily business, and I am confident that we are at the forefront of developments within the steel industry. Customers, of course, are always a key focus for us, and product innovation through our global research and development efforts has played a critical role in the development and success of our company. What we are seeing today is an increase in the pace of change, with customers placing even more focus on ensuring the steel we produce helps them to meet their environmental and sustainability goals, whether this be through lightweight steel solutions that reduce the carbon footprint of our customers products, or an increased interest in the integrity of their – and hence our – supply chains.

In 2017 we introduced new grades of automotive steel that enable automotive manufacturers to further reduce vehicle weight, and hence reduce tailpipe emissions, without comprising on safety, and we expanded our



production of steels for electric vehicles. We are also supporting the development of sustainable renewable energy infrastructure, with our steel being used in solar and wind farms worldwide. For example, 50 per cent of all new solar farms in Europe use our Magnelis® steel technology.

One sector where I believe the sustainable and environmental benefits of steel are not clearly understood is the construction sector. To address this, in 2017 we produced a platform that assesses the environmental impact of different material solutions on an office building. This will provide customers and stakeholders in the construction sector with the information they require when deciding architectural layout and structural systems of buildings. We intend to formally launch this in 2018, and I am confident it will further demonstrate the many environmental and sustainability benefits of steel. The emphasis we place on continual product development not only ensures we continue to meet customer demand, but also demonstrates the valuable role steel can play in supporting sustainable lifestyles and producing the infrastructure society needs in a low-carbon, circular economy.

We also accelerated the work we are doing in the second area I mention above – supply chain assurance – in 2017. Our customers are increasingly, and rightly, asking questions of us, and looking for reassurance that the supply chains we use to manufacture the steel they purchase meet legal, human rights and social and environmental standards. To address this trend, we have taken a leadership role in the development of ResponsibleSteel and the Initiative for Responsible Mining Assurance, which are initiatives that are working towards multi-stakeholder standards for steel production and mining sites, respectively. Providing customers with the reassurance they need in this area will, I believe, provide us with a long-term competitive advantage.

## Addressing our carbon challenge

The greatest societal and environmental challenge that we, and the entire steel industry, face is carbon. It is also one of the three issues we have identified, alongside safety and our financial health, as being key to the future resilience of our business. You can read more about these [here](#).

Production of raw steel using blast furnaces will continue to be required to meet global demand and societal needs for steel until there is sufficient scrap steel available in the world – which we estimate will not be for at least 50 years. We are at the existing technical limits in terms of the improvement we can make to our carbon footprint when producing steel via this route, which means we need to look to emerging technological solutions to make progress. We also need to change our mindset and stop viewing carbon as a waste, but rather as a valuable by-product that can be captured and re-used to create products, such as bio-fuels, that can replace those made from fossil fuels.

Our most advanced project in this regard is our venture with LanzaTech, which captures waste carbon monoxide from the blast furnace steelmaking process and converts it into bio-ethanol. The resulting bio-ethanol, which will predominantly be used in gasoline blending, can cut greenhouse gas emissions by over 80 per cent compared with conventional fossil fuels. It is an exciting technology. We are building a pilot plant in Gent, Belgium. Once it is constructed, we still need to prove the technology on an industrial scale but, should we be successful, it will provide us with an exciting roadmap on how we can advance our efforts to meet our carbon challenge globally. We talk more about our progress in this area, and our long-term goals in the 'Our Future' section of this report.

Of course, carbon capture and re-use technologies such as these are early-stage. We need to be highly selective in terms of progressing the correct technologies, which we are. We also need a regulatory framework and financial environment that will enable us to make technologies such as these commercially viable. This is where the EU Emissions Trading Scheme, which was finalised in 2017, fails. It places European steelmakers at a competitive disadvantage to global peers. That's why I continue to believe there must be a carbon border tax introduced in Europe. Without such action, I fear investment and innovation in the low-carbon solutions the steel industry, and society at large, needs will be curtailed.

## Well-placed for further progression in 2018

In terms of our immediate future, I am optimistic about the market outlook for 2018. Global steel market conditions remain healthy and we anticipate an increase in demand in our markets. Financially, ArcelorMittal has never been stronger. Our bias towards deleveraging will continue until we meet our \$6 billion net debt target, but we also have the financial wherewithal to invest in opportunities to grow and strengthen our business, as demonstrated by our acquisition of Ilva and our recent offer for Essar Steel in India.

Our priorities, which I have outlined above, are clear, and I am confident of making further progress in each of these four areas in 2018. And looking to the future, we are taking positive action to ensure we adapt to long-term trends and identify opportunities for our business.

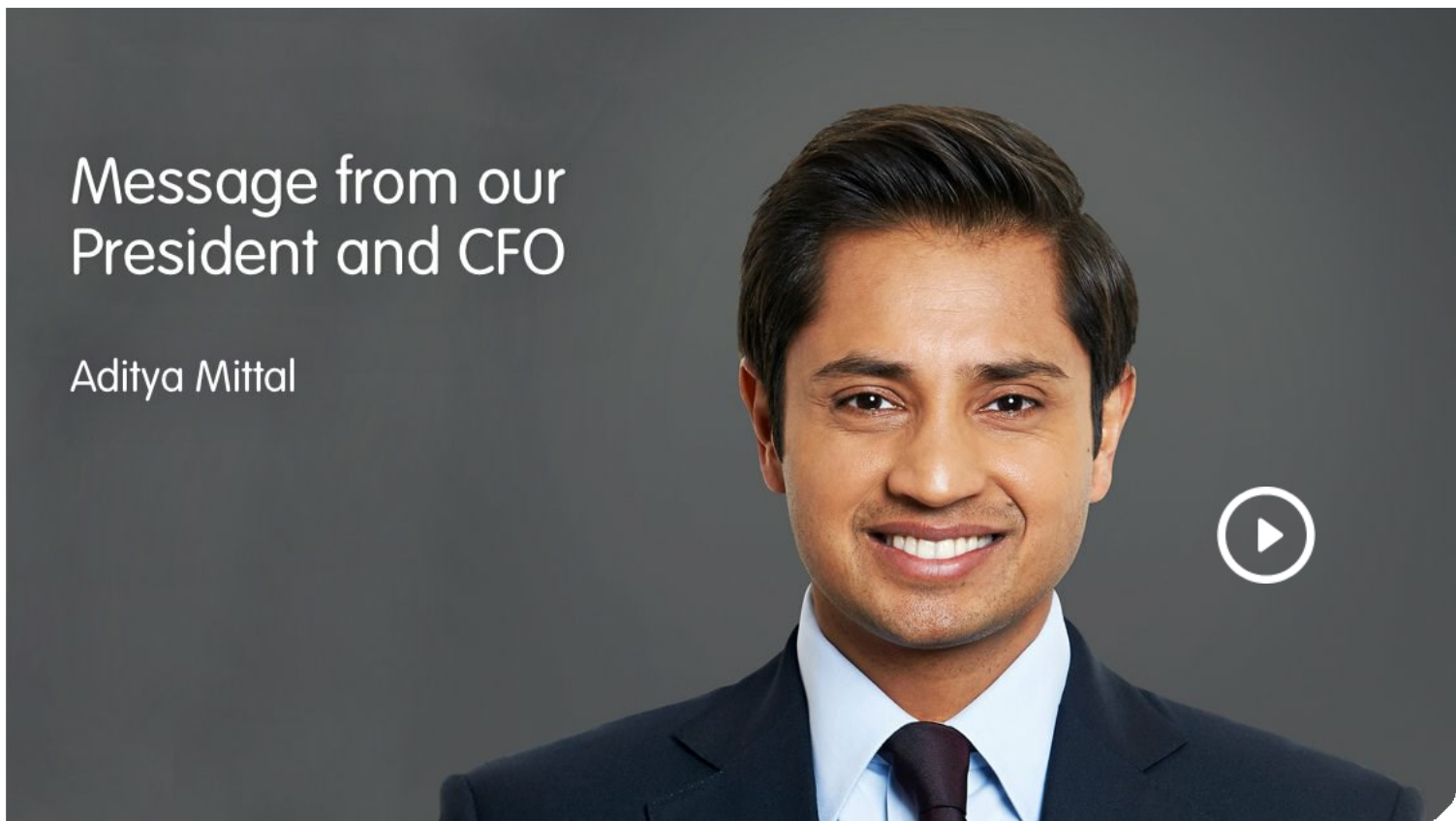


Finally, ArcelorMittal would not be the company it is without the hard work and dedication of every one of our employees worldwide. I thank them all for upholding the company's values of quality, sustainability and leadership and for the important role they played in the company's progress in 2017. I would also like to thank my fellow Board members, for the guidance, wisdom and counsel they provide, and to all our stakeholders for their interest in our business.

**Lakshmi N. Mittal**  
Chairman and CEO

# Message from our President and CFO

Aditya Mittal

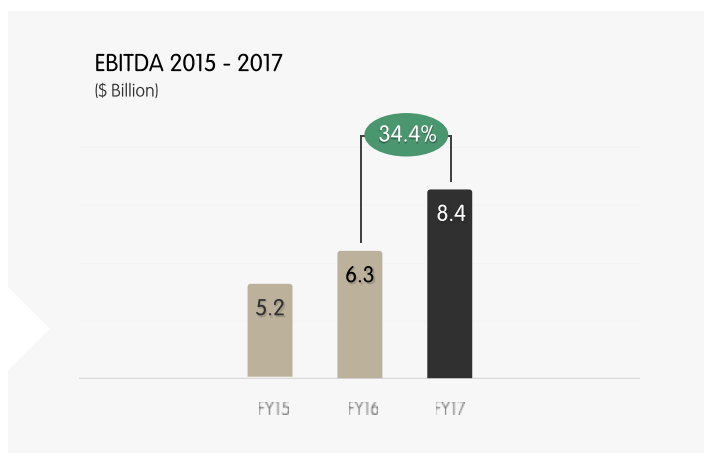


Dear stakeholders,

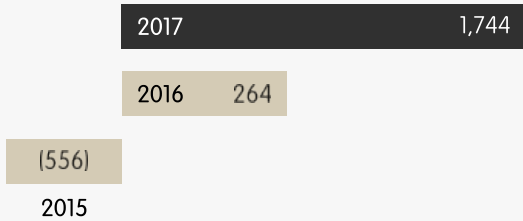
We entered 2017 with strong momentum in our business and in the markets in which we operate, and I am pleased to report that the year proved to be highly successful for ArcelorMittal. Market conditions evolved in a positive direction throughout the year, we made strong progress with the ongoing delivery of our five-year strategic plan, Action 2020, and further strengthened our financial platform, reducing net debt to an all-time low.

Looking at the global demand picture, global apparent steel consumption (ASC) grew by 3.2 per cent in 2017, the strongest growth since 2013. We benefitted from positive ASC growth in our core, developed European and North American markets, and a return to growth in the Brazilian and CIS markets, as those economies emerged from recession.

The positive market environment, coupled with a successful second year in the delivery of Action 2020, led to a strong financial performance for ArcelorMittal. We delivered Ebitda of \$8.4 billion, a 34% improvement on 2016 and the highest level since 2011. Net income, at \$4.6 billion, was also strong and materially exceeded the \$1.8 billion of net income delivered in 2016.





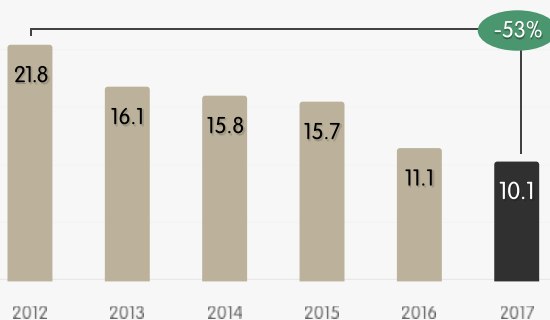
Free cash flow  
(\$ million)

We also delivered a healthy level of free cash flow, of \$1.7 billion, despite incurring costs of \$0.4 billion in bond buyback premiums and investing \$1.9 billion in working capital due to steel and raw material prices increasing throughout the year.

This helped us to deliver against our ongoing focus of deleveraging. At the end of

2017, net debt stood at \$10.1 billion, a reduction of \$5.6 billion over a two-year period. Looking back over the longer-term, we have more than halved our

Net Debt (\$bn)



net debt over the past five years, an impressive achievement given the challenging market environment we faced at times during that period. In fact, our net debt position would have improved further had it not been for a negative foreign exchange impact of \$0.7 billion and the working capital investment we made. The progress we have

made in strengthening our balance sheet is perhaps best represented by our net debt to Ebitda ratio. Two years ago, this figure was 3x; at the end of 2017 it was 1.2x. This represents industry-leading balance sheet strength, and a very strong financial platform on which to build.

The ongoing focus on deleveraging has been driven by a target of regaining an investment grade credit rating. We are now trading in-line with investment grade credit metrics and indeed, were upgraded to investment grade by Standard & Poor's shortly after we announced our 2017 financial results.

Given the progress we have made in improving the financial standing of the group, we outlined a new capital allocation policy at the time of our 2017 results, the overarching purpose of which is to build the strongest possible platform for sustainable shareholder returns. Firstly, our bias towards deleveraging will continue, and we believe net debt of \$6 billion is an appropriate target that will sustain investment grade credit metrics and support positive free cash flow even at the low point of the steel cycle. Secondly, we also now have the financial means to selectively invest in high return projects to grow and strengthen our business. And finally, the Board

decided to reinstate the dividend at a level of \$0.10 per share, a modest level given the Company's ongoing focus on deleveraging. Once we achieve net debt at or below our target we are committed to returning a portion of annual free cash flow to shareholders.

## Disciplined capital allocation

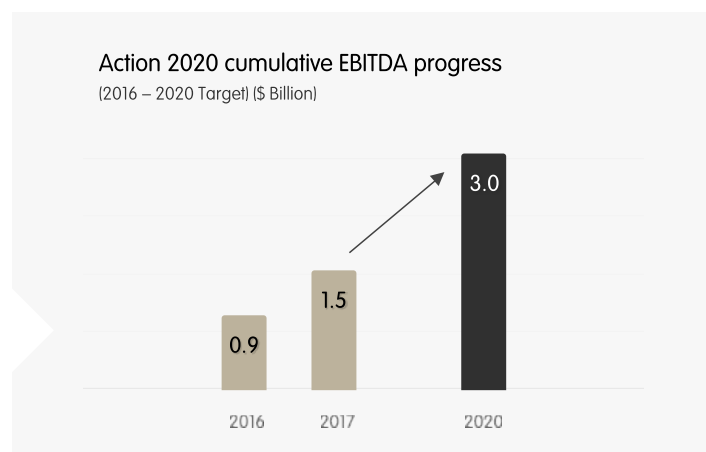


\* Free cash flow refers to cash flow from operations less capex \*\* Refers to the post merger period

Aside from the better external operating environment, there were two key aspects to the success we achieved in 2017: our Action 2020 strategic plan, and our continued focus on carefully managing the cash costs of the business, which maximises our ability to convert Ebitda into free cash flow.

Two years into Action 2020, the total Ebitda benefit from the programme has been \$1.5 billion – halfway to our \$3 billion target. This is encouraging, and the entire group is aligned and motivated in ensuring we meet our goals. The 2017 contribution of \$0.6 billion came from a combination of volume improvement – with steel shipments up 2.3 per cent year-on-year on a comparable basis – and cost / product mix improvement. All of our operating segments contributed: in the US, our footprint

optimisation programme at Indian Harbor is now complete, and capacity utilisation at Calvert, our state-of-the-art downstream facility, is improving; in Europe, our Transformation Programme has progressed well and delivered improved operating performance levels, with further savings and efficiencies being achieved through our digitalisation initiatives; in Brazil, our Value Plan is delivering structural cost reductions, and we are increasing the portion of higher added-value products we sell, with automotive shipments increasing; and in the CIS, we are benefitting from higher levels of steel production and structural savings from the increased use of pulverised coal injection, and new






coke oven batteries in Ukraine. Action 2020 is critical to the future direction of ArcelorMittal. It creates structural, sustainable savings and enhancements across our business. I am confident we will continue to deliver against our plans and create a positive competitive gap between ourselves and our steelmaking peers.

The focus we have placed on managing the cash requirements of the business - CAPEX, interest, taxes and pension costs - in recent years also continued in 2017, with the total limited to \$4.4 billion. Reducing net debt has been an important aspect of keeping this figure down, as it has lowered our annual interest bill, hence enabling stronger Ebitda to free cash flow conversion. However, in-line with the capital allocation policy I describe above, there are attractive opportunities to deploy capital to strengthen and increase the future returns of the business. We are therefore increasing our CAPEX spend in 2018 by \$1 billion, to \$3.8 billion to ensure we capture the best of these opportunities. Two of the key projects we are focussing on are deploying our multi-year investment programme at Ilva, once we receive European Commission approval and formally close the transaction, and our \$1 billion three-year investment programme in Mexico, which includes building a hot strip mill in order to better serve the growing domestic market.

To conclude, our performance in 2017 was encouraging, and the outlook for our business and our markets is positive. We have made strong progress in strengthening our balance sheet and, while that focus will continue, we are also able to invest in opportunities that will drive long-term growth and enhance future returns. These are exciting times for ArcelorMittal. I am confident in our ability to take advantage of the opportunities the market environment presents and deliver against our strategic plans throughout 2018 and beyond.

**Aditya Mittal,**

President, Group CFO and CEO, ArcelorMittal Europe



# Our business

ArcelorMittal is the world's leading steel and mining company, with annual achievable production capacity of approximately 113 million tonnes of crude steel, driven by 197,108 employees working in 60 countries.

We are the leader in all major global steel markets including automotive, construction, household appliances and packaging. We have an industrial presence in 18 countries, and we have leading research and development and technology capabilities, sizeable captive supplies of raw materials, and outstanding distribution networks.

Our core philosophy is to produce safe, sustainable steel. Safety is our highest priority, and our goal is to be the world's safest steel and mining company. Through our products and the value we create, we aim to fulfil our promise of 'transforming tomorrow'. Guiding us in this are our values of sustainability, quality and leadership.

People employed directly

**197,108**  
across 60 countries

Achievable production  
capacity for crude steel

**113**  
million tonnes

Spend on procurement

**\$50.5**  
billion

#### About this review

How we have compiled this integrated report

#### Governance

Our governance structure and approaches to ethics, human rights and stakeholder relations

#### Operations

Find out where, and how, we produce world-class steel

#### R&D

How our industry-leading global R&D division drives sustainable innovation

**Risks**

The key risks and uncertainties to our business, our financial health, our operations, our reputation and our prospects

**Strategy**

How our strategy drives financial performance and sustainable development

**Value creation model**

How we use resources in our steel and mining operations to create value for our stakeholders



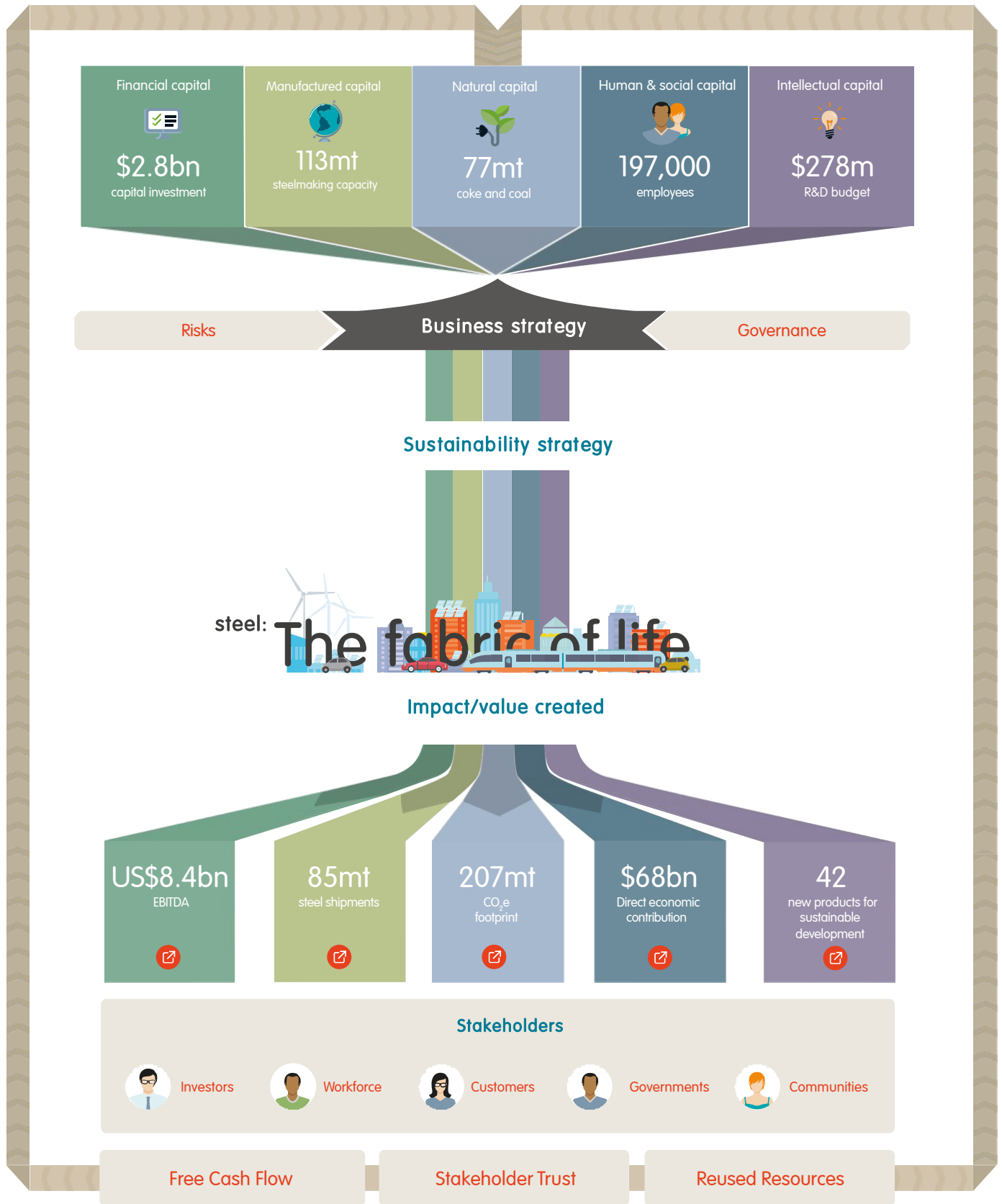
# Our value creation model

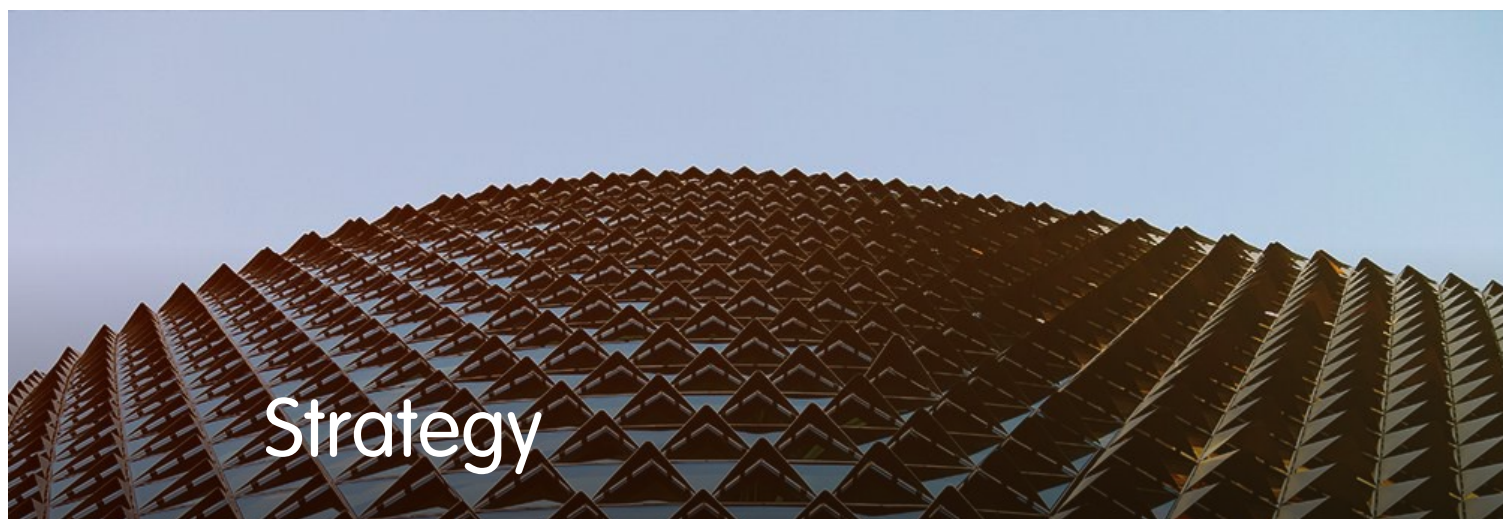
Our value creation model shows the critical resources we rely on in order to produce steel, and create value for our stakeholders. It highlights the importance of our workforce, of natural resources and our capacity to innovate, for example, in producing over 90 million tonnes of steel each year, and at the same time creating different forms of value for society.

These forms of value are of course intimately related. As we develop more integrated thinking within the company, we will be better able to demonstrate how these forms of value relate to each other. This is the rationale behind integrated reporting.

The model is interactive – click to discover more about how we are ‘creating value for society’, and to link with relevant parts of this Annual Review.







ArcelorMittal's success is built on our core values of sustainability, quality and leadership and the entrepreneurial boldness that has empowered our emergence as the first truly global steel and mining company.

Acknowledging that a combination of structural issues and macroeconomic conditions will continue to challenge returns in our sector, we have adapted our footprint to the new demand realities, intensified our efforts to control costs and repositioned our operations to outperform our competitors.

Against this backdrop, our strategy is to leverage five distinctive attributes that will enable us to capture leading positions in the most attractive areas of the steel industry value chain, from mining at one end to distribution and first-stage processing at the other:

- Global scale and scope
- Unmatched technical capabilities
- Diverse portfolio of steel and related businesses, particularly mining
- Financial capability
- Leadership in sustainable development

## The three themes:

### Steel

ArcelorMittal looks to expand our leadership role in attractive markets and segments by leveraging our technical capabilities and our global scale and scope. These are critical differentiators for sophisticated customers that value the distinctive technical and service capabilities our business offers, including our ability to support their sustainable development objectives through innovation. Such customers are typically found in the automotive, energy, infrastructure and a number of smaller markets where ArcelorMittal is a market

leader. In addition, we are present in, and will further develop, attractive steel businesses that benefit from favourable market structures or geographies. In developing attractive steel businesses, our goal is to be the supplier of choice by anticipating customers' requirements and exceeding their expectations. We will invest to develop and grow these businesses and enhance our ability to serve our customers. Given our bias towards further deleveraging,, that investment will be highly disciplined. Commodity steel markets will inevitably remain an important part of ArcelorMittal's steel portfolio. Here, a lean cost structure should limit the downside in weak markets while allowing us to capture the upside in strong markets.

## Mining

ArcelorMittal is working to continue to create value from our world-class mining business. Mining forms part of the steel value chain but typically enjoys a number of structural advantages, such as a steeper cost curve. Our strategy is to create value from our most significant assets, through selective expansion/de-bottlenecking, by controlling cost and capital expenditure, and by supplying products that are highly valued by steel producers. ArcelorMittal's financial capability has allowed us to continue to invest in key mining assets, while the diversity of our steel and mining portfolio facilitates the ability of the mining business to optimise the value of our products in the steelmaking process. Our mining business aspires to be the supplier of choice for a balanced mix of both internal and external customers, while at the same time providing a natural hedge against market volatility for our steel operations.

## All operations

ArcelorMittal strives to achieve best-in-class competitiveness. Operational excellence, including health and safety, our number one priority, is at the core of our strategy in both steel and mining. We steadily optimise our asset base to ensure we are achieving high operating rates at our best assets. Our technical capabilities and the diversity of our portfolio of businesses underpin a strong commitment to institutional learning and continuous improvement through measures such as benchmarking and best-practice sharing. Innovation in sustainable products and processes plays a key role in capturing market share while supporting our overall competitiveness.

## Five key strategic enablers

Critical to implementing this strategy are five key enablers:



### 1. A clear licence to operate

We recognise that we have an obligation to act responsibly towards all stakeholders. Sustainability is a core value that underlies our efforts to be both the world's safest steel and mining company and a responsible environmental steward. Our sustainable development strategy outlines the 10 Outcomes our business needs to achieve to meet our commitment to contribute to a sustainable future for steel, and society.



### 2. A strong balance sheet

We have made good progress in recent years in strengthening our balance sheet. Although further deleveraging remains a priority, the progress achieved to date means that we are now in a position to have more balance and flexibility in our capital allocation and can, on a selective basis, pursue organic or acquisitive growth opportunities.



### 3. A decentralised organisational structure

ArcelorMittal's scale and scope are defining characteristics that give us a competitive advantage. They also introduce complexity and the risks of inefficiency, bureaucracy and diffuse accountability. To manage these risks, the Company favours a structure in which the responsibility for profit and loss is focused on business units aligned with markets.



### 4. Active portfolio management

Throughout our history, we have sought to grow and strengthen our business through acquisitions. That remains the case. The acquisition of existing assets and businesses is typically seen as a more attractive growth path than greenfield investment. We are, however, also willing to dispose of businesses that cannot meet our performance standards or that have more value to others.



### 5. The best talent

ArcelorMittal's success will depend on the quality of our people, and our ability to engage, motivate and reward them. We are committed to investing in our people to develop a safe, high performing culture, and to ensuring a strong leadership



pipeline. We will continue to improve our processes to attract, develop and retain the best talent.

## Action 2020 Plan

On February 5, 2016, we announced our Action 2020 plan, which represents a strategic roadmap for each of ArcelorMittal's main business segments.

The Action 2020 plan is over and above the Company's ongoing management gains plan and seeks to deliver real structural improvements unique to our business. The Action 2020 plan targets to improve our operating income by \$3 billion, absent any recovery in steel spreads and raw materials prices from the levels at the beginning of 2016.

## Our segments

Some of the key segment initiatives included in the Action 2020 plan at the time of launch were as follows:

### NAFTA

The downstream footprint optimization in the U.S. has been completed and targets yielding a minimum of \$250 million improvement in operating income. We intend to continue to ramp-up Calvert to full capacity and this is anticipated to deliver a minimum of \$250 million operating income improvement. Other projects are expected to boost the HAV mix and generate further improvement.

### Europe

We plan to continue our successful asset optimisation as an ongoing transformation plan, involving continued optimisation, and the clustering of finishing sites to remove substantial overhead, centralise activities (including procurement) and improve logistics and service. Together with expected higher added value (HAV) mix and volume gains, this targets delivering a \$1 billion improvement in operating income over the period.

### ACIS

We plan to continue our strategic focus on operational excellence to deliver volumes that will leverage the new competitive cost base it has in the CIS (following competitive currency devaluation) and execute on the improved competitiveness plan in South Africa.

### Brazil

We plan to execute our value plan and target an improvement in sales mix including a recovery of a share of higher margin domestic volumes and improved HAV mix by the end of 2020.

### Our Action 2020 performance

How we're moving towards our future goals

[Read more →](#)

## Sustainable development strategy

Long-term success, for us and for steel, depends on creating value for all stakeholders by actively contributing to society's needs, now and in the future. Our aim is to make steel the material of choice for sustainable development, and ArcelorMittal the supplier of choice for steel.

## Framed by 10 sustainable development outcomes

Our 10 sustainable development (SD) outcomes are designed to describe the business we need to become if we are to bring optimal value to all stakeholders. They provide the framework to embed SD across all our operations, and support the development of sustainability as part of our segmental planning process, based on market and stakeholder context. This approach is underpinned by a commitment to transparent good governance, and informed through two key channels:

- Listening to, understanding and engaging on stakeholder expectations
- Identifying and preparing our business for long-term trends in order to provide leadership

## Creating positive change

Our success depends on creating positive change in two, interdependent ways:

- Business-level SD plans to target progress within segments, countries and sites, using shared knowledge and investment to drive continuous improvement
- Transformational initiatives that address global issues and opportunities and can be leveraged across the Group

## Our core goals

We have identified three core goals which will drive business, social, and environmental value:

- Accelerating steel's role in the low-carbon, circular economy
- Innovating to support a sustainable future
- Building trusted supply chains that meet our customers' needs

We describe these themes further in our [Sustainability Review](#)

### Rising to the sustainability challenge

Our sustainable development framework and identified material issues

[Read more](#) →

### See our Sustainability Review

Our 2017 performance against our 10 outcomes

[Read more](#) →



# Research and development

Innovation has helped us become a market leader in steel. Our global R&D team is ensuring that our steel has a central role in a sustainable future for our customers and society.

Our global R&D division provides the technical foundation for the commercial success of ArcelorMittal. Through innovative thinking, closer relationships with customers, continuous improvement and breakthrough technologies, the team is helping us lead the way in developing the products and processes that will enable sustainable lifestyles.

Our global research and development presence:

R&D  
**12**  
sites worldwide

Global R&D spend  
**\$278**  
million

People working  
**1,407**  
in Global R&D

## Transforming the future, improving the present

We're not afraid to think radically about the future. Our global R&D division is working on technologies that could transform whole areas of our business, and those of our customers: closed loop, low-carbon steel production; environmental product credentials; big data, analytics, and robotics; 3D printing; and electric vehicles, *to name just a few*. But we're also heavily engaged in what our business is doing now, every day – improving processes and developing products so that we retain our competitiveness and our customers' preference, and improve our social and environmental performance.

## Our main focus areas:

Maintaining the competitiveness of steel versus alternative materials, particularly among our unique automotive customer base

R&D plays a vital role in supporting our focus on high added value (HAV) products, especially those designed to meet the evolving needs of the automotive industry – a sector that contributed around 18% of our revenues in 2017.

We've pioneered advanced high strength steel (AHSS) grades and manufacturing processes that help automotive customers meet demanding safety, CO<sub>2</sub> and fuel economy targets. Our co-engineering programmes with North American and European carmakers and our continued innovations such as new press-hardenable steels (PHS), new grades of third-generation AHSS for cold stamping, and new coatings have established us as a market leader in this area. We continue to design S-in motion® solutions, and in 2017, launched its application to front car seats. Our second generation of iCARE® electrical steels for electric motors, and steel solutions tailored to the specific designs required by electric vehicles, demonstrate our commitment to leading innovation in steel for electric and hybrid vehicles. Our work in this area is key to achieving our sustainable development [outcome 2](#).

## Creating niche products to grow ArcelorMittal's non-auto segments

Customers in many sectors including construction, transport, energy and packaging are always looking for better products and ways to improve their processes, in terms of both performance and sustainability. We want our steel to be our customers' material of choice, and we're delivering against their expectations with differentiated products and unique design solutions.

Our R&D supports customers in the [construction](#) sector through a range of products, processes and tools.

We also develop innovative solutions for both [renewable](#) and conventional energy customers, including advanced line pipe steel, steel specifically designed for wind turbines, and our patented anti-corrosion steel coating [Magnelis](#)® in framing solutions for photovoltaic (PV) modules.

Specialised steels, coatings and solutions also play a vital role in a range of infrastructure applications, including rails, bridges and road safety barriers. For example, we have developed a new, high-containment central [road safety barrier](#) made from patented steel for use in North America, which received approval in 2017.

### Driving innovation



Our R&D supports  
carmakers

[Find out how](#) →



For more information on how we're innovating to support sustainable infrastructure, see [outcome 3](#).

## Ensuring a continuing and growing contribution to operational improvement and environmental footprint through research dedicated to improving our steelmaking processes

By creating unique processes and driving improved performance, global R&D helps maintain our competitiveness and promote process-driven product development. We also deliver programmes that generate energy savings and lower emissions of solids, water and gases, as well as leading our exploration of carbon capture and utilisation technologies, which are described in [outcome 6](#).

Customers benefit directly from research-developed technical solutions such as our accelerated cooling technology ([ACCtec](#)), which provides enhanced plate flatness control and superior microstructure, and enables stronger plates for line pipe, offshore structures, and applications in shipbuilding, bridges, buildings, storage tanks and earth-moving equipment. Recent environmental improvements driven by global R&D include industrialising our hybrid filtration process in Zenica (Bosnia & Herzegovina) and Gent (Belgium), and hot commissioning in Dabrowa (Poland), to improve air emissions, which contribute to [outcome 5](#).

## Driving Action 2020 and our sustainable development framework

R&D is at the heart of our structural improvement plan, [Action 2020](#). Innovation enhances our portfolio of HAV products, and improved processes help us reduce costs and emissions. By building close and enduring relationships with customers, based on a deep understanding of their business needs, global R&D also plays a critical role in helping us retain, or win, preferred supplier status.

At the same time, we expect innovation to drive our ambition to ensure that steel contributes to a sustainable, low-carbon future. Innovation is crucial to achieving many of our 10 sustainable development outcomes, whether through breakthrough technologies, sustainable products, environmental impact improvements, or the longstanding relationships between our global R&D division and science and technology institutions around the world.



[Read more >](#)

#### A circular future, driven by R&D

Our R&D division worked closely with architects Wilmotte & Associés in their 2017 plans for ArcelorMittal's new Luxembourg headquarters, which is designed so it can be dismantled, and nearly all the steel products re-used in a new building without the need for recycling.



# Risks

Good risk management is about having the right measures and systems in place to recognise, manage and mitigate our risks, in light of our responsibilities to all of our stakeholders.

Our [Audit and Risk Committee](#) assists the board of directors by overseeing risk and monitoring and reviewing our risk management framework and process.

On this page we list the key risks and uncertainties to our business, our financial health, our operations, our reputation and our prospects. For full details, download the risk section from our [20-F](#).

Global economy and the mining and steel industry

- Excess capacity, oversupply and destocking cycles in the steel industry and in the iron ore mining industry may weigh on the profitability of steel producers, including ArcelorMittal
- Protracted low steel and iron ore prices may have an adverse effect on ArcelorMittal's operational results
- Volatility in the supply and prices of raw materials, energy and transportation, and volatility in steel prices, or mismatches between steel prices and raw material prices, could adversely affect ArcelorMittal's operational results
- ArcelorMittal's business and results are substantially affected by regional and global macroeconomic conditions. Recessions or prolonged periods of weak growth in the global economy, or the economies of ArcelorMittal's key selling markets, may have a material adverse effect on the mining and steel industries and on ArcelorMittal's operational results and financial health

## Competition

- Unfair trade practices in ArcelorMittal's home markets could negatively affect steel prices and reduce ArcelorMittal's profitability
- Developments in the competitive environment in the steel industry could have an adverse effect on ArcelorMittal's competitive position and hence its business, financial health, operational results or prospects
- Competition from other materials could reduce market prices and demand for steel products and thereby reduce ArcelorMittal's cash flows and profitability

## Regulation

- ArcelorMittal is subject to regulatory and compliance risks, which may expose it to investigations by government authorities, litigation and fines, in relation, among other things, to its pricing and marketing practices or other antitrust matters. The resolution of such matters could negatively affect the Company's profitability and cash flows in a particular period or harm its reputation
- ArcelorMittal's business is subject to an extensive, complex and evolving regulatory framework and its governance and compliance processes may fail to prevent regulatory penalties and reputational harm, whether at operating subsidiaries, joint ventures or associates
- ArcelorMittal is subject to strict environmental laws and regulations that could give rise to a significant increase in costs and liabilities. Laws and regulations restricting emissions of greenhouse gases could force ArcelorMittal to incur increased capital and operating costs and could have a material adverse effect on ArcelorMittal's operational results and financial health
- ArcelorMittal is subject to stringent health and safety laws and regulations that give rise to significant costs and could give rise to significant liabilities

## Finance

- ArcelorMittal has a substantial amount of indebtedness, which could make it more difficult or expensive to refinance its maturing debt, incur new debt and/or flexibly manage its business. ArcelorMittal's level of profitability and cash flow currently is and, depending on market and operating conditions, may in the future be, substantially affected by its ability to reduce costs and improve operating efficiency
- ArcelorMittal is a holding company that depends on the earnings and cash flows of its operating subsidiaries, which may not be sufficient to meet future operational needs or for shareholder distributions and loss-making subsidiaries may drain cash flow necessary for such needs or

distributions

- Changes in assumptions underlying the carrying value of certain assets, including as a result of adverse market conditions, could result in the impairment of such assets, including intangible assets such as goodwill
- The Company's investment projects may add to its financing requirements and adversely affect its cash flows and operational results
- ArcelorMittal's operational results could be affected by fluctuations in foreign exchange rates, particularly the euro to US dollar exchange rate, as well as by exchange controls imposed by governmental authorities in the countries where it operates

## Acquisitions

- ArcelorMittal has grown through acquisitions and may continue to do so. Failure to manage external growth and difficulties completing planned acquisitions or integrating acquired companies could harm ArcelorMittal's future operational results, financial health and prospects
- ArcelorMittal may fail to realise the acquisition of the Italian steel-making company, Ilva, and, if the acquisition is completed, ArcelorMittal may fail to implement its strategy with respect to Ilva

## Taxation

- ArcelorMittal's ability to fully utilise its recognised deferred tax assets depends on its profitability and future cash flows
- The income tax liability of ArcelorMittal may substantially increase if the tax laws and regulations in countries in which it operates change or become subject to adverse interpretations or inconsistent enforcement

## Mining

- ArcelorMittal's mining operations are subject to hazards and risks usually associated with the exploration, development and production of natural resources, any of which could result in production shortfalls, damage to persons or property. These include, for example, the collapse of tailing ponds dams, underground fires and explosions, and cave-ins
- ArcelorMittal's reserve estimates may materially differ from mineral quantities that it may actually be able to recover; ArcelorMittal's estimates of mine life may prove inaccurate; and market price fluctuations and changes in operating and capital costs may render certain ore reserves uneconomical to mine
- Drilling and production risks could adversely affect the mining process
- ArcelorMittal faces rising extraction costs over time as reserves deplete
- ArcelorMittal has incurred and may incur in the future operating costs



when production capacity is idled or increased costs to resume production at idled facilities

- ArcelorMittal's greenfield and brownfield investment projects are inherently subject to financing, execution and completion risks

## Joint ventures

- ArcelorMittal faces risks associated with its investments in joint ventures and associates

## Personnel

- A Mittal family trust has the ability to exercise significant influence over the outcome of shareholder votes
- The loss or diminution of the services of the Chairman of the board of directors and Chief Executive Officer of ArcelorMittal could have an adverse effect on its business and prospects

## Pensions

- Underfunding of pension and other post-retirement benefit plans at some of ArcelorMittal's operating subsidiaries could require the Company to make substantial cash contributions to pension plans or to pay for employee healthcare, which may reduce the cash available for ArcelorMittal's business

## Employment

- ArcelorMittal could experience labour disputes that may disrupt its operations, and its relationships with its customers and its ability to rationalise operations and reduce labour costs in certain markets may be limited in practice or encounter implementation difficulties

## Emerging markets

- ArcelorMittal is subject to economic policy, political, social and legal risks and uncertainties in the emerging markets in which it operates or proposes to operate, and these uncertainties may have a material adverse effect on ArcelorMittal's business, financial health, operational results or prospects

## Operational disruption

- Disruptions to ArcelorMittal's manufacturing processes could adversely affect its operations, customer service levels and financial results
- Natural disasters or severe weather conditions could damage ArcelorMittal's production facilities or adversely affect its operations

## Insurance

- ArcelorMittal's insurance policies provide limited coverage, potentially leaving it uninsured against some business risks
- Product liability claims could have a significant adverse financial impact on ArcelorMittal

## Litigation

- ArcelorMittal is currently and in the future may be subject to legal proceedings, the resolution of which could negatively affect the Company's profitability and cash flows in a particular period
- US investors may have difficulty enforcing civil liabilities against ArcelorMittal and its directors and senior management

## Cyber security

- ArcelorMittal's reputation and business could be materially harmed as a result of data breaches, data theft, unauthorised access or successful hacking



# Governance

ArcelorMittal places a strong emphasis on good corporate governance, not only ensuring a culture of compliance and the sensible management of business risks, but also one of integrity. Demonstrating responsibility and respect for our colleagues and all stakeholders, and actively listening and responding to their concerns, are both key to the business.



“Integrity and reputation are key assets that must be preserved at all times.”

Lakshmi N Mittal,  
Chairman and CEO

## Governance structure

ArcelorMittal 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 the company’s **articles of association**.

The board of directors is in charge of the overall governance and direction of ArcelorMittal. Responsibility for the implementation of company strategy, overall management of the business and all operational decisions is delegated to the CEO Office, which is comprised of the chief executive officer, Mr. Lakshmi N. Mittal and the chief financial officer, Mr. Aditya Mittal, and supported by six other **executive officers**.

The board of directors is composed of nine directors, of which eight are non-executive directors and five are independent directors. The board of directors comprises only one executive director, Mr. Lakshmi N. Mittal, the chairman and chief executive officer of ArcelorMittal. To ensure proper checks and balances are in place, a lead independent director – who presides over the independent directors – sets the agenda for board meetings with the chairman and leads the independent directors in regular executive sessions, which take place before every board meeting.

The board's audit and risk committee and its appointments, remuneration and corporate governance committee (ARCG) are each comprised exclusively of independent directors.

## Board of directors

The members of the board of directors are set out below:

Name	Age <sup>4</sup>	Date of joining the Board <sup>5</sup>	End of Term	Position within ArcelorMittal
Lakshmi N. Mittal	67	May 1997	May 2020	Chairman of the Board of Directors and Chief Executive Officer
Vanisha Mittal Bhatia	37	December 2004	May 2019	Director
Jeannot Krecke	67	January 2010	May 2019	Director
Suzanne P. Nimocks <sup>2,3</sup>	58	January 2011	May 2019	Director
Bruno Lafont <sup>1,2,3</sup>	61	May 2011	May 2020	Lead Independent Director
Tye Burt <sup>2,3</sup>	60	May 2012	May 2018	Director
Michel Wurth	63	May 2014	May 2020	Director
Karyn Ovelmen <sup>1,3</sup>	54	May 2015	May 2018	Director
Karel de Gucht <sup>1,3</sup>	63	May 2016	May 2019	Director

1. Member of the Audit & Risk Committee.

2. Member of the Appointments, Remuneration and Corporate Governance Committee.

3. Non-executive and independent director.

4. Age as of December 31, 2017.

5. Date of joining the Board of ArcelorMittal or, if prior to 2006, it's predecessor Mittal Steel Company NV.

Information about the background and experience of each board member is given in our [annual report](#). The board of directors believes that its members have the appropriate range of skills, knowledge and experience, as well as the degree of diversity, necessary to enable it to effectively govern the business.

Its composition and skills are reviewed on a regular basis and additional skills and experience are actively sought as and when appropriate in line with the expected development of ArcelorMittal's business. The board plans for its own succession, with the assistance of the ARCG committee.

Henk Scheffer is the company secretary and, accordingly, acts as secretary of the board of directors.

In line with the worldwide effort to increase gender diversity on the boards of directors of listed and unlisted companies, the board met its goal of increasing the number of women on the board to at least three by the end of 2015 with the election of Mrs. Karyn Ovelmen in May 2015. Out of 9 members of the board, women represent 33.33% in 2017. The strength of the board's diversity not only relates to gender, but also to the region, background and industry of its members.

Details of directors' remuneration can be found in its [annual report](#).

## Chairman and CEO

ArcelorMittal complies with the 10 Principles of Corporate Governance of the Luxembourg Stock Exchange in all respects. However, in respect of Recommendation 1.3 under the Principles, which advocates separating the roles of chairman of the board and the head of the executive management body, the company has made a different choice. This is permitted, however, as, unlike the 10 Principles themselves with which ArcelorMittal must comply, the Recommendations are subject to a more flexible "comply or explain" standard. The nomination of the same person to both positions was approved by the shareholders (with the Significant Shareholder abstaining). Since that date, the rationale for combining the positions of CEO and chairman of the board of directors has become even more compelling. The board of directors is of the opinion that Mr. Mittal's strategic vision for the steel industry in general and, for ArcelorMittal in particular in his role as CEO, is a key asset to the company, while the fact that he is fully aligned with the interests of the company's shareholders means that he is uniquely positioned to lead the board of directors in his role as chairman. The combination of these roles was revisited at the company's Annual General Meeting of shareholders in May 2017, when Mr. Lakshmi N. Mittal was re-elected to the board of directors for another three year term by a strong majority.

## Sustainable development

The board of directors see sustainable development as key to its long-term success and will explicitly incorporate this into the scope of the ARCG in 2018. Safety – as the company's top priority – makes up 10% of the incentive scheme for the leadership of the company, from managers to the CEO Office.



The company's sustainable development council oversees the direction of corporate responsibility and sustainable development across the company, and tracks stakeholder expectations and long-term trends and considers their implications for the business. Its members include senior managers from the corporate functions of strategy, technology, finance, risk, government affairs, CMO, communications and corporate responsibility/sustainable development. The company also has sponsors for each of the 10 SD outcomes, who drive the direction of each outcome in conjunction with the CR team and experts from across the group.

The company also convenes a number of working groups on particular topics, such as human resources, government relations and climate change, that bring together senior managers from relevant functions. The COP21 committee, for example, brings together the company's assessment of climate-related policy and stakeholder developments.

## Explore our approach to governance

### Ethics

How we're creating a positive corporate culture with employees which do the right thing.

### Human rights

The importance of our human rights policy and how it helps our employees.

### Governance

Read more about our approach to good governance on our corporate website.

### Stakeholder relations

How we're committed to communicating with all our stakeholders openly and honestly.



## Business ethics

We encourage our employees to be good corporate citizens, acting 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.

Our commitment to integrity starts with our code of business conduct and is supported by a comprehensive framework of policies in areas such as human rights, anti-corruption, and insider dealing. These 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 our code of business conduct

Our code of business conduct brings together for employees what acting with integrity means in practice. It applies to all directors, officers and employees of ArcelorMittal and our subsidiaries worldwide, and employees undergo training on our code and other aspects of compliance every three years. In 2017, 85% of all employees had completed up-to-date training on our code, and 82% had completed their anti-corruption training.

We continually monitor legal requirements and best practice in the USA, the European Union and Luxembourg to make improvements to our corporate governance standards and procedures when necessary.





## Confidential reporting of breaches

Both employees and other stakeholders can report any breaches of our policies and standards via the confidential whistleblowing facility on our corporate website.


We also have confidential whistleblowing hotlines in

30 major countries of operation. From these systems, in 2017 we received 143 complaints relating to alleged fraud, which were referred to and duly reviewed by the Company's Internal Assurance Department. Following review by the Audit & Risk Committee, none of these complaints were found to be significant.

## Performance at a glance

Metric	Unit	2015	2016	2017
Employees trained on code of business conduct	%	82	81	85
Employees trained on anti-corruption*	%	80	76	82
Employees trained on human rights*	%	81	84	66
Whistleblowing lines	Number	30	30	30

\* % of employees in appropriate functions targeted for training



# Human rights

We developed our first human rights policy in 2010 and reviewed it in 2016 line with the United Nations Guiding Principles on Business and Human Rights and the UK Modern Slavery Act.

Our **new policy** was adopted by the board of directors in June 2017.

We require all relevant employees to undergo human rights training every three years. In 2017, 66% of the Company's relevant workforce had completed up-to-date human rights training, down from 84% in 2016.

We focus additional resources on any areas where we see particular compliance risks. For example, in 2017, we ran an anti-harassment awareness campaign for all employees, and held workshops on integrity and human rights for employees in Kazakhstan.

We provide our stakeholders – including employees, contractors, and community members – with the facility to raise a grievance of any kind with the Company via a confidential grievance mechanism at site level, or via whistleblowing lines at country-level. We also have a central whistleblowing line on our corporate website.

In 2017, our global assurance team received 160 complaints relating to workforce issues\*, of which 36 were found to be substantiated. During the year we resolved 156 complaints, some of which were received the previous year.

In 2017, we continued to map social and environmental hotspots, both in our operations and our supply chain. We also commissioned an in-depth study to comprehensively map our supply chain risks – relating not just to human rights but to other social and environmental risks too.

Our due diligence to date has identified our most salient human rights risks to be in the raw materials part of our supply chain, and this is also the focus of

interest for our customers. This is why we've continued to play a leading role in the development of a sustainability certification scheme for raw materials, the Initiative for Responsible Mining Assurance (IRMA), which you can read more about [here](#).





# Stakeholder relations

Throughout this report our aim is to be open and honest with all our stakeholders, taking their interests into account and engaging with them regularly.

We identified [our key stakeholders in an exercise](#) undertaken in 2014. As outlined in [our value creation model](#), they are: customers, workforce, governments, investors and communities. The top non-financial issues raised by these stakeholders continue to be safety and climate change, and these are identified and addressed in this report in the [priorities for our business and stakeholders](#) section.

29 direct engagements  
with investors on SD

At a country level, stakeholder surveys are carried out on a regular basis. At group level, we also carry out reputation surveys of all our key stakeholder groups in particular countries, using a third party to ensure rigour and objectivity in the approach. Among our employees, we carry out a Speak Up! survey every two years across all our sites, and the results from 2017 are reported in [outcome 1](#).

Each business unit measures the satisfaction of its customers. And we engage with investors throughout the year via roadshows, round tables, surveys and one-to-one conversations.

On particular issues we may make focused efforts to engage stakeholders. In 2017, for example, we engaged heavily with customers, suppliers and civil society organisations on supply chain standards for steel and raw materials - see [outcome 7](#).

Read more about our [stakeholders](#) and how we engage with them.

## Transparency and balance

Reporting is central to our promise of openness with stakeholders. We are committed to applying best practice standards in corporate governance, in our dealings with shareholders and other stakeholders, and with respect to transparency, balance and quality of disclosure and reporting. This is a core element of this Integrated Annual Review, and is why we publish key stakeholder concerns that have been raised in 2017 on the relevant SD outcome pages.

We published 16 [country sustainability reports](#) in 2017, alongside our disclosures to the Carbon Disclosure Project on climate change and water, and a number of investor and customer surveys.



## About this review

### Integrated reporting framework

This 2017 Integrated Annual Review describes the context for and progress of our business as the world's largest steel and mining company, and so outlines what the key considerations are in creating value for our stakeholders now and in the future. Through this report we aim to reflect the guiding principles of the Integrated Reporting Framework (IIRC). This is the third step on our integrated reporting journey and this year, in response to feedback, we have achieved a more focused, concise and balanced global overview of our value creation story. We detail the alignment with the IIRC framework in our [reporting index](#).

### UN Sustainable Development Goals (SDGs)

There is significant alignment between our 10 outcomes and the 17 UNSDGs – indeed in their draft format, the SDGs were a key to the development of our 10 outcomes. And whilst we contribute to many of the SDGs – see [reporting index](#) – we have identified five where ArcelorMittal has a key role to play, and outline this below. It is one thing to map our SD outcomes against the SDGs. It is another to take a strategic approach to our contribution to them. As we develop this further, we will highlight this in more detail on our website.

## UN Global Compact



“We have supported the United Nations Global Compact since 2008. This Annual Review serves as our Communication on Progress of our implementation of the ten UN Global Compact principles.”

**Lakshmi N. Mittal,**  
Chairman and CEO

## Global Reporting Initiative (GRI)

We continue to report in line with the GRI across our reporting landscape, including this Integrated Annual Review, our ongoing online narrative reporting, and our local sustainability reports. We are now using their latest guidelines – GRI Sustainability Reporting Standards 2016 – and you can find details in our [reporting index](#). Whilst we cover those Standards that are material on a global scale within this report, many more are material to stakeholders in certain countries, and most meaningfully reported within our [country SD reports](#). 80% of these used the GRI G4 guidelines in 2017.

## Assurance

This is the ninth year that our sustainable development reporting has received independent assurance.

## Reporting format

We believe that online reporting is the most practical and efficient way to communicate with the widest number of stakeholders. We provide this website for those who wish to browse online, and to bring our Integrated Annual Review more in line with the IIRC principle of conciseness, we have focused the content on the progress of the year and our future outlook, and where appropriate, signposted the reader to more detailed information published elsewhere online. We also provide a full pdf for those who prefer to download, print and read it offline – as well as a pdf download function for each page or section of the review to make it easier to print and read individual parts offline.

For further information please see also:

- [Scope, boundaries and methodologies](#)
- [Assurance statement](#)
- [Reporting index](#) (GRI, IIRC)





# Scope boundaries and methodologies

This annual review covers ArcelorMittal and its significant operating subsidiaries, excluding joint ventures and associates where we do not have operating control, except for those noted below. A list of these subsidiaries, joint ventures and associates can be found in within our [Form 20-F](#) filed with the US Securities and Exchange Commission.

All data is reported for the period from 1 January to 31 December 2017. Our reporting cycle is annual, and the previous annual review and sustainable development report were published in April 2017.

## Financial data – basis of presentation

Financial information has been extracted from the consolidated financial statements. The consolidated financial statements have been prepared on a historical cost basis, except for available-for-sale financial assets, derivative financial instruments, biological assets and certain assets and liabilities held for sale, which are measured at fair value less cost to sell, inventories, which are measured at the lower of net realisable value or cost and the financial statements of the Company's Venezuelan operations, for which hyperinflationary accounting is applied (see of our [Form 20-F](#)). The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and as adopted by the European Union and are presented in US dollars with all amounts rounded to the nearest million, except for share and per share data.

## Non-financial data – basis of reporting

We report on a large number of non-financial metrics in our [SD performance table](#). The methodology behind the calculation and reporting of these indicators, and our reporting boundaries, are set out in our [basis of reporting](#) document.

## Changes to scope and boundaries in 2017

Our 2017 performance data excludes any sites from our organisational perimeter from the date on which they were idled.

We continue to report against the same GRI indicators as in 2016, with the following amendments. Metrics that have changed since we reported on in 2016 are as follows:

- Fatalities: now reported for employees and contractors separately
- LTFIR: now reported for employees and contractors separately
- GHG emissions – scope 1 now reported for steel and mining separately – 305-01
- GHG emissions – scope 2 now reported for steel and mining separately – 305-02
- GHG emissions – scope 3 now reported for steel and mining separately – 305-03
- Water discharge – reported as a separate metric alongside water intake and net water use

## Forward-looking statements

This review may contain forward-looking statements that represent the expectations, beliefs, plans and objectives of ArcelorMittal's management regarding its financial and operational performance in 2017 and beyond, and assumptions or judgements based on such performance. Future performance expectations are forward-looking and accordingly involve estimates, assumptions, judgements and uncertainties. A number of factors may cause actual results or outcomes to differ materially from the expectations of our management. These risk factors are set out in the risk section, with further details in the [Form 20-F](#), filed each fiscal year with the US Securities and Exchange Commission.



# Assurance statement

We believe that independent assurance leads to quality and process improvements, and reassures readers and ArcelorMittal's management that the information we publish is accurate and material, and therefore contributes to building trust and credibility with key stakeholders.

In 2017 we asked our group auditors, Deloitte Audit, to provide limited assurance on the following sustainability performance indicators, in accordance with the International Auditing and Assurance Standards Board's International Standard on Assurance Engagements – Revised (ISAE3000 Revised):

- CO<sub>2</sub>e emissions per tonne of steel
- Total CO<sub>2</sub>e emissions (Steel and Mining)
- Primary energy consumption (steel)

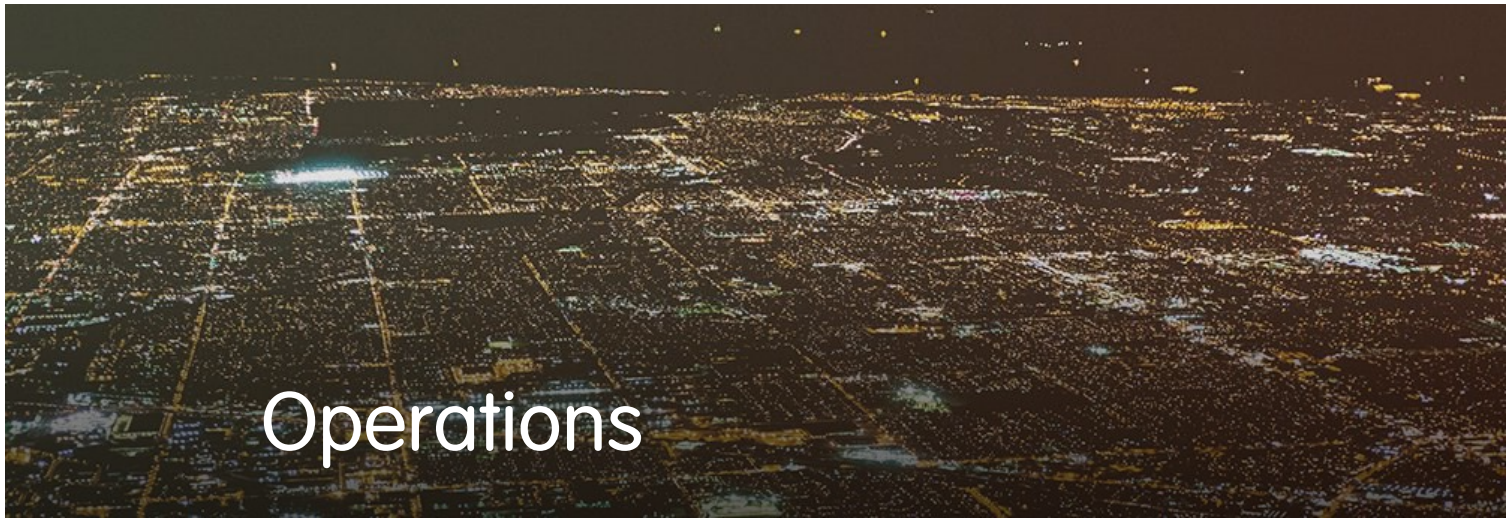
Deloitte Audit provides an independent third-party [assurance statement](#). This assurance covers the specified data as contained in the [Factbook](#) and on the relevant pages of this report.

# Reporting index

Our 2017 Integrated Annual Review aims to reflect the principles and guidelines of the International Integrated Reporting Council's integrated reporting framework, and the Global Reporting Initiative (GRI) Sustainability Reporting Standards 2016. It also reflects how ArcelorMittal contributes to the UN SDGs and serves as our 2017 communication on progress of our implementation of the United Nations Global Compact (UNGC) principles.

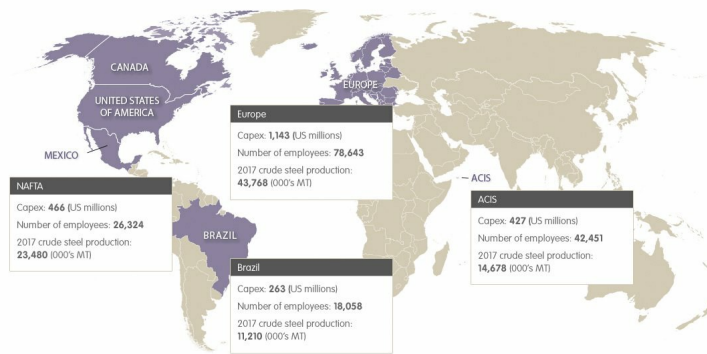
Details of how it meets these various frameworks can be found [here](#).



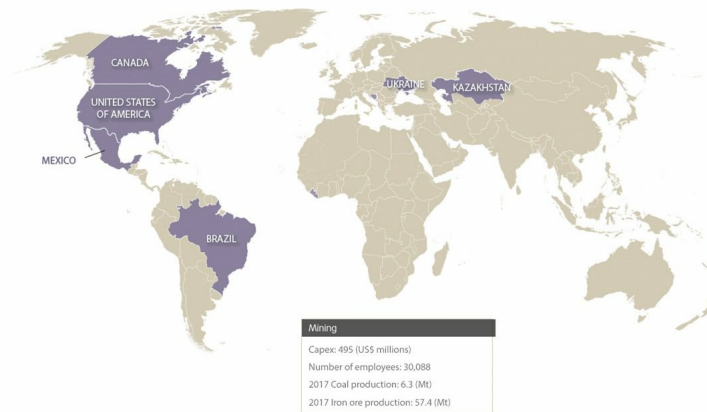


# Operations

## Steel



## Mining





## External context

3.2%  
increase in global  
apparent steel  
consumption in 2017

### Overview of 2017: Growth in all markets, and increasing stakeholder expectations

The recovery in the global economy helped feed growing demand in all our markets, and the year ended with steel prices and spreads up year-on-year. Global GDP growth is estimated to have been 3% in 2017, the best year since 2011, with growth increasing in more than half of the world's economies and with both Brazil and Russia emerging from recession. Global apparent steel consumption (ASC) is estimated to have risen 3.2% year-on-year. Overall, market conditions were favourable.

Stakeholders continued to take an interest in the role of business in responding to climate change, creating social value, and supply chain assurance. Through initiatives such as the Task Force on Climate-related Disclosures (TCFD), stakeholders across society have increased their focus on how businesses demonstrate their approach to the risks and opportunities of climate change, and specifically how they will contribute to a low-carbon future. Social media continued to increase the ability of all stakeholders, including consumers and communities, to engage and challenge businesses on issues of concern to them.



## Steel demand

Global ASC grew robustly in 2017 for the first time since 2014, reflecting increased demand in China and developed markets and rebounding demand in Brazil and Russia.

Chinese demand was stronger than anticipated, growing approximately 3.5%, supported by the strength of the machinery market and a better than expected real estate market. Growth returned to NAFTA (5%), CIS (4%) and Latin America (5%) after declining in 2016. Growth was slower in the EU (almost 2%), developed Asia (1%) and Middle East (1.5%).

## Steel production and pricing

Global crude steel output rose significantly in 2017 to a record 1.69 billion tonnes, up 5.4% from 2016. This reflects a strengthening global economy and rising momentum in trade.

Steel spreads – the difference between the basket of raw materials (iron ore, coal and scrap) used to make steel, and steel selling prices – remained at healthy levels at the end of 2017.

## Excess capacity in China

Overcapacity in China has had a strong negative influence on market conditions in recent years. By the end of 2017, however, China had delivered capacity cuts of around 115 million tonnes from its 140 million-tonne reduction target, with a further 25 million tonnes expected to be cut in 2018.

In addition, 120 million tonnes of induction furnace capacity has been closed, although these induction furnaces were not included in China's steelmaking capacity figures.

## Imports to Europe

Despite a decline in the second half, overall imports into Europe rose by around 6% year-on-year, to almost 29 million tonnes. This represented almost 19% of the European market, a new record high.

Imports into the EU from China fell from 4.9 million tonnes in 2016 to 2.9 million tonnes in 2017, due to higher than anticipated domestic Chinese demand, the ongoing Chinese capacity closure programme, and measures taken to prevent dumping in EU markets. However, these imports are being replaced by imports from other countries on which anti-dumping duties have not been imposed. South Korean imports rose by 30% in 2017, and Turkish and Indian imports rose by over 50% and 100% year-on-year respectively.

## Disclosure expectations on risk

As companies improve their sustainability performance, stakeholders are shifting their focus from disclosures on performance to disclosures on governance: that is, how are company boards deepening their understanding of social and environmental risk, and through what systems do they manage them?

An example is the growing expectation that companies demonstrate that they employ the OECD due diligence guidance to prevent or mitigate adverse impacts in their supply chains.

There has also been a rapid growth of expectations from financial stakeholders around the disclosures companies make on climate change. The Task Force on Climate-related Financial Disclosures (TCFD), led by the financial community, published its final recommendations in June 2017. The financial community wants to understand better how companies are assessing and managing the financial risks associated with climate change so that they can better manage climate change risks in their own portfolios.

## EU Emissions Trading Scheme (ETS)

Reforms to the ETS for the period after 2020 were agreed in 2017. These provided a marginal improvement over the original proposal. For example, the share of free allowances has been increased by up to 3.5%. However, the reality is that even the most efficient steel plants in Europe are going to see cost increases because of the scheme, and many of the European Parliament's more supportive proposals were not included in the final policy. The final agreement only partially reflects the concerns that European steelmakers have made. It doesn't provide a level playing field, exposes European steelmakers to costs that will not have to be borne by our global peers, and will not prevent higher carbon steel imports into the EU.

**How will the ETS affect us?**

**Read more →**

## Collaboration on supply chain standards

The trend towards greater scrutiny and transparency around social and environmental standards in supply chains also continued. Steel customers from several sectors continued to develop their own sustainability requirements and, in some cases, came together to develop standards and goals for their sector. In December 2017, for example, the Automotive Industry Action Group (AIAG) and Drive Sustainability announced an updated version of the “Automotive Industry Guiding Principles to Enhance Sustainability Performance in the Supply Chain”.



# Priorities for our business and our stakeholders

This report aims to meet the needs of a wide range of stakeholders, covering many aspects of our financial and non-financial performance.

There are many SD challenges and opportunities for our business highlighted by both our leadership and our stakeholders, and these are captured in 10 SD outcomes, which were the result of our strategic **materiality** process undertaken in 2014 with a 5 year outlook. However, there are three that we prioritise as key to the resilience of our business:

- Safety
- Financial health
- Climate change

These three have been identified through an ongoing and iterative process based on:

1. Our core business priorities, communicated to all employees and updated to investors through our **earnings release**– safety, financial performance, strategic progress, and sustainable development.
2. Regular leadership reviews of SD trends, published **quarterly**.
3. Quarterly reports on SD trends made internally, to our board of directors.
4. Tracking of stakeholder expectations, reported to our Sustainable Development Committee.

These three priorities are discussed on a regular basis by our senior leadership. Our approach to them is outlined below in such a way that responds to key questions that we and our stakeholders need to ask ourselves.

## Key issue 1: Preventing fatalities

Safety is our highest priority, and essential to our aim of building a high-performing team that will drive our efforts to create value. Improving safety, and specifically preventing fatalities, is a key focus for everyone in the company. It is also highly material to the communities in which we operate, and important to all stakeholders, including investors.



“Working safely is a matter of choice – one that we make every time we act, at every level in the company. We make safety the priority, and it requires boldness to make this priority real. Every person in ArcelorMittal – each employee, temporary worker, contractor – has the responsibility to lead, empower and engage every other person to make sure everybody goes home safe, every day.”

**Lakshmi N Mittal,**  
Chairman and CEO

### What are you doing to prevent fatalities?

It is not acceptable for our employees to leave home in the morning and not return home that evening. We will build our culture of vigilance, improve our reporting of near misses and our analysis and understanding of the root causes and share the lessons within the steel and other heavy industries. We have focused both on training, and on improving a culture of vigilance: for example, this means every employee developing the skills to recognise, log and analyse potentially serious incidents which could have led to a fatality or grave injury, alongside serious occurrences themselves. And we also continue to work closely with trade unions, including through our Global Health and Safety Committee.

## How does this relate to your overall safety performance?

Our lost-time injury frequency rate (LTIFR) has improved significantly over the last decade, driven by our Company-wide safety programme, Journey to Zero, which aims to create a culture of shared vigilance in which risks and hazards are understood and monitored, best practices are shared, and appropriate action is taken at every level. The LTIFR was 0.78 incidents per million hours worked in 2017, compared with 0.82 in 2016, and in marked contrast with the 3.1 recorded in 2007, the first year in which the Company recorded safety data.

This has not achieved our aim of eliminating fatalities, however, which is why we have introduced the measures specifically designed to prevent serious occurrences, described above.

## Your lost time injury rates are improving yet you are still having fatalities. Why is this?

We believe a key reason for the disparity between trends in LTIFR and fatalities is the information LTIFR gives us. LTIFR only records lost-time injuries after they've happened – what is known as a lagging indicator. We recognise the need to focus more on leading indicators, which is why we have renewed our focus on recording potential serious injuries and fatalities (PSIFs) – those incidents that could have resulted in very severe or fatal injuries, but did not. Our analysis shows that where PSIFs are not well recorded, there tends to be a higher risk of fatalities. By improving our understanding of all serious and potentially serious occurrences, we can better build systems and cultures that will prevent them.



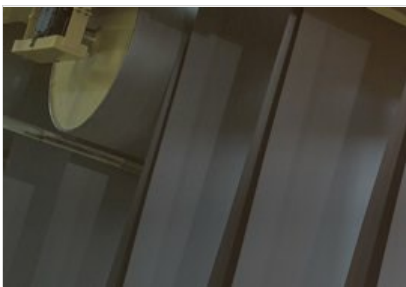
## Key issue 2: Sustainable financial health

Our ability to create value for our stakeholders and for society at large depends on delivering a positive financial performance. We need to maintain a demonstrably healthy business that generates free cash flow and has strong financial foundations, so that investors, employees, regulators and other stakeholders can trust in our ability to make a long-term contribution.

Within our overall strategic plan, Action 2020 is our commitment to structurally improving profitability and cash flow generation. It continues to differentiate us from our competitors and focuses on delivery against key targets, including cost optimisation, volume growth and increasing the proportion of high-added value products we sell.

This provides a platform for strategic, long-term transformational initiatives. While our priority for surplus cash continues to be debt reduction, we are investing with focus and discipline where we see opportunities to create value. Examples in 2017 include our proposed acquisition of Ilva, Italy's largest steel producer, and our proposed merger of our long products business in Brazil with the Brazilian producer Votorantim. We also announced a \$1 billion, three-year investment in Mexico, which will increase our capability to serve the Mexican industry and contribute to our drive to increase the proportion of high-added value products in our portfolio.

In 2018 we announced that we were reinstating our base dividend, and intend to increase capital returns once we achieve our targets for net debt.



### Our financial and non-financial performance

[Read more >](#)

### How did the business perform financially in 2017?

We delivered Ebitda of \$8.4 billion, a 34% improvement on 2016. In Ebitda terms, it is our best performance since 2011, when we delivered Ebitda of \$10.1 billion. Our free cash flow generation of \$1.7 billion was also strong, and our net income of \$4.6 billion was much improved compared to \$1.8 billion in 2016. For more details, see [Group Performance](#).

## How are you strengthening the financial foundations of the business?

We have transformed our balance sheet and reduced our net debt to \$10.1 billion, driven by strong free cash flow generation of \$1.7 billion. Our net debt to Ebitda ratio is now 1.2x. To put this in context, two years ago this ratio was 3.0x.

Over the past six years, we have reduced net debt by over half, from \$21.8 billion to \$10.1 billion. We have maintained strong liquidity and utilised our available cash to repay and pre-pay near- and medium-term bond maturities. We will continue to prioritise deleveraging and believe that \$6 billion is an appropriate net debt target that will sustain investment grade metrics even at the low point of the cycle. An investment grade balance sheet will support positive free cash flow in any market environment and ultimately provide the strongest foundation from which to make sustainable returns to shareholders and create value for society.

For more details, see this message from our [CFO](#)

## What contribution is Action 2020 making to long-term performance?

Action 2020 contributed \$0.6 billion to Ebitda in 2017. Two years into the five-year programme, the total benefits from Action 2020 have been \$1.5 billion, which is halfway to our \$3 billion target. The benefits in 2017 include volume contributions (\$0.3 billion) and a combination of cost and product mix improvements (\$0.3 billion). Volume is a key component of Action 2020 and we expect to see more progress in this area in 2018 and beyond. For more details, see [Action 2020](#).

## Key issue 3: Climate-change

Climate change poses a significant threat to the health of the planet and the livelihoods of millions of people. Steelmaking chemistry uses carbon, and while other materials are more carbon-intensive, because steel is so widespread, our industry currently makes a significant contribution to CO<sub>2</sub> emissions.

Investors, customers, regulators and other stakeholders in civil society are seeking reassurance from us that we are taking action to reduce our impact, and that we understand the risks and opportunities for our business associated with climate change and the drive for a low-carbon economy.

We see steel as a vital element in the circular, low-carbon economies of the future – and we see many market opportunities, both from steel's contributions to sustainable lifestyles and infrastructure, and from re-using carbon, rather than emitting it.



“Even before the recommendations from the Task Force on Climate-related Disclosures (TCFD) were announced in June, we were seeing the level of interest from investors in carbon escalating significantly. Towards the end of the year, this interest started to be channelled through our customers too, as they prepared their own responses to the TCFD. This is a frequent line of stakeholder enquiry.”

**Daniel Fairclough,**

Vice-president, corporate finance and head of investor relations

## What is your response to the recommendations of the Task Force on Climate-related Disclosures (TCFD)?

We know that investors are increasingly aware of the risks and opportunities that climate change presents to all businesses, and that the publication of the TCFD guidelines has accelerated investor interest, including in our carbon footprint. We are supportive of the TCFD's recommendations to disclose how our governance, strategy, risk management, and measurement processes address financial risks and opportunities relating to climate change. In 2017, we established a cross-functional task-force to better understand where the gaps lie between our current reporting and the recommendations of the TCFD, and to evaluate what further disclosure we should be making in this area.

We have started to respond to the recommendations on this page, and discuss them further in [outcome 6](#) and [Our future](#).

## How do you assess the risks of climate change to your business?

At a corporate level we have developed a workstream assessing the implications of megatrends, including a number of climate-related trends such as the transition to a zero-carbon economy, the growth of renewable energy, electric and autonomous vehicles. Each of our sites also assesses its risks on a quarterly basis. The outcomes of these processes come together in the development of a five-year rolling strategy at segment level.

Overall, our assessment is that our biggest risk is not carbon itself – we have developed a number of technologies to reduce our carbon emissions – but carbon policy that does not incentivise investment in long-term solutions. We consider the EU Emissions Trading Scheme (ETS) an example of a system that is not delivering the climate change progress for which it was designed – as discussed below.

## What is your strategy for reducing your CO<sub>2</sub> emissions? Does it take into account a '2 degree scenario'?

We're continuing to make steady progress towards our **target** of reducing our carbon emissions per tonne by 8% by 2020. However, since the majority of our emissions come from the chemical reaction required to make primary steel, rather than our use of energy, achieving our current target means operating at the limits of the technology that is currently available. We are not allowing this to limit our thinking though. We're actively working on new breakthrough technologies and processes that apply circular approaches to the whole life cycle of steel and its production, and seek to create value from the carbon and other by-products we create. This gives us an optimistic outlook on the prospects for low-emissions steelmaking. See Outcome 6: **Carbon and energy**, and **Our future**. We are also working with the International Energy Authority (IEA) on a 2 degree roadmap for the steel industry, which is due to be completed at the end of 2019.

Real progress in low-emissions steelmaking needs three conditions: firstly, a balanced and reliable regulatory environment to ensure a level playing field, so that low-emissions steel can compete in a fair market in particular with respect to imported steel; secondly, development of new technologies and the incentive structures to support this; thirdly, the rapid growth of cheap and abundant renewable energy, since many breakthrough technologies depend on the availability of large amounts of clean electricity.

In the very long term beyond 2050, substantial increases in the availability of scrap steel will enable further decarbonisation of steel.

## What low-carbon steel products does ArcelorMittal make?

Steel is endlessly recyclable and therefore has lower carbon intensity over its life cycle compared to competitor materials. We're working with customers to develop products and processes that specifically contribute to a lower carbon economy during their use phase. We also assess all new R&D projects to ensure they will provide benefits to sustainable development, including carbon reduction.

Steel already plays a crucial role in sustainable infrastructure and sustainable lifestyles and will continue this role will continue to grow – including in wind power, solar power, electric vehicles and other new forms of sustainable transport. Our lightweight, strong steels have been helping carmakers build safe, lighter vehicles with lower emissions for many years, and we offer a similar range of solutions to enhance the sustainability of buildings. Highly specialised, high-added value products such as these are at the heart of our **Action 2020** business plan, creating a strong link between our financial performance and our contribution to low- carbon approaches. More details can be found in **outcome 2**: Products that accelerate more sustainable lifestyles, and **outcome 3**: Products that create sustainable infrastructure.



## How will EU ETS phase 4 affect your business?

We support the EU's climate goals and believe the European steel industry should play its part in reducing emissions. We are concerned, however, that the EU's Emissions Trading System (ETS), as currently outlined, will not address those emissions at the global level.

We support policy that incentivises long-term investment in carbon efficiency and low-carbon technology. As currently configured, the EU-ETS does not do this in our view – one shared by a number of stakeholders, including many investors and NGOs.

The design of the EU-ETS system's benchmarks means that the steel industry is one of the most under-allocated industries in Europe. We therefore expect to start phase 4 without any surplus carbon allocation, unlike many other industrial sectors. Even the most efficient steel plants in Europe are likely to face significant costs resulting from the system – costs that producers importing steel into Europe do not have to bear. The result could make the European industry, which employs 320,000 people and is at the forefront of sustainable steel-making, less competitive against steel imported from regions where producers may face less incentive to reduce emissions. The danger is that this will mean Europe is in effect importing carbon and exporting jobs.

If Europe is to lead the way on lower carbon steel, we believe policy-makers must take this danger into account. If the carbon price within Europe were applied instead as a border adjustment on the carbon content of imported steel, there would be less concern about carbon leakage, and fairer competition between European-made steel and imports to the European market. Most importantly, it would incentivise the development of lower-carbon steel everywhere, with a real effect on global emissions. We continue to advocate such a policy.

## Do you use an internal price on carbon?

For our European sites, where we bear the greatest risk from carbon pricing, we have modelled the potential impact of ETS phase 4 under different price scenarios. We are also developing a tool to ensure that all capital expenditure proposals to our Investment Allocation Committee project their CO<sub>2</sub> impact. This will be able to apply regional carbon prices to project the potential savings, depending on where in our portfolio the investment is allocated. We are also in the process of charting the economic viability of our low-carbon technologies under different price scenarios.



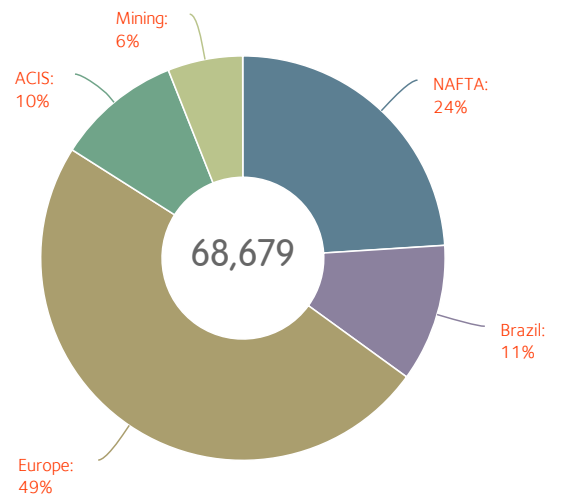
# Group performance

Revenue (Group)  
**68,679**  
 \$ million



## Revenue by segment 2017 (US\$ millions)

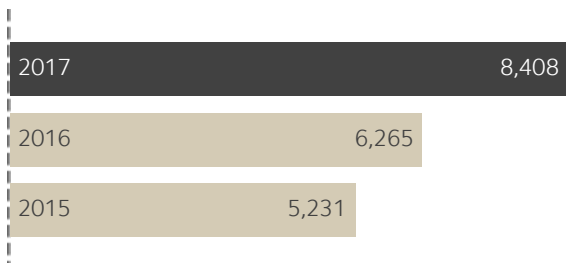
% figures presented exclude holding and service companies and eliminations (4,935); group figure is after eliminations



Ebitda(Group)

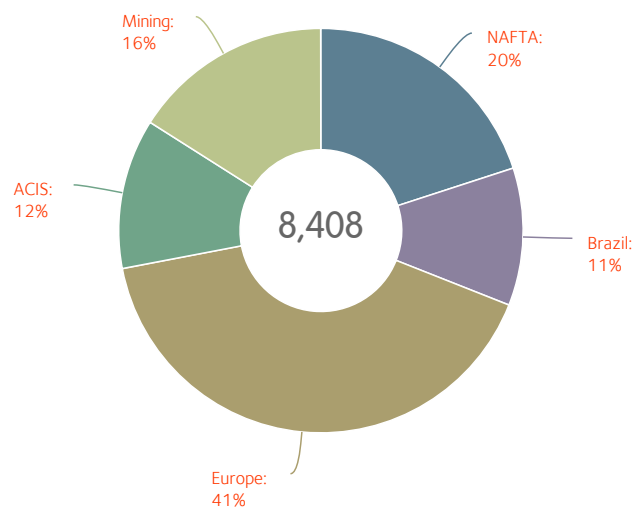
8,408

\$ million



Ebitda by segment 2017 (US\$ millions)\*

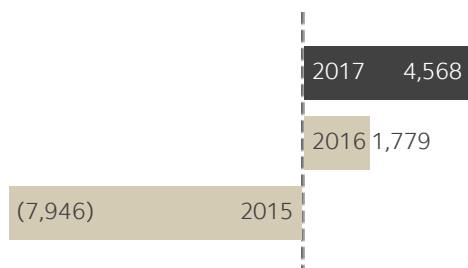
% figures presented exclude holding and service companies and eliminations



Net income (Group)

4,568

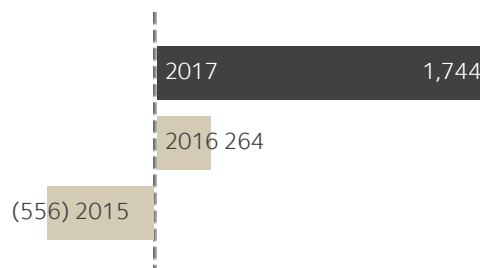
\$ million



Free cash flow (Group)

1,744

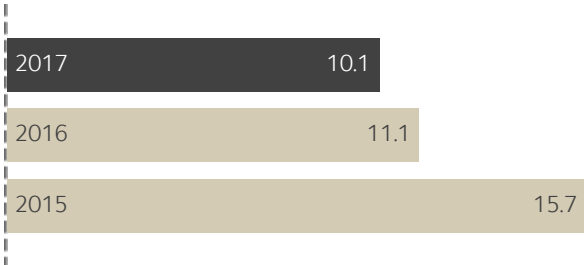
\$ million



Net debt (Group)

10.1

\$ billion



Steel shipments (Group)

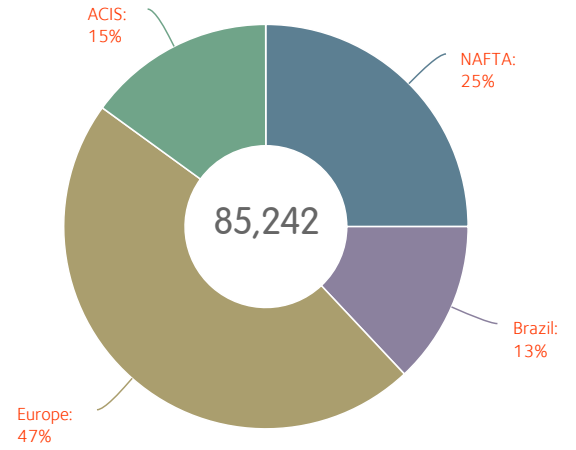
85.2

(million tonnes)



Steel shipments by segment 2017 (000's MT)

% figures presented exclude eliminations (1,467)



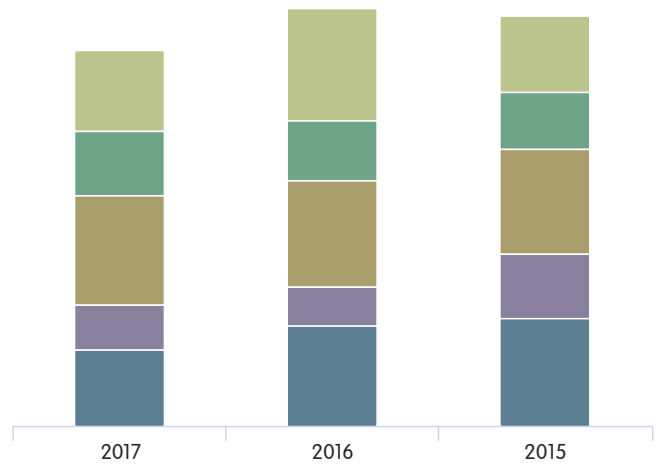
Lost-time injury frequency rate (Group)

0.78

number of days lost per million hours worked



LTIFR Broken down by segment





Direct economic contribution to society  
(Group)

68,143

\$ million



R&D expenditure

278

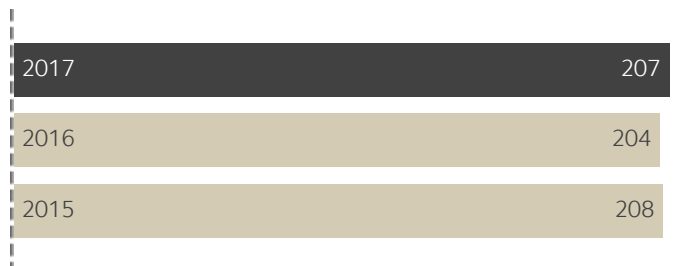
(\$ million)



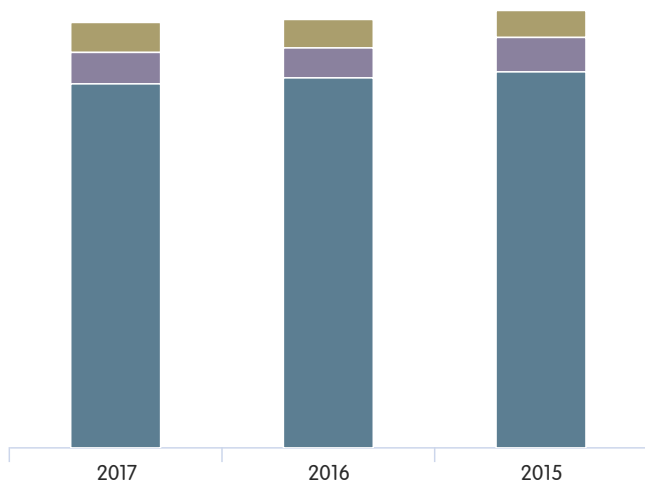
Carbon emissions (Group – steel and mining)

207

million tonnes CO<sub>2</sub>e



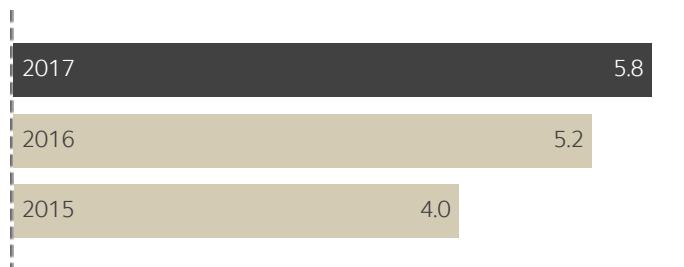
Carbon emissions broken down by scope



Progress towards 2020 carbon intensity target since 2007 (Group – steel)

5.8

(% improvement against target of 8% by 2020)



CO<sub>2</sub> emissions avoided through recycling of scrap and slag (Group – steel)

46.3

million tonnes CO<sub>2</sub>



Dust emissions (Group – steel)

0.68

kg per tonne of crude steel



Production residues to landfill (Group – steel)

7.6

% of residues





# Action 2020

**\$0.6 billion**

2017 Action 2020 Ebitda  
contribution

## Action 2020

Action 2020 is our five-year strategic plan that aims to deliver \$3 billion of structural Ebitda improvement, and annual free cash flow in excess of \$2 billion, by 2020. It was launched in 2016, and by the end of 2017 had delivered a cumulative \$1.5 billion of Ebitda.

	2016	2017	Total Action 2020 Ebitda contribution to date	Target by 2020
Cost and product mix improvement	\$0.9bn	\$0.3bn	\$1.2bn	\$2.0bn
Volume improvement	\$0bn	\$0.3bn	\$0.3bn	\$1.0bn
Total	\$0.9bn	\$0.6bn	\$1.5bn	\$3.0bn

## NAFTA

Our footprint optimisation programme at Indiana Harbor is now complete, and has delivered asset and cost optimisation improvements. At Calvert, capacity utilisation is improving, increasing c. 10% year-on-year (from 79% to 88%). Auto volumes at Calvert were up 30% year-on-year, and are expected to grow by a further 30% in 2018.

## Europe

Our Transformation Programme has progressed well, and has made an important contribution. It has delivered improvements in operating performance in terms of maximising reliability, improving quality and enhancing service levels, in part due to our new, centrally co-ordinated operating model. We are making further savings through digitalisation initiatives in our manufacturing processes, supply chain and commercial activities.

## Brazil

Our Value Plan continues to deliver structural cost reductions and our performance has been enhanced by a better product mix contribution as auto sales have increased.

## ACIS

In Kazakhstan we achieved record steel production in 2017 and structural savings from the benefits of the new coke oven battery in the Ukraine.

# Sustainability review

## Built in to a sustainable future

In 2017, we saw how steel helps drive growth, and how economic growth helps drive our steel business. But like all businesses, the value we create is not – and cannot be – limited to economic development

Underpinning our successful financial results this year is our commitment to finding new ways for steel to contribute to building more sustainable societies and economies. We have seen substantial progress of two main kinds. Incremental progress, in the form of continuous improvement; and progress towards the transformational changes we need to achieve in the longer term. Both are essential if we are to achieve our aim: to make steel the material of choice for sustainability, and ArcelorMittal the supplier of choice for steel.



“We are creating the tools to ensure that steel is the material of choice in a sustainable economy and that ArcelorMittal is the steel supplier of choice.”

**Alan Knight,**  
Head of sustainability

## At the forefront of change

This year, we've built momentum behind the main transformations that we believe will drive business, social, and environmental value for steel in the future:

- Accelerating steel's role in the low-carbon, circular economy
- Innovating to support a sustainable future
- Building trusted supply chains that meet our customers' needs

These goals are interdependent, and they have several things in common. First, they are informed by both the expectations stakeholders have of us, and by the evidence behind long-term trends. Second, they will not be achieved by our business alone, but they are movements we should play a part in leading. And third, our progress in each helps secure the future of our business, as well as contributing to a better world for the people we share it with.

## Accelerating steel's role in the low-carbon, circular economy

Finding new and better ways to close the resource loops in steelmaking will play a vital part in meeting the needs of a resource-constrained world. In 2017 we took a major step forward – conducting systematic technology reviews, carbon reduction assessments, and economic analysis that will give us a low-carbon roadmap.

We're pioneering the new low-carbon technologies – and mindsets – that we believe can enable steelmaking to contribute to significant reductions in global **CO<sub>2</sub> emissions**. They also place steel at the heart of a resource-efficient, circular material economy – one in which we go even further in ensuring that both our inputs and the by-products we create contribute to low-carbon outcomes.

At our flagship project in Gent, Belgium, we're building an industrial-scale plant to demonstrate the viability of a carbon capture and usage (CCU) technology which aims to use waste carbon monoxide from steelmaking to produce ethanol on a commercial basis. This partnership project with **LanzaTech**, described in detail here, is one of several technologies we're exploring which look at carbon not as the enemy, but as a resource that will help create value for our business.





For many of these new ways of thinking about carbon and steel, impact at scale can only be achieved by a policy and regulatory environment that incentivises investment. That is why, alongside our own initiatives, we're working to encourage policy-makers to create a framework that takes a holistic approach to reducing global CO<sub>2</sub> emissions.

## Innovating to support a sustainable future

Other areas, too, require new ways of thinking, and we need to keep challenging ourselves to stay ahead. Innovation is already playing a vital role in helping our customers contribute to a lower-carbon world. In 2017 we piloted our Sustainability Innovation (SI) tool, which analyses the sustainability benefits and impacts of proposed R&D projects. It gives us more information than ever on which projects to proceed with, and which need improvement – insight that will help us provide customers with products and processes which make a demonstrable difference.

We also commissioned innovative plans for our new headquarters in Luxembourg, which will use steel components specifically designed so they can be dismantled and used again – a demonstration of our belief in the enormous opportunities for steel's re-use, with associated savings in resources and energy.

## Building trusted supply chains that meet our customers' needs

The momentum behind supply chain accountability continues to grow. Consumer-facing brands want to demonstrate responsible sourcing, and customers are joining together to demand, and validate, higher standards in their supply chains. This year, for instance, the 10 European carmakers in the DriveSustainability partnership announced new initiatives aimed at identifying and addressing social and environmental issues in their supply chains, with a focus on raw materials. Similarly, the European rail industry's Railsponsible initiative gathered pace. In sectors such as construction, meanwhile, our customers' own sustainability ambitions, and the demands of regulators, are also driving higher standards.

**Making ourselves  
at home in a re-  
usable future**



**How the steel in our  
planned new headquarters  
can be dismantled and used  
again... and again...**

[Read more →](#)



We welcome this movement and expect it to create market incentives to invest in social and environmental improvements across the industry. Through our close work with customers, and as a founding member of both ResponsibleSteel™ and IRMA (Initiative for Responsible Mining Assurance), we are well positioned to gain a competitive advantage through reassuring customers on standards,

including through certification schemes as they develop.

In 2017, we piloted the ResponsibleSteel™ audit process in three of our European steelmaking sites – Gent, Belgium and Bremen and Eisenhuttenstadt in Germany – and found the process to be robust without being overly bureaucratic. With these pilots, and a further series of pre-audits this year, we will be well prepared for the official launch of ResponsibleSteel™ in September 2018.

In mining, in early 2018 we helped promote the launch phase of IRMA's Standard for Responsible Mining, which is designed to enable an improved verification system that is accountable to all stakeholder groups. Also, as a member of the Mining Association Canada (MAC), our mines in Canada continued to apply the independently-verified standards of MAC's Toward Sustainable Mining (TSM) programme. In 2017, having seen the value added to our Canadian mines by TSM, we committed to piloting TSM standards at our marketable mines outside Canada in a four-year programme beginning in 2018.

We discuss the trend among customers to seek reassurance of their supply chains further in [Our future](#).

## A framework for sustainable progress

Our ability to create change is built on our sustainable development framework, which outlines the 10 outcomes that will help us continue to create value for our business, and our stakeholders. We report on our progress towards each outcome through the links below. Our reporting aims to show our successes – our breakthrough innovations, new collaborations, and the continuous improvement we're driving at site, country and segment level. But we also describe the challenges we face, and concerns that stakeholders have raised with us, such as safety, carbon emissions, and air quality around our sites – and the actions we're taking to address them.

These issues will continue to be a focus in 2018 and over the longer term, addressed through action plans at local and global level.

## Addressing the challenges and opportunities of the future

Rapid technological development and other long-term trends are changing the way all industries must operate, including our own. At the same time, there is an increasing expectation that businesses will create value in ways that, ultimately, align with the vision of the UN Sustainable Development Goals to end poverty, protect the planet and ensure prosperity for all. These trends bring challenges to steelmakers, but we believe they are outweighed by the opportunities presented by making responsibly-produced steel the hub of a resource-efficient economy.

It makes compelling business sense to take a leadership role in shaping these trends where we can – and our thinking on some of these key strategic areas is described in [Our future](#).

### Priorities for our business and our stakeholders:

**Safety, Sustained financial performance, Carbon**

[Read more](#) →

### Sustainable development framework

**Designed to drive and shape a consistent approach to make the outcomes relevant**

[Read more](#) →

People

Outcome 1

Product

Outcome 2

Infrastructure

Outcome 3

Resources

Outcome 4

Air, land and...

Outcome 5

Carbon and  
energy

Outcome 6

Supply chains

Outcome 7

Community

Outcome 8

Scientists and...

Outcome 9

Impact...

Outcome 10



## Outcome 1

# Safe, healthy, quality working lives for our people

The outcome we need is for our people to be safe and healthy, committed to our success, and to work with integrity. We want a workplace where diversity is valued and every individual is respected and their potential developed.



“We should keep safety at the forefront of our minds every day and every minute and be vigilant. Nothing is more important. Improving our safety performance and eliminating fatalities will not happen by chance. It can only happen by choice.”

**Robin Paulmier,**  
Head of health and safety

## Creating value and addressing challenges: our highlights of 2017

Safety is our number one priority, and a key issue for many stakeholders. Despite continued improvement in our lost-time injury frequency rate (LTIFR) there were 23 fatalities across our operations in 2017. We deeply regret this and recognise that we still have much more to do to improve our safety culture. This is a matter of deep concern to our leadership and all employees; some of the measures we have taken to enhance our safety performance are described in key stakeholder concerns, below. We outline our response on this key issue in [priorities for our business and our stakeholders](#).

Alongside our work on safety, we are engaging with our employees, unions and social partners to build the working culture we need – developing greater understanding, engagement and wellbeing among our workforce, taking steps to increase diversity, and helping employees develop their careers.

### Worked to strengthen our health and safety culture. This included:

- A particular focus on tracking our leading indicator – potential serious injuries and fatalities (PSIF) – as well as actual accidents. We logged 1,626 PSIFs proactively on our REX system, exceeding our target of 900 and equating to 87% of all PSIFs logged. These measures are described in more detail below
- Highlighting where sites have successfully avoided fatalities and serious injuries over time. For example, our ArcelorMittal Mines Canada (AMMC) Fire Lake mine ended the year without any recordable injuries. Our Princeton mine in the US received two safety awards from the Mine Safety and Health Administration in recognition of its reduction in workplace injuries; and our Serra Azul mine in Brazil continued its record of no lost time injury or fatality, having implemented a cultural role-modelling programme, [Guardian Angels](#).

### The wider perspective

Why is this important to us and our stakeholders?

[Read more](#) →

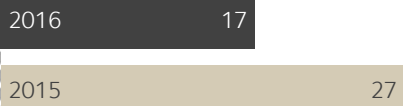
### Our approach to safety and security

[Read more](#) →



## Fatalities

23



## LTIFR

0.78

Number of lost time injuries per million hours worked



## Potential serious injuries and fatalities (PSIFs)

1,626



“In a world that demands rapid responses to complex issues, different views and approaches are essential. As a global business, we already have a culturally diverse workforce; we are now focused on increasing the contribution from women. We are putting in place several initiatives to enable us to benefit from the value women’s perspectives bring to the challenges we face.”

**Suzanna Fagundes,**  
Vice president of HR, legal and sustainability ArcelorMittal Brasil

**Our approach to health**

[Read more →](#)

**Continued to build a diverse and engaged workforce with strong career development. Highlights include:**

- Convening in October our Global Health and Safety Committee, including participation from our senior management and from United Steelworkers and the IndustriALL union; several safety training programmes have been developed with local committee members and rolled out in support of our Journey to Zero objective; the global committee explored how to make local committees more effective
- Engaging 210,492 people in the workshops and activities of our Health and Safety Week in April, as well as a dedicated Health Week in September

- Sharing best practice to protect worker health at our coke plants across Europe, described [here](#)

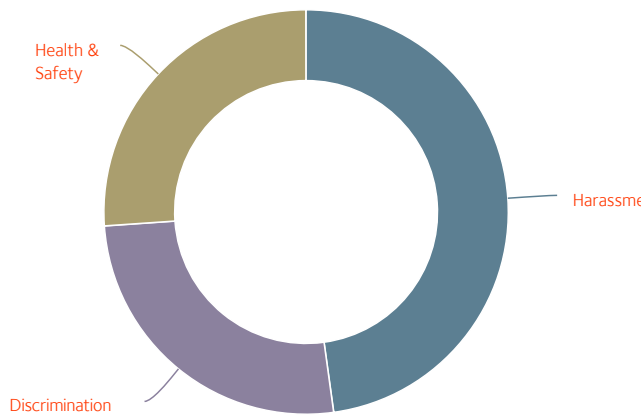
**Remained committed to continuous social dialogue and employee relations, including through:**

- Collective labour agreements, which covered 88% of our workforce this year
- Eleven consultations with the European Works Council, with regular discussions on safety and human resources as well as financial results and market outlook; and three working groups on health and safety, employment and social responsibility
- Investigating and resolving grievances relating to workforce issues, not only through line management but also via our whistleblowing lines. In 2017, our global assurance team received 160 such complaints, of which 36 were substantiated. During the year they resolved 156 such complaints (some of which were received the previous year)

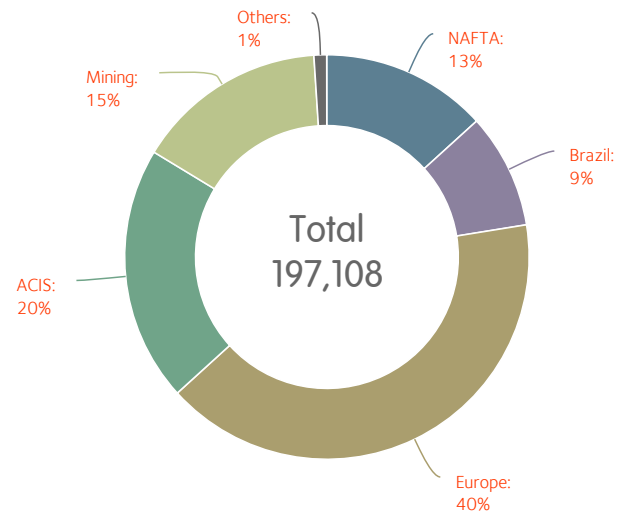
**Our approach to diversity and inclusion**

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**Complaints relating to workforce issues\***



**Number of employees at 2017**



\* Includes health, safety, discrimination and harassment, freedom of association and right to collective bargaining, child labour, forced labour



**Preventing fatalities – why proactive risk reporting matters**

The use of leading and lagging indicators explained

[Read more >](#)



### Preventative action on health in coke plants

[Read more >](#)



### Role-modelling programme

'Guardian Angels' at Serra Azul mine in Brazil, which continued its record of no lost time injury or fatality

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# Responding to key stakeholder concerns

## Safety

### Concern

Despite improvements in LTIFR safety performance, there were 23 fatalities across the business.

The worst accident involved three fatalities in August 2017 in Kazakhstanskaya coal mine, Kazakhstan, following a methane leak.

### Our response

We deeply regret every loss of life. We provide assistance to the families of those involved. After investigating each incident thoroughly, we share the learning globally through talks, communications and videos. Safety is one of our three key challenges – and our approach to this very grave concern is described in [Priorities for our stakeholders and our business](#).

We respond on serious safety incidents to external stakeholders through our country websites.

For example, in response to the three fatalities at the Kazakhstanskaya mine we made a [statement](#) of the incident and another statement [later](#). We also invited external experts to assist us in identifying all unsafe conditions in our mines in Kazakhstan and begun an in-depth review of our current Health and Safety programmes there, which has led to the ongoing implementation of a series of recommendations.

## Employee relations

### Concern

In Kazakhstan, workers and unions raised concerns over the expiry of their collective labour agreement in a period of local inflation, and asked for improvements in pay and conditions.

### Our response

ArcelorMittal Termitau has concluded a new collective labour agreement with the Zhaktau, Korgau and Birlik trade unions which covers the period from January 2018 to January 2021. We have developed a unified approach to pay increases, based on the principle that employees with the lowest pay receive a higher percentage increase. More information is published on our Kazakhstan country [website](#).

## Gender

### Concern

Concerns from investors, employees and government over the Company's low gender ratio.

### Our response

Supporting and fostering female leaders is important for creating a sustainable business. While 33% of our Board are women, only 6% of vice presidents and 6% of general managers are women. We know that we have more to do to both create an inclusive culture and attract and retain talented women to our business. This year we launched Women@ArcelorMittal, a new programme designed to support women in their training and development; women now make up 15% of the succession plans for senior management positions.

Increasing the diversity of our management overlaps with our ambition to support future leaders in science, technology, engineering and maths (STEM). In 2017, we ran initiatives in France and the US specifically designed to attract women applicants with STEM backgrounds.

## Our progress

Our 2017 plan	2017 progress	Comment
Strengthen our tracking and analysis of serious occurrences – situations with potential for serious injury or fatality, with a goal of detecting and treating at least 900 such situations in 2017	Achieved	This goal is described in Preventing fatalities through proactive management above
Establish a new Women@ArcelorMittal training programme at the ArcelorMittal University	Achieved	See highlights and challenges, above
Plan to conduct a new Speak Up! survey to benchmark employee sentiment and feed the results into new action plans to actively recruit and retain our talent pipeline	Achieved	See highlights and challenges, above

## Performance at a glance

KPI	Unit	2015	2016	2017
Safety - Fatalities	Number	27	17	23
Safety - Lost-time injury frequency rate (steel and mining)	Per million hours worked	0.81	0.82	0.78
Gender - % VPs that are female	%	NR	NR	6

\*For further breakdown and performance information, see full Sustainability Performance data table

<b>Metric</b>				
Number employees	Number	209,404	198,517	197,108
Number contractors	Number	45,914	43,044	43,368
Accident severity rate (steel and mining)	Days lost per thousand hours worked	0.08	0.08	0.08
Operations certified OHSAS 18001	%	97	98	98
Absenteeism rate	%	2.48	1.84	2.84
Manager turnover rate	%	2.6	2.4	2.7
Training provided per employee	Average hours	58	51	49
Gender: managers (and above) that are female	%	11	12	12





## Outcome 2

# Products that accelerate more sustainable lifestyles

The outcome we need is for commercial designers and manufacturers, in industries that contribute to our everyday lifestyles such as automotive and packaging, to choose steel because they understand that its strength, formability and recyclability are vital in developing innovative solutions for sustainable development.



“As transport starts to shift towards electrification, our close working relationships with our customers leaves us confident that steel will continue to be an important material for vehicles through this transition and beyond. For our customers, and for society, safety will continue to be important – and here steel has a strong competitive advantage – combined with sustainability, flexibility, weight, and cost. There is no other material that combines these qualities together so well in a single product.”

**Jean-Luc Thirion,**  
Head of Automotive for Global R&D

## Creating value and addressing challenges: our highlights of 2017

We aim to meet and exceed the expectations of our customers, and make sure that steel is not only their material of choice, but that we are their preferred supplier.

We work closely with them, often co-engineering new solutions, and it is clear that, like us, they increasingly expect good sustainability performance as well as market-leading quality and service from their suppliers.

One way to achieve this is through the principle of 'more with less', retaining or improving strength, durability and quality while reducing the weight of the steel that's needed – an area in which our advanced high strength steels (AHSS) lead the market. In 2017, we also worked with customers in the electric vehicle sector, who want their designs to extend battery range and keep costs low for the mass market. Our expertise in life cycle assessment (LCA) enables us to ensure that our products, over their life cycle, contribute to sustainable lifestyles in terms of energy efficiency, recyclability, water and raw materials efficiency, and reduced negative consequences for the environment. More information about our innovation pipelines in 2017 can be found in [R&D](#).

Among a range of innovations in products and processes, in 2017 we:

### Maintained our commitment to sustainable innovation at a global level by

- Launching 21 new products which make contributions to more sustainable lifestyles, predominantly in the automotive sector, including electrical steels solutions to improve the efficiency of electric vehicles. We also launched a further 21 new products for [outcome 3](#)
- Working on 18 related product development programmes across Global R&D
- Piloting our new Sustainable Innovation (SI) tool in our automotive R&D portfolio. The tool enables our researchers to test new proposals for their potential impact on sustainable development. Ultimately, any that do not make a positive contribution will not be progressed, ensuring that we create a pipeline of products with proven sustainability benefits

### The wider perspective

Why is this important to us?

[Read more](#) →

### Our approach to research and development

[Read more](#) →

### Continued to support customers in the automotive sector through

- Commercialising a range of specialised steel grades which help carmakers reduce the weight of their basic vehicle structures (the 'body-in-white') to improve fuel economy without compromising vehicle safety, durability or performance. These included two new press-hardenable steel (PHS) products, Ductibor® 1000 and Usibor® 2000, and new products in our third generation, highly formable (HF) AHSS range, including HF1050 and HF1180
- Launching other specialised steels including DP780 DH GI dual phase steel, MS1500JVD martensitic steel; and Zagnelis® surface exposed coated steel to prevent corrosion
- Expanding our S-in motion® range with the launch of a new front seat solution for cars. By combining our new advanced steel products with innovative design and engineering processes, S-in motion® for front seat design has demonstrated opportunities to save up to 18% of the weight compared with conventional seats
- Working with carmakers in the electric vehicle market in areas including battery housing to extend a vehicle's range, and our second-generation electrical steels, iCARE®, for electrified powertrain optimisation
- Inaugurating our unique jet vapor deposition (JVD) line in Liège, a world-first use of our patented breakthrough technology designed to significantly enhance surface quality and durability by improving the metallic coating process. This enables us to create a unique new generation of coated products, such as Jetgal®, aimed at the automotive markets. [Read more](#)
- Expanding our use of quenching and partitioning technology, which enables us to increase production of our Fortiform® line of automotive products. This technology is now in use at our facilities in Gent and Liège, Belgium, and at our Calvert site in Alabama, US, a joint venture with Nippon Steel and Sumitomo Metals Corp

#### Our approach to automotive

[Read more](#) →

### Expanded and shared our understanding of steel products' potential contribution to sustainable development through:

- Our active participation in the Worldsteel Product Sustainability Committee and the LCA expert group
- Eleven LCA studies related to outcome 2, including packaging and automotive products. For example, the LCA study of our lightweight packaging steel showed that by reducing the gauge of a steel can from 0.21mm to 0.18mm, there is a corresponding reduction in CO<sub>2</sub> per can because less steel is used. If this innovation were to be applied to the 15 billion steel drinks cans sold in Europe each year, it would save CO<sub>2</sub>

#### Our approach to packaging

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equivalent to the total annual emissions of 27,000 people in Europe

lifecycle assessment studies

23

total conducted

new products launched

21

to achieve outcome 2

R&D programmes

18

to achieve outcome 2



Lighter vehicles through S-in motion®:  
front seat design

[Read more >](#)



Steel and electric vehicles

[Read more >](#)

## Our progress

Our 2017 plan	2017 progress	Comment
Pilot our Sustainability Innovation tool for two automotive R&D programmes	In progress	We trained researchers from two selected R&D programmes to work on more than 16 automotive projects with this tool
Start developing our S-in motion® concept on smaller 'B segment' cars	In progress	As well as progressing this concept, we have also responded to customer demand, and begun co-engineering activities with customers on electric vehicles

## Performance at a glance

Metric	Unit	2015	2016	2017
R&D spend	\$m	227	239	278
Lifecycle assessment studies (outcomes 2 & 3)	Number	16	16	23
Products launched that contribute to outcome 2	Number		37	21
Research programmes in development that contribute to outcome 2	Number		19	18



## Products that create sustainable infrastructure

The outcome we need is that steel is the first-choice material for construction and related infrastructure projects because its qualities, and our innovation, help our customers deliver the sustainability solutions they seek.





“We believe steel is the perfect material for the infrastructure of a low-carbon, circular economy. Already, 95% of structural steel for construction is recycled – and if a building is designed in the right way, its steel can be re-used. What is more, innovations in high-strength steel mean that less material is needed to construct the building in the first place. So by constantly building more with less, again and again, steel gives us the very best material efficiency.”

**Olivier Vassart,**  
Head of construction and Infrastructure for Global R&D

## The wider perspective

Why is this important to us and our stakeholders?

[Read more](#) →

## Creating value and addressing challenges: our highlights of 2017

Our customers, like us, are increasingly looking for solutions that have demonstrable sustainability benefits. Nowhere is this more important than in infrastructure, where products and processes that improve durability, reduce weight or cut pollution can all help designers and engineers lower environmental impacts over the long lifespan of their projects.

Because steel is strong, flexible and durable, and can be recycled without losing its key qualities, it has a vital contribution to make by helping our customers in the construction, energy, public transport and general industrial markets deliver their sustainability ambitions. We know that commercially, creating and providing these solutions gives us a competitive advantage – a key theme of our Action 2020 strategy.

How we're making efficient use of resources and high recycling rates:

In 2017, we continued to work closely with customers and use our expertise in life cycle analysis (LCA) to provide solutions at every stage of the process, from design, through product development, to delivery. Among our highlights this year, we:

**Continued to expand our pipeline of products that support sustainable construction and infrastructure** through:



- The launch of 21 product solutions, with 19 further programmes in development
- Piloting the use of our new Sustainable Innovation (SI) tool to assess the potential sustainability impact of R&D projects for the construction and energy sectors. Our ambition is to apply this across our entire R&D portfolio

## Our approach to buildings

[Read more →](#)

### Reinforced our commitment to circular economy approaches through:

- Working with architects Wilmotte & Associés to design our new Luxembourg headquarters, which will be a demonstration of the principles of the circular economy and a showcase of the use of steel in 'green', sustainable construction. It will be built in such a way that it can be entirely dismantled, and nearly all the steel products re-used in a new building without the need for **recycling**
- Completing 12 LCA studies of products for construction and infrastructure, including for environmental product declarations (EPDs) which we provide to customers through our **Constructalia** platform

### Provided customers in the construction and infrastructure sectors with innovations and tools that support their sustainability objectives, including

- Progressing a platform to assess the impact of the use of different materials on the performance of an office building. This will help construction customers to select the right material when considering architectural layout, structural systems and facade engineering
- A new offer of pre-fabricated reinforcement technology for construction in Brazil which improves worker safety and reduces construction time for our customers by reducing the amount of earth removal required to lay foundations
- A new, high-containment central road safety barrier made from patented steel for use in North America, developed in partnership with manufacturer Gregory Industries. It received approval from the US Federal Highway Administration and will begin to be installed in 2018
- A new framing solution for photovoltaic (PV) modules using Magnelis®, our patented steel coating, developed with solar cell company Hanwha Q CELLS. The 2017 Intersolar Awards recognised the PV solution for its "combination of innovative design with a strong focus on product sustainability"
- The acquisition of Exosun, a company that specialises in solar trackers, in an expansion of our portfolio in the solar energy market

## Our approach to energy

[Read more →](#)

lifecycle assessment studies

23

total conducted

new products launched

21

to achieve outcome 3

R&D programmes

19

to achieve outcome 3



### Making ourselves at home in a re-usable future

How the steel in our planned new headquarters can be dismantled and used again...

[Read more >](#)



### Safety barriers in US

[Link to video >](#)



### Steel for solar

[Read more >](#)

## Our progress

Our 2017 plan	2017 progress	Comment
Pilot our Sustainability Innovation tool for two construction research programmes	In progress	We trained researchers from our construction and energy R&D programmes to pilot this tool
Create EPDs for structural beams, road safety barriers and coated coils	Achieved	See our Environmental Product Declarations on our <a href="#">Constructalia</a>
Launch the second phase of our steel in modern construction initiative with a model for industrial buildings	In progress	This phase was completed in 2017, and will be launched in 2018

## Performance at a glance

Metric	Unit	2015	2016	2017
Products launched that contribute to outcome 3	Number	5	30	21
Research programmes in development that contribute to outcome 3	Number	11	15	19



## Outcome 4

# Efficient use of resources and high recycling rates

The outcome we need is to use our raw materials and other inputs in the most efficient way, so that we are creating significant value for our customers and shareholders as well as contributing to the goals of a circular economy.



“Our plants make steel – which can be endlessly recycled and reused – but they make much more besides: a valuable portfolio of by-products. Constantly focusing on resource efficiency, while capturing the enormous potential of the by-products we create, will be key to a sustainable future for our business.”

**Carl de Maré,**

Vice-president technology strategy and sponsor for this outcome

## Creating value and addressing challenges: our highlights of 2017

We have a social, environmental and commercial responsibility to use resources efficiently, reducing both our impacts and our raw material costs. For us, this means making sure that we extract the maximum use and value from the by-products, solids, and waste gases generated by our operations, as well as making the most of steel's recyclability. From cement to chemicals, fertiliser to glass, our by-products support a range of industrial and municipal partners. The way we're exploring the use of our waste gases is described in [outcome 6](#). Last year, we continued to explore existing and innovative new uses for our by-products, both within our own operations and in partnerships, as we built on the circular economy potential of steelmaking.

Among our highlights in 2017, we:

### Focused on creating value from our waste products, including by

- Identifying the KPI that will drive improvement across ArcelorMittal for this outcome: 'production residues and by-products to landfill'. Last year, we saw a 9% improvement in this KPI across the group, from 7.8% from 2016 to 7.1% in 2017
- Selling 10.2 million tonnes of blast furnace slag to the cement industry - an increase of 12% over 2016 - avoiding 7.8 million tonnes of CO<sub>2</sub>
- Expanding our joint venture with Ecocem France, which turns granulated slag into a partial replacement for Portland cement at our Fos-sur-mer site, to a planned new production site at Dunkerque, which will be completed in 2018
- Successfully piloting pioneering hydro-metallurgy technologies which aim to separate out 100% of the carbon and iron dust in blast furnace sludge for recycling; we are planning the industrialisation phase
- Investigating a number of additional environmental uses of recycled basic oxygen furnace steel slag, including as a means of neutralising acid mine drainage, and as ballast for off-shore wind turbines
- Completing a three-year, EU-funded project "Recycling of industrial and municipal waste as slag foaming agent in EAF" ([RIMFOAM](#)) with other companies and research centres on the use of municipal waste in electric arc furnaces to improve energy efficiency

### The wider perspective

Why is this important to us and our stakeholders?

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### Our approach to recycling steel

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**Continued to build our capability to recycle scrap steel**, including through

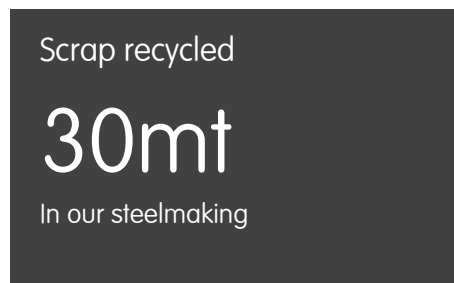
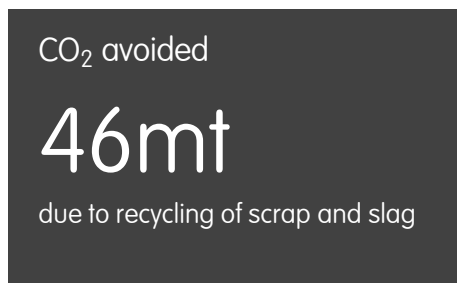
- Seeking to improve the quality of available scrap through a global R&D project exploring the viability of automated sorting processes for removing non-magnetic material. This has included working with scrap dealers and car manufacturers to research the recyclability of new vehicles – given ever more complex car designs – in order to gain insights into the quality of future streams of scrap steel, and the need for new tools to maintain a supply of high quality scrap
- Progressing to its final stages our work with the University of Cambridge and our customers to look at the efficiency of steel flows downstream from our operations, and identify where there is potential for greater carbon- and cost- efficiencies through the reduction of pre-consumer scrap
- Providing testing and feedback on the quality of steel packaging scrap from municipal sorting centres in France through our contract with Ecoemballage

**Our approach to residues, by-products, and waste**

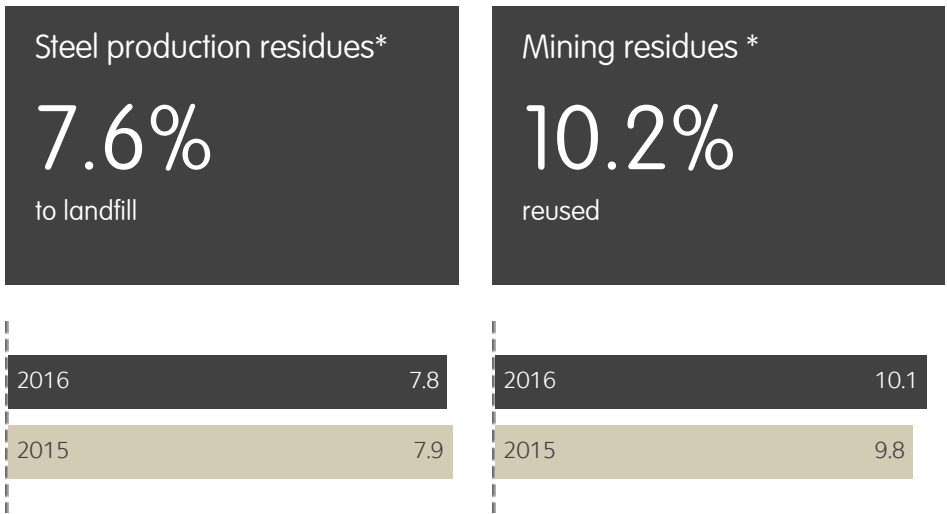
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**Received external recognition for our achievements in resource efficiency and circular approaches**, including

- Being 'highly commended' for demonstrating leadership and innovation in applying circular economy principles to our business models by the Circularity Awards, an initiative of the World Economic Forum and the Forum of Young Global Leaders
- ArcelorMittal Tubarão winning the World Steel Association's Excellence in Sustainability award (Steelie Award) for its programme of repaving rural roads in Brazil using steel by-products







\* KPI for outcome 4

\* KPI for outcome 4



Paving the way to better roads in Brazil

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The circular economy and why steel is an ideal material to support it

- Dr Alan Knight explains

[Read more >](#)



ArcelorMittal gets nod from World Economic Forum for integrating circular economy principles into its business model

[Read more >](#)



## Our progress

Our 2017 plan	2017 progress	Comment
Publish an external paper on steel and the circular economy	In progress	<p>We are still developing our strategy in this fast-moving area while engaging stakeholders through:</p> <ul style="list-style-type: none"> <li>● publishing a <a href="#">blog</a> on this topic, and</li> <li>● contributing to the WBCSD working group on circular economy and the built environment</li> </ul>
Evaluate two processes for the recycling of blast oxygen furnace slag using our ROMEO tool	Achieved	Our global R&D division evaluated a number of additional environmental uses of recycled basic oxygen furnace steel slag, including as a means of neutralising acid mine drainage, and as ballast for off-shore wind turbines

## Performance at a glance

KPI	Unit	2015	2016	2017
Production residues and by-products to landfill (steel)	%	7.9	7.8	7.6
Production residues and by-products reused (mining)	%	9.8	10.1	10.2
Metric	Unit	2015	2016	2017
Scrap recycled	million tonnes	28.1	25.3	29.6
Lower CO <sub>2</sub> due to scrap recycling	million tonnes	36.5	33.0	38.5
Production residues and by-products re-used (steel)	%	79.2	78.2	88.6
Blast furnace slag re-used	million tonnes	15.8	18.4	19.0
Blast furnace slag sold to make cement	million tonnes	8.0	9.1	10.2
CO <sub>2</sub> avoided due to blast furnace slag used to make cement	million tonnes	6.0	7.0	7.8



## Outcome 5

# Trusted user of air, land and water

The outcome we need is for our stakeholders to trust us to share the vital resources of air, land and water. They will do this because we operate responsibly and transparently, demonstrate we want to reduce our negative environmental impacts, and work in collaboration with partners and local communities to enhance the natural resources we all rely on.



“Communities expect high standards around our stewardship of air, land and water. We need to respond to their expectations by innovating and investing to meet the standards required of us, and communicating openly about how we plan to improve. Earning the trust of our communities is key to our licence to operate.”

**Karl Buttiens,**  
Head of environment, ArcelorMittal

## Creating value and addressing challenges: our highlights of 2017

We know that the way we use air, land and water – and particularly the impact of our emissions on air quality – are among the most salient issues for the communities in which we work, and for our stakeholders more widely. In 2017, through better processes, investment in R&D, and investment in capital improvements, we have continued to make progress, though we know that air quality remains one of the key issues raised by our stakeholders in communities around our sites.

This year, despite overall steel production increasing by some 3%, we saw a notable reduction in SO<sub>2</sub> emissions again, and to a lesser extent in NO<sub>x</sub> emissions too; dust emissions intensity showed little change. Nevertheless KPIs have shown a downward trend since the formation of the company, with reductions since 2007 of 52% for dust, 18% NO<sub>x</sub>, and 32% for SO<sub>2</sub>. These figures represent an average of our portfolio of steel plants, and cover a wide range of performance, including a number of sites which are best in class. Emissions from our mining activities also declined.

Nonetheless, we received a number of stakeholder concerns about air quality and we outline the actions we're taking to respond to the primary examples of this in a section below. We aim to report transparently to stakeholders both in this integrated annual review – see the table below – and in country-level sustainability reports, most of which used GRI environmental indicators in 2017.

Among our highlights from 2017, we:

**Made further innovations in our steelmaking processes to reduce environmental impacts**, including by:

- Installing a pioneering 'wet scrubbing' dedusting technology in the basic oxygen furnace at Gijon, Spain that will surpass European limits of 50mg/nm<sup>3</sup> and enable us to reach 20mg/nm<sup>3</sup>.
- Piloting our hybrid filtration technology for the sintering process for the first time at Zenica in Bosnia & Herzegovina, and then at Ghent, Belgium

**Invested in environmental improvements at our steelmaking sites**, as we:

- Allocated a total of \$158 million for new investment in environmental capital projects, including \$74 million for our steelmaking operations in Temirtau, Kazakhstan, as part of an environmental action plan. The projects include a new coke gas cleaning facility and dedusting equipment at the

### The wider perspective

Why this is important to us and our stakeholders?

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### Our approach to air

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sinter plant

- Completed a modernisation programme at Krakow, Poland, which included relining a blast furnace, reducing emissions per tonne of steel beyond current EU regulations
- Installed a new bag filtration system at the sinter plant of our Tubarão site in Brazil, which will reduce 90% of visible emissions. This was the first installation of the system at a sinter plant in South America – it is already in use at our sites in Bremen (Germany), Fos-sur-Mer (France), Dunkerque (France) and Ostrava (Czech Republic) sites
- Developed an action plan for our operations in Ukraine with the European Bank for Reconstruction and Development (EBRD)'s Green Economy Transition programme to agree a number of important environmental investment projects
- Announced a €200 million environmental improvement plan, which includes 26 projects over five years, in Gijon, Spain - see key stakeholder concerns, below
- Worked collaboratively to reduce our risks and improve our positive impacts

**Worked collaboratively to reduce our risks and improve our positive impacts**, including through:

- Signing an agreement with the Administration of Nature and Forests in Luxembourg for the ecological management of our sites in protected areas of national and community interest in Differdange, Dudelange and Esch-sur-Alzette; the objective is to preserve biodiversity within these areas while enhancing their ecological potential through agriculture
- Working with peers to further consider the materiality of water risk to steel plants in different geographies. Whilst situations vary across our portfolio, our average net water use in 2017 remained relatively stable at 5m<sup>3</sup> per tonne of steel, with the volume of freshwater extracted remaining at 24m<sup>3</sup> per tonne of steel, only 0.4% of which was groundwater

**Our approach to land**

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Continued to manage environmental risk and drive improvements in our mining operations, by:

- Allocating \$61 million to investments in projects that will improve tailings storage facility (TSF) management across our mining operations, and initiated internal audits of TSFs to ensure dam safety as we continued to enhance our corporate tailings stewardship programme
- Implementing our new 'water assessment for improvement' tool, developed in 2016 to help mining sites improve water use and the quality of effluent discharge, at our Las Truchas site in Mexico, and our Serra Azul and Andrade sites in Brazil. This has prompted investment to improve monitoring and the development of a mass load analysis to measure effluent discharge quality
- Achieving ISO14001 certification at our Serra Azul and Andrade mines in Brazil as we work towards 100% certification for our mining operations

**Our approach to water**

[Read more →](#)



**Green Belt in Brazil**

[Read me >](#)



**Water in Gent**

[Read more >](#)



**Liberia biodiversity**

## Responding to key stakeholder concerns

Air quality is a key issue for communities, regulators and other stakeholders wherever we operate.

We aim to meet or outperform air quality regulations, and investigate all concerns raised so that we can take action where it is required. Often, specific sources of pollutants, particularly in urban and industrial areas, are not easily identifiable, and third-party investigations may find that air emissions are attributable to a number of sources, including transport, domestic heating and industry. We continue to invest in environmental improvements across our business.

In 2018 we aim to build our understanding of community engagement in each country of operation and ensure we have the mechanisms in place to constructively engage with their concerns and respond appropriately.

We will also prepare our European integrated sites for ResponsibleSteel™ certification with pre-audits, and follow up action plans for improvement on environmental and social standards.

### Spain

#### Concern

Community and regulatory concerns in Asturias, Spain

#### Our response

While investigations into the source of air emissions in Aviles continue, we have:

- Invested in a range of the best techniques available in Spain to ensure that emissions are below regulatory levels
  - Commissioned a new electro-filter system
  - Announced a €200 million environmental improvement plan, which includes 26 projects over five years, including the re-modelling of coke batteries
- Established a quarterly Community Liaison Committee with the Gijon community to analyse environmental incidents and share information and concerns.

Read more on our [Spain](#) website

## Bosnia

### Concern

NGO and community concerns, highlighted by UK media, in Zenica, Bosnia

### Our response

The source and severity of air emissions in the industrial city of Zenica are under investigation. Since acquiring our steel plant in 2004, when it had been largely out of operation since 1992, we have invested more than €160 million, including €50 million specifically for environmental improvements. This includes the €3 million investment to make ArcelorMittal Zenica the first steel plant in the world to have industrial-scale hybrid filtration technology installed in one of its two sinter plants – this has cut dust emissions significantly, to well below the EU limit of 20 mg/Nm<sup>3</sup>. We plan to install a filter at the second sinter plant.

[Read more](#)



## United States

### Concern

Allegations from PennEnvironment of breaches of air emissions regulations at Monessen Coke Plant, Pennsylvania, US

### Our Response

We restarted our coke-making facility in Monessen, Pennsylvania in 2014 to improve our domestic steelmaking supply chain. Restarting the plant proved to be challenging, and the environmental performance during this period was unacceptable.

Since then, ArcelorMittal Monessen has been operating under new leadership and working diligently to improve the facility's performance through a series of investments and actions. We are committed to achieving and maintaining full compliance with all environmental permits.

We have worked closely with the US Environmental Protection Agency, the Pennsylvania Department of Environmental Protection, and the citizen group PennEnvironment to achieve a comprehensive settlement as reflected in the Consent Decree and PennEnvironment agreement.

We will perform a full-scale trial of innovative technology to control emissions, which is included in the settlement.

## Kazakhstan

### Concern

Regulatory and community concerns in Temirtau, Kazakhstan

### Our Response

As part of a city-wide effort to improve air quality, we set up a joint commission with the Department of Ecology of the Karaganda Region, which is conducting an inspection of all production units and analysing dust samples to find out the source of emissions. We also took part in city planning to address air emissions in periods of adverse weather.

In 2017, we approved a three-year plan of investment in environmental projects, with 17 projects aimed at decreasing emissions to the environment, including a new coke gas cleaning plant and an upgrade to the sinter plant no.5 in 2017. We are also working with the EBRD to plan upgrades to our power plants.

## Ukraine

### Concern

Public concerns about air emissions in Kryvyi Rih, Ukraine

### Our Response

We have invested over US\$170 million in environmental protection activities since 2006, and in 2017 all our key projects included an environmental component. We have an action plan in place and we are working with the EBRD to implement higher standards.

## France

### Concern

Community health concerns in the Golfe de Fos, France, which is one of Europe's largest industrial areas and includes our Fos-sur-Mer site.

### Our Response

A programme initiated in 2015 aims to go beyond regulatory requirements. It has improved our operational processes and the actions and equipment of individual workers. [Read more](#)

## Our progress

Our 2017 plan	2017 progress	Comment
Introduce a new monitoring and data management procedure to ensure our air and water data across our operations consistently meet the standards required for external assurance	Achieved	We engaged Deloitte Audit to review the implementation of the new procedure in March 2018
Install a second pilot of our new hybrid filtration technology in Dabrowa Gornicza, Poland	Achieved	We installed the technology pilot in Dabrowa Gornicza, which will be commissioned in 2018. The technology was also installed at Gent, Belgium
Map sites in water stressed-areas and report on their water management plans	In progress	We are working with the Worldsteel Association to prepare an industry-level worldwide mapping of water risk against steel production

Dust (ducted) kg/tcs

**52%**

reduction since 2007

NOx (ducted) kg/tcs

**18%**

reduction since 2007

SOx (ducted) kg/tcs

**32%**

reduction since 2007

## Our performance at a glance

KPI	Unit	2015	2016	2017
Dust emissions intensity (steel)	kg/tonne of steel	0.66	0.67	0.68
NOx emissions intensity (steel)	kg/tonne of steel	1.18	1.25	1.19
SOx emissions intensity (steel)	kg/tonne of steel	1.85	1.90	1.64
<b>Metric</b>				
Environmental capital expenditure [air, land, water]	\$m	162	177	158
Industrial operations certified to ISO 14001 (steel only)	%	98	98	98
<b>AIR</b>				
Total dust emissions (steel)	thousand tonnes	60.1	60.6	62.8
Total NOx emissions (steel)	thousand tonnes	110.4	113.5	107.7
Total SOx emissions (steel)	thousand tonnes	170.4	169.5	149.2
Total dust emissions (mining)	thousand tonnes	5.1	6.8	6.3
Total NOx emissions (mining)	thousand tonnes	15.5	15.7	13.9
Total SOx emissions (mining)	thousand tonnes	9.4	9.0	8.8
<b>WATER</b>				
Water intake (steel)	m3 per tonne of steel	23.7	24.0	23.7
Water net consumption	m3 per tonne of steel	5.3	5.0	4.9
Water discharge	m3 per tonne of steel	18.4	19.0	18.8



## Outcome 6

# Responsible energy user that helps create a low- carbon future

The outcome we need is for our stakeholders to trust that we are focused on making our operations as energy efficient as possible, and significantly cutting the carbon they emit, in order to help create a low-carbon future.



“Climate change means we’re looking at a fundamentally different world ahead of us. Our challenge is how to make steel while substantially cutting CO<sub>2</sub>. Given the technological challenges and the very substantial costs involved, it’ll take a huge shift in policy, but if the right incentives are there, we can go a considerable way with the technological innovations we’re working on.”

**David Clarke,**  
vice-president head of strategy

## Creating value and addressing challenges: our highlights of 2017

The need to reduce our carbon footprint is clear – this is one of the key priorities for our stakeholders and our business. And yet carbon plays a fundamental role in the chemistry of steelmaking, which means we have one of the largest corporate carbon footprints in the world. Many of our stakeholders see this as a quandary for our business, but we are passionate about steel's potential to contribute to a sustainable, resource-efficient future – Accelerating steel's contribution to creating a low-carbon economy is one of the core objectives of our sustainable development strategy, as we describe in our [Sustainability review](#).

We're continuing to make steady progress towards our target of reducing our carbon emissions per tonne of steel by 8% by 2020 (over a 2007 baseline for our assets) – and we've achieved 6% to date. We're also working hard on new technologies and processes that apply circular approaches to the whole lifecycle of steel and its production, and seek to create value from the carbon and other by-products we produce. We provide our medium and long-term outlook on this in [Our future](#), and respond to common stakeholder questions about carbon in [Priorities for our business and our stakeholders](#).

Progressing our work in this area in 2017, we have:

**Furthered developed our strategic approach to carbon:**

- Deepening our work to chart a low-carbon pathway for our steelmaking operations, based on the current potential for our sites to reduce carbon emissions further, analysing the costs of carbon abatement for each potential intervention, including carbon capture and utilisation (CCU) technologies. We are also considering the potential market value of the products that result from CCU
- Acknowledging that the financial implications of our climate change risk are highest in Europe, due to policies that will expose lower-carbon European steel to unfair competition from countries where carbon is not so regulated, and so punish rather than incentivise carbon reduction efforts. All our European sites have been tasked with developing a carbon reduction plan, costed using a shadow price on CO<sub>2</sub>. At present, carbon prices in Europe are too low to attract substantial investment in low-carbon technologies, yet a high carbon price with the current policy would only accelerate carbon leakage
- Formally requesting that European policymakers introduce a way to ensure a fair and balanced system that enables a level playing field between ETS-regulated steel and steel imported to Europe, to provide

### The wider perspective

Why is this important to us and our stakeholders

[Read more](#) →

### Our approach to strategy and performance

[Read more](#) →

investors in low-carbon technology with assurance that they will see a payback on their **investment**

- Contributing to the development of a 2-degree roadmap for the steel industry by the International Energy Agency, expected to be complete in 2019
- Exploring our carbon strategy for our mines, identifying commodity- and location-specific challenges and opportunities
- Mapping our internal processes that track the risks and opportunities resulting from climate change, and establishing a cross-functional committee to analyse the recommendations of the Task-Force on Climate-related Disclosures (TCFD).

**Continued to develop technologies that have the potential to enable low-carbon steel to become the hub of a circular economy, including by:**

- Beginning to build an industrial-scale plant in Gent, Belgium, to demonstrate the viability of a CCU technology, in partnership with carbon-recycling pioneer LanzaTech. The demonstration, which aims to use waste carbon monoxide from steelmaking to produce ethanol on a commercial basis, will start to yield results in 2019. It involves a combined investment package of over €100 million from ArcelorMittal, EU Horizon 2020 and the European Investment Bank. The 80,000 million litres of ethanol produced by this demonstration will yield an annual CO<sub>2</sub> saving equivalent to 600 Boeing 747 flights between London and New York
- Conducting early stage research on a further low-carbon technology project at Fos-sur-Mer, France, to test the viability of using flue gases to grow microalgae, which could be converted into bio-crude or valuable chemicals. The project, Vasco 2, is a collaboration with 11 partners
- Developing alternatives to metallurgical coal for reducing iron ore in the blast furnace. One example is a breakthrough design concept, IGAR, for a potential technology that captures carbon gases from the coke ovens and reforms them into a hot reductant gas to be used in place of coal in the blast furnace. Following a successful lab pilot in 2017, IGAR will be demonstrated at our Dunkerque site, France, in 2018. Another is the injection of municipal waste in the blast furnace in place of coal, and we are initiating a research project in Gent to trial this.
- Initiating a European-funded project, **Siderwin**, to scale up a breakthrough new technology which aims to reduce iron ore by using renewable electricity instead of carbon.

**Our approach to low carbon technology**

**Read more →**



**Made progress in our efforts to achieve energy efficiencies and seek synergies that enable carbon footprint reductions, including through:**

- 17 investment projects that will have a significant impact on energy efficiency, involving a capital expenditure of \$373 million, including improvements to the reheating furnaces at Burns Harbor (US), Montreal (Canada) and Gent (Belgium), as well as improvements to our power plant at Dofasco (Canada), and a reline of our blast furnace at Lazaro Cardenas (Mexico)
- Installing, with the support of the Quebec Government, a new cryogenic system at our mining unit in Canada which is exploring natural gas replacement in our iron ore pellet plant. It will enter its test phase in 2018, and is expected to enable 5,000 tonnes of CO<sub>2</sub> to be avoided per year
- More than 60 significant projects in our NAFTA segment which will provide annual savings of over \$41 million and 379,000 metric tonnes of CO<sub>2</sub>
- Attaining ISO50001 for our Dofasco site in Canada, the first integrated steel mill in North America to achieve the standard. All our major European sites are certified to this standard or equivalent
- Continued to pursue our goal in our US sites of reducing energy consumption by 10% over 10 years (baseline is 2013), in line with our voluntary agreement under the US Department of Energy's Better Plants Partnership.
- In 2017, we started work on the Burns Harbor Power Plant; the disruption to our electrical energy generation caused a short-term drop back against our target, which has been necessary to enable the long-term gain needed to meet the target

**Evolved our approach to disclosing the carbon performance of our global portfolio in 2017 and engaging with stakeholders, by:**

- Sharing how we monitor the progress in carbon efficiency of our portfolio of steel plants. We explain the method we have used internally, based on the CEN EN 19694-1 standard, since the formation of the company in 2007. By tracking the carbon efficiency of each steelmaking process at each site and controlling for external factors, we can measure how far each site is from our internal benchmark – a level we consider achievable for all our sites given current technology. In 2007, just 12% of our sites were below the benchmark. This has risen steadily over the past 10 years and in 2017, 50% were below the benchmark. For more about the carbon efficiency indicator, see our [Basis of Reporting](#).

### Carbon data

For carbon data information see our interactive charts

[Read more](#) →

- Continuing to publish our average carbon footprint intensity per tonne according to GHG protocol methodology - in 2017 this was 2.12t/ts, slightly improved from 2016 – but explaining that this is an average figure, and does not account for the very different fundamentals of primary and secondary steelmaking nor the impact of a shift in production balance between the two. In fact, the carbon footprint intensities of both our integrated sites and our electric arc furnaces, when measured separately, have fallen since 2007, by around 6% and 21% respectively since 2007. We point out that an indicator that averages performance between these two routes will not incentivise, lasting improvements in the carbon efficiency of steelmaking.
- Reporting our progress towards our 8% target by 2020 – in 2017 this was 5.8% since 2007 using a constant profile of assets we owned in 2007 and still own today – whilst also highlighting that, over the past ten years, there has been a significant shift in our production balance towards the primary (integrated) steelmaking route (see above) away from the secondary scrap (EAF) route. Given that carbon strategy, one that focuses on the unique potential of new low carbon technology to transform the primary (integrated) steelmaking route to support a low-carbon future. This is a major focus for the company moving forwards.



### Creating value through low-carbon steelmaking

Carl de Maré, head of technology strategy

[Watch video >](#)



### Looking at global megatrends

David Clarke, head of strategy

[Watch video >](#)



### Climate change

Priorities for our business and our stakeholders

[Read more >](#)

# Responding to stakeholder concerns

## Carbon

### Concern

What is your response to the recommendations of the Task-Force on Climate-related Disclosures (TCFD)?

What is your strategy for reducing your CO<sub>2</sub> emissions? Is it in line with a 2 degree climate scenario?

Do you use an internal price on carbon?

How will carbon policy, including EU ETS phase 4, impact your business?

What low carbon steel products does ArcelorMittal make?

### Our response

Read our response in [Priorities for our business and our stakeholders](#)

## Our progress

Our 2017 plan	2017 progress
Start a full-scale industrial demonstration of the LanzaTech technology	Achieved The project engineering phase was finalised, with permits and further finance obtained in 2017. We describe the project further in <a href="#">Our future</a>
Progress the financing for industrial pilots of two further carbon reduction technologies to serve the low-carbon circular economy	Achieved Projects are proceeding at Dunkerque and Fos-sur-Mer, France, as described above

## Performance at a glance

KPI	Unit	2015	2016	2017
Carbon intensity improvement since 2007 (target = 8%)*	%	4.0	5.2	5.8
Metric	Unit	2015	2016	2017
Capex allocated to projects with significant energy impact	million \$	11	108	373
Primary energy consumption (steel)**	million GJ (PJ)	2,238	2,168	2,214
Energy intensity (steel)	GJ/t liquid steel	24.20	23.89	23.84
Total CO <sub>2</sub> e emissions (steel and mining)*	million tonnes	208	204	207
Scope 1 CO <sub>2</sub> e (steel and mining)	million tonnes	176	176	179
Scope 2 CO <sub>2</sub> e (steel and mining)	million tonnes	16	14	15
Scope 3 CO <sub>2</sub> e (steel and mining)	million tonnes	15	14	14
Total CO <sub>2</sub> e emissions (steel)	million tonnes	198	193	197
Total CO <sub>2</sub> e emissions (mining)	million tonnes	10	10	10
CO <sub>2</sub> footprint intensity *	tonnes CO <sub>2</sub> per tonne of steel	2.14	2.14	2.12

\* This KPI differs from our carbon intensity data metric marked \*\* since it is adjusted to reflect the profile of those sites we operated in 2007 and still operate today.

\*\* This data has been assured by [Deloitte Audit](#).

See our [Basis of Reporting](#) for definitions.



## Outcome 7



“Customer demand for high standards in their supply chains and for robust assurance continues to grow. We see our work in this area as a key component of customer service – and as building competitive advantage.”

**Brian Aranha,**  
Executive vice-president, head of strategy, CTO, R&D, CCM & global automotive,  
sponsor of outcome 7

## Creating value and addressing challenges: our highlights of 2017

Like us, many of our customers are demanding supply chains that they can trust to meet or exceed their environmental and social standards. We aim not only to fulfil that trust, but to enhance it by providing increasingly robust forms of reassurance. That way, we increase our competitive advantage and build closer relationships with our customers. Where standards are not met, we have action plans agreed to address this.

In 2017, we saw significant momentum in this area. Not only are customers increasingly looking across the value chain – which in the case of steel, includes mined raw materials – but they are joining forces, for example in the automotive and rail industries, creating opportunities for us to engage with them on strategic approaches. At the same time, momentum is building behind customers’ use of the OECD guidelines for responsible supply chains. And, in France, the Netherlands and the EU, legislation covering supply chain standards continues to evolve.

Providing customers with assurance of the integrity of our supply chain is one

The wider  
perspective

Why is this important to us  
and our stakeholders?

[Read more →](#)

of our core objectives. We know that customer expectations here cover a range of levels, with different customers developing their approaches at different rates, as we describe in [Our future](#). What we observe is a growing trend among steel industry customers – as we have seen in other sectors – towards multi-stakeholder standard-setting and independent site-based certification as an effective way of providing the higher levels of reassurance they are looking for. We aim to strengthen our leadership in this area. In 2017, we:

**Worked proactively with our peers to promote the development of multi-stakeholder standards and site-based assurance, by:**

- Playing a key role in supporting the evolution of two new certification organisations, ResponsibleSteel™ and the Initiative for Responsible Mining Assurance (IRMA), helping to strengthen their governance, membership network, strategic outlook and communications
- Piloting the ResponsibleSteel™ standard at three steel sites in Europe – the first exercise of its kind to test and shape the process. We now intend to roll this out across our European sites. Read more about this in our [Sustainability review](#) of 2017
- Completing the three-yearly independent verification review of the performance of ArcelorMittal Mines and Infrastructure Canada as part of the Toward Sustainable Mining (TSM) programme of the Mining Association of Canada (MAC)
- Engaging the leadership of MAC on the global application of their TSM programme, and potential links with ResponsibleSteel™
- Committing to a gradual roll-out of TSM principles and standards across our marketable mines outside Canada in a four-year work plan beginning in 2018
- Consulting customers and suppliers, including suppliers of our mined raw materials, on their views and expectations of the emerging trends towards multi-stakeholder standards and site-based assurance

### Engaged directly with more customers than ever before on standards in their supply chain by:

- Responding to customer requests from the automotive, rail, construction, household goods and packaging sectors on our management of supply chain standards, and in particular raw materials risks
- Engaging with customers through strategic initiatives such as DRIVE Sustainability, Railsponsible, the Responsible Minerals Initiative, EcoVadis and the Green Building Council

### Worked to improve critical supply chain issues by:

- Continuing to support a field-based multi-stakeholder working group to address the specific challenges of tin mining in Indonesia. In 2017 the group developed good practice principles for worker safety and land reclamation, and it aims to work with local stakeholders on implementation in 2018

### Further focused on due diligence within our own supply chain, by:

- Commissioning a detailed study of supply chain risks including, but not limited to, raw materials, to identify the areas where we need to be more diligent
- Surveying 357 of our strategic and core suppliers at corporate level to assess their implementation of our Code for Responsible Sourcing, which sets out minimum standards for our suppliers, and describes how we will work with suppliers to achieve them. Action plans were drawn up with those who fell short of our code. Local assessments were also made by our sites
- Refreshing our [Human Rights Policy](#) to align with the UN Guiding Principles on Human Rights and to specifically cover forced or compulsory labour, human trafficking and all forms of modern slavery

Our approach to  
our code for  
responsible  
sourcing

[Read more](#) →

Our approach to  
our code and our  
due diligence

[Read more](#) →





Sustainable sourcing for the automotive industry

[Read more >](#)



Helping the rail industry improve transparency down the line

[Read more >](#)



Cleaning up tin mining in Indonesia

[Read more >](#)

## Responding to key stakeholder concerns

### Traceability and due diligence

#### Concern

Automotive customers are requesting transparency over our risk assessment processes, and the sources of our raw materials.

#### Our response

As part of our continuing programme of supply chain due diligence, we will continue to deepen our engagement to reassure our customers.

#### Concern

Customers, raw material suppliers and civil society organisations have all expressed concerns at the proliferation of different standards and the number of assessments this entails. All support the need for greater efficiency and effectiveness in improving social and environmental standards.

#### Our response

We have worked to encourage co-operation between standard-setters at IRMA, TSM and ResponsibleSteel™; and also to consider how we can use these standards most effectively to drive continuous improvement in social and environmental standards.

## Our progress

Our 2017 plan	2017 progress	Comment
Continue to support ResponsibleSteel™ and IRMA through funding and by sitting on their boards	Achieved	We have continued to play a leading role in the evolution of these two assurance organisations. We will now develop an action plan to implement ResponsibleSteel™ standards across ArcelorMittal
Test the feasibility of ResponsibleSteel™ at three of our European sites	Achieved	We piloted ResponsibleSteel™ standards at three steel sites in Europe – see our <a href="#">Sustainability Review</a>
Publish a statement about our human rights due diligence systems for our supply chain	Achieved	We published our <a href="#">statement</a> in June 2017. We will now undertake a study of our raw materials and key risk areas to support our ongoing due diligence.

### Steel

Where do we make our steel?



### Mining

Where are our mines located?



## Performance at a glance

Metric	Unit	2015	2016	2017
Global procurement suppliers evaluated against our Code for Responsible Sourcing	Number	424	387	357



## Outcome 8

# Active and welcomed member of the community

The outcome we need is for our communities to have confidence that we will anticipate and address the impacts we have on them and the environment, to see us as partners in local socio-economic development, and to trust us to have an open dialogue when challenges arise.

“Whatever the data says about our environmental performance or how much we spend in our local communities, unless we listen to what our neighbours have to say about our operations, and understand their perspective, we will be unable to make the right impact in the right way.”

**Alan Knight,**  
Head of sustainability

## Creating value and addressing challenges: our highlights of 2017

We want to be welcomed as good neighbours who actively engage with and listen to local stakeholders, and who make a positive contribution to communities. In 2017, we continued to work with communities to understand our impacts, both positive and less welcome, and to develop social and environmental programmes that meet the needs of communities and our business. Many of our stakeholders acknowledge the economic and social value we create through employment, procurement, taxation, and our sustainable development initiatives. But we know that these are not always directly felt in the communities where we are based, and we aim to listen to the concerns of stakeholders at site, country, and segment level. In 2017, for example, air quality continued to be a concern for some communities. We describe the actions we are taking on this issue in [outcome 5](#).

This year, we:

**Listened to and responded to the interests of our communities** through

- Active engagement on community concerns, such as through the model of a Community Liaison Committee, which we established with the Gijon community in Spain. It holds quarterly meetings to analyse environmental incidents and to share information and concerns relating to pollution; we take part in similar groups in Canada, Poland and the Czech Republic
- Working to enhance the biodiversity value of land through projects. For example, in Luxembourg we lease, free of charge, a number of former industrial sites, such as disused open-pit mines, to the Administration of Nature and Forests (ANF) to ensure their ecological management
- Signing a letter of intent with the Krakow city administration in Poland to offer incentives for citizens to replace their old coal and wood burning stoves under the government's funding programme as part of city-wide air quality initiatives. ArcelorMittal Poland will pay the first 1,000 applicants PLN 150 and will recycle the old stoves to be made into bicycle racks to be installed in the city
- Agreeing with the Zenica city authorities in Bosnia & Herzegovina to establish a joint venture company (to be formalised in 2018) to reuse our coke and blast furnace gases to heat local homes

**Built social value through contributions** including:

### The wider perspective

Why is this important to us and our stakeholders?

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### Our approach to listening to community stakeholders

[Read more](#) →

- A wide range of community programmes with environmental and social objectives. In Mexico, for example, our programme with Child Fund Mexico presented its fourth report in 2017 showing the results of the Integral Project of Community Development 'Cultivating the Future'. During its five years of operation, Cultivating the Future has benefited more than 1,300 children, young people and their families directly and more than 7,000 people in the community indirectly

**Our approach to understanding our impacts**

[Read more →](#)

**Continued to create direct economic value for communities**, including through supplier initiatives such as :

- The Integrated Programme for Supplier Development and Qualification in Brazil
- The Minority and Women Business Enterprises Programme in the US, and
- The Enterprise and Supplier Development Programme in South Africa, which is supported by our 'incubation hub' (see [outcome 9](#))

**Our approach to actively responding to community priorities**

[Read more →](#)

## Responding to key stakeholder concerns

### Air quality health concerns

#### Concern

Air quality is a key concern for communities at a number of our sites.

#### Our response

Our community engagement around air quality is described in [outcome 5](#).

## Land use

### Concern

The Yarmien community in Liberia raised concerns over the level of social development planning in preparation for mining operations at Gangara

### Our response

We understand that communities close to sites where there is substantial investment often expect to see rapid improvements in their standards of living, especially in developing countries. We aim to listen to the concerns of communities and other stakeholders, and to communicate clearly the value our operations will create.

### Concern

Residents of Zhukovka, Ukraine, raised concerns over resettlement plans to enable the expansion of our Krivoy Rog site

### Our response

We are committed to implementing the process of resettlement of residents as openly and transparently as possible, and to strictly observing the rights of each owner of housing and land in accordance with Ukrainian legislation.

### Concern

Community concerns raised over the planned expansion of our tailings facilities at Mont Wright, Canada

### Our response

In 2017, we launched a landing page entitled "[Mont-Wright 2045](#)", as well as an associated Facebook page, to provide accessible information about the tailings process, the associated tailings management procedures, the strict regulations applied in the mining industry, and to explain why this project is critical to the continuity of our operations. We also participated in hearings organised by local government – providing an opportunity for all stakeholders to express their concerns and for us to respond in real time. And we held consultation sessions with the local First Nations community and worked with local NGOs to discuss and address their concerns.





## Cultivating Futures, Mexico

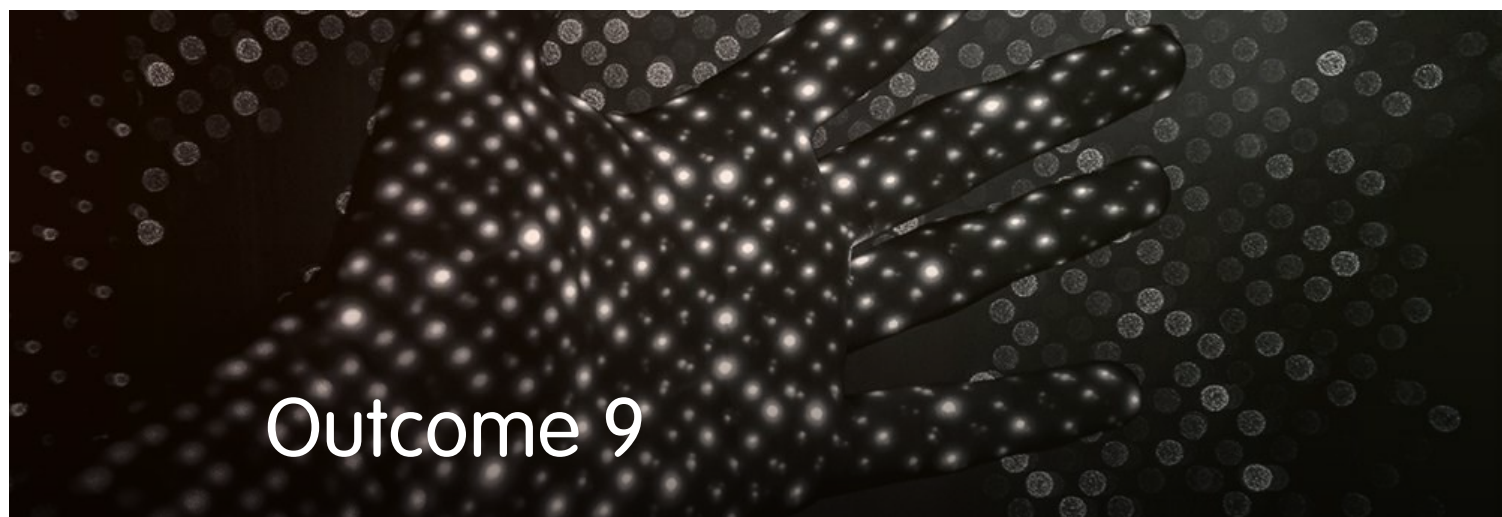
[Read more >](#)

## Our progress

Our 2017 plan	2017 progress	Comment
Advance wider adoption of our community grievance mechanism guidelines by reviewing their implementation in three more countries	Not achieved	Rather than doing the envisaged 'deep dives' in countries of operation, we have spent 2017 refreshing and strengthening our group-wide approach to this this outcome in order to emphasise the importance of engaging and listening to local stakeholders. We will continue to develop further in 2018
Review and institute standardised metrics to measure social impact in our communities	In progress	We have strengthened our community investment metrics, in order to clearly differentiate between voluntary and mandatory spend, and also community spend on STEM initiatives. We are now strengthening our processes for consolidated reporting of community investment

## Performance at a glance

Metric	Unit	2015	2016	2017
Community investment spend (including STEM spend)	\$ (million)	18.5	20.2	29.1
- of which, voluntary spend	\$ (million)	N/A	N/A	18.8
- of which, spend on STEM projects	\$ (million)	8.0	6.0	7.1



## Outcome 9

# A pipeline of talented scientists and engineers for tomorrow

The outcome we need is to build a strong pipeline of talented and well-trained engineers, scientists and technicians to support our business, and society, in the future.



“There will be no more breakthroughs in research, no more industrial revolutions, no more digital transformations unless we have the heads and the hands to create, build, deploy and improve technology – every day.”

**Daniele Quantin,**  
Director of human resources, Global R&D and sponsor of this outcome

### The wider perspective

Why is this important to us and our stakeholders?

[Read more](#) →

## Creating value and addressing challenges: our highlights of 2017

Connecting with future engineers and technicians is a priority for us everywhere we operate – so we've built a global network of initiatives which aim to reach potential STEM students throughout their education. We want to support and attract undergraduates and graduates with the skills we – and society – will need to build a sustainable future: areas such as life cycle analysis, robotics, data analysis, nanotechnologies, circular economics, and 3D metallurgy. That means working closely with universities and technical colleges

– but to help create a truly sustainable pipeline, our involvement begins with inspiring schoolchildren with the wonders of science and technology and offering guidance and encouragement to older school students considering STEM. We deliver this strategy in a wide range of ways, according to local needs in the countries where we operate.

In 2017, we:

### **Continued to develop STEM initiatives that specifically focus on women and girls, who are historically underrepresented in STEM professions**

- 64% of our country operations were running STEM projects focused on women and girls in 2017
- We supported the Annual Leadership Camp in Liberia run by the Society of Women Engineers at the University of Michigan in the US (SWE at UM), which helps Liberian female undergraduate engineering students develop engineering leadership and organisational skills

### **Supported STEM education in schools and universities around the world, including through**

- Our R&D teams hosting 42 PhD students and more than 100 engineering students in their final year on long-term internships
- Responding to concerns in Brazil that only 10% of the nation's graduates are trained in areas related to science and technology by launching the ArcelorMittal Science programme to improve the quality of science teaching and learning through a variety of initiatives tailored to regional needs
- Engaging 13,000 students from 96 schools through our three Science Centres in South Africa, and concluding a successful pilot project on leadership in collaboration with a local university

### **Continuing to support awards aimed at promoting STEM, including**

- The Challenge, a hackathon in Belgium in which 65 participants were given 48 hours to come up with a creative solution for an industry-based problem, focused on welding fractures, for a share in €8,500 of prize money
- The ArcelorMittal Jean-Sebastien Thomas prize for sustainable development, awarded to Fionn McKillop from Heriot-Watt University (Edinburgh, Scotland) for his paper entitled 'Society, materials, resilience and sustainability: inquiries from the fields of industrial waste management, climate science and eco-urbanism'

**Our approach**

**Read more →**

Country operations with STEM projects focusing on women and girls in 2017

64%

Final year engineering students given long-term internships

102

within our R&D function

Pupils engaged via our Science Centres in South Africa

13,000

students from 96 schools



Developing people in Liberia

[Read more >](#)



Building skills in small businesses in South Africa

[Read more >](#)



## Outcome 10

# Our contribution to society measured, shared and valued

The outcome we need is to be able to show the value of the contributions we make to society, and enable our stakeholders to understand these alongside our financial results.

“We’re seeing clear signs of integrated thinking within our business, as social and environmental trends are becoming integrated into the way we consider our strategy, processes and product development. This is strengthening our understanding of the positive and negative impacts we have on stakeholders. Our move towards integrated reporting is just one way in which we evidence this.”

**Alan Knight,**  
Head of sustainable development

## Creating value and addressing challenges: our highlights of 2017

To improve and develop, we need to understand the positive and negative impacts we create as a business – and earn our stakeholders' trust that we are creating as much positive value for them as possible. This, in turn, creates our social licence to operate.

Reporting is an essential part of this. This Integrated Annual Review, the result of three years' progress, is our most significant move yet towards providing our stakeholders with a holistic view of the operational, financial, and non-financial aspects of our business – past, present, and future.

Producing an Integrated Annual Review is not an end point, however. We need to continue to develop the ways in which we measure and communicate our impacts in order to maintain and build the trust between us, communities, regulators, customers and society that are crucial to the transition to a sustainable future.

Among our activities in this area in 2017, we:

**Continued to measure and report our contribution to society at global and country level**, including by:

- Measuring and reporting our impacts through 16 country-specific sustainable development reports. Our reports from South Africa, Poland, Mexico, France and the Czech Republic include data on our direct economic, environmental and **social impacts**
- Seeking feedback on the quality of our reporting from stakeholders beyond the business, including an investor panel of the International Integrated Reporting Council, and an expert panel at the World Council for Sustainable Development
- Finalising our social impact framework to help us understand and report non-financial performance, and mapping it against the **UN's Sustainable Development Goals** we will pilot it in 2018

**Focused on measuring and sharing the impact of our products**, including by:

- Piloting our new Sustainable Innovation tool to assess the potential sustainability impacts of new R&D proposals both for products and processes, designed to ensure our innovations all contribute positively to sustainable development
- Joining the **Roundtable for Product Social Impact Assessment**, a cross-sector initiative developing guidance on how to measure social impacts

The wider perspective

Why is this important to us and our stakeholders?

[Read more →](#)

of products and services, with the aim of improving the lives of workers, users and local communities

**Continued to create direct economic value for society**, including through:

- A total tax contribution of \$4.4 billion, with \$507 million paid in income tax, \$381 million in local taxes, and nearly over \$3 billion in payroll taxes
- 197,108 jobs for employees and 43,368 contractors worldwide
- The procurement of a wide range of goods, amounting to over \$50 billion



**Economic contribution in Poland**

[Read more >](#)

## Our progress

Our 2017 plan	2017 progress	Comment
Finalise a social impact framework.	Achieved	We have finalised our social impact mapping tool and are developing best practice guidance on how to apply this in practice in order to assess our social impacts at country level.
Publish a fully integrated report for 2017.	Achieved	We believe our Integrated Annual Review 2017 meets the principles of the International Integrated <a href="#">Reporting Framework</a>



## Performance at a glance

Metric	Unit	2015	2016	2017
Total estimated direct economic contribution of which	\$ million	63,316	56,222	68,143
Corporate income tax	\$ million	398	296	507
Local taxes	\$ million	465	390	381
Payroll taxes	\$ million		3,193	3,335
Other taxes	\$ million		95	157
Employee salaries, wages and pensions	\$ million	10,880	7,637	9,046
Supplier and contractor payments	\$ million	46,569	40,489	50,498
Capital expenditure	\$ million	2,707	2,444	2,819
R&D	\$ million	227	239	278
Dividends and payments to creditors	\$ million	1,978	1,417	1,092



# Our future

## Leading our industry into a sustainable future - built with steel

We asked leaders from across our business to identify a key strategic area for ArcelorMittal – one that will shape what we do and who we are in the years to come.

We then asked them to explore the opportunities and challenges their chosen area presents – now, in the medium term, and into the future. Here are the main opportunities and challenges they identified:

- Sustained value creation
- Digitalisation
- Low-carbon steelmaking
- Supply chain assurance and certification
- Innovation

# 1. Sustained value creation

Aditya Mittal

President, Group CFO, and CEO ArcelorMittal Europe

**What is the business doing to respond to the main opportunities and challenges for sustained value creation now?**

The combination of improving market fundamentals and delivery against our strategic objectives contributed to a successful year in 2017. We need to build on that success and capitalise on a positive market environment by focusing on operational delivery, continuing to meet our Action 2020 objectives and ensuring that our business continues to outperform its competitors, even if the market environment becomes less supportive. At the same time, it is vital that we act now to build strong foundations both in the way we work and our innovation programme to ensure we are well-positioned to respond to the changing context over the years to come.

## **Building a high-performance culture**

We are putting huge efforts into building the high-performance organisation we'll need for the future. That is about ensuring our people get the training they need as our business adapts to new ways of working; recruiting the very best talent; and making sure we have a culture that motivates people to achieve outstanding results.

## **Sustainable development and innovation for customers**

Our leadership in R&D and our sustainable development strategy both put us in a good position to innovate continually and stay ahead of what our customers expect. Our focus on higher added value products will play a crucial role in the future of our business. Our research into low-carbon technology is preparing us for the changes ahead in our markets. And our work to reassure our customers that our steel upholds robust social and environmental standards will ensure that steel is the material of choice in a future sustainable economy and ArcelorMittal is the preferred supplier. All of these themes are expanded on by my colleagues.

...over the next 1-2 years?

We've got a clear trajectory on both further strengthening our balance sheet and improving the structural profitability of our business through our Action 2020 initiatives. Action 2020 is covered elsewhere in this [Annual Review](#) but in summary it represents a strategic roadmap for each of ArcelorMittal's main business segments to deliver real structural improvements. It targets improved Ebitda of \$3 billion between 2016 and 2020 through cost optimisation, volume growth and increasing the share of high added value (HAV) products. By the end of 2017, we were halfway towards our target, having delivered \$1.5 billion of Ebitda from Action 2020.

### **Structural improvements for resilience**

Challenges can always come from the market environment. As I said earlier, our Action 2020 objectives are designed to be structural, so they bring benefits in any market conditions and ensure we are financially sustainable. In fact, our forecast for apparent steel consumption in 2018 points to a favourable demand environment, and growth in each of our markets. Steel spreads remain at healthy levels. So the outlook is positive, and we intend to continue to focus on our priorities: improving our safety performance; achieving our financial targets, which include a continued bias towards deleveraging until we reach our \$6 billion net debt target; delivering our strategic plan and Action 2020; and making sure we're adapting our organisation to meet the needs of customers and other stakeholders, including through innovation of the products and technologies that our customers need.

### **Addressing overcapacity and unfair trade**

At the same time, I do see areas that present both challenges and opportunities - my colleagues in this section of this Review identify several of the issues that investors and other stakeholders are interested in, and I would add two more: overcapacity and unfair trade. These confront the sector as a whole, and we continue to address them by advocating policies that will support jobs in Europe's efficient steelmaking industry.

## ...to 2023 and beyond?

As economies and populations grow, steel will play a vital role in more people's lives, and we need to ensure that we maintain the strength of our foundations in order to be able to respond. My colleagues describe below how we are preparing for key trends like digitalisation, emissions reduction and the circular economy. What will sustain our ability to create value in this context is a continuous focus on two fundamentals: a deleveraged, resilient financial position, and the successfully delivering on our investments to generate more free cash flow. With these, we can continue to innovate, to respond and exceed our customers' expectations and to adapt to succeed.

### **Balance sheet strength**

Our success over the last two years in transforming the Company's balance sheet has already given us a strong foundation. Our net debt to Ebitda ratio is now 1.2x - two years ago this ratio was 3.0x. We are now trading with credit metrics in line with an investment grade rating, and Standard & Poor's has upgraded its rating on ArcelorMittal to investment grade. This reduces interest costs which will help to increase free cash flow further. We've set a net debt target of \$6 billion as the right landing point to support investment grade ratings through the cycle, and beyond that we will need to maintain nominal levels of debt to ensure we can adapt even when the market environment is not favourable.

### **Delivering on investment**

Our progress on reducing net debt puts us in a position to deploy capital in order to increase future returns. So, while we continue through our deleveraging bias, we will invest selectively in opportunities that will enhance our ability to generate Ebitda and free cash flow - we are already increasing capex in 2018 by \$1 billion to \$3.8 billion. Recent examples include our proposed acquisition of Ilva, Italy's largest steel producer, and our proposed merger of our Long products business in Brazil with Votorantim. We also announced a \$1 billion, three-year investment in Mexico, and \$0.3 billion in additional strategic capex. This will enhance downstream optimisation in Europe; increase our high added value capacities; and reduce costs. Ultimately, these investments are aimed at creating the foundations for sustained value creation.

## 2. Digitalisation

Geert van Poelvoorde

Executive vice president, CEO ArcelorMittal Europe Flat Products

### What is the business doing to respond to the main opportunities and challenges now?

Digitalisation isn't new, of course – it's part of everyday life. Ours is a highly automated business and we have been digitalised in many areas for years. The pace of digitalisation and the scope of what it offers us, though, is accelerating enormously. The remarkable growth in data volumes, computational power, and connectivity, and the emergence of new types of analytics, business-intelligence capabilities, and technologies are creating a huge opportunity which we, as a business, are embracing.

#### **Safer, more efficient, and better for customers**

My first example is in safety – by using drones to inspect potentially hazardous areas, for example, or by using big data to identify situations which could lead to incidents, we reduce the risk to employees. We're also trialling wearable technology to make access to machinery safer.

A second is the gain in visibility we have made through sensors and the data they give us. We can now predict and prevent more technical issues, which not only reduces disruptions, but means we can also react faster when they do occur. And if we can prevent disruptions, we can use resources more efficiently.

A third example is about creating 'one virtual supply chain' system, by connecting all our assets into one unique web-enabled digital system, thus acting as effectively 'one virtual mill' despite our big footprint in Europe. This will allow our customer service teams to have almost instant and uniform information on the order and production status in each of our production lines in Europe, thus allowing to give preciser and faster answers to customers questions about their order status.

Another important target of our digital transformation is of course also to improve the interaction with our customers, by further improving our online Steeluser webplatform and by offering further automation and intelligence in the commercial administration

processes, leading to less manual interaction, less risk on mistakes, more efficient and faster data communications with the customers.

### ...in the next 1-2 years?

Through the use of analytics and big data, we're expecting to achieve progress in a number of key areas: reduced stoppages, which means higher volumes and a better yield; a better-quality product thanks to the early detection of defects; better service for our customers; and lower spending on spare parts, as issues are fixed early on.

#### **Big data and new technologies**

We've already started to deploy big data applications in our manufacturing sites - and as the information we gather from sensors and cameras increases, we expect the benefits to continue to grow. This has direct benefits for our customers - by using sensors and data analysis, we can improve quality in our steel shop. Algorithms and sensors are also helping us predict and prevent failures in major industrial machinery, such as motors and gear boxes, and enabling us to plan maintenance more accurately. This has considerable potential cost benefits. The ability of artificial intelligence to apply 'deep learning' and help our decision-making is accelerating rapidly, and will bring further gains in both safety and productivity.

Our R&D teams are constantly on the watch for new technologies and companies, and where we see a clear competitive advantage, we'll invest in the development of proprietary solutions.

#### **New skills, new opportunities**

The opportunity created by digitalisation does come with challenges. We need to help our existing employees to learn new skills and adapt, and we need to add employees with different skill sets to our teams. We've developed a strategy to help people learn the new skills they need as top managers, as people involved in digitalisation projects, and as employees in a digitalising business - and we're already recruiting people with new skill sets. We're also innovating ways to identify new ideas and new people - for example, we held a 36 hour open hackathon at our site in Gent, Belgium, awarding prizes to contestants whose ideas had the potential to create value for our business by helping us predict and prevent disruptions on our processing lines.



## ...up to 2023 and beyond?

Ultimately, our vision is to have a fully digitalised enterprise where everything is connected, bringing benefits to our production, our customers and our employees – and giving us a competitive advantage.

We expect rapid progress in areas we're already working in – the use of virtual reality in engineering to enable better design and planning, for example, and the use of robotics. We're heading towards the 'smart factory' which, using artificial intelligence, will bring machines, objects and people together to self-organise in the most efficient manner.

### **Seizing the potential of 3D**

We also see huge potential in 3D printing. Within our own operations we will be able to 'print' spare parts when our analytics tell us that equipment needs replacing, for instance, reducing disruptions. And, as 3D technology matures, it will have a far wider impact on the way we and our customers do business. Our R&D teams are exploring our opportunities in this area now. Already, we have developed steel powder which specialist companies can use to create 3D printed structures such as bridges.

### **Staying ahead, maintaining competitiveness**

As with any rapid development, our challenge is to read the trends, understand customer needs, and stay ahead of our competition. I believe our strategy, our scale, and the talent we have in R&D will enable us to continue to lead in this field – with great results for our business.

### 3. Low-carbon steelmaking

Carl de Maré

Vice president, head of technology strategy

**What is the business doing to respond to the main opportunities and challenges now?**

We have always used carbon to create value through steelmaking. So how can we keep creating that value in a lower-carbon world?

To answer the question, it is important to remember this: carbon itself is not a bad thing. Carbon emissions into the atmosphere are the problem. And the best approach to reducing carbon emissions is to stop thinking about carbon as waste at all - and to see it as a valuable resource. I believe our future will be based on converting waste carbon into high value products that will benefit customers and society, thus reducing net emissions. That means carbon is, for us, a huge opportunity.

#### **Circular approaches to drive lower carbon**

Converting waste carbon into forms that are commercially attractive, such as bio-alcohols, chemicals, plastics and fuels, is the focus of our work on a number of carbon capture and utilisation (CCU) technologies. These new products can be used in place of ones made from new fossil fuels, with the net effect of reducing greenhouse gas emissions. These are very exciting opportunities for us and for customers and I'll talk more about them later in this section.

They are part of a strategy of adopting more circular approaches to all materials, to make significant gains in carbon efficiency. Some of the ways we do this are long-standing - by recycling scrap steel, for example, by using our waste gases to generate energy for us and our neighbours, or by selling the by-products we create to **other industries**. And we also make an important contribution to lower-carbon approaches through innovation of new products and processes, as my colleagues describe elsewhere on this page.

#### **Creating the conditions for success**

Of course, there are some challenges we need to overcome to move to low-carbon steel. Some of the technologies we're trialling are at relatively early stages - so we need to ensure that we're advancing the right ones and looking out for others. Then we need to help build

the regulatory, market, and financial environment that is needed to make such technologies viable at scale. Encouraging more investment in carbon-efficient steel is one of the reasons our business advocates a border adjustment as part of the EU's Emissions Trading Scheme - see priorities for [our business and our stakeholders](#). Our work with customers, regulators and other stakeholders will be crucial - including our contribution to the International Energy Agency (IEA)'s roadmap to a 2 degree world for steel.

### ...in the next 1-2 years?

The next few years will be extremely exciting, as we start seeing results from some of the CCU technologies we're pursuing, and particularly from our two world-first demonstration projects.

#### **Carbon as a resource, not waste**

Our most advanced CCU project is a partnership with LanzaTech which uses a biological conversion process to produce ethanol from carbon monoxide. We've tested the technology extensively in pilots - and now we're able to demonstrate it at industrial scale. In 2017 we obtained the funding and permits to build an industrial plant at our mill in Gent, Belgium. We expect the plant to be producing ethanol by the middle of 2019, and to yield an annual CO<sub>2</sub> saving equivalent to 600 Boeing 747 flights between London and New York.

In France, our Dunkerque site has started work on a project in which CO<sub>2</sub> is captured and reformed with plasma torch technology into a hot reductant gas which is injected in the blast furnace. By doing this we will reduce our use of coal and subsequent CO<sub>2</sub> emissions.

We'll also know much more about other technologies and CCU projects we have in the pipeline. There are several of these at present - for example, we're currently conducting an experiment to test the viability of using flue gases to grow microalgae which could be converted to bio-crude or valuable chemicals at Fos-sur-Mer in France.

#### **Thinking ahead: making CCU viable**

As CCU begins to produce results - or new technologies emerge - questions will intensify about how these low-carbon approaches can be made financially viable. How should investment in them be

incentivised - and specifically, how will policy-makers ensure they accelerate this process? What are the markets for the new products CCU can produce, and how will we adapt to make the most of these opportunities? We're already talking to potential customers about this, and exploring opportunities to attract investment. At the same time, we'll keep embedding the circular approaches that underpin our strategy, laying the foundations for a business model that turns waste carbon into useful carbon.

### ...up to 2023 and beyond?

I have no doubt that in the low-carbon economy of the future, carbon and other materials will be treated as resources, not waste. That means that what is currently seen as a risk to our business - the use of carbon - will be recognised as an opportunity. Our steelmaking will be at the centre of a circular economy approach to materials, with enormous benefits to society and our customers.

#### **Engines of change**

There is a great deal of work to be done before we know which mix of technologies will achieve this. But we have clear signs of progress with CCU. As it scales up in line with our plans, it has the potential to be the engine of change for the whole way many materials are made, used, and disposed of. I would argue that we are already more than a steel and mining company, as the by-products from our steelmaking are currently used by the cement, fertiliser, and glass industries, among others. In the future, our sites could be producing valuable resources in even greater volume and variety: bio-alcohols that, unlike current bio-fuels, produce no impacts on forest or agricultural land; plastics and chemicals that require lower carbon inputs than existing alternatives. Already one of the world's biggest recyclers because of our use of scrap steel, we could become even more efficient hubs for used materials, including plastic and wood, or municipal waste - channels we have begun exploring already.

#### **Infrastructure that supports the circular economy**

To embrace that opportunity, there will have to be changes to our business and to the economy more widely. As the energy sector decarbonises, we expect renewable energy to become more affordable, which will accelerate many of the technologies we're working on. At the same time, this wider decarbonisation will

increase the expectation on the steel industry. We will need to demonstrate that we are closing the carbon loop on steel. I believe that with our strategy and the technologies and mindsets it includes, we'll have changed the way we and others see carbon - and that it will be a very exciting time for steelmaking.

## 4. Supply chain assurance and certification

Alan Knight

General manager, head of corporate responsibility

**What is the business doing to respond to the main opportunities and challenges now?**

What's the story behind this product? Where does it come from – and what impacts has it had? Across sectors, consumers and other stakeholders are increasingly asking these kinds of questions about the goods that reach the marketplace. Manufacturers need to know, and be able to tell, their story – showing how it fits with their own sustainability agenda, with their customers' needs, and with regulatory and reporting requirements.

### **Supply chain focus across industries**

Like us, our customers want to know that our steel – and the raw materials it is made from – is the result of a value chain in which all key stakeholders' expectations are met in terms of the law, human rights, and social and environmental standards. Alongside a steady increase in individual surveys and engagements with us, our customers are joining together in single-sector or cross-sector collaborations to shape and drive common objectives. In 2017, for example, DRIVE Sustainability, Electronic Industry Citizen Coalition, Railsponsible, EcoVadis and the Green Building Council, among others all engaged in supply chain standard-setting. There are two areas of focus: the sites that make steel, which for us means our operations; and the mine sites where our raw materials come from. Giving customers assurance in these areas in ways they can trust and validate is, I believe, a key competitive advantage, both for steel as a material, and for us as a business. The challenges today are: what are the right standards, and how do we prove they are met? Do they involve trade-offs – and how and when do we drive for further improvement?

### **Piloting independent assurance standards**

Customers and sectors currently vary widely in terms of their expectations and assurance methodology. But the underlying trend towards greater reassurance is clear – and we believe one of the best ways to meet it is through standards set and agreed by all the key stakeholders, and against which every steelmaking site and mine site

can be certified. We have taken leadership roles in the formation of ResponsibleSteel™, and IRMA (Initiative for Responsible Mining Assurance), which are working to establish multi-stakeholder standards for steel production and mines. This year, we also made an important commitment to assessing our marketable mines against Towards Sustainable Mining (TSM), the Mining Association of Canada's responsible mining programme. In 2017, we ran pilot projects to test ResponsibleSteel™'s evolving audit process at three of our steel sites, and we learnt that our best plants would meet the required standard. There are challenges still to address - mining and steel supply chains are complex, and we need to keep working on identifying risks and opportunities in our raw material supply chain as well as how this complexity is reflected in standards as they evolve. Nonetheless, we think programmes like these are leading the way.

### ...in the next 1-2 years?

I mentioned earlier that different customers have different levels of expectation, and require different degrees of reassurance. We're seeing that. As customers learn more about the complexity of their raw material supply chains, they shift their expectations - for example, from asking us to complete questionnaires, to expecting us to take the lead in identifying the right standards in our sectors and the right interventions to address critical issues.

#### Meeting four levels of assurance

As a supplier to many different customers we have to accommodate these different levels of scrutiny and reassurance. Some customers currently do not ask us anything in this area. Many other customers simply ask us to affirm that we comply with their standards, through a code of conduct - this is what I think of as the first level of assurance. At the second level, customers require us to show data and evidence to support compliance - a stage that an increasing number of customers have already reached.

What we are seeing now is a trend towards a third level: that is, customers seeking assurance through multi-stakeholder standards and site-based certification. We've already seen this in other sectors - such as forestry, jewellery and seafood. In my view, more and more of our steel customers will seek this more sophisticated level of assurance - and this trend will accelerate in the short to medium term.



### Staying ahead of the certification curve

This desire for greater assurance is what is driving momentum behind certification - momentum which we have helped build, and which I believe will keep growing over the next two years.

The expansion of the ResponsibleSteel™ standard once it is formally launched in 2018 will be a big step forward. We are beginning pre-audits of all our European integrated sites, so that we can identify and remedy any issues and ensure we're among the first to achieve ResponsibleSteel™ certification when it becomes available. At the same time, we are talking to customers - exploring what they need from us, and how site-level certification will work within their supply chain.

### Focus on mined raw materials

Of course, customers are not looking only at our steelmaking sites. In addition to reassuring customers about standards in our operations, we're also already working on standards for our mined raw materials. Work began in early 2018 on our plan to achieve TSM standards at our marketable mines in Liberia, and at Serra Azul in Brazil and Princeton in the US. We decided to commit to this four-year roll-out having seen the benefits of TSM in Canada. I see programmes like TSM and ResponsibleSteel™ as meeting what I described above as the third level of assurance. So what is the fourth level? In my view, it is pro-active engagement with issues in the field. An example is our support of a multi-stakeholder working group on sustainable tin production in Indonesia. In 2017, the group developed good practice principles for worker safety and land reclamation - the aim is that these will start to be implemented with local stakeholders in 2018.

## ...up to 2023 and beyond?

Over the next few years, in my view, we're going to enter a new era for responsibly produced steel. If the trends we see now continue, assurance standards could shape the way our industry works very quickly.

There are challenges - we need to reach a consensus with all stakeholders over what standards for steel should include, and in particular on what part low-carbon steel will play. Nonetheless, it is easy to imagine a near future in which certification for most high added-value steel products is a normal expectation from many customers, rather than the exception. This has already happened in other sectors, with initiatives such as the Forest Stewardship Council (FSC). In such a market, I expect us to have benefited significantly from our leadership in these areas.

### **Embedding certification in customer supply chains**

As the standards in our industries become established, we'll want to see them used to the greatest benefit of our customers, the people in our supply chain, and ourselves. Policy makers and the market will both play important roles here - for example, encouraging customers to communicate their ResponsibleSteel™ credentials to consumers and others, or demonstrating the merits of certification to regulators who stipulate standards for public buildings and similar projects. Policy frameworks will also be important in ensuring a fair competitive environment for those steelmakers who can demonstrate they have met standards for responsible production.

### **Building a system that works efficiently**

We also need to ensure that the standards within - and between - industries are as integrated as possible. This creates synergies and, crucially for us and for our suppliers, helps eliminate duplication. We are already working with customers and suppliers in this area, and engaging with standards-setters at ResponsibleSteel™, IRMA and TSM, among others. There's a consensus that the more efficient and effective the system we arrive at, the better for all stakeholders - and ultimately, for the people who live and work in our shared value chains.

## 5. Innovation

Greg Ludkovsky

Vice president, head of global R&D

**What is the business doing to respond to the main opportunities and challenges now?**

Where will the products and infrastructure come from to support sustainable lifestyles in a low-carbon economy? Some of them are already with us – and it's fair to say they are the result of our excellence in R&D.

### **Making transport more sustainable**

If you drive a car in Europe, it probably contains our advanced high strength steels (AHSS), designed to provide safety and strength but reduce weight – helping carmakers hit emissions targets or, in the case of electric vehicles, extend battery range. If you prefer to take the train, we may well have made the steel in the rails it is running on: we have a rail excellence centre where we work closely with customers on research into new products for the rail sector, and a number of our sites make specialist steel for rails. In 2017, engineers began testing Africa's first-ever high-speed railway line, between Tangiers and Kenitra. We're the sole rails supplier for the first phase of this project, and provided 46,000 tonnes of rails.

### **Supporting renewables**

In fact our breakthrough technologies are supporting sustainable infrastructure in a number of ways, including renewable energy. Our Magnelis® technology is being used in 50% of all new major solar farm structures produced in Europe, and at Al Maktoum Solar Park in Dubai, the world's largest single-site renewable-energy project. If your renewable energy comes from wind power, there's a good chance the heavy plate in the wind towers or, in offshore installations, the jackets that keep the turbine stable on the sea floor, contain our steel – and we also supply the electrical steels for wind tower generators.

### **Innovation is key**

Innovation is key to producing these steels and processes, which in turn form a major element in achieving our 10 Sustainable Development outcomes, especially **outcome 2** and **outcome 3**. They are also the kind of high added value product – ones based on true

insight into customers' needs - that are at the heart of our business strategy. The challenge for us is to make sure we're reading the long-term trends right, so we can keep our market leadership position.

### ...in the next 1-2 years?

I've already described some of the ways that our products help our customers, and society, drive sustainability improvements. We have a pipeline of products and innovations in place that will continue to serve customers who are leading their sectors in these areas.

#### Helping to drive electric vehicles

Electric vehicles (EVs), for example, are being rapidly developed by carmakers. We're working closely with them and aim to maintain our leading position in providing innovative steel solutions for electric and hybrid vehicles. Having launched two further second generation iCARE® specialist steels for electric motors in 2017, we are already working on a third generation of electrical steels. What is more, we're offering steel solutions tailored to the specific designs required by EVs - to house and protect the battery in the event of a crash, for example, or improve the stiffness of the chassis and wheels of electric vehicles to enhance handling performance.

#### Pipeline of breakthroughs

We've taken steps to ensure that this pipeline not only continues, but expands. In 2017 we piloted our Sustainable Innovation (SI) tool, created by R&D to ensure that all research projects have sustainable development as a core design principle. Over the next two years, we expect to see more and more projects formally assessed against the key social and environmental trends identified by our 10 outcomes, and given ratings, including on their CO<sub>2</sub> emissions.

This includes products for the construction sector, where we're working closely with customers as they seek to achieve higher and higher environmental standards. We need to support them with new products and processes, and with tools that help them choose and deploy materials in the most sustainable and cost-effective way.

#### A reusable future?

In 2017, our R&D teams worked with architects Wilmotte &

Associés on the design of our new Luxembourg headquarters. The 'cradle to cradle' design ensures that the building can be dismantled, and nearly all the steel products re-used in a new building. Steel is already one of the most recycled materials; making it more reusable as well will, with the right market and regulatory conditions, create whole new opportunities, both commercial and environmental.

### ...up to 2023 and beyond?

Industries and economies are evolving fast. The requirement to transition to a lower-carbon economy coupled with Industry 4.0, will stimulate real change. Looking ahead, we know a low-carbon, circular economy will need products that use natural resources in ways that are ultra-efficient. Through innovation, we need to keep developing products and processes that enable both sustainable lifestyles for a growing population, and a successful future for a business committed to adding value for our customers.

#### **What we need to succeed**

Elsewhere in this section, Carl and Geert describe two of the biggest, most transformative areas where we're innovating - low-carbon technologies, and in digitalisation. Innovating new products and processes that support our customers will be equally important. So what do we have to do to achieve this?

We have to make sure we keep identifying long-term trends and anticipating our customers' needs. We are well placed to do this through, on the one hand, our network of R&D centres and resident engineers working closely with academic institutions and others, and, on the other, our close relationships with customers. The model we've established with the automotive sector in particular, of collaboration and co-engineering from an early stage, will be just as important in other sectors too.

#### **The people who will invent the future**

We also have to make sure that we have the right people, and the right kind of organisation, to meet these needs. We're already recruiting people with skill-sets very different from those that were common in the steel industry a decade ago, because our needs have expanded to include the data and robotics skills that Geert describes elsewhere. In many countries where we operate, some of the skills

we need – broadly, science, technology, engineering and mathematics (STEM) – are in short supply. Building a pipeline of people with those skills – a process that starts in the primary school classroom – is a key way in which we will both secure the future of our business, and help society more widely find solutions to the challenges of a resource-constrained world. Our work to support STEM education is described in [outcome 9](#).

# Sustainability performance and data charts

Also see our [interactive charts](#)

## SD data table 2017<sup>1</sup>

Metric	Unit	Performance		
		2015	2016	2017
Crude steel production	tonnes (million)	92.5	90.8	93.1
<b>1. Safe, healthy, quality working lives for our people</b>				
Number of employees - total		209,404	198,517	197,108
Number of contractors - total		45,914	43,044	43,368
<b>Fatalities - total</b>	number	27	17	23
Fatalities - steel	number	24	11	19
Fatalities - mining	number	3	6	4
Fatalities - own personnel	number	12	10	16
Fatalities - contractors	number	15	7	7
<b>Lost-time injury rate - total</b>	per million hours worked	0.81	0.82	0.78
Lost-time injury rate (mining)	per million hours worked	0.74	1.07	0.77
Lost-time injury rate (steel)	per million hours worked	0.82	0.78	0.78
Lost-time injury rate - own personnel	per million hours worked	0.78	0.81	0.83
Lost-time injury rate - contractors	per million hours worked	0.9	0.85	0.67
Accident severity rate - total	per thousand hours worked	0.08	0.08	0.08
Accident severity rate (steel)	per thousand hours worked	0.08	0.07	0.08
Accident severity rate (mining)	per thousand hours worked	0.10	0.12	0.09
Absenteeism rate - total	%	2.54	1.84	2.84
Manager turnover rate	%	2.6	2.4	2.7
Industrial operations (including mining) certified to OHSAS 18001	%	97	98	98
Employees covered by collective bargaining agreements	%	90	89	88
Number of strikes exceeding one week in duration	number	0	0	0
No. training hours per employee	hours	58	51	49
Managers that are female:	%	11	12	12
<b>Vice presidents</b>			6	3
General Managers			6	10
Managers			14	14
<b>2. Products that accelerate more sustainable lifestyles</b>				
Research and development spend	\$( million)	227	239	278
Number of LCA studies undertaken		16	16	23
Products for outcome 2 launched			37	21
Programmes for outcome 2 in development			19	18
<b>3. Products that create sustainable infrastructure</b>				
Products for outcome 3 launched			67	21



Metric	Unit	Performance		
		2015	2016	2017
Programmes for outcome 3 in development			15	19
<b>4. Efficient use of resources and high recycling rates</b>				
Raw materials used by weight:				
- Iron ore	million tonnes	115.7	114.9	118.6
- Pulverised coal injection (PCI) and coal	million tonnes	43.9	46.3	47.8
- Coke	million tonnes	29.2	29	28.9
- Scrap and direct reduced iron (DRI)	million tonnes	36.8	33.7	35.4
Steel scrap recycled	million tonnes	28.1	25.3	29.6
CO <sub>2</sub> avoided from steel recycled	million tonnes	36.5	33.0	38.5
Blast furnace slag re-used (total)	million tonnes	15.8	18.4	19.0
BF slag to cement industry.	million tonnes	8.0	9.1	10.2
CO <sub>2</sub> avoided from slag re-use in cement industry	million tonnes	6.1	7.0	7.8
<b>Production residues to landfill/waste (steel)</b>	%	7.9	7.8	7.6
Production residues to landfill/waste (mining)	%	36	40.4	35.0
Production residues and by-products re-used (steel)	%	79.2	78.2	88.6
<b>Production residues and by-products re-used (mining)</b>	%	9.8	10.1	10.2
<b>5. Trusted user of air, land and water</b>				
Environmental capital expenditure	\$ (million)	162	177	158
Industrial operations certified to ISO 14001 (steel)	%	98	98	98.1
Industrial operations certified to ISO 14001 (mining)	%	44	52	48
<b>Air<sup>2</sup></b>				
Total dust emissions (steel)	thousand tonnes	60.1	60.7	62.8
<b>Dust emissions (steel) per tonne</b>	kg/tonne of steel	0.66	0.67	0.68
NO <sub>x</sub> (steel)	thousand tonnes	110.40	113.5	107.7
<b>NO<sub>x</sub> (steel) per tonne</b>	kg/tonne of steel	1.18	1.25	1.19
SO <sub>x</sub> (steel)	thousand tonnes	170.4	169.5	149.2
<b>SO<sub>x</sub> (steel) per tonne</b>	kg/tonne of steel	1.88	1.90	1.64
Total dust emissions (mining)	thousand tonnes	5.1	6.8	6.3
Total NO <sub>x</sub> (mining)	thousand tonnes	15.5	15.7	13.9
Total SO <sub>x</sub> (mining)	thousand tonnes	9.4	9.0	8.8
<b>Water</b>				
Freshwater intake (steel)	m <sup>3</sup> per tonne of steel	23.7	24	23.7
Proportion of water extraction from ground water sources	%		0.4	0.4
Water discharge (steel)	m <sup>3</sup> per tonne of steel	18.4	19.0	18.8
Net water use (steel)	m <sup>3</sup> per tonne of steel	5.3	5.0	4.9
<b>6. Responsible energy user that helps create a lower carbon future</b>				
Energy capital expenditure	\$ (million)	11	108	373
Energy intensity (steel)	GJ/t liquid steel	24.2	24.0	23.8
Primary energy consumption (steel)*	million GJ (PJ)	2,238	2,168	2,214

Metric	Unit	Performance		
		2015	2016	2017
- energy recovered and reused on site, as % of total	%	24.3	25.3	26.0
- energy from renewable sources, as % of total	%	0.2	0.2	0.2
- energy sold by type (heat, steam or electricity) as % of total	%	1.3	1.1	1.2
Total CO <sub>2</sub> e footprint (steel and mining)*	million tonnes CO <sub>2</sub> e	208	204	207
- Scope 1 CO <sub>2</sub> e (steel and mining)	million tonnes CO <sub>2</sub> e	176	176	179
- Scope 2 CO <sub>2</sub> e (steel and mining)	million tonnes CO <sub>2</sub> e	16	14	15
- Scope 3 CO <sub>2</sub> e (steel and mining)	million tonnes CO <sub>2</sub> e	15	14	14
Total CO <sub>2</sub> e footprint (steel)	million tonnes CO <sub>2</sub> e	198	193	197
- GHG emissions – scope 1 (steel only)	million tonnes CO <sub>2</sub> e	168.4	167.1	170.4
- GHG emissions – scope 2 (steel only)	million tonnes CO <sub>2</sub> e	14.2	12.4	13.2
- GHG emissions – scope 3 (steel only)	million tonnes CO <sub>2</sub> e	15.3	13.6	13.6
Total CO <sub>2</sub> e footprint (mining) <sup>7</sup>	million tonnes CO <sub>2</sub> e	10	10	10
- GHG emissions – scope 1 (mining only)	million tonnes CO <sub>2</sub> e	7.6	8.5	8.2
- GHG emissions – scope 2 (mining only)	million tonnes CO <sub>2</sub> e	1.9	1.8	1.9
- GHG emissions – scope 3 (mining only)	million tonnes CO <sub>2</sub> e	0.2	0.2	0.1
CO <sub>2</sub> intensity (steel)*	tonnes CO <sub>2</sub> per tonne of steel	2.14	2.14	2.12
<b>Carbon footprint intensity improvement since 2007 (target = 8% by 2020)</b>	%	4.0	5.2	5.8
<b>7. Supply chains our customers trust</b>				
Global procurement suppliers evaluated against code for responsible sourcing	number	424	387	357
<b>8. Active and welcomed member of the community</b>				
<b>9. Pipeline of talented scientists and engineers for the future</b>				
Community investment spend (including STEM spend) <sup>3</sup>	\$ (million)	<b>18.5</b>	20.2	29.1
- of which, voluntary spend	\$ (million)			18.8
- of which, spend on STEM projects <sup>4</sup>	\$ (million)	8.0	6.0	7.1
<b>10. Our contribution to society measured, shared and valued</b>				
Estimated direct economic contribution <sup>5</sup>	\$ (million)	63,297	56,222	68,143
of which:				
- Total tax contribution			3,976	4,381
- Corporate Income tax	\$ (million)	398	296	507
- Local taxes		465	390	381
- Payroll taxes			3,193	3,334
- Other taxes including royalties			95	157
- Employee salaries, wages and pensions	\$ (million)	10,880	7,637	9,046
- Supplier and contractor payments	\$ (million)	46,569	40,489	50,498
- Capital expenditure	\$ (million)	2,707	2,444	2,819
- Dividends and payments to creditors	\$ (million)	1,978	1,417	1,092
Number of country level corporate responsibility/sustainability reports	number	19	17	16
Country level reports adhering to GRI	%	74	76	81
<b>Transparent good governance</b>				

Metric	Unit	Performance		
		2015	2016	2017
Number of Board self-assessments		1	1	1
% of employees completed code of business conduct training	%	81	81	85
% of employees completed anti-corruption training	%	80	76	82
% of employees completed human rights training	%	81	84	66
Number of operations with a local confidential whistleblowing system	number	30	30	30
Whistleblowing complaints received via Internal Audit	number	175	153	160

\*Assured by [Deloitte Audit](#)

(1) The indicators in this table have been developed over the period 2007–2017 in line with the requirements of the Global Reporting Initiative and of the business. All methodologies can be found in the [Basis of Reporting](#). In 2014, we adopted 10 new sustainable development outcomes, and although these indicators were not selected to measure progress against these outcomes, they are listed here under our 10 outcomes. KPIs the company has identified as metrics that are useful for driving and tracking progress, are marked in bold. Environmental data presented in this table are provisional except where assured by Deloitte.

(2) From 2014 onwards we report dust, NO<sub>x</sub> and SO<sub>x</sub> emissions per tonne of steel produced as a more meaningful indicator than the absolute volume generated – a key performance indicator.

(3) In 2017 for the first time we break down community investment spend into that portion which is voluntary and that which is mandatory as a result of contractual agreements with host governments.

(4) STEM = Science, technology, engineering and maths.

(5) Further details of the estimated direct economic contribution are found in [OUTCOME 10](#), which details our contribution to society. In 2016, the company undertook a review of all the taxes paid at a local level besides income tax. The total tax contribution published here are the result of that work, and represent a wider scope than reported in previous years. Details can be found in our [Basis of Reporting](#).

(6) 'Royalties' are reported from 2016 onwards according to the scope of extractive industry reporting under the EU Accounting Directive 2013/34/EU, which is narrower than scope used in previous years. In this report, royalties are now included under 'other taxes'. See [Basis of Reporting](#)

(7) In 2017, we revised the methodology for calculating CO<sub>2</sub>e emissions from our mining operations, from an input-output mass balance method, to a method that calculates the actual emissions from specific processes within our mining operations: the combustion of fuels (for transportation, for heating, for power generation etc), utilities (electricity, steam etc) and materials. This change impacted on the 2015 figure we published in previous years, and that we publish in this table. CO<sub>2</sub>e (mining) data has been within the scope of assurance by Deloitte Audit since 2017.

## **Independent assurance report on selected environmental performance indicators published in the Fact book 2017 of ArcelorMittal, Société Anonyme, for the year ended December 31, 2017**

To the Management of  
ArcelorMittal, Société Anonyme  
24-26, boulevard d'Avranches  
L-1160 Luxembourg  
Grand-Duchy of Luxembourg

### **Objectives and scope of work performed**

This report has been prepared in accordance with the terms of our engagement letter dated February 27, 2018 to provide limited assurance on selected environmental performance indicators (the "Indicators") published in the Fact book 2017 of ArcelorMittal, Société Anonyme, (the "Company", "ArcelorMittal" or "Group") for the year ended December 31, 2017 (the "Report").

The selected environmental performance indicators under our assurance scope and marked with a "\*" on the Sustainability Performance pages of the Report, are the following:

- Primary energy consumption
- Total CO<sub>2</sub>e emissions (steel and mining)
- CO<sub>2</sub>e emissions per tonne of steel

The Indicators have been defined following ArcelorMittal's Basis of Reporting (<http://annualreview2017.arcelormittal.com>) and they have been selected by the Management of the Company.

## **Responsibility of the Management of the Company**

The Management of the Company is responsible for the preparation of the Report in accordance with ArcelorMittal's Basis of Reporting and for the information and statements contained within it. The Management is responsible for determining the Company's sustainability objectives and for establishing and maintaining appropriate performance management and internal control systems from which the reported information is derived.

## **Our Independence and Quality Control**

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, as adopted for the audit profession in Luxembourg by the Commission de Surveillance du Secteur Financier ("the Code"). The Code is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Deloitte Audit applies International Standard on Quality Control 1 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.

## **Responsibility of the Réviseur d'Entreprises Agréé**

Our responsibility is to conduct a limited assurance engagement solely on the Indicators selected by the Company and draw conclusions on the work we performed.

We carried out our procedures on the Indicators in accordance with the International Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" ("ISAE 3000 Revised"). To achieve limited assurance the ISAE 3000 Revised requires that we review the processes, systems and competencies used to compile the Indicators on which we provide limited assurance. This is designed to give a similar level of assurance to that obtained in the review of interim financial information. It does not include detailed testing of source data or the operating effectiveness of processes and internal controls.

In order to draw our conclusion on the Report, we undertook the following procedures:

- Interviewed a selection of ArcelorMittal senior management who have operational responsibility for corporate responsibility matters, including the group Corporate Responsibility team, data owners and those with operational responsibility for sustainability performance related to the selected Indicators
- Visited eleven sites across the world to review the systems to capture, collate and process source data for the Indicators listed above. The sites visited to examine relevant 2017 data and processes were:
  - Temirtau (ArcelorMittal Temirtau), Kazakhstan
  - Atasu (ArcelorMittal Temirtau), Kazakhstan
  - Abaiskaya (ArcelorMittal Temirtau), Kazakhstan
  - Lenina (ArcelorMittal Temirtau), Kazakhstan
  - Shakhtinskaya (ArcelorMittal Temirtau), Kazakhstan
  - Cleveland (ArcelorMittal Cleveland), USA
  - Indiana East (ArcelorMittal Indiana Harbour), USA
  - Indiana West (ArcelorMittal Indiana Harbour), USA
  - Avilés-Gijón (ArcelorMittal Asturias), Spain
  - Dąbrowa Górnicza (ArcelorMittal Poland), Poland
  - Zenica (ArcelorMittal Zenica), Bosnia and Herzegovina
- Obtained an understanding through inquiries, analytical reviews, observation and other applicable evidence gathering procedures on a sample basis on the key structures, systems, processes, procedures and internal controls relating to
  - the selected key performance indicators
  - collation, aggregation, validation and reporting of performance data for the selected Indicators.

## Limitations

The scope of our work has been limited to the aforementioned selected Indicators. Our conclusion below covers therefore only these Indicators and not all indicators presented or any other information included in the Report.

The process an organisation adopts to define, gather and report data on its non-financial performance is not subject to the formal processes adopted for financial reporting. Therefore, data of this nature is subject to variations in definitions, collection and reporting methodology with no consistent, accepted standard. This may result in non-comparable information between organisations and from year to year within an organisation as methodologies develop.

The accuracy and completeness of the information disclosed in the Report are subject to inherent limitations given their nature and the methods for determining, calculating or estimating such information. Our independent assurance report should therefore be read in connection with the Company's definitions of indicators as included in the Basis of Reporting document, which is available on <http://annualreview2017.arcelormittal.com>.

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly, we do not express an audit opinion.

## Conclusion

Based on the procedures performed and evidence obtained, we are not aware of any material amendments that need to be made to the assessment of the selected environmental performance Indicators, marked with a "" on the Sustainability Performance pages of the Report, for them to be in accordance with ArcelorMittal's Basis of Reporting.

For Deloitte Audit, *Société à responsabilité limitée*  
*Cabinet de révision agréé*



Jean-Pierre Agazzi, *Réviseur d'Entreprises Agréé*  
Partner

April 30, 2018



ArcelorMittal  
24-26, Boulevard d'Avranches  
L-1160 Luxembourg  
Grand Duchy of Luxembourg  
Tel: +352 4792 3198

[www.arcelormittal.com](http://www.arcelormittal.com)



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