

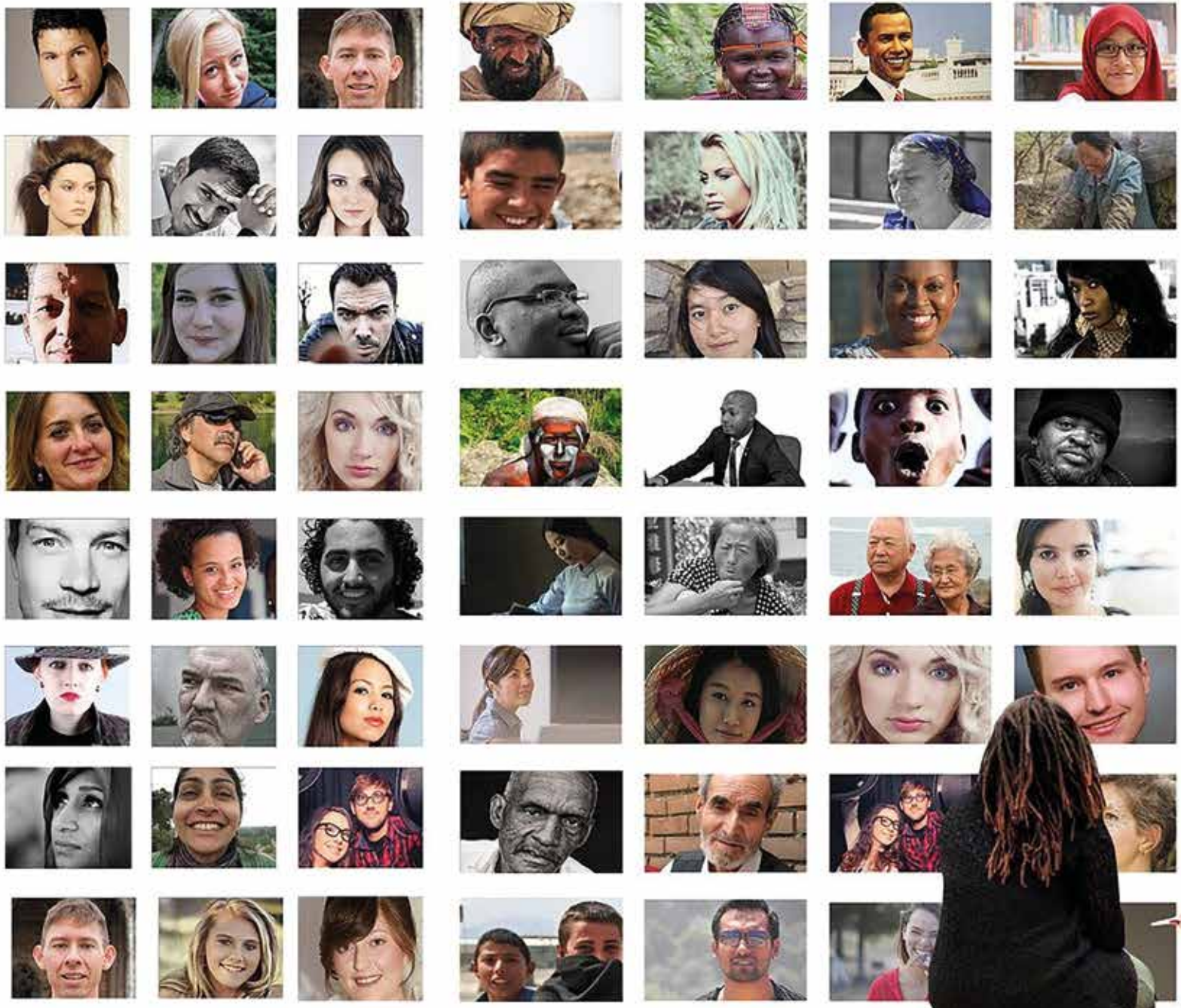


ArcelorMittal



# Sustainable development report 2020

ArcelorMittal Luxembourg





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## About the report

This report sets out the achievements and performance in terms of sustainable development of the ArcelorMittal Group in Luxembourg in 2020, following on from the one published in August 2020 regarding our 2019 results. This report covers all activities for the period from 1 January 2020 to 31 December 2020, in line with the taxation regime followed by the ArcelorMittal SA Group. This report is produced annually. The next edition will appear in 2022 and will focus on the achievements and performance for the 2021 financial year.

The report contains forward-looking statements that sets out the expectations, beliefs, forecasts and objectives of ArcelorMittal's senior management regarding ArcelorMittal's financial and operational performance in 2020 and beyond, along with assumptions or judgements based on said performance. As they are forward-looking, future performance forecasts involve estimates, assumptions, judgements and uncertainties. Several factors could cause the actual results to differ from senior management's expectations. All our publications, along with the English version of this report, are available at <http://luxembourg.arcelormittal.com>. If there is a variance between the French and English versions, the French version will prevail. The ArcelorMittal Group's integrated annual review for 2020 is also available at <https://corporate.arcelormittal.com> for further information.

# Message from management



**Michel Wurth**  
Chairman  
ArcelorMittal Luxembourg



**Roland Bastian**  
Managing Director and Vice-Chair  
ArcelorMittal Luxembourg



**Valérie Massin**  
Managing Director and Vice-Chair  
ArcelorMittal Luxembourg

In our previous report, we mentioned the beginning of the health crisis that we are still going through this year. The pandemic is having a severe impact on people in all countries, but also, beyond individuals, on all sectors of the economy. The steel industry is not immune to this profound disruption because of its significant effect on our markets, which has repercussions on our production levels, our investments and our innovation capacities. However, the continuity of our activities and the pursuit of our CSR commitments was possible thanks to the responsiveness, mobilisation and resilience of all our employees.

ArcelorMittal in Luxembourg's CSR (Corporate Social Responsibility) strategy is a continuous development process, in line with the group's ambition, which clearly highlights its desire to produce 'safe and sustainable' steel. Steel is a sustainable material due to its very nature, as it can be infinitely recycled 100%. More than 95% of our steel production in Luxembourg is based on recycled scrap. The ArcelorMittal group has committed to a global carbon neutral approach by 2050, with the first significant step of reducing its emissions by 30% by 2030 in Europe. This commitment is taking shape in the development of Smart Carbon and DRI

(Direct Reduction Iron) technologies and is being pursued in ArcelorMittal's target markets under the XCarb™ initiative. Since 2020, the Belval site has delivered 700 tonnes of XCarb™ -stamped sheet piling for a railway infrastructure project in Sweden. This means that the production process for these sheet piles was based 100% on renewable energy. In Luxembourg, the CSR approach is integrated in the very essence of its activities.

In the difficult context we face today, the establishment of a tripartite negotiation was made necessary, to respond to the accumulation of adverse factors which have emerged on top of an already complex situation: global overcapacity, which is forcing down steel prices, imports of low-priced steel into the European market poorly defended by insufficient safeguards, increase in the price of raw materials - scrap metal, energy needed for production, electrodes, refractories, etc. The agreement, signed at the beginning of 2021, provides for significant investments in the Luxembourg facilities to restore their competitiveness, but also for a plan to reduce the workforce, the social impact of which is cushioned by various support measures for the employees concerned.

Despite these unfavourable conditions, CSR-related projects continued to progress: the partnership with the Luxembourg Institute of Science & Technology (LIST) continued to develop in a constructive manner, while the associations supported by ArcelorMittal in Luxembourg continued to benefit from the company's commitment, despite the health crisis and cost pressures.

In addition to its own projects, ArcelorMittal Luxembourg shares its experience in CSR by participating in various working groups set up at the national level, such as those of Fedil, the Chamber of Commerce and IMS.

We believe that the future is prepared today and that it is important that ArcelorMittal in Luxembourg can share its know-how and thus contribute to the maturity of the Luxembourg ecosystem in terms of CSR.

ArcelorMittal in Luxembourg has always demonstrated exemplary resilience in the past and is redoubling its efforts to strengthen it in order to create lasting value for all of its stakeholders, employees, customers and communities.

To find out more about the strategy of the ArcelorMittal Group in Luxembourg, visit <https://luxembourg.arcelormittal.com/>

# Overview of the Group

## ArcelorMittal, a global presence

ArcelorMittal is the world's leading steel and mining company, with operations in 60 countries and an industrial presence in 17 countries. We are committed to the production of safe, sustainable steel, and are the leading supplier of quality steel to the major global steel markets, from automotive and construction to home appliances and packaging. Our research and development department is world-class, and we have the advantage of excellent distribution networks.

Steel has been at the heart of human progress. And steel will continue to be intrinsically useful because it is strong, durable, flexible and reusable, and is the most easily recyclable material – perfect for a circular economy. But it is essential that the next chapter of our history does not compromise future generations. Our goal is to help build a better world with smarter, more efficient steel that has less of an impact on the environment.

This means preparing for and responding to long-term environmental and social trends that are transforming the context

in which we operate. It means listening carefully to stakeholders, both locally and globally, and recognising a trend of rising expectations. It means outlining what we need to do now to protect and enhance value for stakeholders in the future. And it means continuing to produce innovative steel solutions while maintaining operational standards that meet or exceed customer and investor expectations.

Integrating sustainability in the business is essential to ensure that steel is the material of choice in the transition to a low carbon, circular economy.

We are among the world's top five producers of iron ore and metallurgical coal. Thanks to the geographic diversity of our portfolio of iron and coal mining assets, we are able to strategically supply our network of steelworks and external customers. Although our own facilities are a significant outlet for our mining activities, we can increase our supply to the external market as we develop our activity.

## Sustainable development is at the heart of our goal: inventing more sustainable steel for a better world

Acknowledged for its commitment to sustainable development, ArcelorMittal has been a member of the FTSE4Good index since 2007, (<http://www.ftse.com/products/indices/FTSE4Good>) which measures the performance of companies meeting globally recognised standards of corporate responsibility. In addition, since 2005 ArcelorMittal has participated in the Carbon Disclosure Project (CDP), an independent non-profit organisation that asks companies to measure and make public their impacts on the environment and natural resources. In 2003, the Group joined the United Nations Global

Compact, which identifies 10 key principles defining the corporate values to be implemented when conducting business. In 2018, we supported the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD), to which our 2020 Climate Action Report responds. ArcelorMittal is also a member of the World Steel Association (Worldsteel) and European Steel Association (EUROFER).

ArcelorMittal continues its commitment to carbon neutrality: this means that we can significantly reduce our Scope 1 CO<sub>2</sub> emissions, which

include all process emissions, by 2030, without having to wait for the large-scale, affordable renewable energy needed for hydrogen-based steel production. Urgent action to reduce CO<sub>2</sub> emissions is needed over the next decade, and with our Road Map to 2030, we recognise that the time to act is now!

ArcelorMittal's key financial figures for 2020 show revenue of US\$ 53.3 billion with production of 71.5 million tonnes of crude steel, while our own production of iron ore stood at 58 million tonnes.

To find out more about the ArcelorMittal Group, visit <http://corporate.arcelormittal.com>



ArcelorMittal maintains A- CDP rating for the second year in a row

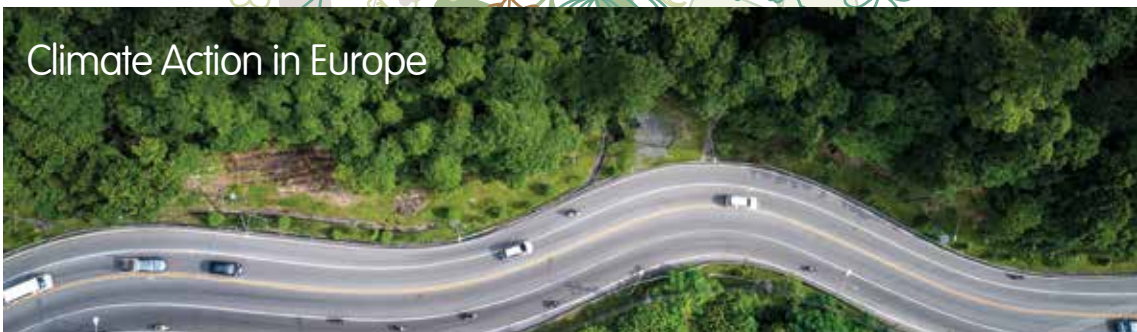
ArcelorMittal has again been recognised by the CDP for its excellent performance on corporate transparency and climate change action. ArcelorMittal successfully maintained its A- rating in the CDP 2020 climate change assessment, placing the company in the top quartile of all metal smelting, refining and forming companies and in the top 10% of the steel industry.

*“2020 has been a year of enormous challenges as countries, societies and businesses around the world have grappled with the disruption caused by the Covid-19 pandemic. The impact on the steel industry*



*has been significant, but I am very proud of the resilience and entrepreneurial spirit that has enabled ArcelorMittal to deliver a strong operational performance in times of adversity.”*

M. Lakshmi N. Mittal, Executive Chairman of ArcelorMittal.



### Climate Action in Europe

Discover our ArcelorMittal road map in favor of climate:  
<https://corporate-media.arcelormittal.com/media/yw1gnzfo/climate-action-in-europe.pdf>

# ArcelorMittal in Luxembourg

ArcelorMittal is the leading private industrial employer in the Grand Duchy, with 3,695 employees at the end of 2020. Products made in Luxembourg by ArcelorMittal achieve international recognition and have been selected for many large-scale projects.



ArcelorMittal's world headquarters, located in Luxembourg City, hosts the Group's central functions.

ArcelorMittal's presence in Luxembourg is spread over nine sites, including five industrial steel production or processing sites, one logistics platform and an electricity distribution centre for its plants. These steels mainly cover the construction, general industry and agricultural markets.

The **Long Products** segment produces light, medium and special profiles, rails, heavy beams, and sheet piles.

In Luxembourg, **Long Products** primarily include the **Belval** site, with an electric steelworks allowing continuous casting, as well as two rolling mills - the Medium Section Mill which produces medium beams and Mill 2 which produces sheet piles. This site is the world leader in large sheet piles. These are used in the construction of quay walls, dikes, underground car

parks, tunnels, bridges and trunk roads. Designed to fit into one another with no welding or screwing, they allow soil or water to be retained, on a temporary or permanent basis.

The **Differdange** site also operates an electric steelworks along with continuous casting. Its Grey Mill specialises in the rolling of heavy beams (notably Jumbo beams) and sheet piles. Differdange currently produces the tallest (1,108 m) and heaviest (1,377 kg/m) beams in the world. The Quenching and Self-Tempering or QST process allows beams of exceptional quality to be produced: H1STAR® beams. Combining high-yield strength with excellent toughness and weldability, as well as offering a clear weight gain, they are used in the construction of skyscrapers.

The **Rodange** rolling mill (Mill A) produces special profiles, in particular rails of different types for overhead cranes and trams.

The **Bissen** site, included within the Long Products scope in 2018, is a wire-drawing mill that is over a hundred years old, specialising in wire production, metallic and non-metallic coatings for wire, wire for fences and for the agricultural sector, as well as metallic fibres for the construction sector.

In Luxembourg, ArcelorMittal also has a centre specialising in the **Research and Development** of long heavy products, located in **Esch-sur-Alzette**.

Among the **specialist sites**, **Dommeldange** is a mechanical workshop incorporating skill centres in engineering, welding, machining and assembly, serving the Belval and Differdange facilities in particular. The **European Logistics Centre** holds a central inventory of beams for Downstream Solutions, ArcelorMittal's distribution network; it also provides logistics for deliveries to Luxembourg plants. Lastly, **Sotel** distributes electricity to the main ArcelorMittal plants in Luxembourg.

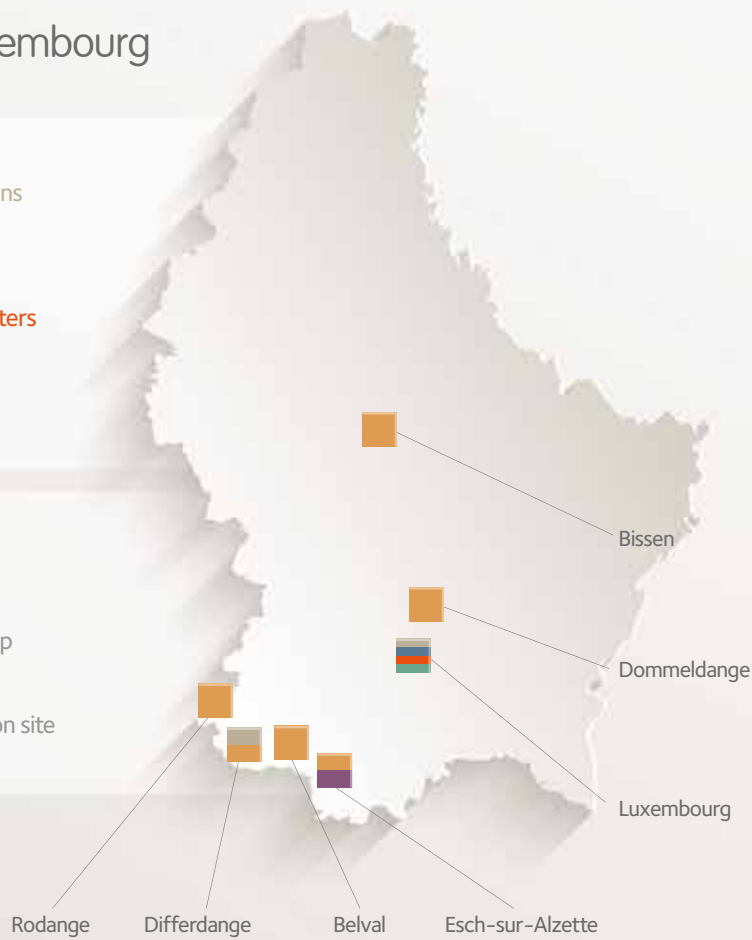
In addition, ArcelorMittal Luxembourg works with the Luxembourg government in **Agora**, a company created in 2000 jointly and equally with the Luxembourg state. Agora's mission is to plan and build a new modern urban district on the former brownfield sites of Belval, covering an area of some 120 hectares. This project, already at an advanced stage, is a world benchmark in the field of brownfield redevelopment. In 2019, Agora launched a town planning competition covering the conversion of the 62 hectares of brownfield at the Schifflange site. From the four submitted, the project by Danish team COBE Architects was chosen by multidisciplinary teams, and an overall master plan was established in 2020. If the proposed project meets the criteria set out in the memorandum, the site will be transferred to the Agora company during its deployment.

To find out more about the ArcelorMittal Group in Luxembourg, visit <http://luxembourg.arcelormittal.com>

## Our sites in Luxembourg

- Downstream Solutions
- Flat Products
- Long Products
- Corporate headquarters
- Global R&D
- Mining

- 2 administrative sites
- 4 industrial sites
- 1 mechanical workshop
- 1 logistics site
- 1 electricity distribution site



### Sheet piling

Produced at the ArcelorMittal **Belval** and **Differdange** sites, they are used to retain earth or water to create quay walls, dikes, underground car parks, tunnels, bridges or roads.



### Beams

They are produced by ArcelorMittal **Belval** and **Differdange** to be integrated in the foundations, structures and/or floors of buildings.



### Rails

They are made by ArcelorMittal **Rodange** to be integrated in public transport systems such as tramways.



### Wire and fibres

ArcelorMittal **Bissen** develops a wide range of solutions for fencing in agriculture and the reinforcement of structures in construction.

# 1.9 million

Tonnes of crude steel produced at our Luxembourg plants in 2020



GRI 102-7 | GRI 102-12 | GRI 102-13

ArcelorMittal Luxembourg is a founding member of “Inspiring More Sustainability” (IMS), a network that supports organisations in their commitment to Corporate Social Responsibility by promoting stakeholder dialogue. In October 2020, ArcelorMittal Luxembourg signed the Lëtzebuerg Diversity Charter.

ArcelorMittal Luxembourg was awarded the Socially Responsible Company label (ESR), renewed until 2021 by the Luxembourg Institute for Sustainable Development and Corporate Responsibility (INDR). This acknowledges that the company promotes a genuine culture of sustainable development.

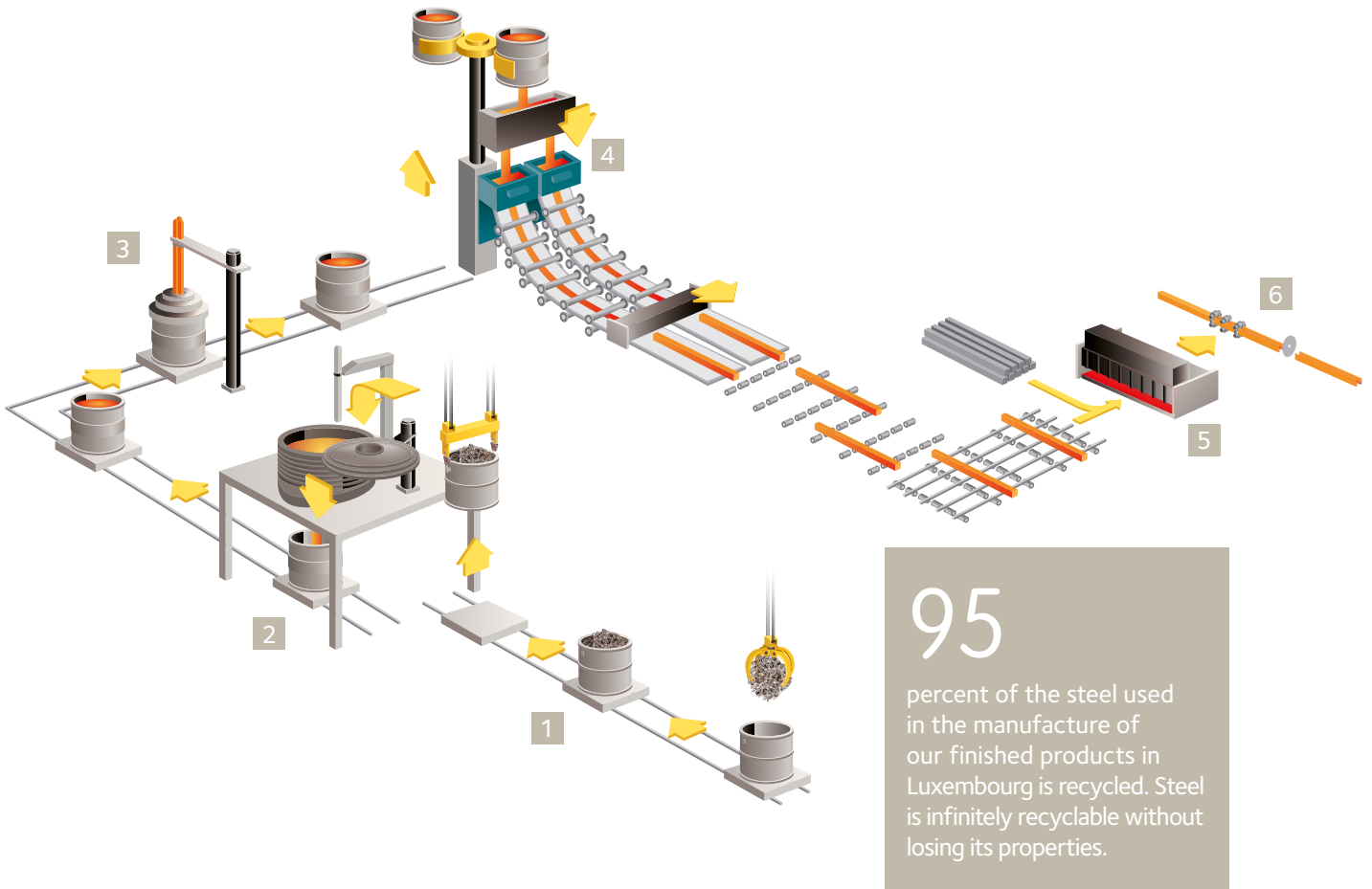
ArcelorMittal Luxembourg is affiliated to the Chamber of Commerce, of which two representatives are elected members of the plenary assembly. Valérie Massin is vice president, and chairs the Training Commission.

Lastly, the steel produced at our Luxembourg sites all benefit from the “Made in Luxembourg” label, a registered trademark since 1984, on the initiative of the Ministry of Foreign Affairs, the Chamber of Commerce and the Chamber of Trades, which identifies the Luxembourg origin of products and services.



Steel poured into the ladle furnace

## Steel produced in Luxembourg: the main stages



### 1 Sorting scrap

Scrap iron, the main raw material, is first transported to the scrap yard. Measuring devices are installed at the site entrance to detect any sources of radiation.

About 15% of the scrap metal comes from internal recycling while the rest is bought from stockists or scrap dealers of various origins: offcuts from processing industries (automobile), used consumer goods (scrap vehicles, household appliances, food or drink cans), steel from building demolitions. The quality of the scrap metal directly influences the quality of steel produced. As such, all loads are tested to pinpoint those elements likely to change the characteristics of the products manufactured, such as tailings (materials that do not contain iron). The scrap metal is then sorted by quality.



### 2 Steelmaking

The scrap metal baskets arrive at the electric arc furnace, where the teams prepare the injections and mixtures required for casting. This is undertaken using the radiation energy of an electric arc, supplemented by the combustion heat of natural gas burners and the addition of anthracite.

The steel is refined by blowing oxygen, and lime is used to form a slag making it possible to capture the undesirable impurities contained in the scrap, which form oxides under the action of oxygen, and bind to the lime. Charcoal injections make this slag foam, thus protecting the upper tank from the electric arc's radiation, and enhancing the transfer of energy to the steel bath.

Filters trap the furnace fumes, supplemented by a quench and activated carbon injection system, making it possible to meet the most stringent environmental standards.



Ladle furnace of Belval

### Grading

In the ladle furnace, the steel is refined thanks to the addition of alloys, which will enable the mechanical properties specified by customers to be reached.

The steel bath is homogenised by combining it with argon, an inert gas which does not react, even at high temperature. Desulfurisation is performed at the same time.

For the full length of the treatment, the steel ladle is kept at the right temperature via a three-phase alternating current running between the steel and three electrodes, placed directly in the steel bath.

5

### Reheating steel

Each rolling mill includes a reheating furnace, in which hot or cold semi-finished products may be placed. Laminating must in fact be carried out hot to ensure quality and productivity. Once it is brought to a given temperature, the steel is gradually transformed as it passes between the rolling rolls, to thus refine its grain and achieve the mechanical properties requested by customers.



Continuous casting at ArcelorMittal Belval

### Casting steel

At the continuous casting stage, the steel is poured into the mould and begins to solidify on contact with the mould which is water-cooled. The skin thickness reaches ten or so millimetres. Upon output from the facilities, the steel is cut by oxycutting according to the length required by the rolling mills.



Rolling stand at the Differdange site.

### Rolling steel

The rolling mill is an industrial facility whereby the thickness of the steel can be reduced, and the product can be shaped to obtain beams, angles or sheet piles.



### Finalising orders

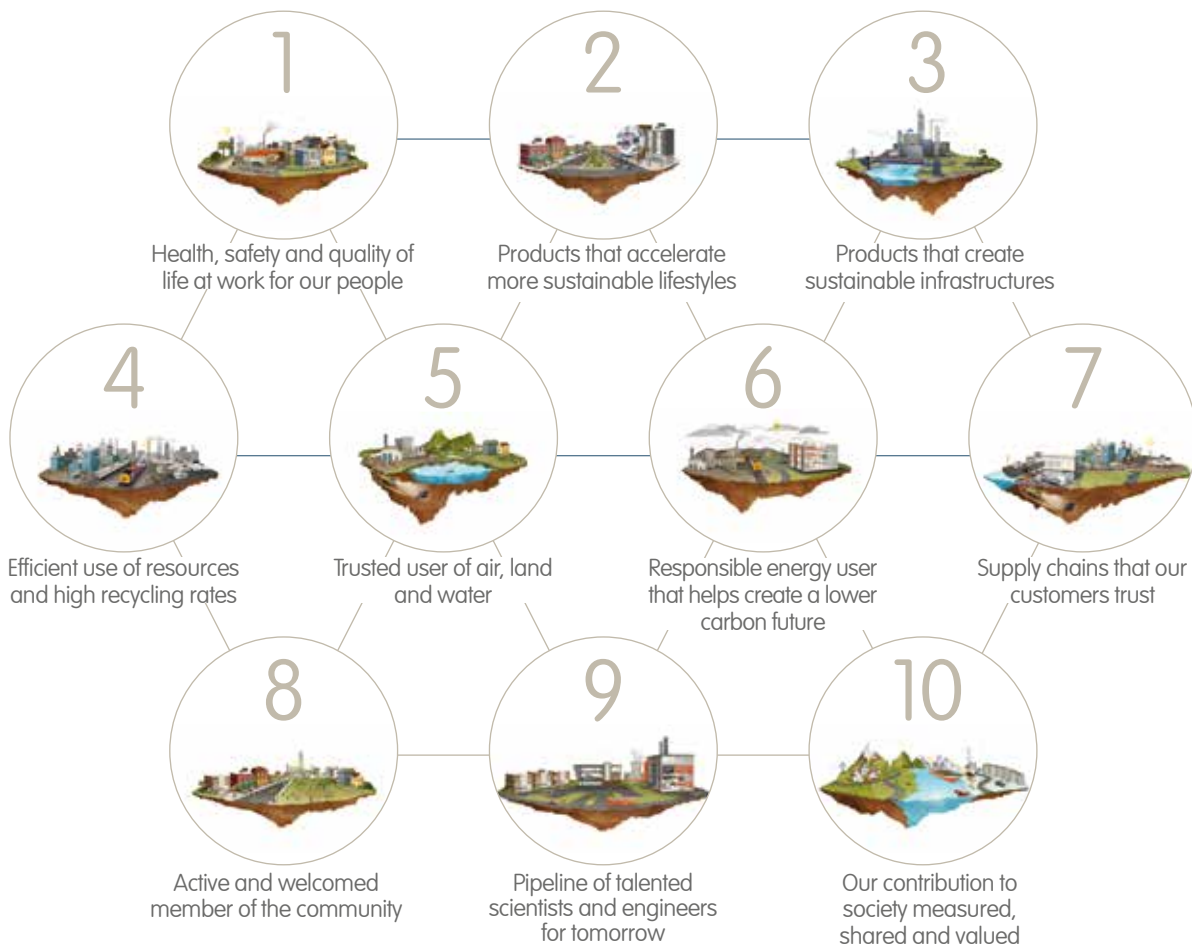
After cooling, the product is straightened and cut into commercial lengths, prepared prior to shipment to customers or intermediate users.

For more information, see our website <https://luxembourg.arcelormittal.com/rubrique> ArcelorMittal in Luxembourg tab > Our products

# Strengthening our sustainable development strategy

Since 2010, ArcelorMittal has published a sustainable development report that sheds light on its activities in Luxembourg. In 2015, we adopted the Group approach based on **10 key challenges**, according to the impacts and priority expectations of ArcelorMittal’s main global stakeholders, supported by transparent corporate governance.

These ten themes have so far structured our approach and our actions, with the aim of continuously improving our performance.



A sustainable development committee was set up in 2015 to manage the approach in Luxembourg. It brings together top managers and industrial site managers, with advice from various internal experts.

In order to professionalise our sustainable development approach, in late 2017 this committee decided to undertake an in-depth review to help determine which topics were

deemed material, thus considered to have both a significant economic, social or environmental impact and an influence on the evaluation or the decisions of our stakeholders.

With the help of the consultancy KPMG Luxembourg, ArcelorMittal Luxembourg conducted an impact study and a consultation with its main internal and external stakeholders.

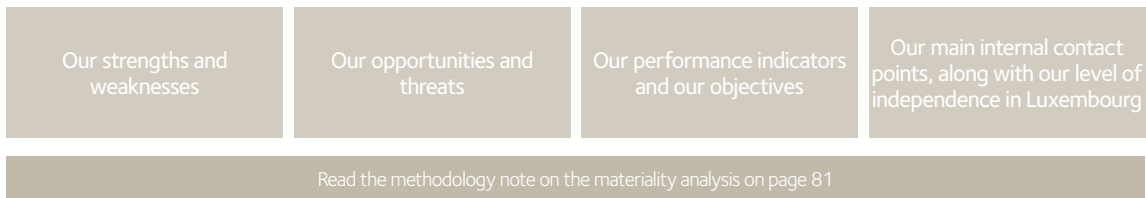
From its materiality analysis, six priority subjects emerged:



Three subjects also stood out in importance for ArcelorMittal and its stakeholders:

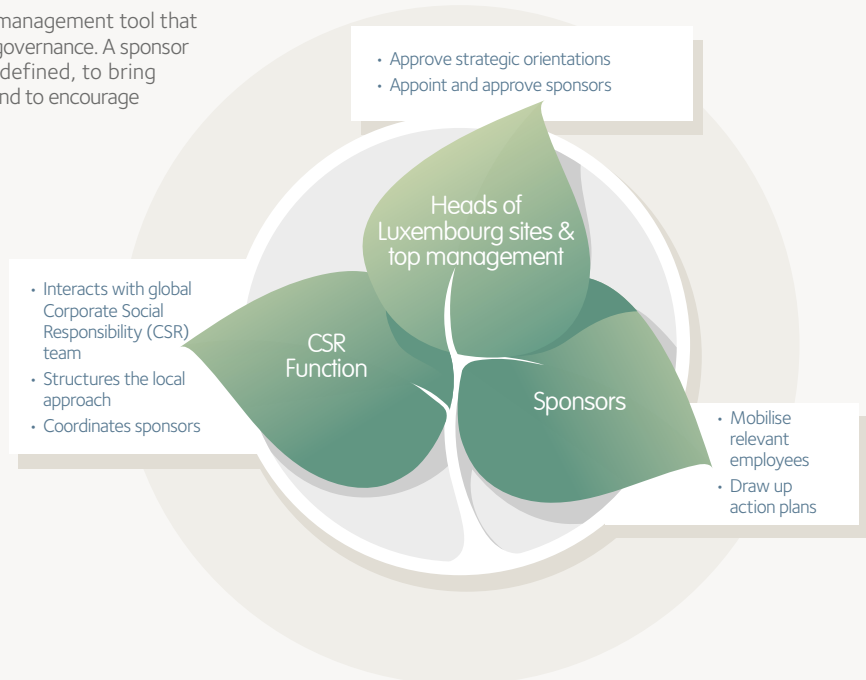


Approved at the end of March 2018, this analysis was then supplemented by an inventory of each material topic with the relevant experts. It helped to highlight:













































We thus aim to make CSR a genuine management tool that must be supported by more effective governance. A sponsor system for each material issue was defined, to bring together the various sectoral experts and to encourage change.

In 2019, the sustainable development committee validated the implementation of an action plan to be carried out under the guidance of ambassadors identified for this purpose. **In 2020, the implementation and dissemination of this CSR culture in each ArcelorMittal Luxembourg entity was placed on the agenda, to allow stakeholders to appropriate the themes and actions to deploy in order to fill any gaps in existing systems. Achievement of this objective was postponed, due to the Covid-19 pandemic which impacted the company's business in the Grand Duchy.**



That said, the principle remains to gradually orient our approach, one that we would like to be more integrated, by reflecting on the monetisation of our external features, be they positive or negative, to gain a more tangible view of the economic, environmental and social benefits of our CSR approach.

To enable you to put local priorities into perspective alongside the Group's key issues in the international framework of the United Nations Sustainable Development Goals for 2030, the following correlation table is provided.

	Innovation	Competitiveness	Health and safety of our employees	Environmental compliance	Operational performance	Greenhouse gases and other emissions	Circular economy	Rehabilitation of industrial sites	Economic value created and distributed	Contribution ODD
1 	Health, safety and quality of life at work for our people		✓		✓					 
2 	Products for sustainable lifestyles	✓					✓			
3 	Products for sustainable infrastructures	✓					✓			   
4 	Efficient use of resources			✓	✓	✓	✓			
5 	Trusted use of air, land and water			✓			✓			     
6 	Responsible energy user for a low-carbon future			✓		✓	✓			     
7 	Supply chain that our customers trust				✓					  
8 	An active role within our communities							✓		     
9 	A pipeline of talented scientists and engineers for the future	✓	✓		✓					 
10 	Shared, valued contribution to society		✓					✓	✓	 
	Ensuring transparent governance	✓	✓	✓	✓	✓	✓	✓	✓	

The correlation table helps to show our existing commitment to topics deemed material. As a responsible company, ArcelorMittal Luxembourg also contributes to the United Nations Sustainable Development Goals by 2030.

# Engaging with our stakeholders

Our sustainable development actions only make sense if they reflect both our challenges and those of our stakeholders. This implies perfect knowledge of our stakeholders, and of the direct and indirect influence that we have. Genuine ways to be involved already exist as seen in the table below, ranging from information to the inclusion of certain stakeholders in our governance process.

In late 2017, our main stakeholders were consulted as part of our materiality analysis so as to better understand our economic, social and environmental impacts and their influence. We are now deepening our relationships and commitment to some of them, to work together more effectively on our common challenges earmarked as priorities. The Responsible Steel™ approach, which is the subject of an audit started in 2019 still currently underway, further supports this work of integrating our stakeholders in the conduct of our operations.

We also plan to update our materiality matrix in 2023.

	Employees and trade unions	Local communities	Government, Administrations and Public Authorities	Customers	Suppliers	Investors and Partners	Media
Stakeholder challenges	Safety Health and well-being Working conditions Remuneration Career development Attracting high potential employees and developing skills Work-life balance Operational excellence Environment Employee engagement	Community engagement processes Environmental concerns Social and economic development Attracting high-potential employees Donations Innovation	Competitiveness Investments Employee management Environmental engagement Social engagement Climate change Changes in environmental regulations	Product reliability and quality Innovative, competitive and sustainable products Effective use of resources Compliance with social and ethical standards Competitive prices Reducing our carbon footprint	Responsible sourcing Operating performance Product quality Business ethics	Results and performance Competitiveness Investments Efficiency Sustainability Employee health and safety	Quick access to reliable information Identified contact point within our company to answer different requests (interviews with top management and experts, documentary, etc.) Input on economic, social and environmental topics (corporate strategy, earnings release, innovation, local activities, industrial wasteland reconversion, steel market)
Our engagement	In-house magazine, intranet and brochures, posters, TV screens, special offers for employees, etc. Organising internal & external events Team building Volunteering Team meetings Conferences and thematic campaigns Training and learning ArcelorMittal Luxembourg S.A. Board of Directors under shared management with the directors representing the employees and unions	Common projects and long-term cooperation with communities Communication on the development of our activities and responses to questions Strengthening links with communities Regular meetings and dialogue with communities	Attendance at conferences Regular discussions and meetings Plant visits Participation in trade missions and official visits	Customer events Fairs Links with research institutions and partnerships for product development Surveys Code of Ethics and Human Rights Plant visits	Regular meetings Dialogue, surveys and questionnaires Code of Ethics and Human Rights	Transparency of information Regular meetings and dialogue Plant visits	Media relations manager Visit of plants Press conference on general and specific topics Invitation to press trips organised by the Group Communication plan dedicated to the new headquarters
Our goals	Ensuring a safe, attractive working environment Valuing our employees as they are central to our company Promoting social harmony	Maintaining close, trusting relationships with communities Supporting local and regional economic development	Promoting a level playing field in trade Contributing to growth through taxes, contributions and product innovation	Creating sustainable products at a fair price Ensuring a reliable value chain Strengthening long-term relationships	Complying with responsible sourcing requirements Making the supply chain more reliable Ensuring the quality of products and services supplied Promoting a policy of fair competition and ensuring fair payment conditions	Aiming for sustainable growth and positive results Delivering profit	To be acknowledged as a modern and collaborative company Build a positive reputation supported by ArcelorMittal's commitment in Luxembourg (social, environmental, economic)

# Our performance in 2020

Our performance is monitored using key indicators which aim to reflect the specific features of our business. These aim to evolve in order to support the emphasis given to the strategic priorities identified in our materiality analysis.

Key	Indicators	2018	2019	2020	
1 - Health, safety and quality of life at work for our employees	<b>Lost-time injury frequency rate</b> Number of injuries resulting in lost time of more than one day, suffered by our own staff, our sub-contractors and our temporary staff during a 12-month period, per million hours worked.	0.56	0.78	0.30	
	<b>Number of fatalities</b>	1	1	0	
	<b>Number of OHSAS 18001 certified sites</b> The norm sets out the organisational requirements for the occupational Health and Safety management system. This approach, based on continuous improvement, increases efficiency and reduces risks and accidents.  The British Standard Occupational Health and Safety Assessment Series (BS OHSAS 18001), published in 1999 and superseded in 2018 (publication of ISO 45001), was a model occupational health and safety management system (OHSMS). OHSAS 18001 no longer exists and was replaced by ISO45001:2018. AMBDR is no longer OHSAS certified since its ISO 45001 certification in October 2019. This indicator will be removed for the next report.	6 out of 7	6 out of 7	0 out of 7 <i>(standard reference changed)</i>	
	<b>Number of ISO 45001 certified sites</b> The norm sets out the organisational requirements for the occupational Health and Safety management system.  The Belval, Differdange, Rodange and Dommeldange sites are ISO 45001 certified. Bissen and AMCLE are in transition.		3 out of 7	4 out of 7	
	<b>Number of employees</b> as of 31 December 2019 in headcount	3,794	3,786	3,695	
	<b>Total training hours</b> for our employees, temporary employees, and subcontractors  The reduction in activity due to the health crisis is at the origin of the decrease recorded in 2020 on this criterion.	129,477	120,052	88,200	
	<b>Number of young people welcomed by our Luxembourg entities</b> gathering apprentices, interns and international work experience volunteers  39 internships were cancelled due to the pandemic between March and July 2020.	219	224	161	
	<b>Number of training courses offered to all employees</b>	414	496	488	
	<b>Percentage of employees covered by a collective agreement</b>	74%	74%	74%	
	<b>Total number of employees who have taken parental leave, by gender</b>	93 63 men and 30 women	128 98 men and 30 women	131 104 men and 27 women	
	<b>Number of employees who have left the company in the year following their return to work after parental leave, by gender</b>	2 men, 3 women	4 men, 2 women	0	
	<b>Percentage of working day lost due to social disputes</b>	0	0	0	
	<b>Total number of employees by employment contract and by gender</b>	<b>2020</b>	Female	Male	Total
		CDD	12	63	75
		CDI	510	3,110	3,620
		Total Luxembourg	522	3,173	3,695
		<b>2019</b>	Female	Male	Total
		CDD	9	66	75
		CDI	528	3,183	3,711
Total Luxembourg		537	3,249	3,786	
<b>2018</b>		Female	Male	Total	
CDD		14	68	82	
CDI	502	3,210	3,712		
Total Luxembourg	516	3,278	3,794		
<b>Total number of employees by gender</b>	<b>2020</b>	Female	Male	Total	
	Full-time	404	3,165	3,489	
	Part-time	118	88	206	
	Total	522	3,173	3,695	
	<b>2019</b>	Female	Male	Total	
	Full-time	421	3,165	3,586	
	Part-time	116	84	200	
	Total	537	3,249	3,786	
	<b>2018</b>	Female	Male	Total	
	Full-time	378	2,873	3,151	
	Part-time	138	405	543	
	Total	516	3,178	3,794	

\* This indicator will be removed in 2021.



Key	Indicators							
1 – Health, safety and quality of life at work for our employees	Total number of employees by age	2020	Female	Male	Total			
		<30	43	223	266			
		30/50	360	1,923	2,283			
		>50	119	1,027	1,146			
		total	522	3,173	3,695			
		2019	Female	Male	Total			
		<30	56	239	295			
		30/50	361	1,103	2,329			
		>50	120	9	1,162			
		total	537	1,351	3,786			
		2018	Female	Male	Total			
		<30	48	248	296			
		30/50	356	1,985	2,341			
		>50	112	1,045	1,157			
		total	516	3,178	3,794			
Total number of employees by nationality	Nationalities	2018	2019		2020			
		Number of employees	%	Number of employees	%	Number of employees	%	
		French	2,061	54	2,093	55	2,084	56
		Luxembourg	694	18	632	17	569	15
		Belgian	381	10	367	10	366	10
		Portuguese	142	4	148	5	142	4
		Italian	94	2	94	2	88	2
		German	81	2	77	2	74	2
		Romanian	47	1	53	1	50	1
		Indian	45	1	56	1	57	2
		Spanish	44	1	46	1	45	1
		55 other	205	5	220	6	220	6
		Total	3,794	100	3,786	100	3,695	100

Key	Indicators	2018	2019	2020
2 – Products that accelerate more sustainable lifestyles 3 – Products that create sustainable infrastructure	<b>Research &amp; Development expenditure</b> Amount in k€ – R&D center of Esch/Alzette	3,271	3,480	2,079
	The level of R&D expenditure is clearly decreasing. The health crisis and its economic consequences have led to a pronounced slowdown in our order and billing cycles for research activities carried out with our suppliers, subcontractors and academic partners.			

Key	Indicators	2018	2019	2020
4 – Efficient use of resources and high recycling rates	<b>Tonnes of materials used in the production process</b> (scrap, used tyres, lime, etc.)	2,674,883	2,516,519	2,271,933
	<b>Percentage of by-products recovered per tonne of waste generated</b> Quantity of operating waste such as black slag, calamine, etc. from steel production, returned to a recovery process rather than a disposal process. *The 2019 figures have been adjusted to 75.9% instead of 87.2%.	81.2 %	75.9 %*	79.1 %
	<b>Percentage of recycled materials in the production of crude steel casting</b> Proportion of scrap and used tyres put into the furnace during steel production. Scrap represents the vast majority of it.	95.1 %	95.1 %	94.8 %
	<b>Tonnes of recycled scrap</b> The reduction in activity due to the health crisis is at the origin of the decrease recorded in 2020 on this criterion.	2,541,268	2,389,750	2,151,055
	<b>Tonnes of CO<sub>2</sub> avoided due to using scrap in comparison with an integrated route</b> (blast furnaces) The reduction in activity due to the health crisis is at the origin of the decrease recorded in 2020 on this criterion.	3,303,649	3,106,675	2,796,372

Key	Indicators	2018	2019	2020
5 – Trusted user of air, water and soil	<b>Dust emission (g/tCS)</b> Grammes per tonne of crude steel (tCS: tonne Crude Steel) Additional increased maintenance work on the dust collection facilities may explain this variation.	8	9	6.55
	<b>Water withdrawal (m3/tCS)</b> Cubic meter per tonne of crude steel (tCS: tonne Crude Steel)	0.34	0.79	0.68
	<b>Surface water</b>	0.07	0.06	0.02
	<b>Piped water</b>	0	0	0
	<b>Ground water</b>	0.27	0.27	0.15
	<b>NOx emissions (g/tCS)</b> Grammes per tonne of crude steel (tCS: tonne Crude Steel) Factories are conducting tests and research into lower NOx and the reduction in activity due to the health crisis is responsible for the decrease in 2020 on this criterion.	264	270	195
	<b>SOx emissions (g/tCS)</b> Grammes per tonne of crude steel (tCS: tonne Crude Steel)	101	99	99
	<b>Water discharge (m3/tCS)</b> Cubic meter per tonne of crude steel (tCS: tonne Crude Steel)	0.57	0.51	0.69
	<b>Percentage of waste disposed of in landfills</b>	18.1 %	24.1 %	20.9 %
<b>Fines received for non-compliance with environmental legislation and regulations</b> Amount and number of non monetary fines	0	0	0	

Key	Indicators	2018	2019	2020
6 – Responsible energy user that helps create a lower carbon future	<b>Energy consumption (GJ/tCS)</b> Gigajoules per tonne of crude steel (tCS: tonne Crude Steel) The evolution is mainly related to the fact that electricity is sourced green.	8.68	8.76	8.96
	<b>CO<sub>2</sub> emissions per tonne of crude steel (kg CO<sub>2</sub>/tCS)</b> Kilogram per tonne of crude steel (tCS: tonne Crude Steel)	300	289	272
	<b>Direct emissions (Scope 1 set by the GreenHouse Gas protocol)</b> corresponding to the CO <sub>2</sub> directly emitted by the furnaces	179	180	186
	<b>Indirect emissions (Scope 2 set by the GreenHouse Gas protocol)</b> corresponding to the CO <sub>2</sub> emitted to generate the energy consumed: electricity and heat (hot water, steam)	77	65	42
	<b>Other indirect emissions (Scope 3 set by the GreenHouse Gas protocol)</b> corresponding to CO <sub>2</sub> emissions from products used in our workshops such as quicklime and industrial gases (oxygen, nitrogen)	44	44	44
	<b>ISO 14001 certified facilities</b> The standard covers environmental management. It is based on the principle of continuous improvement in environmental performance by controlling the impact associated with company activities. The Belval, Differdange, Rodange and Dommeldange sites are certified.	4 out of 7	4 out of 7	4 out of 7
	<b>ISO 50 001 certified facilities</b> The standard covers energy management. The Belval, Differdange, Rodange and Dommeldange sites are certified.	3 out of 7	3 out of 7	3 out of 7

Key	Indicators	2018	2019	2020	
7 – Supply chains that our customers trust	<b>Electricity</b>	77,830,000 Germany: 4 % Belgium: 7 % France: 89 %	67,710,000 Germany: 4.2 % Belgium: 3.4 % France: 92.5 %	64,018,000 Germany: 3.5 % Belgium: 8.2 % France: 88.3 %	
	<b>Gaz</b>	In the case of natural gas, prices fell sharply as a result of Covid-19 to unprecedented levels. Consumption is also down for the same reasons. For electricity, lower market prices due to the pandemic and also lower consumption especially in Q2 2020.	38,471,000 Germany: 0 % Belgium: 100 % France: 0 %	29,364,000 Germany: 0 % Belgium: 100 % France: 0 %	17,120,000 Germany: 0 % Belgium: 100 % France: 0 %
	<b>Sourcing via local suppliers amount in k€</b>	The connection to Belgium became operational again on 23 July 2020 and part of the loads were transferred back to Belgium.	Total: 116,301,000 Germany: 2.5 % Belgium: 38 % France: 59.5 %	Total: 97,074,000 Germany: 2.9 % Belgium: 32.6 % France: 64.5 %	Total: 81,138,000 Germany: 2.77 % Belgium: 27.58 % France: 69.65 %
	<b>Transport &amp; logistics</b>	The figures have been recalculated according to a new model for the years 2015 to 2018. There are two additional countries in 2020 GB, CH (original pits).	Total: 107,974,433 Luxembourg: 58 % Belgium: 29 % Germany: 2 % Austria: 4 % France: 2 % Others: 5 %	Total: 112,059,968 Luxembourg: 59 % Belgium: 28 % Germany: 2 % Austria: 4 % France: 2 % Others: 5 %	Total: 98,226,181 Luxembourg: 59 % Belgium: 26 % Germany: 3 % Austria: 5 % France: 2 % Others: 5 %
	<b>Number of suppliers assessed for their environmental and social impacts</b>	All of our suppliers are required to ratify the ArcelorMittal Responsible Sourcing Code. Each year we carry out an in-depth evaluation of a sample of suppliers. The 2020 assessment campaign has been postponed in view of the health situation.	53	54	0

Key	Indicators	2018	2019	2020
8 – Active and welcomed member of the community	<p><b>ArcelorMittal Luxembourg donations</b> Amount in € representing the projects sponsored, including STEM projects.</p> <p>Support for the Schalssgoart Gallery has been postponed to 2021. In 2019, support for the construction of the Expo Dubai pavilion inflated the amount of donations.</p>	363,050	1,006,654	339,300

Key	Indicateurs	2018	2019	2020
9 – Pipeline of talented scientists and engineers for tomorrow	<p><b>Amount invested in STEM (science, technology, engineering, mathematics) projects</b></p> <p>From 2020 onwards, donations to student associations on the sites are included in the reported amounts.</p>	172,500	212,500	215,500

Key	Indicators	2018	2019	2020
10 – Our contribution to society measured, shared and valued	<p><b>ArcelorMittal's economic contribution to Luxembourg</b> Payroll (pay and employer contributions) allocated to ArcelorMittal employees in Luxembourg, and expenditure to our suppliers and subcontractors in Luxembourg for their services.</p> <p>The decrease is explained by the amount of the wage bill which is much lower than last year (2019 = €304,778,192.40) for several reasons:</p> <ul style="list-style-type: none"> <li>• The LTC contribution was included in the total last year, but it is an employee contribution, not an employer contribution, so it should be excluded. The amount of this contribution last year was €3,677,478.15</li> <li>• Wages and contributions are reduced due to partial unemployment in 2020</li> <li>• Wages and contributions are also reduced as a result of the NHF taking over from the 1st day of illness between 01/04/2020 and 30/06/2020.</li> </ul>	490,086,755	500,640,678	435,098,709

Key	Indicators	2018	2019	2020
Ensuring transparent governance	<p><b>Number of complaints received by the Internal Audit service</b> These complaints relate to internal shortcomings identified by employees concerned to uphold ArcelorMittal's reputation for honesty and integrity.</p> <p>Three complaints were received in 2020 in relation to the «Luxembourg steel sites» alert system concerning honesty and integrity.</p>	4	0	3
	<p><b>Percentage of employees trained in the Code of Business Conduct</b> The ArcelorMittal Code of Business Conduct provides a set of guidelines to be followed by all employees when conducting their business. The aim is to uphold ArcelorMittal's reputation for honesty and integrity in its management practices as well as in all business transactions.</p> <p>Training on the Code of Ethics is mandatory and valid for three years. Before the end of this period, all employees must renew their training certificate. To keep all these certificates up to date, we have to anticipate employee turnover, training revalidation constraints or long-term absences.</p> <p><i>* Please note that, exceptionally, the 2020 data only concern the following sites: AOB, Belval, Differdange, Dommeldange, Rodange, Bissen and ArcelorMittal Europe – Flat Products EPO. The year 2020 cannot be compared to previous years.</i></p>	93.66 %	93 %	95.7 % *
	<p><b>Percentage of employees trained in Human Rights</b> ArcelorMittal has published a comprehensive policy on Human Rights, in order to coordinate the group's efforts as a whole, focusing on the priority areas identified.</p> <p>Human rights training has been mandatory for certain functions and for all management staff since September 2016 and is valid for three years. Before the end of this period, the employees concerned must renew their training certificate. To keep all these certificates up to date, we have to anticipate employee turnover, training revalidation constraints or long-term absences.</p> <p><i>* Please note that, exceptionally, the 2020 data only concern the following sites: AOB, Belval, ArcelorMittal Differdange, Dommeldange, Rodange and Schifflange, Bissen and ArcelorMittal Europe – Flat Products EPO. The year 2020 cannot be compared to previous years.</i></p>	92.72 %	97 %	86.4 % *

# Key Issue 1 : Safe, healthy, quality working lives for our people



## Safety

Our aim is to provide a professional environment for our employees and subcontractors in which everyone can work in complete safety. This is our number-one priority. In line with our corporate culture, the goal of Zero Accidents is of daily concern to our teams and management. ArcelorMittal sites in Luxembourg are mainly industrial, and are particularly complex environments. The activities undertaken within these vast infrastructures involve a variety of security issues. ArcelorMittal has set itself an ambitious goal, of being the world's safest steel and mining company.

Indicators	2018	2019	2020
<b>Lost-time injury frequency rate</b> Number of injuries resulting in lost time of more than one day, suffered by our own staff, our sub-contractors and our temporary staff during a 12-month period, per million hours worked.	0.56	0.78	0.30
<b>Number of fatalities</b>	1	1	0
<b>Number of OHSAS 18001 certified sites</b> The norm sets out the organisational requirements for the occupational Health and Safety management system. This approach, based on continuous improvement, increases efficiency and reduces risks and accidents.  The British Standard Occupational Health and Safety Assessment Series (BS OHSAS 18001), published in 1999 and superseded in 2018 (publication of ISO 45001), was a model occupational health and safety management system (OHSMS). OHSAS 18001 no longer exists and was replaced by ISO45001:2018. AMBDR is no longer OHSAS certified since its ISO 45001 certification in October 2019. This indicator will be removed for the next report.	6 out of 7	6 out of 7	0 out of 7 <i>(standard reference changed)</i>
<b>Number of ISO 45001 certified sites</b> The norm sets out the organisational requirements for the occupational Health and Safety management system.  The Belval, Differdange, Rodange and Dommeldange sites are ISO 45001 certified. Bissen and AMCLE are in transition.		3 out of 7	4 out of 7

\* This indicator will be removed in 2021.

## Our path to a safety culture

Safety management is based on various pillars, which we use to create a strong internal culture:

### Safety organisation

A corporate team is dedicated to health and safety management on all sites and defines the main lines of the safety approach based on feedback from the field. One manager per site is dedicated to safety and coordinates a network of safety correspondents assigned to different areas for the main sites in Belval, Differdange and Rodange.

Various committees are held regularly to guarantee the upward and downward flow of information to each level. Their mission is to analyse potential risks and actual accidents; then to implement corrective and preventive measures. A safety committee (COSEC), responsible for safety, was set up in 2020 at the Dommeldange site. It convenes on a monthly basis, and ensures that information on safety, quality and the environment is provided in both directions. The actions to be taken are defined in the Dommeldange Master Plan.

### Procedures, standards and performance monitoring

The procedures and standards set up within its operations, in line with the most stringent international standards, are regularly audited by independent organisations, specifically with regard to OHSAS 18001 certifications, and more recently ISO 45001. ArcelorMittal also has its own safety standards and audits:

- The FPS (Fatality Prevention Standards) are procedures that contain the basic safety rules to be applied in the field for all sites.

- FPA (Fatality Prevention Audit) based on field audits to verify the application of the 11 FPS. The questionnaires are reviewed periodically, incorporating actions arising from the latest accidents in the group. Structured over six levels, sites must climb the ladder year-on-year to achieve excellence: at Level 5 for the 11 FPAs.
1. Belval: Level 5 for the 11 FPAs achieved in May 2019
  2. Differdange: in November 2019: level 5 for 10 FPAs and level 3 for 1 FPA with only 1 open question to obtain level 5
  3. Rodange: level 3 - 1 open question
  4. Bissen: Level 3 - 9 open questions (2019 information)
  5. AMCLE: level 2 - ok, level 3 - 16 open questions

6. Dommeldange: 9 FPAs and 2 not involved, level 5 for 4 FPAs; level 4 for 2 FPAs; level 3 for 2 FPAs; level 1 for 1 FPA

### Awareness, training and collective mobilisation programmes

Training plays a key role in building a safety culture. It consists of a technical training component, specifically focused on the most high-risk operations such as working at height, electrical maintenance or handling, along with a training component on behaviour.

In fact, the establishment of a safety culture aims above all to have an influence on the ways of doing and thinking widely shared by all players in an organisation, from management to field staff. Linked to the Bradley curve, the maturity of this culture differs depending on the ArcelorMittal site in Luxembourg:

1. Belval: independent level
2. Differdange: independent level (2019 information)
3. Rodange: independent level
4. Bissen: dependent level (2019 information)
5. ArcelorMittal Centre Logistique Européen (AMCLE): dependent level
6. Dommeldange: independent level

At the ArcelorMittal Belval, Differdange and Rodange (AMBDR) level, quarterly meetings are held for all the FPS, which allow the pilots of the different sites to meet and exchange information about the difficulties and the solutions found. It is also a way to move beyond the independence of the Bradley curve to interdependence.

The Dommeldange site organises its training, awareness-raising and mobilisation independently.

**The Take Care training course**, a 10-year health and safety programme, will be rolled out in three phases at all ArcelorMittal operational sites in Europe, and aims to provide the keys to changing attitudes and behaviour. The first stage, focusing on self-knowledge, consolidation in the field and making improvements sustainable, was rolled out at Belval, Differdange, Rodange, Bissen and Dommeldange in 2017. This first stage was completed at all these sites in 2018. 2019 marked a turning point in the programme's implementation. It is more focused on the active participation of employees and will eventually reach the 'Interdependence' phase of the collective-based Bradley curve.

For AMBDR, the training is due to complete the first 10 days by the end of 2022. This will bring the second stage of TCT to a close. One of the developments we should achieve by day 10 is «the present moment» i.e. how to de-programme our brain from the habits established during repetitive work.

Dommeldange finished day 7 of phase 2 of the Take Care programme at 91.67%. The sessions will start in May 2021 and aim to have 100% of staff trained by the end of the year and to complete the first 10 days by the end of 2022.

A total of 20 days of training will be provided for each employee by the end of the programme.

## The «Maturity Project»

This is a multidisciplinary approach created at the end of 2013 to achieve sustainable improvements in health and safety performance. The Belval site focused specifically on the notion of culture in 2013. It then developed the «Maturity Culture» programme in 2016 to identify and educate staff on the key elements for improvement. In 2020, «maturity» interviews were carried out by the Health Department, with a sample of employees from each department, in order to monitor and develop the maturity culture. The synthesis of the results and output per

site will be carried out in 2021. The support of foremen, by people certified per department, in their field audits in order to improve quality is one of the continuous actions carried out within the framework of «Refresher-mastery accreditation»:

Due to the Covid-19 situation, certain actions were postponed to 2021 depending on the development of the health situation.

«Refresher-Mastery accreditation» is an 8-hour process communication training course.

Process communication (PCM) is a communication and management tool that allows you to:

- Be more aware of your strengths, understand your reactions
- Manage energy and stress more effectively
- Know / understand your discussion partners better
- Adapt your management style
- Know how to motivate and appreciate
- Manage conflicts

## Validation in 2020 of the integration of the «present moment» project in TCT2 day 10

An analysis will be carried out in 2021 with the safety team to examine how this topic can be integrated into the Take Care Training (TCT) day 10. The aim is to prevent accidents related to a lack of attention (which accounts for about 44% of accidents) and to develop a strategy for being able to concentrate on the risks, especially at strategic moments of the work activity (here the focus is on repetitive, routine tasks). This concept will also allow us to seek work phases that favour automation and free the mind for other activities, and to target potential risks and look for solutions to draw attention in the moment to these present risks, and finally to propose a cognitive-behavioural learning method that will allow us to integrate these solutions into the usual approach.

In addition to the Take Care training course, various initiatives were

developed and introduced at the Luxembourg sites in 2020 to improve the maturity of the safety culture.

In 2020, a specific risk analysis was developed to take into account the global Covid-19 pandemic. This completed the set of measures that had been put in place in March to allow the restart of the factories as quickly as possible, with priority given to the health safety of our staff coming to work at the AMBDR sites.

For the Dommeldange site, a specific risk analysis was developed to take into account the global Covid-19 pandemic. This allowed us to complete the set of protective measures to facilitate the return to service of the workshop as quickly as possible, giving priority to the health and safety of our staff. In the risk reassessment action plan, a column has been added which includes the specific protective measures for Covid-19.

Safety management also involves cross-functional collective mobilisation programs, such as the 5S continuous improvement programs (Seiri, Seiton, Seiso, Seiketsu, Shitsuke), WCM (World Class Manufacturing) and GESIM (Grouping of Steel and Metallurgical Companies). These focus on optimising the working environment and are subject to constant efforts at every one of our industrial sites.

### New risk analysis sheet

Establishment of a HIRA5/TOP sheet that allows for a risk analysis before starting a job, in a transversal way on AMBDR. This is a first step towards the standardisation of instructions across the Belval, Differdange and Rodange sites. There are several advantages to this implementation: it makes it easier to maintain the instructions over time and it is much clearer for all the people working transversally on AMBDR, mainly including subcontractors.

From April to December 2020, AOB, PETRUSSE and AMBDR distributed:

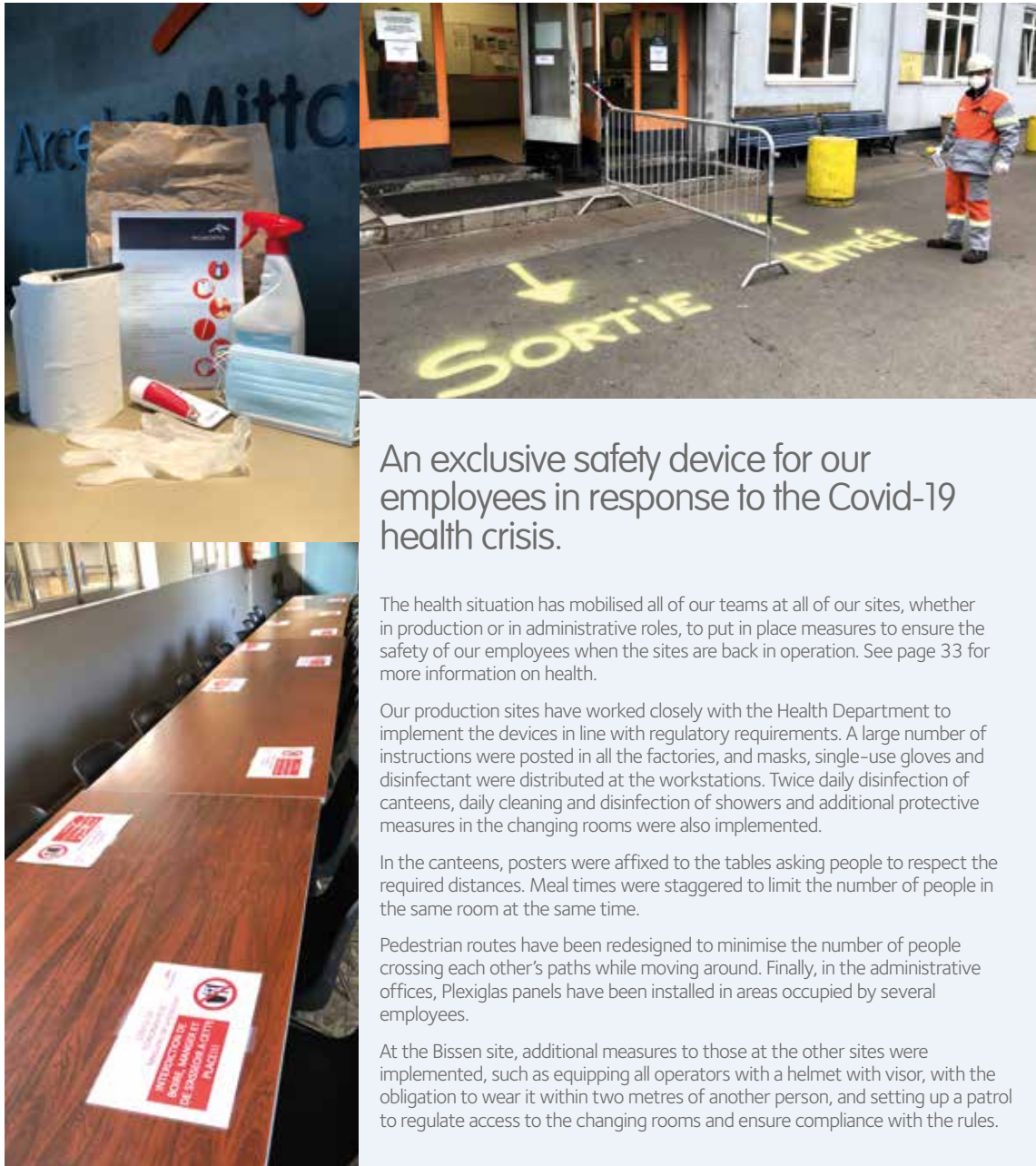
- 439,900 masks
- 1,055 kits containing masks, hydroalcoholic gel, gloves, etc.

And more specifically for AOB

- Hydroalcoholic gel:
  - 1,088 500 ml bottles
  - 827 250 ml bottles
- 70,000 latex gloves
- 1,246 kits (cooler and thermos)

Dommeldange :

- Orders of 500 surgical masks per week.
- Distribution of +/-500 pairs of latex or silicone gloves
- Installation of 15 hydroalcoholic gel dispensers at strategic points



## An exclusive safety device for our employees in response to the Covid-19 health crisis.

The health situation has mobilised all of our teams at all of our sites, whether in production or in administrative roles, to put in place measures to ensure the safety of our employees when the sites are back in operation. See page 33 for more information on health.

Our production sites have worked closely with the Health Department to implement the devices in line with regulatory requirements. A large number of instructions were posted in all the factories, and masks, single-use gloves and disinfectant were distributed at the workstations. Twice daily disinfection of canteens, daily cleaning and disinfection of showers and additional protective measures in the changing rooms were also implemented.

In the canteens, posters were affixed to the tables asking people to respect the required distances. Meal times were staggered to limit the number of people in the same room at the same time.

Pedestrian routes have been redesigned to minimise the number of people crossing each other's paths while moving around. Finally, in the administrative offices, Plexiglas panels have been installed in areas occupied by several employees.

At the Bissen site, additional measures to those at the other sites were implemented, such as equipping all operators with a helmet with visor, with the obligation to wear it within two metres of another person, and setting up a patrol to regulate access to the changing rooms and ensure compliance with the rules.

*“The site was completely cleaned and disinfected during the shutdown. At the restart, regular disinfection measures were put in place in all departments and rounds were staggered to avoid crowding. Wearing a visor has become compulsory if the two-metre distance cannot be ensured”*

**Nuno Rebello**, Team Leader Fibres/Covid 19 Patroller in Bissen

*“Being in charge of facility management is not easy at the moment, as we have to adapt our support to the needs of the building’s occupants, keeping in mind their safety as well as our own. We spend time explaining our actions and the rules to be respected for the well-being of all”*

**Richard Vigneron**, Facility Management Manager at Petrusse.

*“At ArcelorMittal University, the health crisis caused by Covid-19 was also an ideal opportunity to further develop our digital offer and overcome the reluctance to use this training method, which is just as effective as face-to-face trainings. Several programmes were made available in virtual mode and we were also able to strengthen our online offering for the benefit of all those who wished to continue to develop during these difficult times”*

**Imane Jelloule**, Head of Operations ArcelorMittal University

## Quality management at ArcelorMittal in Luxembourg

The quality management department is responsible for implementing the quality policy of the Belval, Differdange and Rodange plants, with particular attention to the global and transversal quality vision. This department, managed by Christophe Houyoux, is divided into three areas of activity:

- An Acceptance Unit in charge of certifying production and obtaining approvals
- A Monitoring and Improvement Unit, focused on monitoring quality indicators, continuous improvement and new product development
- A Customer Satisfaction Unit that manages the technical aspects of complaints and closely follows up on certain high added-value orders.

Focus on the Acceptance department, which inspects the finished products of the four rolling mills of ArcelorMittal Belval, Differdange and Rodange, on the mechanical properties and internal health of the sections. Samples are taken from hot rolled products to determine their mechanical properties. Non-destructive testing is also carried out, using ultrasound, to check the internal health of the beams. The test results are compared with customer specifications formulated according to European and national standards. The results are then used to issue certificates of conformity of the material in relation to the customer’s request. In some cases, customers appoint a third party to inspect the material on their behalf. The department also deals with the qualification of production sites. Indeed, a steel mill and a rolling mill need official certification recognised by a control body to

obtain the right to supply products in the different countries according to defined qualities. CE marking for Europe, SIRIM for Malaysia, IRAM for Argentina, BIS for India, Decreto Ministeriale for Italy, etc. The certifications are regulatory obligations.

There is also customer specific certification such as the NF-acier mark for engineering structures and

SNCF in France, HPQ for German railways, offshore (Petronas) in Malaysia as well as naval qualities by companies such as Bureau Veritas, DNV-GI, ABS or Lloyd’s Register of Shipping. These certifications are obtained on a voluntary basis.

The team consists of 17 people who monitor the certification process on a daily basis and prepare the certification.



Tensile testing machine with a capacity of 2,500 kN (250 tons)



ISO 45001/2018 is the latest ISO standard, published in 2018, which will enable companies to improve the safety at work of its staff, reduce risks in workplaces and working environments, and create improved and safer working conditions.

The involvement of the management of the three sites remains the keystone of

this commitment to health and safety. The integrated management system policy, which includes the four previous standards, and the health and safety charter, which specifically includes ISO 45001, have been reviewed and their objectives strengthened in line with the guidelines of this new standard. Consultation and the active participation of workers, well-being

at work, awareness of the impact of workers on health and safety performance, skills management, identification, assessment and control of risks are all themes that will support the objective of reaching zero accidents resulting in incapacity for work. The foundations of the system were laid and validated by the certification body in October 2019.

## Key figures 2020:




ArcelorMittal

**Safety first**  
it makes sense for us

Safety distance in car =  
2 seconds = 30 m

Respecting safety distances while driving is essential to be able to react to unforeseen events or to anticipate slowdowns.

## Health and Safety Week 2020 e-mail campaign

The week focused on the dissemination of road safety tips as well as nutritional advice, which was part of our GIMB label, obtained in 2019 from the Ministry of Health.



  
ArcelorMittal

## Safety first

it makes sense for us

Texting while driving or walking = 23 times as many accidents.



  
ArcelorMittal

## Antioxydants, naturally healthy

**YES**

"The body's bulletproof". Antioxidants are essential to protect your cells from aging and limit the risk of many diseases.



  
ArcelorMittal

## The bitter, sugar truth



According to OMS, only 5% of the ration should consist of sugar (5 pieces of sugar for a ration of 2000 kcal).

## Health

The health and well-being of our employees and subcontractors, just like their safety, are also among our priorities.

Our staff and subcontractors spend a considerable amount of time in the work environment. It is essential that everyone feels comfortable. The company also aims to strengthen our employees' sense of belonging, so as to bring them closer together and to stimulate initiatives.

**Prevention as a key role of the approach: prevention is one of the main pillars of occupational medicine and the management of the health crisis in 2020 linked to Covid-19 illustrated this.** The entire Occupational Health Department was involved in managing this unprecedented crisis.

As soon as the Covid-19 crisis broke out in Europe at the end of February 2020, occupational physicians began to be heavily involved. Firstly, by managing the return from holiday of our employees from countries where the virus was beginning to appear, and secondly by managing symptomatic people, contact cases, high-risk contact cases or positive cases.

The aim was to advise and even supervise the staff concerned so as to avoid any risk of contamination in the workplace, to guarantee the best possible medical care and to ensure the continuity of operations at our sites. This resulted in thousands of telephone exchanges, tele-consultations and even traditional face-to-face consultations during the course of 2020, and completely disrupted the usual work organisation of the health department. In addition, detailed professional tracing was carried out as soon as an ArcelorMittal employee or co-contractor tested positive.

In March 2020, the Health Department began to develop instructions detailing all prevention aspects put in place to effectively manage this health crisis on ArcelorMittal Luxembourg sites and to best ensure a safe working environment for all our employees.

Thanks to close collaboration with the operational services, the SEEIM department, the Human Resources departments, the purchasing department, etc., the instructions could be elaborated and adapted over the course of the year in relation to the evolution of scientific knowledge as well as to the evolution of the pandemic at the national level.

Today we can proudly say that ArcelorMittal has been able to put in place a very effective prevention programme, which must be considered a benchmark in this area.

The occupational physicians also participated in all the task forces set up in the context of the health crisis, whether at site, segment or group level. A specific communication programme was developed and implemented together with the communication department. The doctor in charge was also responsible for crisis management at the group level, along with his HOH network, which brings together occupational health physicians and hygienists from

ArcelorMittal sites around the world.

In March, a **health audit** system was set up in which a nurse from the department, together with members of the safety team, visited all workplaces to assess the effectiveness of the measures in place and compliance with the rules implemented, while discussing ideas for improvement with the workers. Since the emergence of the second wave of the pandemic, the intervention nurses have been carrying out audits on each tour to monitor the application of sanitary measures at our three production sites in Belval, Differdange and Rodange and to advise employees on the implementation of prevention rules.

**Coronavirus - Preventive measures**

An increasing number of cases of coronavirus infections in France, Belgium, Germany, as well as a few cases in Luxembourg, invite us to remind and ask everyone to rigorously apply the measures indicated below, in order to allow everyone to work safely on our sites.

If you return from a trip from areas identified as risk (China, Hong Kong, Macao, Singapore, Japan, South Korea, Iran, Italy, French departments of Alsace and Haut-Rhin, Länder in Germany from Nordrhein-Westfalen and Baden-Württemberg), or if you develop symptoms such as fever, cough, difficulty breathing, please contact our occupational doctor as soon as possible to inform him.

Dr. Marc Jacoby +352 621 245 987 or the Belval medical service +352 55 50 21 11

You are invited to apply the following good practices:

- Avoid close contact: do not shake hands, do not hug. Prefer meetings by teleconference.
- Maintain social distancing when interacting with colleagues.
- Avoid touching your eyes, nose and mouth with your hands.
- When coughing and sneezing, cover mouth and nose with your flexed elbow or a tissue and throw this tissue immediately away and wash your hands.
- Wash your hands regularly and thoroughly.

If you develop symptoms such as fever, cough, difficulty breathing:

- In Luxembourg:** contact the hotline at 8002 8080 or 112.
- In France:** Call Center 15
- In Belgium:** call your general practitioner.
- In Germany:** call your general practitioner.

For cross-border employees: in case of symptoms, contact both the Luxembourg health authority (8002 8080) and the competent authority of the country of residence (Center 15 for France, 116 117 for Germany and 112 for Belgium).

If you experience the above symptoms, do not spontaneously go to your doctor's waiting room or to the emergency room.

## Prevention of psychosocial risks (PSR) linked to the Covid-19 health crisis

In the context of the Covid-19 health crisis, requests for psychological support have increased significantly. The anxiety-provoking health situation and the related constraints have caused some employees who were already in difficulty before the crisis to experience considerable distress, and have severely hit employees who have been forced to suddenly and radically mobilise mechanisms to adapt.

Just like the company's other tasks, this psychological support has had to innovate and reinvent itself, particularly through media technologies, in order to respond to the many demands, especially during lockdown. Although these new practices may have been a hindrance for some employees, they were nevertheless greatly appreciated by the majority of beneficiaries.

Our social worker has developed an online tool to provide advice to our employees during this unusual period and to help them put in place certain rules to limit the effects of this situation for which no one was prepared.

### The health service had to continue its occupational health activities regardless of the health crisis.

The steel industry is subject to specific working conditions that our occupational health department manages in a proactive, multidisciplinary manner. In fact, shift work and the stringent nature of the work environment require a process of continuous improvement on the part of our team:

- Three doctors
- Eleven nurses:
  - Six intervention nurses on shift
  - Five occupational health nurses

Three of our nurses have developed skills in nutrition, sophrology and ergonomics

- One social worker
- One external consultant psychologist
- One ergonomist
- Six occupational health agents

The team's work is structured around improving working conditions, preventing industrial risks, monitoring the health of the entire workforce, including temporary workers and certain subcontractors according to

their exposure to risks and frequency of intervention, and also responding to medical emergencies.

Adapted to the steel industry environment, the themes are based on sleep management, legionella and chemical risks, addiction, noise, optical and ionising radiation, electromagnetic fields and psychosocial risks. Priority is given to preventive action strategies, particularly around training and daily awareness, within a process of continuous and sustainable improvement. These strategies are based on enhanced interactivity to encourage the appropriation of challenges and best practice.

**The management of psychosocial risks (PSR)** entailed by the work itself or caused by the organisation and by work relationships, is ever more important in a rapidly changing world. PSR may arise due to an imbalance between the perception that a person has of their work environment constraints and the resources they have to deal with (stress, burnout), harassment, conflicts or violence inflicted on employees by people outside the company. As well-being at work and professional efficiency are complementary, the health department of ArcelorMittal Luxembourg has been carrying out a systematic evaluation of the perception of professional stress during all periodic examinations since 2011, resulting in diagnostic and follow-up indicators.

At the same time, the department has developed a comprehensive training and care programme aimed at all levels of PSR prevention:

### The training module on primary prevention aims to prevent the development of psychosocial risks.

An innovative module has been developed in addition to the workshops aimed at developing preventive actions relating to the organisation of work, the workstation or the economic and social context. It is aimed in particular at managers and strives, among other things, to develop the ability to adapt one's mode of communication to the personality profile of each employee, while knowing how to spot the early signs of a stress reaction, specific to each personality, and to react appropriately.

Led by the occupational health department, the module includes theoretical contributions and practical workshops to help manage the different profiles, identify their strengths and risk factors, and know how to develop specific prevention actions.

**The training module on secondary prevention** is intended for all employees. The objective is to know how to interact and react to proven psychosocial risks. Burndown, burnout, stress management and resilience, crisis management, prevention of post-traumatic stress disorder, listening and shared vigilance are among the topics covered.

**The training module dedicated to tertiary prevention** is aimed at anyone who has to support an employee when he or she returns to work following a burndown or burnout episode. The objective is to be aware of the different stages of a return to work, to structure the work resumption interviews but also to reinforce the follow-up of the worker during his/her reintegration in order to prevent any subsequent relapse.

### The training courses in detail:

- «Business performance by effective stress management» (workshop / target audience - management functions)
- «Managing different personality profiles» individual management training (workshop / target audience: managerial functions)
- «Preventing post-traumatic stress» (training / target audience: managerial functions)
- «Knowing how to integrate PSR management in team management» (training / target audience - supervisors)
- «Shared stress vigilance» (general public training)
- «Burnout - definition, prevention and management» (general public training)
- «Sleep and mental performance» (general public training)
- «Returning to work after a burnout or burndown, the role of the manager» (workshop / target audience: managerial functions)

In addition to training and workshops, the Health Department provides a variety of prevention services.

To this end, a dedicated contact platform is available round the clock, along with the psychological support unit, aimed at preventing post-traumatic stress. The service also carries out personality assessments (PCM) to find the right balance between work and psychological needs, teaches relaxation techniques, and provides multidisciplinary care (doctor, psychologist, social worker, nurses, ergonomist) for any employee displaying symptoms of poor stress management. In addition, a psychologist specialising in the treatment of psychological disorders related to PSR is on duty every two months to offer employees in difficulty the possibility of individual interviews with a neutral and independent psychologist. These interviews serve to help people in difficulty to become aware of their professional or private situation, to advise them pragmatically, and to determine the most appropriate help to resolve or improve each situation, while respecting professional confidentiality. This is the basis for regaining control over the constraining situation that caused their difficulties and for committing to developing a solution. The most appropriate methods and support approaches are selected on a case-by-case basis from a range of possibilities depending on the demand and the type of problem in question. The aim is not to provide psychotherapy, but to jointly assess the situation, to propose pragmatic tools/methods to resolve the situation as far as possible, and for referral, if necessary, to an external specialist. These interviews are part of a multidisciplinary team approach, combining the intervention of occupational physicians, psychologist, social worker, nurses and ergonomist.

Consultations are offered in the premises of the health service on the Belval site or, depending on the context, in the Pétrusse building in Luxembourg City.

**The Occupational Health Department continues its ergonomics-related activities with a personalised response**

During this health crisis, teleworking became widespread for those activities that allowed it.

Our ergonomist has developed an aid offering advice aimed at adopting good posture at the workstation (in order to avoid the appearance of MSD), and at optimally organising the teleworking day:

**Covid-19 : message du Service Santé au Travail**

Les médecins du travail ont proposé une série de règles visant à créer un environnement de travail protégeant les personnes présentes sur nos sites du risque d'une contamination par les virus SARS Cov-2, donnant lieu à l'infection Covid-19, ceci même si un porteur asymptomatique du virus se trouvait présent parmi notre effectif.

**Les règles de protection essentielles sont :**

- L'interdiction pour toute personne présentant des symptômes potentiels d'une infection Covid-19 de se présenter au travail (fièvre/ toux, céphalées, courbatures, diarrhées, perte du sens du goût ou de l'odorat, obstruction nasale)
- Le lavage régulier des mains ou alternativement leur désinfection
- Le nettoyage /désinfection régulier de toutes surfaces de travail
- Le distanciellement systématique des points contact en cas de changement d'opérateur
- La bonne aération des locaux
- L'usage d'un écran barière (p.ex. paroi de séparation) ou d'un masque de protection (p.ex. masque chirurgical) si le distanciellement de 2m ne peut être assuré
- La gestion sécurisée des équipements de protection individuelle
- Le changement / alternance quotidien des vêtements de travail

\* Fièvre de faible importance évoluant entre 37,2 °C et 37,8 °C (source: Lancet)

En complément des règles évoquées nous préconisons également le port systématique d'un masque respiratoire (hors bureaux individuels, cabines de commandes sauf si une autre personne vient à rentrer dans cette espace et qu'une barrière mécanique ne peut être appliquée vis-à-vis d'elle). L'objectif de cette démarche est de protéger ses collègues de travail en évitant de répandre le virus dans son environnement de travail. Ceci ne pourra fonctionner que du moment où chacun porte cet équipement. Notre devise devant être : **Je te protège, tu me protèges.**

La sécurité promise dépendra du bon respect des règles proposées et nous lançons un appel chaleureux à vous tous pour que vous respectiez scrupuleusement ces règles. **Je garde qui et sur les mois à venir**, une approche rigoureuse et solidaire permettra à chacun de pouvoir évoluer dans un environnement sûr et de ne pas risquer de contaminer ses collègues de travail.

Dr. Karine Muccidente | Dr. Marc Jacoby | Dr. Marlène Berger

- **Ergonomics:** how to design your workstation at home to avoid bad postures: seat, posture in front of the screen, work spaces, etc.
- **Organising working hours:** remember to take regular breaks, remember to relax your joints with some joint movement exercises (wrist, shoulders, etc.), stretching, not eating at your workstation, etc.

The health department also continues to work on optimising its ergonomic approach. The latter had been thoroughly analysed and defined in 2017 to enable employees to be actively involved in improving their working environment. With the support of our ergonomist and our ergonomics nurse, the approach was tested in three stages: analysis of the workstation, the environment (noise, vibrations, light, etc.), and a working group to collect and adapt, according to the possibilities, the ideas and proposals of the operators themselves.

In 2018, an «à la carte» movement and posture training course was developed by our ergonomics nurse and launched to the production sectors to better adapt and respond to the needs of the field in terms of postural constraints. It includes a theoretical and practical part in the participants' working environment during the day to illustrate the advice in a specific manner and to reflect on the problems identified beforehand.

The theoretical part provides:

- A definition of musculoskeletal pain (anatomy, acute or chronic pain);
- Information about good posture (handling loads, repetitive movements, awareness of warming up);
- Advice on healthy living (nutrition, stress management, physical activity).

At the end of this theoretical part, a questionnaire is filled in by the participants to identify the ergonomic constraints encountered at the workstation. The practical part is then carried out in the field and includes:

- A job analysis based on the questionnaire filled in that morning, completed by a search for practical exercises to apply the elements of the theoretical part;
- Practical handling exercises in the field;
- An introduction to muscle warm-ups before starting work or before demanding physical activity.

The administrative functions continue to benefit from the «ergo check» carried out by our ergonomist, who studies and advises on the work environment or area, as well as from training in movement and postures in a mixed group offered by external trainers.

## Training and personal development

Employee commitment, recognition and outlook in terms of personal development are essential to any business wishing to boost momentum. Our employees and the young talents we integrate expect a Group like ours to help them to build a career that is rich in projects, professional development opportunities and positive meetings.

We aim to help our employees take every opportunity to flourish in a global company like ArcelorMittal. We believe that success depends not so much on the organisation as on the people that are a part of it. It is our conviction to support and promote the development of every person, and to enhance the skills and know-how of those who work with us, at all levels. Lastly, we strive to cultivate diversity within our teams, and to establish high-quality labour relations with our employees.

Indicators	2018	2019	2020		
<b>Number of employees</b> as of 31 December 2019 in headcount	3,794	3,786	3,695		
<b>Total training hours</b> for our employees, temporary employees, and subcontractors <small>The reduction in activity due to the health crisis is at the origin of the decrease recorded in 2020 on this criterion.</small>	129,477	120,052	88,200		
<b>Number of young people welcomed by our Luxembourg entities</b> gathering apprentices, interns and international work experience volunteers <small>39 internships were cancelled due to the pandemic between March and July 2020.</small>	219	224	161		
<b>Number of training courses offered to all employees</b>	414	496	488		
<b>Percentage of employees covered by a collective agreement</b>	74%	74%	74%		
<b>Total number of employees who have taken parental leave, by gender</b>	93 63 men and 30 women	128 98 men and 30 women	131 104 men and 27 women		
<b>Number of employees who have left the company in the year following their return to work after parental leave, by gender</b>	2 men, 3 women	4 men, 2 women	0		
<b>Percentage of working day lost due to social disputes</b>	0	0	0		
<b>Total number of employees by employment contract and by gender</b>	<b>2020</b>	Female	Male	Total	
	CDD	12	63	75	
	CDI	510	3,110	3,620	
	Total Luxembourg	522	3,173	3,695	
	<b>2019</b>	Female	Male	Total	
	CDD	9	66	75	
	CDI	528	3,183	3,711	
	Total Luxembourg	537	3,249	3,786	
	<b>2018</b>	Female	Male	Total	
	CDD	14	68	82	
	CDI	502	3,210	3,712	
	Total Luxembourg	516	3,278	3,794	
	<b>Total number of employees by gender</b>	<b>2020</b>	Female	Male	Total
Full-time		404	3,165	3,489	
Part-time		118	88	206	
Total		522	3,173	3,695	
<b>2019</b>		Female	Male	Total	
Full-time		421	3,165	3,586	
Part-time		116	84	200	
Total		537	3,249	3,786	
<b>2018</b>		Female	Male	Total	
Full-time		378	2,873	3,151	
Part-time		138	405	543	
Total		516	3,178	3,794	
<b>Total number of employees by age</b>		<b>2020</b>	Female	Male	Total
	<30	43	223	266	
	30/50	360	1,923	2,283	
	>50	119	1,027	1,146	
	total	522	3,173	3,695	
	<b>2019</b>	Female	Male	Total	
	<30	56	239	295	
	30/50	361	1,103	2,329	
	>50	120	9	1,162	
	total	537	1,351	3,786	
	<b>2018</b>	Female	Male	Total	
	<30	48	248	296	
	30/50	356	1,985	2,341	
>50	112	1,045	1,157		
total	516	3,178	3,794		
<b>Total number of employees by nationality</b>		2018	2019	2020	
	<b>Nationalities</b>	Number of employees	%	Number of employees	%
	French	2,061	54	2,093	55
	Luxembourg	694	18	632	17
	Belgian	381	10	367	10
	Portuguese	142	4	148	4
	Italian	94	2	94	2
	German	81	2	77	2
	Romanian	47	1	53	1
	Indian	45	1	56	1
	Spanish	44	1	46	1
	55 other	205	5	220	6
	Total	3,794	100	3,786	100
	Total	3,695	100		

## People at the heart of our performance

Training is key in developing employee skills, versatility and employability so as to meet today's needs and anticipate tomorrow's. With this in mind, ArcelorMittal supports a wide range of training and development approaches to smooth the transition to a 4.0 industry: theoretical and practical training, online and classroom programmes, seminars, conferences, tutoring, coaching, and so on.

Our training policy focuses on seven areas: the integration of new employees, workstation adjustment, leadership management, techniques in the steel industry, techniques in the non-steel industry, health and safety, and languages. It is accompanied by a precise process:

- Analysis and identification of training needs;
- Creation of training plans;
- Implementation of training courses;
- Assessment of training courses;
- Monitoring and continuous improvement.

The range of training courses is thus structured around three main hubs: **Health and Safety, Business Techniques and Management.**

“Knowledge to help identify, assess, anticipate and minimise risk» is our motto. Central to the day-to-day concerns of our industrial reality, the health and safety of our own staff and our subcontractors' staff is a top priority. It involves the commitment of every person, every day, to do all they can to reach the level of excellence required in terms of results. Our training courses accompany this ambition through the acquisition of knowledge of risks and the relevant behaviours to adopt. Leading by example, communication, transparency, involvement, and thoroughness are key skills and attitudes that set us apart in the health and safety field.

Business skill resources are essential to help navigate the complex and constantly changing environment at ArcelorMittal, and these are at the heart of a dual dynamic. On the one hand, industrial progress, improving the company's performance in line with market needs and technical

advances, and on the other, social progress helping to ensure each employee's professional development and experience acquired.

Commitment and self-knowledge to enhance communication and collaboration, diagnostic and problem-solving tools, the ability to instigate and support change, the ability to be part of a continuous improvement process, and shared responsibility: the challenges of management on the field are at the heart of the collective performance of the company. Training provides the resources required to develop an operational toolbox for field managers and is the link between, individual skills and their use to enhance value creation and progress, and the continuous development and constraints of the organisation.

As part of a collaborative approach, our activities are performed in tandem with all internal partners (site managers, human resources, operational services, union representatives, etc.) and external partners (training bodies, state representatives, professional chambers and federations, etc.).

### Continuing our commitments in 2020

Due to the exceptional health situation that started in March 2020, a number of on-site training sessions had to be cancelled and/or postponed.

In order to provide the best possible support to employees and partners in the field, whose needs for certification, particularly in the fields of machinery and high voltage, were still very real, the training department was mobilised and organised at the end of April 2020 to become operational in May 2020 with:

- The resumption of external health and safety training on 11 May and internal training (driving traction vehicles) from 3 June,
- The relaunch of external technical training on 14 May and internal training (electrical accreditation) from 8 June.

This is how key training courses, which are a priority for our operational staff,

# 790

trainees trained in 2020 (from June to December 2020 and in the health and safety and technical fields, which illustrates the resumption of face-to-face training following lockdown).

were maintained in face-to-face mode from June to December. In order to achieve this, the number of trainees per session was reduced, the training rooms were adapted accordingly with the installation of individual Plexiglas protection, revised equipment and layout, etc.

Similarly, a range of sanitary measures and conditions have been put in place in line with internal recommendations:

- On arrival at the course,
- Introduction to the training course: reminder of the strict rules to be respected, actions to prevent the spread of Covid-19,
- During the training course,
- During breaks.

The interface with our service providers was also ensured in order to guarantee that our trainees following external training courses were and felt safe.

In addition to these operational needs for in situ training, distance learning solutions were activated whenever the subject matter, content and target audience allowed. For example, some of the theoretical modules of the Master your Job Course (*Fonction Maitrise*) ongoing in 2020, management courses, languages, office automation, etc.

Thus, from June to December 2020, a total of some 790 trainees were trained in the fields of health and safety and techniques, from the gradual resumption of essential training to the quasi-standardisation of the training courses in our schedule.

## Illustration of the adaptation of a training room

- Maximum eight people, sometimes five in the case of group work
- Respecting a distance of two metres between tables and the installation of Plexiglas protection
- Signposting of stairways and corridors
- Provision of disinfectant materials, masks, gloves and bags.





# Key Issue 2 : Products that accelerate more sustainable lifestyles



One way in which we promote sustainable development is to offer products that create more environmentally friendly lifestyles for every citizen of the world.

To this end, we develop environmentally friendly coatings that also offer protection from corrosion for various applications, from agricultural fencing to marine equipment. We also provide efficient products to promote the development of public transport.

**Indicators**

**Research & Development expenditure**

Amount in k€ - R&D center of Esch/Alzette

The level of R&D expenditure is clearly decreasing. The health crisis and its economic consequences have led to a pronounced slowdown in our order and billing cycles for research activities carried out with our suppliers, subcontractors and academic partners.

	2018	2019	2020
Research & Development expenditure	3,271	3,480	2,079

## Rails «Made in Luxembourg» for the Grand Duchy of Luxembourg tram

Mobility is a major issue in Luxembourg. This includes free transport, the development of the bus network and the extension of the tramway line. The ArcelorMittal Rodange site was chosen to supply the grooved rails for the Luxembourg tram for phase II of the project, which runs to the station and was put into service in December 2020.

This is the first order for the Luxtram group placed with ArcelorMittal Luxembourg. It was received in February 2019 for section B for type 54G1 rails, grade R200, 18 metres long. The Rodange site has been producing grooved rails in compliance with the standards required by the Luxembourg tramway project for more than three years now. In 2016, Luxtram placed the main part of the order for section A abroad. ArcelorMittal Rodange had already supplied the rails for the switches produced in the Kihn workshops in Rumelange.

*“It was logical for everyone here in Rodange to participate in this local work. Buying local is really useful for the country’s economy and for reducing the carbon footprint. We made a point of informing our employees on the line and they paid even more attention to the project’s completion. They were proud of it and it demonstrates to Luxembourg that we know how to make this type of high quality rail.”*

**Emir Grairi**, Team Leader, Completion Customer Service Rodange.

The employees were kept informed about the destination of the rails on which they were working. At the ArcelorMittal site in Rodange, around

thirty people were involved in the completion of this order for Luxtram. The first rails were delivered on 21 February 2020 at Place de Paris

(Luxembourg City) and on 4 and 5 March in other streets of the Grand Duchy's capital.



## Rodange's tramway rail in Finland

The 25 km long Jokeri Light Rail tramway, of which 16 km are in Helsinki and the remaining 9 km in Espoo, replaces the main bus line 550, the busiest in the region. Approximately 91,000 passengers will use the Jokeri tram on weekdays in 2030. The budget for the 25 km line is 386 million euros. The line will have a total of 33 stations and will open in June 2024.



These quantities also include the supply of bent rails (i.e. curved rails) needed to make the bends when laying the tramway tracks in the city. It should be noted that these curved rails were manufactured in the new finishing centre, established at the Rodange plant at the beginning of 2020.

The 2020 phase of this project has almost been completed. Only a small quantity of rails remains to be supplied

for all factories. The complexity of this project lies in the fact that respecting the delivery deadlines and timing is imperative, requirements for which the Rodange factory was able to respond due to its efficiency in terms of production times and deliveries. Each week, an area of the city is sealed off and reserved for laying the rails. The stakes are high, as each delay can cause many difficulties for the implementation of the project, which employs more than 700 workers!

In total, the project includes the provision of:

# 77,400m

of rail from Krolewska and Dabrowa in Poland, or 3,823 tonnes

# 23,500m

of grooved rails from Rodange, representing 1,400 tonnes

## 2021, European Year of Rail: discover ArcelorMittal's commitment to the rail sector

Officially launched on 29 March by the European Commission, the European Year of Rail aims to highlight the benefits of rail as a sustainable, intelligent and safe means of transport. «Environmentally friendly and energy efficient, rail will play a crucial role in helping the EU become climate neutral by 2050. The Covid-19 crisis has also shown how rail transport can facilitate the supply of essential goods such as medical devices, food and fuel in exceptional circumstances,» stated Oleg Butković, Croatian Minister of Sea, Transport and Infrastructure, President of the EU Council.

Read more: <https://youtu.be/Ir4ds7Vce8Y?t=4>



# Key Issue 3 : Products that create sustainable infrastructure



People around the world are becoming increasingly aware of the environmental performance of the products and services they consume. Designing innovative solutions to create structures that are built to last is one of ArcelorMittal Luxembourg’s responses to contribute to sustainable development.

**Indicators**

**Research & Development expenditure**  
Amount in k€ - R&D center of Esch/Alzette

The level of R&D expenditure is clearly decreasing. The health crisis and its economic consequences have led to a pronounced slowdown in our order and billing cycles for research activities carried out with our suppliers, subcontractors and academic partners.

	2018	2019	2020
Research & Development expenditure	3,271	3,480	2,079

## An alternative approach to construction: Steligence®

Through its radically innovative concept, Steligence® promotes the next generation of high-performance buildings and construction techniques, and creates a more sustainable life cycle for buildings.

The concept is based on the idea that buildings are holistic entities where all aspects of design are considered in an integrated manner, as part of a whole. It involves better dialogue between various specialist disciplines of architecture and engineering, acknowledging not only the need for expertise, but also effective cooperation between experts. Steligence® also allows the best

available steel technologies to be used, along with modularised steel components, generating efficiency gains during the design, construction and configurability of buildings in comparison with traditional construction methods.

In addition, since steel is infinitely recyclable, Steligence® paves the way for architects to configure the life cycle, recyclability and reusability of the building and its components, from the design phase.

Steel has many advantages in this domain: more floors for a given height; less imposing and thus less costly

foundations thanks to the reduced weight of steel buildings compared to traditional materials; and much larger free spans between columns, allowing greater flexibility in terms of internal layout. Furthermore, buildings designed according to the Steligence® philosophy are easier to assemble (and potentially dismantle) and are faster to build, reflecting significant efficiency gains for the construction sector. Design using modular steel components also enables reuse rather than recycling, giving steel a significant advantage in view of the tightening of building performance regulations and the development of the circular economy.

Luxembourg steel thus helps breathe life into this approach, in particular through:

- **HISTAR® steels** are very strong and have a low alloy content, thus significantly reducing their weight and making significant time savings in the manufacturing process. HISTAR® combines high yield strength, excellent toughness at low temperatures and outstanding weldability. The application of the QST (quenching and self-tempering) heat treatment means that all HISTAR® grades improve the guaranteed values of the elastic limit across the entire range of section sizes.

- **Angelina® cellular beams** are lightweight, long-spanning, structural elements that enable the design of vast column-free spaces. They are an efficient, cost-effective alternative to trellises and openwork joist systems, combining function with flexibility, integrating technical installations and optimising the weight-height and load-weight ratios.

- **HD profiles** are hot-rolled wide flange structural steel profiles used in the construction of buildings, bridges, machines and virtually every type of standard or specialist structure. HD 400 series hot-rolled H-shaped

construction beams are very practical for making connections, given the identical measurement between the wings.

- **Cofraplus® floor profiles** are trapezoidal steel sheets with open ribs and specific bosses, ensuring a composite action with the concrete used in floor constructions. This product offers considerable savings in terms of weight, time and cost. Its ease of handling and flexibility of use make it suitable for almost all renovation projects and works, while being fully recyclable at a building's end-of-life.



## ArcelorMittal Luxembourg beams in the Luxembourg pavilion in Dubai

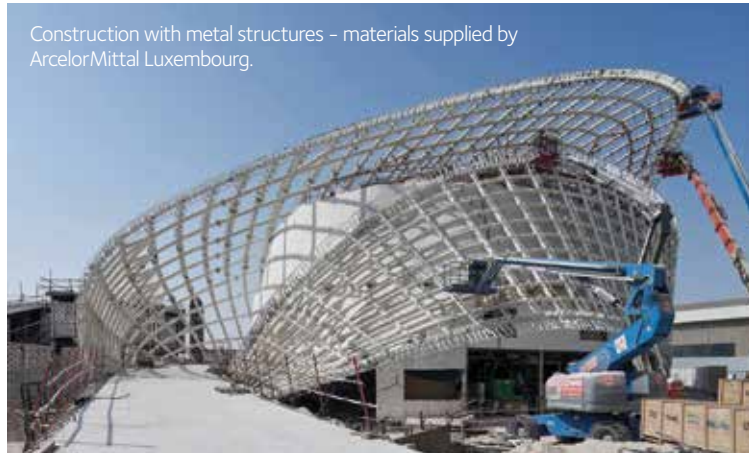
ArcelorMittal had the opportunity to supply the steel products needed to build the structure of the pavilion that will host the Luxembourg delegation at Expo Dubai. 170 tonnes of hot-rolled steel sections from the European IPE and HE ranges were manufactured at the Luxembourg plants in Belval and Differdange – in electric arc furnaces fuelled by recycled scrap metal as raw material. It is the most energy and resource

efficient production method. Another advantage of steel is that the components of the structure are mainly designed with mechanical connections. This concept will allow economical dismantling, transport and reassembly of the pavilion in the future at no extra cost.

**The pavilion is inspired by its country:** small and ambitious, intriguing and reassuring, and above

all generous and open. The overall theme is «opportunity», reflecting the country's past, its present and future. The general shape of the pavilion resembles a Möbius loop, where the twist of a ribbon results in a single surface, without beginning or end, expressing infinity and symbolising the circular economy. The face of the tape temporarily serves as the floor, wall and ceiling, allowing for a multifaceted scenography from the

starting point to the second floor. The visitor experience begins in the entrance. Like a kind of red carpet, a wide ramp between the inner and outer skin of the building invites a journey of discovery along a gently sloping route to the next floor. Visitors are fascinated by the fusion with the pavilion exhibition, which presents a series of visuals representing the country and its people in a natural and interactive way. The ground floor mainly houses the gift shop, the restaurant and the visitor access ramp to the first floor. The first floor houses a multifunctional space for receptions and conferences, as well as the ramp that guides visitors



Construction with metal structures – materials supplied by ArcelorMittal Luxembourg.



Photo credits: [www.luxembourgexpo2020dubai.lu/](http://www.luxembourgexpo2020dubai.lu/) METAFORM

seamlessly to the top. The second floor, the highlight, is devoted to an exhibition on Luxembourg's space economy. To «come back down to earth», the visitor has three options: the conventional stairs and lift, and a slide through the green, picturesque patio.

The World Expo will open its doors in the autumn of 2021.

Dubai Pavilion:

**170 tonnes**

of hot rolled steel sections from Belval and Differdange.

## Construction of the One Za'abeel towers in Dubai using HISTAR® profiles

HISTAR®, the world's strongest steel H-profiles, presented in one of the most prestigious high-rise buildings currently under construction.

One Za'abeel consists of two towers, Tower A with 67 floors and a total height of 330 m, which includes a retail space, a hotel, flats and high-end offices, and Tower B at 235 m and

52 floors, which includes high-end flats.

The connecting bridge is the project's signature feature, which takes the world record as the world's longest cantilever at 70 m. The lower level of the connecting bridge is to be erected on level 23 of Tower A and level 26 of Tower B and is two storeys high.

## ALEC broke a record

ALEC, Dubai based construction company, raised the company record by erecting the tallest tower crane in its history to lift the huge bridge connecting the two towers

*“We have carried out more than 200 ultrasonic tests (UT) after welding the rolled steel sections on HISTAR®460. They were all successful.”*

explain the ALEC entrepreneurs.

## HISTAR® 460 in the Link-Bridge

The two-storey truss bridge consists of a truss frame of **UB 920 and UB 1016 sections made of HISTAR®460 steel**. These sections are welded together in the form of a box for a concrete filling, thus increasing the required rigidity and strength.

The trusses of the connecting bridge made of 2 H-sections in a HISTAR® 460 box offer the possibility of achieving a load bearing capacity with a substantial tonnage saving.

The use of high quality HISTAR®460 sections provided a tonnage gain that reduced the deflection of the dead weight of this part of the structure.



The tonnage savings resulting from the use of HISTAR® 460 also contribute to savings in manufacturing, transport, lifting, crane capacity, erection, etc.; the **bridge weighs 8,000 tonnes** with an average dead-weight deflection range of 300 mm in the cantilever. The connecting bridge, fully assembled on the ground, was raised at a speed of 8 m per hour with safety stops, to its design height of **114 metres above the ground**.

- Product: Jumbos / heavy sections  
UB 920x420 up to 1,377 kg / m  
and UC 356x406 up to 634 kg / m
- Steel grade: HISTAR®460 (ASTM A913 Gr.65)
- Steel producer: ArcelorMittal Differdange, Luxembourg
- Supply period: 2017-2019, building under completion

## HISTAR® 460 in the columns

The tower columns supporting the connecting bridge and the supporting piles are heavily reinforced.

The bridge-bonding forces are transferred to the columns. These tower columns are mixed steel-concrete columns with **embedded HISTAR®460 Jumbos** (W360 heavy forms). The foundation is a 7-storey basement, the first of its kind in Dubai, designed on **HISTAR® 460 steel columns sinking 7 floors below ground level**.

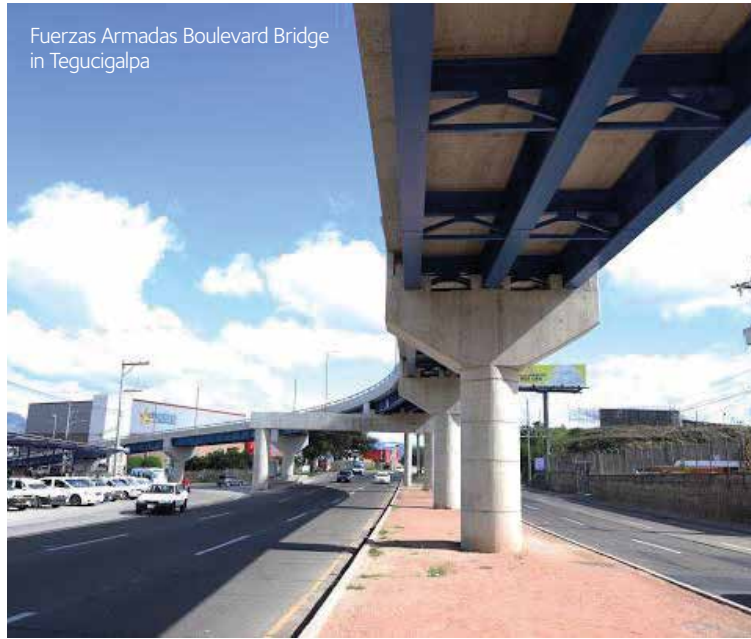
The heavy HISTAR® 460 steel sections thus extend from the foundation to the top of the tower. HISTAR® 460 offers excellent compressive strength and resists the tensile load that would result from torsion of the connecting bridge. They also provide an effective load transfer mechanism for the tower deck loads, including dead weight, live load and wind loads, to the foundation.

**The highest reinforced column** is located at the corner of the tower by the cantilever of the connecting bridge, which comprises multiple HISTAR®460 steel forms. It is the heaviest column in the structure, **weighing 6,846 tonnes per metre**. In a lower steel class, the section would have weighed on average 26% more. **HISTAR®460 Jumbo columns have achieved lighter cross-sections** than the S355 steel grade options, which effectively **contribute to innovative design and iconic building achievements**.

## HISTAR® 460 makes its grand entrance in Central America

Due to political and economic problems, as well as a concrete-oriented culture, steel is not a preferred solution in Central America. However, the trend may soon be reversed with the first project in the region involving HISTAR®. Beams produced by **ArcelorMittal Differdange** were used to build a new bridge in Tegucigalpa, the capital of Honduras. HISTAR® provides an efficient and economical solution for bridges.

The new bridge on the Fuerzas Armadas boulevard in Tegucigalpa is a clear improvement for the residents of the area, as it provides a smoother flow of traffic and allows residents of the area to travel along this stretch of road in about 5 minutes, instead of the 30 minutes it took before.



Fuerzas Armadas Boulevard Bridge in Tegucigalpa



The bridge during construction

HISTAR® 460 / A913 grade 65 was selected for this project due to its many advantages:

- Weight savings due to higher resistance.
- Better and more efficient weldability. Preheating can even be reduced or eliminated in some cases.
- Minimum impact due to sleek solution and quick installation (compared to a concrete bridge).
- Savings (through smaller lifting equipment, reduced consumption of electrodes for welding, etc.).

Construction of the bridge began in May 2018 and was completed in July 2019, with a **100 m long structure constructed from HISTAR® beams**. The road bridge was opened in 2020.

## The ATRIO tower in Bogota: the first height reference for ArcelorMittal in South America

ATRIO is an impressive mixed-use project located in the centre of Bogota, Colombia. Composed of two towers, North and South, it will offer 250,000 m<sup>2</sup> of office space and 10,000 m<sup>2</sup> of public space on the ground floor. This is ArcelorMittal's first high-rise project in South America, and it supplied 90% of the steel sections for the construction of the North Tower.

### 3,900 tonnes of profiles from Luxembourg and Spain

Building a skyscraper in an earthquake zone and in a country where most buildings are made of concrete was a great challenge for the teams involved in this project.

Designed by architectural firms Rogers Stirk Harbour + Partners and El Equipo Mazzanti, the ATRIO tower features impressive column elements and façade trusses designed to resist seismic forces and improve the torsional behaviour of the structure, a breakthrough for local architecture and structural design.

To comply with the design and technical requirements, **ArcelorMittal International supplied 3,900 tonnes of steel sections, including 400 tonnes of HISTAR® grade (ASTM A913), produced by ArcelorMittal Differdange.**





Bogotá's ATRIO tower at the top.

### Customers who are convinced 100% by steel solutions

ArcelorMittal Europe – Long Products' involvement (via our technical support service) started in 2013 with the consultant AECOM and followed by the UK engineering consultancy ARUP. There are many reasons why the customers chose to work with ArcelorMittal:

- The H1STAR® steel grade has the exact weldability properties that the customer required and does not require preheating
- ArcelorMittal offers the most comprehensive size range of any steel producer
- ArcelorMittal can supply long sections as well as sections cut to length
- The project required steel made from at least 50% recycled material, and ArcelorMittal's sections are made from **100% scrap metal**.

In addition to its mechanical properties, the use of steel has helped to improve the design of the tower. Thanks to the giant steel sections embedded in the concrete, the size of the columns was reduced, resulting in elegant, slender composite columns with sophisticated diagonal lines in the façade.

### Giving the city centre a new lease of life

This development gives a boost to the Centro Internacional quarter, the city's former business district, bringing in new businesses, tourism, public transport and culture. The construction of the North Tower, measuring 200 metres (44 floors), is the first phase of the project. 50,000 m<sup>2</sup> of office space, 4,600 m<sup>2</sup> of public services and 1,800 m<sup>2</sup> of retail space are available. The high quality of our products, the service provided and the efficient cooperation between the teams of ArcelorMittal International and ArcelorMittal Europe – Long Products were decisive in being part of this project. Construction of the ATRIO North Tower began in 2015 and is now complete. It is one of the first large steel high-rise buildings in South America.

Finally, ATRIO North Tower is GOLD LEED certified and has won several awards:

- Council on Tall Buildings and Urban Habitat - CTBUH: Best High Tower from 200 to 299 metres
- ICCA ACESCO Award 2019 in the Building category.

## Luxembourg sheet piles, a sustainable solution

Climate change is an undisputed reality and it will have an impact on our daily lives. ArcelorMittal's steel sheet piling has played, and will continue to play, a major role in flood protection and other major projects that protect our environment. They help to prevent the harmful, and sometimes catastrophic, effects of storm damage and coastal erosion.

In 2020, several large-scale projects were carried out around the world using proven or innovative solutions from ArcelorMittal.

### Flood protection programme in the UK

The Environment Agency (EA) in the UK has invested around £2.6 billion of public money between 2015 and 2021 to deliver the most ambitious flood protection programme in the UK. The recently completed first phase protects some 300,000 family homes from flooding, which

will enhance economic growth and environmental protection. The EA estimates that avoiding flood damage over the lifetime of flood defenses results in savings of £28 billion. One example is the flood barrier in Boston, Lincolnshire (UK), for which ArcelorMittal supplied nearly 6,500 tonnes of **AZ sheet piles and the combined HZ-M/AZ system**.

### Flood protection in Troyes, France

Rehabilitation and raising of 1.5 kilometres of ageing flood protection dikes protecting the historic city of Troyes. Approximately **1,500 tonnes of AZ profiles and HZ-M/AZ combi walls** were installed in the vicinity of historical heritage sites.

### Flood protection dikes on the Wintersburg Canal, Huntington Beach, California, USA

The existing canal is surrounded by residential areas. The only way to increase the capacity to drain floods to the sea was to transform the trapezoidal shape of the canal into a rectangular shape with vertical walls. Other key design parameters were the seismic design due to the site location (California), as well as the need to install the sheet piles without noise or vibration, which was achieved by using self-supporting hydraulic presses. For the first phase of the project, ArcelorMittal delivered some **12,000 tonnes of AZ sheet piling**.

### Reinforcement of dikes along the Dead Sea, Jordan

In order to stabilise the water levels in the Dead Sea evaporation ponds, and to reduce the considerable percolation of water through the old dikes, steel sheet piles are used as a containment wall in the centre of the existing dikes. Approximately **34,000 tonnes of AZ sheet piles with lengths of up to 31 metres were installed**.

### Beach erosion protection in Cayeux-sur-Mer, France

Following the proven success of the first phase, which included more than 80 coastal groynes installed in the 1990s, the Syndicat Mixte

Baie de Somme Grand Littoral Picard decided to install 22 new 90-metre long coastal groynes, spaced some 90 metres apart. This time they are located along the beach of Cayeux-sur-Mer, and their main purpose is to reduce the impact of the swell and the tide on the constant erosion of the beach. ArcelorMittal delivered **2,300 tonnes of PU sections from Belval**. As the region attracts many tourists during the season, a challenge for the construction company was the limited time available to carry out the work and the fact that noise and vibrations had to be limited during the summer months. Not to mention the tidal variation of more than ten metres, which did not make the task any easier!



Example of a dike reinforcement project in Germany in Niederschoenenfeld.

Photo credits: ©DuK Bau

## New underpass in Lokeren, Belgium - ArcelorMittal's EcoSheetPiles™ contribute to improved safety for residents

**Lokeren is a Flemish city of 41,000 inhabitants** located between the cities of Ghent and Antwerp. The busy Ghent - Antwerp railway line passes through the centre of Lokeren. To improve the safety of the rail network in the north-eastern part of the city, the authorities replaced an existing level crossing with an underpass.

The new structure passes under four railway tracks, a **service road and a cycle path**. The underpass has **two lanes for road vehicles, as well as a wide, elevated bicycle and pedestrian path** protected from the road.



Convivial inauguration of the Lokeren underpass.

Photo credits: ©Kristof Pieters 2019

During the entire construction period, the two main railway lines could only be interrupted for two days during a single weekend. The ideal solution to such time-sensitive challenges is to install extra wide **AZ-800®** steel sheet piles to minimise the time required for installation. The sheet piles were driven into the ground using special vibratory hammers, which allowed for rapid installation without damaging the foundations of nearby houses.

In addition, the decks of the new bridge transmit vertical forces to the **AZ 25-800** vertical sheet piles, which are approximately 12 metres long. This kills two birds with one stone: in addition to their traditional function as retaining walls, the sheet piles act as supporting piles.

Another technical challenge was to push the **400-tonne prefabricated subway** deck on rails over the sheet piles to its final position. The dimensioning of the concrete deck / sheet pile connection was optimised using a dimensioning method developed by ArcelorMittal's R&D department in collaboration with a German engineering office.

In a second stage, in order to reduce noise pollution for the neighbourhood, the hoppers (entrances/exits of the graded passage) were built with steel sheet piles **with an inclination of 11° to the vertical, with profiles up to 12 metres long.**

A total of almost **400 tonnes of the new AZ-800 series of sheet piles** were installed on this site in the centre of the city. This additional constraint posed a challenge to our logistics department, which had to organise just-in-time deliveries due to the limited storage space. It should be noted that the lack of space in urban areas is also an advantage for steel sheet piling: the construction site has a much smaller footprint than alternative solutions.

Another interesting fact is that the excavation under the bridge was done after the sheet piles for the hopper had been installed, without disrupting the railway traffic.

For aesthetic reasons, the retaining walls must be watertight. Thus the locks were welded on site. **The use of ArcelorMittal's extra large AZ-800 series** has reduced the total number

of welds needed, and consequently the cost and time of this job. However, the sheet piles have not been coated, leaving an unusual visual appearance of «rusty» elements, a rather bold choice by the customer.

Finally, from an environmental point of view, the AZ range of sheet piles produced under the **EcoSheetPiles™** label allow the execution of more sustainable and environmentally friendly structures. Indeed, they inherently have a much lower carbon footprint than other solutions, not only because they are produced from 100% recycled steel via the electricity chain, but also because at the end of their life, unlike solutions using other materials, all sheet piles can be extracted from the ground and recycled again, a good illustration of the concept of the circular economy.

The entire project was completed two months earlier than originally contracted.

## The Oslo Opera and Ballet House in Norway

The new Opera House in Oslo is the largest cultural building constructed in Norway since Nidarosdomen, the famous cathedral in Trondheim. The Opera House is an important symbol of what modern Norway stands for as a nation, and expresses the role opera and ballet play in Norwegian culture and society.

The building has a surface area of approximately **38,500 m<sup>2</sup>** and more than **1,100 rooms** spread over 4 levels and a basement.

The opera house acts as a link between the historic square of downtown Oslo to the west and the Ekeberg Hills to the east. It is a cornerstone in the development of a brand new district. For decades, Bjørvika was known for its port activities and heavy traffic, but the area is gradually becoming a dynamic and attractive area for shopping, living and cultural activities.

### Foundation work

A large part of the structure is found below sea level, which was a major challenge for the foundation work. In addition, a large amount of polluted soil had to be excavated.

The foundations and basement structures were built under the shelter of a cofferdam of 12,000 m<sup>2</sup> of steel sheet piles. **More than 1,300 tonnes of AZ sheet piles produced at the Belval plant** were driven into the ground to seal the excavation. The watertightness of the retaining wall was improved by using **the Roxan® waterproofing system in the locks of the sheet piles.**

The deepest point of the excavation was 16 m below sea level. The main stage structure was built inside a circular cofferdam with a diameter of 40 metres, for which the excavation and pouring of a concrete raft about 2 metres thick was carried out under water with the help of divers.

The other part of the building is built above the water, at an elevation of 2.6 m above sea level. This pile structure rests on approximately **28 kilometres of HP steel piles driven into the ground to rock level**, representing over **3,000 tonnes of steel delivered from the Differdange plant.** The pile foundations were designed to have a **300-year life span**, which required protection for the HP piles by encasing

them in 600 mm diameter steel tubes, filled with fibre-reinforced concrete to protect the HPs from corrosion. The HP piles were driven down to rock level and reach lengths of 60 m below the surface of the water in some places.

Approximately 90,000 tonnes of soil with varying degrees of pollution were excavated and transported to the licensed depot in Langøya, near Holmestrand.

### Archaeological remains

Bjørvika is filled with a layer several metres thick of waste from sawmills that operated along the river Aker as early as the 16<sup>th</sup> century. This layer has preserved many of the objects lying on the seabed in good condition. Many boats and other artefacts lie beneath what is now dry land. One of the main constraints of the planning permission was that the site had to be thoroughly inspected and surveyed for archaeological finds. Some **2,000 objects were found during this phase of the construction work.**



Oslo Opera House in Norway.

Photo credits: ©Erik Berg

# Key Issue 4 : Efficient use of resources and high recycling rates



The main advantage of steel is the fact that it is infinitely recyclable, enabling reduced consumption of finished raw materials, iron ore or coal. The responsible use of these finite resources in our production processes is essential, along with waste management, and the development of products that can be reused, rather than simply recycled.

Indicators	2018	2019	2020
<b>Tonnes of materials used in the production process</b> (scrap, used tyres, lime, etc.)	2,674,883	2,516,519	2,271,933
<b>Percentage of by-products recovered per tonne of waste generated</b> Quantity of operating waste such as black slag, calamine, etc. from steel production, returned to a recovery process rather than a disposal process. <small>*The 2019 figures have been adjusted to 75.9% instead of 87.2%.</small>	81.2 %	75.9 %*	79.1 %
<b>Percentage of recycled materials in the production of crude steel casting</b> Proportion of scrap and used tyres put into the furnace during steel production. Scrap represents the vast majority of it.	95.1 %	95.1 %	94.8 %
<b>Tonnes of recycled scrap</b> The reduction in activity due to the health crisis is at the origin of the decrease recorded in 2020 on this criterion.	2,541,268	2,389,750	2,151,055
<b>Tonnes of CO<sub>2</sub> avoided due to using scrap in comparison with an integrated route</b> (blast furnaces) The reduction in activity due to the health crisis is at the origin of the decrease recorded in 2020 on this criterion.	3,303,649	3,106,675	2,796,372

## The circular economy, an integrated approach

In developing the holistic approach necessary for the circular economy, ArcelorMittal works at all stages of its product life cycles to reduce its environmental footprint as much as possible. Reduce, recycle and reuse are the mottoes during the design, production, use and management of the end-of-life of our steel products, in conjunction with our stakeholders. Most of our Luxembourg products and construction solutions are initially designed as closely as possible to the “cradle-to-cradle” approach. Our Differdange HISTAR® steels, combining significant weight savings

and strength, and our latest-generation Belval sheet piles, allow a reduction in the quantity of materials and thus the energy required for their production, along with reduced lead times in handling and assembly. The advantages of our products are disseminated transparently by means of Environmental Product Declarations (EPDs), based on a life cycle analysis (LCA) and certified by an independent body, awarded to our HISTAR® steels and sheet piles in 2017 and 2018. Developing innovative construction solutions is also the aim of the new Stelgence® concept,

which promotes the next generation of high-performance buildings and construction techniques, and creates a more sustainable life cycle for buildings.

The environmental efficiency of the production process is also monitored on a daily basis. The first milestone in this approach in Luxembourg was the full transition to the electrical sector in 1997, which made it possible to reduce energy consumption by 55%, particle emissions by 97%, and water consumption by 50% compared to the integrated sector. 95% of the steel we produce is made from

recycled steel. In fact, steel is infinitely recyclable without a loss of quality, considerably reducing the use of new resources. Since that time, the margin of progress has been more limited, and we consistently strive to reduce our impact by installing the latest generation equipment and using innovative techniques. In addition, particulate matter emissions are gradually controlled by transport techniques and new processes. Managed in a closed circuit, the water is recovered, treated and reused. Its consumption will have to be gradually reduced. More information on emissions, water and energy management can be found on pages X, X and X respectively of this report.

Our waste also falls under three main action areas: prevention, recycling and disposal. 80% of our operational waste (co-products) is recovered. Of the 180 kg of waste generated per tonne of steel produced (tCS: tonne of crude steel), black slag makes up the majority (slag from electric steel works, 100kg/tCS) along with mill scale from rolling mills (44 kg/tCS). These are respectively recovered externally in public works for road construction, and internally, reinjected into the steel production cycle to replace iron ore. White slag in landfill is subject to constant studies to find potential recycling routes in order to recover it.

In addition to ease of transport, handling and construction, our products encourage reuse. Our Belval sheet piles are part of the rental model developed to promote the concept of use rather than consumption. Over successive rental cycles, sheet piles are used at least 10 times over a period of 15 years, and 100% of sheet piles are recycled at end of life. This model allows the customer to reduce project costs and their physical inventory, and to benefit from a wide range of options. In addition, design using modular steel components encourages building configurability, thus increasing the potential use of premises (homes, offices, commercial spaces). Thanks to the Angelina® castellated beams produced in Differdange, it is for instance possible

to create uninterrupted spans of up to 13m. The resulting reduction in the number of columns required makes it possible to easily reconfigure office spaces and to increase the range of uses. The Steligence® concept supports the holistic approach required to achieve circularity in the construction sector.

## Our waste management

Given our core business, our main waste comes from the production process (co-products) from our major sites in Luxembourg: Belval, Differdange and Rodange. Three strategies for action form the backbone of our continuous improvement approach: prevention, recycling and elimination.

Firstly, prevention comes down to limiting the production of waste, particularly co-products, by working on the performance of facilities, as much as possible. For instance, leaks are avoided as much as possible thanks to continuous maintenance to conserve oils.

Recycling then consists of using the specific properties of the waste generated by our production processes as raw materials. In fact, everyday waste linked to activity around the process (PPE, packaging, etc.), is reduced, selectively collected and recovered or eliminated by recognised channels. When arbitrating between internal and external recycling for co-products, this is done according to the material's value in use. If it is higher than its exchange value, internal recycling is the preferred channel. The ROMEO system also helps to determine the best processing path. A recycling

optimisation model for economic and environmental optimisation, it analyses the behaviour of our various industrial tools throughout the world, such as the electrical furnace or sinter plant. The model simulates the effect of using a co-product to supply our various facilities in terms of cost, productivity and atmospheric emissions. It thus allows more efficient arbitrage, taking into account both economic and environmental factors to recover these co-products. Improvement scenarios are thus identified to recycle our waste.

Internal recycling is chosen for mill scale (the layer of iron oxide produced on the surface of steel parts subject to high temperatures), a residue from the steel process formed during continuous casting and when semi-finished products pass through the reheating furnaces in our rolling mills. This is reinjected to partially replace the iron ore.

When internal recycling is not suitable, external recycling channels are used. One of our main industrial waste types is black slag, an impurity expelled from the electrical furnace when scrap metal is melted. This is temporarily stored in storage centres, commonly known as "heaps" to be used in road construction.

Lastly, 18% of the elimination via landfill of certain operational waste such as white slag from ladle furnaces or a portion of the sludge from rolling mills, occurs according to the strict environmental standards described under Key Issue 5 of this report. In 2020, dedicated research projects continued to be pursued.

## Differdange slag heap

In 2020, ArcelorMittal Luxembourg submitted a request for a temporary storage permit in the context of exchanges with the Luxembourg Ministry for the Environment.

## SEEIM, a transversal service to improve our performance in safety, environment, energy and integrated management

The SEEIM (Safety, Environment, Energy and Integrated Management) division was created in August 2019. This division is the result of a joint initiative by the three sites at Belval, Differdange and Rodange. Its objective is to create a standardised work methodology in order to save time and improve efficiency for ArcelorMittal and its subcontractors on a daily basis.

This division comprises three centres:

- **The operational centre**, in charge of monitoring safety and environmental achievements (water quality, air

quality, noise reduction, radioactivity monitoring, etc.) in order to comply with regulations both in Luxembourg and those published by the ArcelorMittal group.

- **The projects centre**, which is in charge of managing environmental, safety and energy projects, and managing CO2 quotas. For example, a project carried out on recyclable paper, the recovery of dissipated energies, water flocculation (purification process by which flakes of impurities suspended in a liquid are collected), the standardisation of procedures

and practices regarding standards to prevent fatal accidents (in close cooperation with specialists in the operational centre), etc.

- **The SMI centre**, in charge of internal and external communication as well as contacts with administrations, labour inspectorate, environment administration, NGOs, etc.

All certification audits, continuous improvement monitoring, regulatory supervision and regulatory check monitoring will also all be planned from this centre.

## ArcelorMittal participated in the webinar on: "A legal framework for transparency and sustainability in supply chains"

Perry Dimmer (Head of Supply Chain & Logistics and CIO of ArcelorMittal Belval & Differdange) and Grace Barrasso (General Manager, Environment and Sustainable Development of ArcelorMittal Mining Canada) participated, in their capacity as experts, in the webinar organised by the University of Luxembourg.

The session discussed the growing imperative to address human rights and environmental violations in the supply chain, current and emerging regulations in this area, and how some companies are already

proactively addressing these issues.

Moderated by Alexis Bateman, Director - MIT Sustainable Supply Chains, more than 80 participants from a wide range of backgrounds (students, professionals, ministry representatives) attended this online seminar.

The framework governing social impact along the supply chain has evolved at a rapid pace. In 2011, the UN Guiding Principles on Business and Human Rights recognised that companies have a responsibility to respect human rights and the

environment in their operations and supply chains.

Since then, companies and governments around the world have been working to implement the principles in an efficient and cost-effective manner. While the initial focus was on voluntary measures and reporting requirements alone, attention has recently turned to mandatory human rights due diligence. 2020 has been a pivotal year in which legislative developments have accelerated at the regional level.

**LCL CONVERSATION SERIES**

**A Legal Framework for Transparency & Sustainability in Supply Chains**

ONLINE SEMINAR: Thursday 14 January, 17:00 - 18:00 CET

**Dr. Alexis Bateman**, Director, MIT Sustainable Supply Chains

**Dr. Basak Baglayan**, Postdoc, FDEF, University of Luxembourg

**Marl-Hou Dupont**, Senior Manager, UN Global Compact

**Grace Barrasso**, Head of Corporate Responsibility and Sustainable Development, ArcelorMittal Mining

**Dr. Perry Dimmer**, Head of Supply Chain & Logistics and CIO of ArcelorMittal Belval & Differdange

Logos: Luxembourg Centre for Logistics and Supply Chain Management (LCL), MIT GLOBAL SCALE NETWORK

## Glove recycling at the Rodange site

A second lease of life for workers' gloves at the Rodange site.

A foreman at the Rodange site decided to carry out the test in his factory in Rodange after observing a company in France. It has been validated by the purchasing department in partnership with Gummi Roller, a specialist in industrial supplies. By placing collection barrels next to the coffee machines, he allowed workers to deposit used gloves in them for recycling. Recycling takes place at the INITIAL site in La Bresse, France. After sorting and checking, the gloves deemed to be in compliance are repackaged in packs of 10 pairs. At INITIAL's site, customers' gloves are always washed separately in machines. Gloves may only be washed three times.

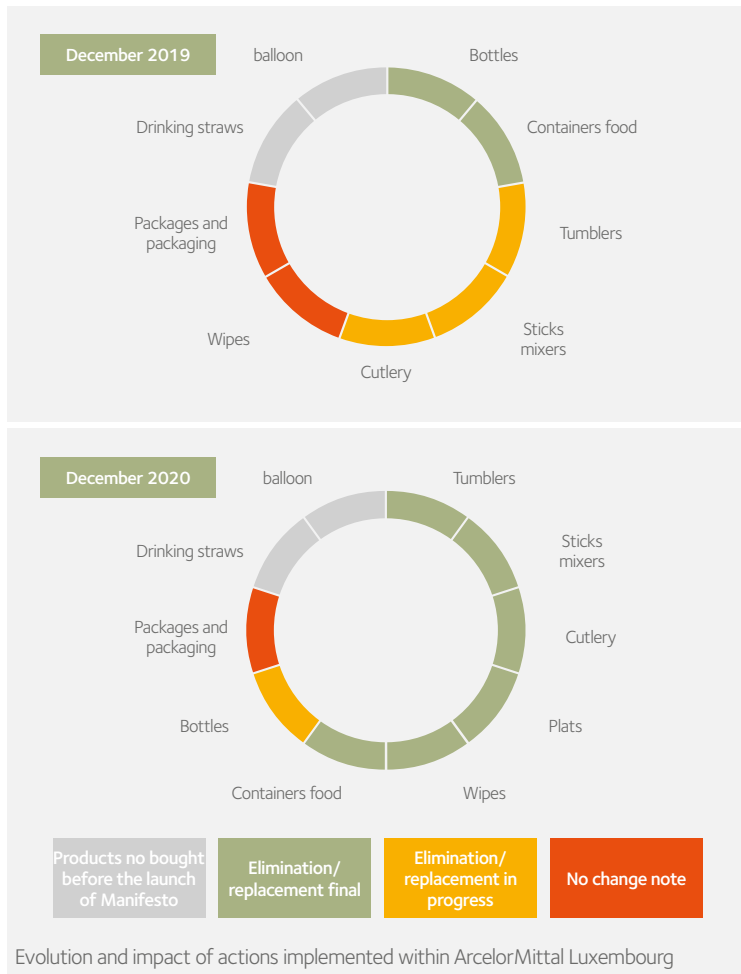


## Results of our commitment to the «Zero Single Use Plastic» Charter.

The result of the launch audit revealed that **2,967 kilograms (kgs)** of single-use plastic were consumed. The final audit shows a reduction in the consumption of single-use plastic to **25 kgs**. By the end of the project, ArcelorMittal will have eliminated the equivalent of **2,942 kgs** of single-use plastic, a quantity that will no longer be consumed annually by our organisation as of 2021.

The **“Zero single use plastic”** project ends in 2021 and will be followed by the «REUSE» project, for which ArcelorMittal in Luxembourg has suggested setting up working groups dedicated to packaging waste linked to the production process. An internal working group was thus created in 2020 and is already working with LIST to identify volumes, actors and avenues to be exploited.

**2,942 kg**  
of plastic eliminated thanks to our actions and our commitment to the «Zero Single Use Plastic» Charter.





## ArcelorMittal Luxembourg is participating in the Product Circularity Data Sheet Luxembourg (PCDS) project

Led by the Luxembourg Ministry for the Economy and supported by major international leaders, the initiative aims to develop the «Product Circularity Data Sheet» (PCDS) which aims to establish an official standard for reporting on the circular economy properties of products. This project is part of an international approach that currently brings together a dozen countries that are engaged in similar processes. **ArcelorMittal Luxembourg is participating to provide methodological support to this process of co-construction of the PCDS model.**

Ultimately, it would solve the difficulty for industry and consumers to access reliable data on the circular properties of a product. For each product, an internationally accepted data set will describe all relevant circular information in audited and verifiable statements, helping the consumer and manufacturer to make informed choices, increasing the value of the product and enabling future uses in a circular economy. It also aims to implement an ISO standard. At the beginning of 2021, the working group obtained an agreement in principle for the implementation of a new ISO 59040 standard.



### Circularity data set initiative

An efficient circular economy designed for continuous high quality material loops requires the circulation not only of resources, but also of information.

#### PCDS Standard

The «Product Circularity Data Sheet» (PCDS) is a basic source of data for other actors to determine the degree of a product's circularity.

#### PCDS computer system

The general idea is to provide reliable data on the circularity aspects of the product.

#### Audit system

An independent audit system will be put in place to ensure the validity of the data without compromising confidentiality.



*“PCDS is a major initiative undertaken by the Ministry for the Economy to promote the circular economy in a unique way. ArcelorMittal Luxembourg has been integrating the principles of circularity for many years, firstly through its production process, which is based in Luxembourg on more than 90% recycled materials, (...) which allows the construction of sustainable buildings, and finally through the new Steligence® concept, which opens the way for architects to take into account the life cycle, recyclability and ultimately the reusability of a building and its components. The Green Deal proposed by the European Community confirmed both the strategy of the Ministry and the strategy of ArcelorMittal Luxembourg. ArcelorMittal Luxembourg has participated in the PCDS initiative and intends to continue to do so, as this new standard could provide companies that integrate the spirit of circularity with a competitive advantage. This project was launched in a very complete and exhaustive manner, with a multidisciplinary team working on it, taking into account existing European and international standards.”*

**Pierre Turpel** Head of Government and Institutional Affairs – ArcelorMittal in Luxembourg.

# Key Issue 5 : Trusted user of air, land and water



For many years, climate change has alerted us to our responsibility to be water-, air- and soil-friendly. In addition, our stakeholders ask for improvements in the environmental footprint on our sites. As such, all our efforts focus on continuing our activities with greater respect for nature, by improving our processes.

Indicators	2018	2019	2020
<b>Dust emission (g/tCS)</b> Grammes per tonne of crude steel (tCS: tonne Crude Steel) <i>Additional increased maintenance work on the dust collection facilities may explain this variation.</i>	8	9	6.55
<b>Water withdrawal (m3/tCS)</b> Cubic meter per tonne of crude steel (tCS: tonne Crude Steel)	0.34	0.79	0.68
<b>Surface water</b>	0,07	0,06	0,02
<b>Piped water</b>	0	0	0
<b>Ground water</b>	0.27	0.27	0.15
<b>NOx emissions (g/tCS)</b> Grammes per tonne of crude steel (tCS: tonne Crude Steel) <i>Factories are conducting tests and research into lower NOx and the reduction in activity due to the health crisis is responsible for the decrease in 2020 on this criterion.</i>	264	270	195
<b>SOx emissions (g/tCS)</b> Grammes per tonne of crude steel (tCS: tonne Crude Steel)	101	99	99
<b>Water discharge (m3/tCS)</b> Cubic meter per tonne of crude steel (tCS: tonne Crude Steel)	0.57	0.51	0.69
<b>Percentage of waste disposed of in landfills</b>	18.1 %	24.1 %	20.9 %
<b>Fines received for non-compliance with environmental legislation and regulations</b> Amount and number of non monetary fines	0	0	0

## Soil and biodiversity management: a complex balance to be struck

The impact we have on soils depends mainly on our management of hazardous products and waste at our active sites, as well as our conversion process on former industrial sites which were hitherto not subject to the same environmental requirements as today.

At our active sites, our products and waste are classified into three categories: non-hazardous, hazardous and toxic. Subject to their classification, management measures will be applied to them as required by internal procedures, the ISO 14001 international standard and national

and European regulations such as REACH (Registration, Evaluation, Authorisation and Restriction of Chemical substances) at the storage, handling, use and recovery stages. As discussed in Key Issue 4 of this report, we recover 80% of our operational waste. Most of this recovered waste,

black slag, is temporarily stored in storage centres, commonly known as slag heaps. These rest on soil that forms a barrier to groundwater and all runoff water is collected and treated at ArcelorMittal's plants. The nature of the authorised residues and their storage conditions are set out in regulations, and regularly checked by water analyses and inspections by the appropriate local authorities. The analyses are carried out in house and do not only concern runoff water.

Among other things, chemical analyses are carried out periodically to guarantee the structure's reliability; and the quantity of waste leaving the plant is closely monitored. The slag is cut to size by a specialist subcontractor so it can be used directly in various sectors such as public works. It should be noted that the quality of these co-products is managed from the production stage onwards using temperature control, cooling and rock-blasting.

The remaining 20% of operational waste is either placed in storage pending a recovery solution made possible in line with current technological advances, or transferred to landfills approved and controlled under European regulations ensuring the best fit between type of material and processing.

This differentiated management aims to maximise the reuse potential.

On our former steel sites subject to

conversion, environmental analyses are carried out to identify the nature of the soil, subsoil and underground water, in particular storage centres to clean them up and secure them as effectively as possible with a view to launching a rehabilitation project. Old storage centres are composed mainly of blast furnace slag, since the electric sector only replaced the integrated sector in Luxembourg in 1997. This slag is recoverable, and thus sold in the cement industry as discussed in Key Issue 4 of this report on pX. The remainder is sent to treatment centres.

Particular attention is also paid to the many species that have repopulated our sites over the years. In fact, a biotope study is required for all sale, rehabilitation or construction projects. An external expert is then commissioned by the operating company to identify all the species and habitats present. For a period of up to one year, the land is analysed in depth, summer and winter, day and night. This biotope study identifies the habits of the various species present, as well as their diet, or reproduction period. The experts then put forward solutions to comply with the legislation: for each protected species, the ideal habitat with a territory that is sufficiently large for the animal to flourish must be recreated. In this way, protected species now populate our former sites, including alpine newts on the Mondercange heap, common redstarts identified at Lentilles-

Terres-Rouges or the woodlark at Ehlerange. To find out more about the environmental process implemented during an industrial conversion, please see Key Issue 10 on page 47 of this report.

Lastly, it should be noted that the Luxembourg Nature and Forest Agency (NFA) manages the sites owned by ArcelorMittal in protected areas of national and community interest through a leasing agreement signed in 2017 for a renewable period of five years. ArcelorMittal is making available land located in the Natura2000 areas of Differdange, Dudelange and Esch-sur-Alzette, which are subject to management plans drawn up by the NFA, as well as habitat action plans, such as the one dedicated to limestone grasslands and several species action plans such as those for the woodlark or the smooth snake. As part of the national plan on the protection of nature 2017-2021, and more specifically the national biodiversity strategy, many sites of high ecological value belonging to ArcelorMittal Luxembourg, such as former open pits, benefit from the NFA's know-how in environmental management. These areas, which were formerly industrial sites, have now been reclaimed by nature. The aim is to preserve the biodiversity which can flourish in these spaces, while enhancing their ecological potential through extensive agriculture.

## Water Management

Water is a vital resource for our steel sites, all of which are in fact built near rivers. Water has two main functions: firstly, to cool facilities subjected to high temperatures in the steel industry, and secondly, to transport the steel particles resulting from the rolling process which are detached from the finished product, and must be recovered.

In both cases, water is managed identically at our main sites in Belval, Differdange and Rodange. We deal

both with water consumption and water treatment. The cooling tanks present on our sites hold a large volume of reserve water. They are supplied chiefly by rainwater flowing onto our sites, as well as the occasional supplements from surface and underground water required to compensate for water lost through evaporation. Water is then pumped from these ponds to be transported to our facilities through a substantial pipe network. After use, the water

flows to the settling tank systems for treatment. These systems are mechanical facilities, subject to maintenance and hefty checks, which allow the extraction of solids suspended in water as well as traces of hydrocarbons. The water winds up in our tanks and will be pumped again, since our sites operate on a closed circuit. Continuous maintenance has been carried out on these settling tanks to optimise their operation since 2018.

## Booms in Belval and Differdange

The optimisation and protection of resources is one of the cornerstones of ArcelorMittal's environmental approach. Over the years, the requirements for water protection have become increasingly important. Finally, the findings of the latest internal incidents have also shown that we must be prepared for all situations and that the reactivity and efficiency of our teams is paramount.

The ArcelorMittal Belval and Differdange sites have reviewed and enhanced existing prevention

measures. SEEIM mobilised to set up floating booms to contain potential pollution on the Belval and Differdange sites. As the last bastions before the water used flows into the watercourses, the booms were placed at different locations in the network in December 2020 for Differdange and in February 2021 for Belval, to provide an additional protection measure for the existing water treatment systems.

The booms are designed to contain any accidental pollution of **oil at**

**the site and to avoid polluting the natural environment.** They consist of a succession of closed-cell flexible foam tubes enclosed in waterproof PVC-coated polyester fabric covers. This compartmentalisation allows them to follow the movement of the surface of the water and their flexibility means they have behave very efficiently in the wind.

The implementation was easy on both sites. The lifespan is about ten years. The old Belval boom could be removed and replaced by a new one.

## Managing emissions

Our industrial facilities typically produce four types of emission: CO<sub>2</sub>, NOx (nitrogen oxides), SOx (sulphur oxides) and dust (diffuse emissions). Emission from our steel mills are treated both by extracting the fumes created inside the electrical furnace and in the hall where the furnace stands.

The fumes produced during casting in the electrical furnace are extracted via the main dust extraction system. It extracts the fumes through openings in the lids of the furnaces and guides them to the afterburner chambers, whose job it is to burn off gas residues. The fumes are then rapidly cooled to 260 degrees Celsius by a fume sprinkler system called a quench in order to remove the dioxins potentially present in the fumes and are then guided to the spark separator to eliminate any sparks that may start a fire in the bag filters. Before entering

the filter chamber, activated carbon is added by injection, which allows dioxins and the various contaminants to be captured. These numerous filters greatly reduce the particles in suspension in fumes before they are evacuated by chimney. Dust emissions at the chimney outlet are thus reduced to less than 3mg/Nm<sub>3</sub>.

Another important strategy for managing diffuse emissions is the confined, watertight transport of powdery materials, such as lime or anthracite used in addition to scrap metal for the manufacture of steel within our facilities.

For emissions located in the electrical furnace hall, extraction systems (two at Differdange and one at Belval) are mounted on the steelworks' ceiling to extract the diffuse emissions produced during casting. They are then subject to the same treatment

as the emissions captured in the electrical furnace. They are collected by the main dust extraction system, passed through the quench, collected in the spark separator to be guided to the activated carbon injection, and end up in the filters.

Since 2018, ArcelorMittal has carried out the sizeable maintenance required to maximise all the components of these filtering systems.

NOx and SOx emissions mainly occur in terms of the combustion of natural gas necessary to cast steel in the electrical furnace and walking-beam furnaces. The technologies of the burners used, as well as their adjustment, are the main strategies for action.

Find out more about our management of CO<sub>2</sub> emissions on page 45 of this report.

ArcelorMittal Differdange 

**ArcelorMittal  
à votre écoute**



L'acier fait partie de la trame de la vie moderne et nous ne pourrions pas vivre sans lui. Les bâtiments, les routes, les ponts, les chemins de fer, les voitures et de nombreux appareils électroménagers n'existeraient pas sans l'acier. Ce dernier est l'un des matériaux les plus durables au monde, car il est solide, flexible et peut être indéfiniment recyclé. Les produits innovants en acier contribuent à réduire les émissions de carbone des véhicules et des bâtiments, à construire des villes plus intelligentes et à générer des infrastructures productrices d'énergies renouvelables. Mais l'acier fait face à des défis, en particulier environnementaux.

Chacun d'entre vous connaît une personne ayant travaillé pour cette industrie sidérurgique. Vous pouvez certainement parler du vécu et de l'existence depuis plus de 100 ans de cette belle industrie au Luxembourg. Pour faire de l'acier un matériau de choix pour un avenir durable, ArcelorMittal a défini le type d'entreprise vers lequel nous voulons tendre, et a identifié pour cela ses enjeux de développement durable.

Parmi ces enjeux, il est essentiel de prendre en compte entre autres l'évolution de l'implantation de nos sites. Hier, l'usine était isolée, loin de toute habitation. Puis, le tissu urbain s'est peu à peu étendu et aujourd'hui, cette même usine est au cœur de la ville !

Ce contexte peut amener nos voisins à se poser des questions. Aussi, et pour répondre à ces attentes, nous mettons en place une organisation qui vous permettra en direct de disposer de personnes de contact auxquelles les questions pourront être posées directement. Nous vous fournirons également par l'intermédiaire de petites brochures des explications sur les évolutions techniques de notre industrie.

Et pour tout savoir sur notre stratégie de développement durable au Luxembourg et sur nos plans d'action engagés, vous pouvez d'ores et déjà vous reporter à notre rapport annuel sur le développement durable disponible sur notre site internet : <https://luxembourg.arcelmittal.com>

L'objectif clair est de cultiver ce lien entre voisins qui permettra une discussion ouverte sur les préoccupations que pourraient ressentir certains. La responsabilité sociale du groupe ArcelorMittal est un axe majeur de son fonctionnement.

**L'acier d'ArcelorMittal Differdange est présent partout dans le monde.  
Paris – New York – San Francisco – Beijing – Singapore – Auckland**


## Communication campaign with residents of Differdange

During the summer of 2020, approximately 1,000 flyers were distributed to local residents of the Differdange production site to provide them with the full contact details of the employees available to answer their questions and complaints through a contact form delivered to their letterboxes. The flyer is also available on the website of the municipality of Differdange to all local residents.

As a result, six replies have been received to date (via the flyer or the e-mail address or by telephone) regarding complaints, including groups of local residents. They are being handled and will be followed up by ArcelorMittal Luxembourg to provide a response as soon as possible.

## Forest Management LIST work

ArcelorMittal Luxembourg owns over 600 hectares of forest in Luxembourg. In order to enhance the value of its assets, in 2019, ArcelorMittal Luxembourg initiated analysis work on the management of its forests with LIST, as part of the FORGE research partnership. Discussions and work will continue in 2021 with the integration of new actors such as the association naturem&emwelt.

LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY **LIST** 

**AMBD-LIST FORGE ACTIVITIES:  
TOPIC "FORESTS"**

Version: V1  
Date: 30.06.2020

Luxembourg Institute of Science and Technology (LIST) Environmental Research & Innovation (ERIN) department  
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# Key Issue 6 : Responsible energy user that helps create a lower carbon future



The steel industry consumes energy thanks to its production process. As such, energy efficiency is a key issue, both in terms of the environmental aspects of the energy transition and in terms of costs for the company.

Indicators	2018	2019	2020
<b>Energy consumption (GJ/tCS)</b> Gigajoules per tonne of crude steel (tCS: tonne Crude Steel) The evolution is mainly related to the fact that electricity is sourced green.	8.68	8.76	8.96
<b>CO<sub>2</sub> emissions per tonne of crude steel (kg CO<sub>2</sub>/tCS)</b> Kilogram per tonne of crude steel (tCS: tonne Crude Steel)	300	289	272
<b>Direct emissions (Scope 1 set by the GreenHouse Gas protocol)</b> corresponding to the CO <sub>2</sub> directly emitted by the furnaces	179	180	186
<b>Indirect emissions (Scope 2 set by the GreenHouse Gas protocol)</b> corresponding to the CO <sub>2</sub> emitted to generate the energy consumed: electricity and heat (hot water, steam)	77	65	42
<b>Other indirect emissions (Scope 3 set by the GreenHouse Gas protocol)</b> corresponding to CO <sub>2</sub> emissions from products used in our workshops such as quicklime and industrial gases (oxygen, nitrogen)	44	44	44
<b>ISO 14001 certified facilities</b> The standard covers environmental management. It is based on the principle of continuous improvement in environmental performance by controlling the impact associated with company activities. The Belval, Differdange, Rodange and Dommeldange sites are certified.	4 out of 7	4 out of 7	4 out of 7
<b>ISO 50 001 certified facilities</b> The standard covers energy management. The Belval, Differdange, Rodange and Dommeldange sites are certified.	3 out of 7	3 out of 7	3 out of 7

## GRI 103-2

As a steelmaker, our major environmental impact lies in our energy consumption and our resulting CO<sub>2</sub> emissions. Our strategies for action focus on reducing energy consumption and on the energy source used. Our emissions are also subject to stringent monitoring.

In fact, ArcelorMittal is part of the

European Union Emissions Trading Scheme (ETS). Each year we declare our emissions based on measurements and calculations audited and validated by an approved European organisation. Each flow that may generate the slightest kilo of CO<sub>2</sub> is scrupulously studied, from the quantity consumed to the accuracy and changes in inventory, including

traceability, chemical analyses, calculation method, and so on.

In Luxembourg, ArcelorMittal is currently focusing on reducing its energy consumption in order to reduce its emissions. Several projects have reduced both the energy consumed in our ecosystem and that of our facilities.

## Pursuing a partnership with LIST to improve our energy performance

In 2019, the Luxembourg Institute of Science and Technology (LIST) and ArcelorMittal Luxembourg signed a five-year agreement to work together on the research and development of innovative projects and services in the fields of enhancing energy efficiency and the responsible use of resources, optimising multiple energy efficiency measures, heat recovery and the generation of electricity from excess heat. The research field forms part of ArcelorMittal's process of transition to a circular economy and circular steel production.

The first thing to be done is a needs

and opportunities analysis to help reach the goals of reducing the environmental impact of steel plants and increasing their energy efficiency, by launching various research projects. The technical and strategic documents thus generated will allow various other more detailed research projects to be launched. In fact, energy efficiency is a key issue, both in terms of the environmental aspects of the energy transition and in terms of costs for the company. As such, this partnership is totally consistent with ArcelorMittal's *CSR policy* in Luxembourg and more broadly, with the Group's stated ambition to significantly reduce its

carbon footprint by 2050, in line with its commitment to the *Paris Agreement*.

Via its teams, LIST, which aims to pass on scientific, innovative solutions to economic and industrial players, will bring all its know-how and research power to this partnership based on the "Forge" concept, a space thus named because ideas and avenues for circular projects are developed and tested there.

In 2020, the project group continued its work and identified some new avenues that are still being explored.

## An industrial pilot project for biogas production at the ArcelorMittal Rodange site

As part of its efforts to transform its business model towards even more environmentally friendly steel and a circular economy, ArcelorMittal has launched an innovative initiative by setting up an industrial biogas production demonstrator on the Rodange site. This project, initiated by ArcelorMittal, is part of the Group's sustainable development approach in Luxembourg. Ultimately, the project aims to replace 25% of natural gas consumption for heating steel sections before rolling with biogas produced on site.

The biogas plant in Rodange is the first project for this specific application. If the project delivers satisfactory results, ArcelorMittal will be able to deploy this principle of replacing natural gas with biogas on a global scale.

In order to do this and to be operational in 2023, ArcelorMittal Europe – Long Products has signed an initial strategic partnership with the Norwegian company Vow ASA, a supplier specialising in technologies for the decarbonisation of industry. Vow ASA's patented «Biogreen» technology is based on the pyrolysis of biomass at a high temperature (> 750° C). In line with European circular economy requirements, this process will allow for the recovery and reuse of local waste. The biogas produced



ArcelorMittal Rodange plant.

is cleaned and then burned in the reheating furnace of the Rodange rolling mill. Pyrolysis co-products, such as bio-coal, can be used to reduce CO<sub>2</sub> emissions from the Belval and Differdange electric arc furnaces (EAF).

At the same time, ArcelorMittal in Luxembourg is partnering with LuxEnergie, a subsidiary of Enovos, which is contributing its know-how

in the implementation of this type of innovative technology. Its solid experience in the development of energy plants using renewable resources and its in-depth knowledge of the corresponding regulatory environment perfectly complement VoW ASA's technical solution.

The synergies offered by pooling these skills will enable this project to become a frontrunner in the field.

*“We are delighted to be working with Vow ASA, combining our expertise as a steelmaker with the technology offered by this specialist company, to create the biogas plant for ArcelorMittal Rodange. We see significant potential in the use of biogas as a replacement for natural gas in ArcelorMittal Europe - Long Products’ facilities, which will contribute to our goal of being carbon neutral by 2050. This technically ambitious project is truly revolutionary in its ability to create biogas for industrial use from sustainable biomass.”*

Vincent Cholet, ArcelorMittal Europe – Long Products’ technical director.

As a reminder, ArcelorMittal Europe is committed to reducing its CO<sub>2</sub> emissions by 30% by 2030 and has the ambition to be carbon neutral by 2050. As part of its Smart Carbon strategy, the company is also implementing a carbon-neutral steelmaking process that harnesses all clean energy for the controlled high-temperature reduction of iron ore. For example, replacing natural gas with hydrogen as a key reductant in the production of DRI (Direct Reduction principle of Iron ore).

Henri Reding, CEO of ArcelorMittal Rodange, said:

*“The Rodange site is proud to host this innovative project. Our teams are eager to contribute to this experience, which will enable ArcelorMittal Luxembourg to be part of the Group’s ambitious strategy to offer ever more efficient and environmentally friendly steel.”*



## Upgrading of Train 2 electrical cells at the Belval production site

In Belval, the maintenance department works daily to ensure the efficiency and performance of Train 2, the world leader in sheet piling. In 2019, a comprehensive plan for the sustainability and operation of

the facilities was initiated, including the re-commissioning of the Ilgner electrical room and, as of 2020, the launch of the «High Voltage Transfo sec» project.

To this end, a plan was drawn up for the replacement of high-voltage cells and the renovation of certain high-voltage cells on the production line. Upgrading electrical cells creates significant benefits for production,



product quality and staff safety. The needs of the maintenance team were primarily related to:

- Reducing the risk of personal injury involved in maintenance of the electricity network.
- Anticipating future projects.
- Reducing electrical failures on the internal network.

Following the diagnosis of the old electrical cells still in use, a call for tenders was issued to local companies, with specifications that included the modernisation of the high-voltage distribution system at Train 2 in Belval, to which Schneider Electric responded, taking into account the environmental impact of this kind of renovation. Therefore, the project began with a performance and safety modernisation audit by the service provider of Train 2's equipment, including an inventory of the electrical network, an assessment of the equipment and a budget estimate, in order to determine what

improvements and replacements would be required.

The approach is in line with ArcelorMittal's concern for the circular and environmental economy in Luxembourg. The installation thus consists of thirteen reconditioned medium-voltage cells and five oil transformers that have been decontaminated and replaced by reconditioned dry-type transformers.

EcoStruxure measurement sensors were installed on the busbars of the cells to make the installation more reliable, to perform

predictive maintenance and energy management, and to protect the existing equipment. Maintenance operators will be able to see and monitor energy consumption in real time. This will allow savings to be measured and visualised by improving the most energy-intensive installations. Future failures can also be identified by using the sensors and can thus be prevented, avoiding a production delay. These sensors meet the need for improved, fast and reliable diagnostics, enabling conditional, preventive and corrective maintenance.

*“Thanks to these operations, we avoided reprocessing 26 tonnes of material and saved the equivalent of 170 tonnes of CO<sub>2</sub>.”*

Sébastien Michon, industrial engineer at the Train 2 maintenance site in Belval.

The 33 high-voltage cells will be installed in three phases: 13 cells have already been installed, 10 more will be installed in 2021 and the remaining 10 in 2022.



# Key Issue 7 : Supply chains that our customers trust



Product quality and respect for delivery methods are basic expectations for our customers. Beyond these expectations, ArcelorMittal Luxembourg aims to ensure that its supply chain, both upstream and downstream of its production, offers guarantees regarding compliance with environmental, social and ethical standards. It thus strengthens the traceability of its products to satisfy its increasingly demanding customers, particularly in the construction and automotive sectors, which themselves face increasingly stringent regulations.

Indicators		2018	2019	2020
Sourcing via local suppliers amount in k€	Electricity	77,830,000 Germany: 4 % Belgium: 7 % France: 89 %	67,710,000 Germany: 4.2 % Belgium: 3.4 % France: 92.5 %	64,018,000 Germany: 3.5 % Belgium: 8.2 % France: 88.3 %
	Gaz	38,471,000 Germany: 0 % Belgium: 100 % France: 0 %	29,364,000 Germany: 0 % Belgium: 100 % France: 0 %	17,120,000 Germany: 0 % Belgium: 100 % France: 0 %
	Total Electricity and Gaz	116,301,000 Germany: 2.5 % Belgium: 38 % France: 59.5 %	97,074,000 Germany: 2.9 % Belgium: 32.6 % France: 64.5 %	81,138,000 Germany: 2.77 % Belgium: 27.58 % France: 69.65 %
	Transport & logistics	107,974,433 Luxembourg: 58 % Belgium: 29 % Germany: 2 % Austria: 4 % France: 2 % Others: 5 %	112,059,968 Luxembourg: 59 % Belgium: 28 % Germany: 2 % Austria: 4 % France: 2 % Others: 5 %	98,226,181 Luxembourg: 59 % Belgium: 26 % Germany: 3 % Austria: 5 % France: 2 % Others: 5 %
<b>Number of suppliers assessed for their environmental and social impacts</b>				
All of our suppliers are required to ratify the ArcelorMittal Responsible Sourcing Code. Each year we carry out an in-depth evaluation of a sample of suppliers. The 2020 assessment campaign has been postponed in view of the health situation.		53	54	0

## Make our value chain more reliable

Since 2010, our Responsible Purchasing Code, drafted in collaboration with our customers, suppliers, peers and NGOs, sets out the minimum threshold for health and safety, human rights and ethical and environmental standards in relation to our suppliers.

ArcelorMittal assesses annually the main suppliers of its industrial sites in Luxembourg. This assessment helps us to analyse our suppliers in more depth, to guarantee purchasing that is reliable in environmental, social, economic and ethical terms.

Since 2018, we have evolved this tool; the themes assessed are similar. The assessment criteria include:

- Compliance of deliveries compared to requirements (quantity, quality,

technical specifications, nature of customer-supplier relations, etc.);

- Responsible purchasing on-site (compliance with health and safety procedures, management of environmental impacts, compliance with the related specifications, etc.);
- Responsible purchasing (management of health and safety, the environment, human resources, human rights and ethics, etc.);
- Compliance with deadlines;
- Commercial potential (competitiveness).

Several players take part in this assessment, from buyers to users, via the on-site stores that receive the goods. The sample to be assessed is

chosen on the basis of:

- The magnitude of the expenses and the number of orders;
- The score from the previous campaign;
- Supplier criticality (sole supplier, or directly linked to the plant's strategy, product with a key impact on quality, etc.).

**Due to the health crisis, the 2020 assessment campaign has been postponed to 2021.**

The new 2021 assessment will take into account commercial reciprocity in the sense that suppliers will be able to assess ArcelorMittal in order to jointly establish improvement plans for collective performance.

## ResponsibleSteel™, deployment of the European sustainable development program

In 2019, ArcelorMittal announced its intention to roll out a new sustainable development programme across Europe, with the aim of achieving ResponsibleSteel™ site certification for all its ArcelorMittal sites in Europe. The programme will allow all sites to demonstrate that ArcelorMittal's production processes meet rigorously defined standards across the wide

range of social, environmental and governance criteria making up the ResponsibleSteel™ standard. This certification is awarded by an independent body.

The certification project at the ArcelorMittal sites in Belval, Differdange and Rodange began in 2020 and will continue in 2021.



# Key Issue 8 : Active and welcomed member of the community



Our activities in Luxembourg have a sizeable impact on the local and national communities in which we operate. We sponsor projects that encourage sustainable community programs, thus supporting long-term economic and social growth. To fully establish its integrated sustainable development approach, ArcelorMittal aims to give particular emphasis to initiatives and associations relating to our core business and our significant impacts, so as to maximise the creation of shared value. We also encourage community commitments made by our employees, and encourage them to get more involved in local community life.

Indicators	2018	2019	2020
<b>ArcelorMittal Luxembourg donations</b> Amount in € representing the projects sponsored, including STEM projects.  Support for the Schalssgoart Gallery has been postponed to 2021. In 2019, support for the construction of the Expo Dubai pavilion inflated the amount of donations.	363,050	1,006,654	339,300

The health situation has had a major impact on the actions to be carried out by the associations, foundations and organisations supported by ArcelorMittal Luxembourg in 2020 and also in 2021. However, the resilience and adaptability of these organisations has been in line with the expectations of the beneficiaries and causes.

## Enhancing and maintaining a sustainable ecosystem

### natur&ëmwelt

natur&ëmwelt, Fondation Hëllef fir d'Natur is a public utility organisation created in 1982, whose main areas of activity are the acquisition and management of natural reserves, information and awareness campaigns to safeguard nature and biodiversity, scientific studies and research, safeguarding forests, undertaking national, inter-regional and European projects with the main aim of conserving and restoring the natural environment.



#### National Tree Day 2020

Initiated by *natur&ëmwelt Fondation Hëllef fir d'Natur*, in partnership with the Administration de la nature et des forêts (Anf), and with the support of its member companies, including ArcelorMittal in Luxembourg, **National Tree Day** is an annual awareness-raising campaign aimed at encouraging public and private bodies, as well as citizens, to plant trees and shrubs, which are **essential for biodiversity in rural and urban areas**. The effects of climate change are making more and more citizens aware of the importance of getting involved, participating and contributing to the conservation and improvement of our natural environment.

ArcelorMittal Luxembourg supported this initiative through two actions.

The first was a donation for planting **hardwood forests in Luxembourg**. As sources of food, protection and shelter, large and small mammals, birds and insects have made the forest their habitat. The biodiversity of hardwood forests is very rich. But the forest is also an essential tool in the fight against global warming. It ensures climate stability by reducing the amount of carbon dioxide in



Presentation of the cheque on 9 November at the Maison de la Nature in Bettembourg: on the left (blue mask) Gilles Weber, Director of *natur&ëmwelt Fondation Hëllef fir d'Natur*, and on the right (black mask) Tom Embringer, Professor of Economics at Bonnevoie Technical College.

the atmosphere and improving the quality and availability of water. **A forest ecosystem of 100 m<sup>2</sup> stores about 10 tons of CO<sub>2</sub> from the atmosphere over 100 years.**

The second action consisted in putting Bonnevoie Technical College in contact with *natur&ëmwelt*. We had already contacted the secondary school at the beginning of 2020 for the young students' project «Seabin», which could not be completed due to the health crisis.

ArcelorMittal offered to **donate the funds allocated to the initial project to National Tree Day**. Aware of the environmental cause to which the young people were committed, they donated all the funds they raised to the Foundation for this day, i.e. 3,000 euros. (<https://www.naturemwelt.lu/3000-e-collecte-par-le-lycee-technique-de-bonnevoie-en-faveur-de-la-journee-nationale-de-larbre/>)

National Tree Day has become an annual event not to be missed by all those who want to take concrete action to conserve biodiversity, protect nature, promote sustainable development and combat climate change.

Read more: <https://www.naturemwelt.lu/faire-un-don/?type=project>

#### Natur&ëmwelt mobil 2020

Since 2011, thanks to the support of ArcelorMittal, the organisation is the proud owner of a truck named 'natur&ëmwelt mobil'. This vehicle has been fully equipped to transport educational, teaching and information workshops, thus making it possible to carry out local awareness-

raising actions, by going on-site to businesses, public places, schools, and so on.

It is an excellent tool for the distribution of information that is essential to the Foundation's missions. In 2020, the van's tour was greatly reduced. However, some actions were carried out, in particular during the soft mobility day, a campaign that took place in Weiler la Tour in the north of Luxembourg.

#### Rehabilitation of the Rumelange newt pond

In late 2018, a project was launched to rehabilitate a crested-newt pond at «Kierchberg», on ArcelorMittal land in Rumelange. The pond is located in a meadow that is widely grazed by cattle. It is fenced off and surrounded by a screen of bushes. One of the pond's specific features is that it plays host to the crested newt, a priority species under Annex II of the Habitats directive. The pond is part of the Esch-sur-Alzette Sud-Est – Former mines/Ellergonn special conservation zone of the European Natura 2000 network and national biotopes of open environments to be protected. Three management measures are necessary to help the crested newt's return to colonise the pond: reed cutting, clearing the surroundings of trees creating a hindrance, and making the site accessible.

In 2020, the reeds were cut back again and the fence was removed. During this last task, the dike was found to be broken. The next stages of work planned will be to dig up the pond and rebuild the dike, remove trees that are stifling the waterhole and put up signs explaining the actions carried out at the site.

## First Luxembourg Sustainability Digital Forum for IMS

ArcelorMittal is a founding member of IMS (Inspiring More Sustainability), a network that has been supporting organisations in their commitment to CSR for more than 10 years by promoting dialogue with their stakeholders. ArcelorMittal Luxembourg actively participated and supported this event, and some twenty employees logged on to follow the event remotely.



If you were unable to log on, you can watch the 2020 edition of the Luxembourg Sustainability Forum thanks to the videos available on YouTube in French, Luxembourgish, English and German (<https://www.youtube.com/playlist?list=PLKKPpGU31r98RMvjOqtkyrFsQxyIMgnCt>)

In the module entitled “From Hyperconnected to Techno-freaks”, which is devoted to managing the multiple demands we face every day (e-mails, various alerts received via different channels, messages and phone calls, etc.), Dr. Jacoby, Head of the Occupational Health Department at ArcelorMittal in Luxembourg, and Mr. Jean Yves Lamant, ArcelorMittal Global R&D France, talk about their experience.

*“As far as infobesity is concerned, I am convinced in the approach I am trying to implement to achieve better management of e-mails, avoiding overload, saturation and allowing the maximum benefit from this tool. This is a real challenge for companies and their employees, but many tools and solutions are readily available. The important thing is to «want» to apply them. This is also true in the case of knowledge management, where free tools are available that make it easier and, above all, more efficient to manage the wealth of information available”*

Dr Jacoby.



For this first digital edition:

- Nearly 400 participants,
- 6 hours of live broadcasting,
- Two sessions, two studios
- 22 speakers including two from ArcelorMittal
- 10 cameras and
- An international virtual exhibition

*“Processing information we receive must take into account our biological cycle and particularly that of our brain. Our relationship with time must change.*

*The concept of a «cognitive footprint» must be managed in much the same way as the (individual) carbon footprint, so as not to pollute our personal reflection and the restorative moments we need.*

*Infobesity is a problem that is not easy to manage, if you are slightly demanding.*

*We are far too ignorant of the tools that can help us feed ourselves with information.*

*Ryad Sallem’s life testimony, very effectively challenging the notion of the meaning of life, the downward spiral of meaning in today’s economy, where what is essential is the attention given to vulnerable people so that they can benefit from decent living conditions and be afforded a full place in society, conveyed a convincing message.”*

Jean-Yves Lamant

## Virtual tour of the Zero Single-Use Plastic exhibition

On the occasion of the Luxembourg Sustainability Forum and the commitment to the Zero Single-Use Plastic Manifesto, IMS created an **exhibition to raise awareness of plastic pollution**.

ArcelorMittal hosted this exhibition at its headquarters in February 2020.



M. Michel Wurth, Chairman of the Board of Directors of ArcelorMittal Luxembourg, at the exhibition in the Petrusse buildings in February 2020.

Visit the virtual exhibition below:

<https://view.genial.ly/602aaf335462210d85f39905>

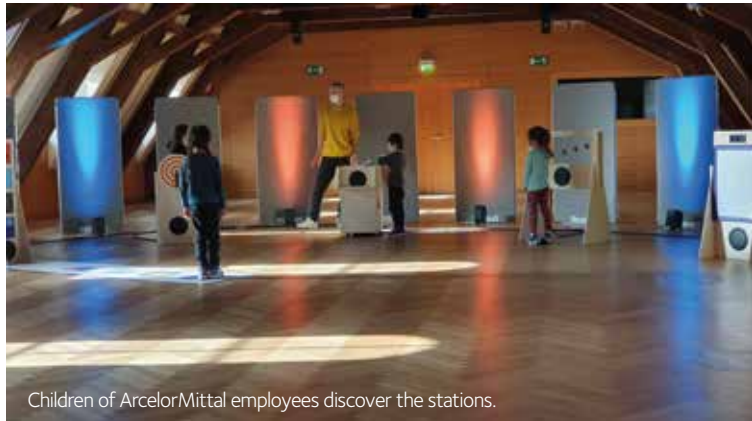
## Encouraging inclusion

### Fondation EME

The Fondation EME “Listening to aid understanding”, established by an initiative of the Philharmonie Luxembourg, aims to provide access to music for those who are generally excluded from cultural life. Since access to music is a genuine need, any effort to make it accessible strengthens the cause of social justice.

In 2020, the Foundation continued its activities by adapting to the health crisis situation. As soon as the lockdown began, it issued a call for musicians who recorded 75 concerts. They were then sent to the health care institutions and broadcast on local TV stations (TV d’Esch and Apart). 120 outdoor concerts also took place from the end of April until the summer. Finally, they were able to set up training sessions for musicians to raise awareness of the specific audience. This introductory training will become mandatory for newcomers. It will create a community of sharing and exchanges.

ArcelorMittal Luxembourg supported the Soundcolors programme in 2020. Four project discovery workshops supported by ArcelorMittal, Soundcolors – EME Foundation, were held at the end of February 2021 at Neimënster Abbey, in the centre of Luxembourg City. The aim of Soundcolors? To make culture and music accessible to everyone!



Children of ArcelorMittal employees discover the stations.

There are five different stations on which everyone can play and create their own music, regardless of their age, mobility, possible disability, culture, etc. The body is key in this project. Each station responds to the lightest movements of the body to create a melody or rhythm. It is the body that thus composes a unique piece of music. Soundcolors knows no creative limits, participants can let their imagination run wild. Everyone can create and record his/her own original work and listen to it again at home. Soundcolors thus restores self-confidence by putting the body at the centre of this project, all participants get to know their body and to value it.

**440**  
 filmed events were implemented by the EME Foundation in 2020.  
 All events were filmed and available for streaming.



The Soundcolours stations available at the Néimënster abbey.

### La Main Tendue

The association is a listening and support body for children, adolescents and adults who are victims of physical, mental and sexual violence. It endeavours to provide these people with a confidential ear, support and information. The year 2020 brought many difficulties at the beginning of lockdown with regard to maintaining

activities. Video-conferencing was introduced (except with children). Many forums were cancelled by secondary schools in connection with the events; in response to this, the non-profit organisation deployed new solutions such as setting up the ELENA project in 2020, a telephone helpline in several languages to overcome loneliness. Training was also developed

for professionals to meet the specific needs of this period.

The conclusion is clear. The crisis has accentuated the needs of beneficiaries facing isolation, loneliness, domestic violence, anxiety and so on. The volume of requests and demands has not decreased, but the needs have changed.



## Forging future talents

### Jonk Entrepreneuren Special Award

The purpose of the association is to promote entrepreneurship and creativity among young people in Luxembourg through a partnership between the worlds of business and education. Young people are introduced to professional life and entrepreneurial culture through various programs. In particular, ArcelorMittal supports the mini-business competition that invites young students to create and manage a real miniature business, with the help of volunteer advisers from the business world, with a specific focus on business ethics.

### Award for the best mini-business goes to “FrëschKëscht”

Each year, ArcelorMittal Luxembourg supports the “Best Business Plan” of the mini-business competition. For the 2020 edition, the winning group received a special prize: a trip to Dubai to visit the World Expo! With this in mind, the participating mini-businesses had to bring together and showcase the themes present at the Luxembourg Pavilion: creativity, beauty, diversity, sustainable development and entrepreneurship.

The «FrëschKëscht» project by the Lycée Robert Schuman won the prize for the best mini-business of the year. The FrëschKëscht concept was born from the desire of seven students to find an original and ecologically interesting idea that would have a positive impact on everyday life. The FrëschKëscht (“fresh box”) is a box containing seasonal and regional products. The products primarily consist of fruit and vegetables. The content of the FrëschKëscht changes every week. The customer does not know the contents of the box in advance.



In the background, from left to right, Gilles Heinesch, Teo Castevilli, Ivo Silva and in front, from left to right Gaia Costadura, Diogo Marques, Clémentine Offner, Julien Clusserath  
 @ Photo credit: freschkescht [www.freschkescht.lu/buy](http://www.freschkescht.lu/buy)

### Official sponsor of the Luxembourg Pavilion at the Dubai World Expo

As Diamond Sponsor of the Luxembourg Pavilion in 2019, ArcelorMittal Luxembourg decided to take part in the great adventure of the World Expo in Dubai, which had been postponed to 2021. This is a great opportunity for the company to help shore up Luxembourg’s reputation by offering its exceptional quality products: 170 tonnes of beams, tubes and concrete reinforcing bars were produced and shipped from the Grand Duchy’s steel mills to the Emirates. (see issue number 3)

### Da Vinci non-profit association, Luxembourg

The Da Vinci non-profit association in Luxembourg brings together engineers, architects, scientists and

representatives from the business world. ArcelorMittal Luxembourg supports the Wëssensatelier Lëtzebuerg, which offers young pupils the opportunity to discover scientific subjects through various fun and educational experiments.

### ArcelorMittal and the University of Luxembourg continue their partnership

The University of Luxembourg and ArcelorMittal are continuing their collaboration in research on steel construction and civil engineering. Since way back in 2010, ArcelorMittal Luxembourg has been one of the main partners and supporters of the University of Luxembourg.

This support provides funding for research to enhance the efficiency and sustainability of steel constructions,

in which the circular economy and reducing the carbon footprint of the construction sector serve as core topics of this collaboration until 2022.

As with Steligence®, the Chair is working on a modular steel construction system allowing the disassembly and reuse of items after their initial use. In this case, the life cycle of the elements can resume with no transformation of the raw material or any of the related carbon emissions. The research focuses on different areas, including design of the modular components that must meet the capacity requirements, a shift towards the standardisation of construction parts, and the development of digital tools to save the history and technical specifications for each individual component.

## Conserving local cultural heritage

### The Circle of Friends of Colpach

The «Emile and Aline Mayrisch» award was created in 2005 by Annette Schwall-Lacroix, chair of the Circle of Friends of Colpach, and Joseph Kinsch, Chairman of the Board of Directors of Arcelor. Supported by ArcelorMittal, this award aims to promote “the spirit of Colpach”, as one of openness to cultural trends and the promotion of understanding between European people. The prize is awarded every four years and is open to researchers, students, journalists and other authors residing in Germany, Belgium, France and Luxembourg. The works presented concern history, politics, economics, social life and/or culture in the Franco-German-Belgian-Luxembourg area.

### Galerie Schlassgoart non-profit association

Created by Arbed in 1993 and housed in the Centenary Pavilion in

Esch-sur-Alzette, the Schlassgoart gallery aims to promote art and artists from Luxembourg and around the world. A non-profit association, the Schlassgoart gallery does not take a commission on the works for sale. In fact, buyers and exhibiting artists can negotiate directly, with artists benefiting from the great exposure afforded by the patronage of ArcelorMittal Luxembourg.

In 2020, the gallery has hosted several exhibitions.

The Luxembourgish painter, Carine Kraus, took place in February. In autumn, The schlassgoart gallery hosted, in the part of the Sculpture Prize exhibition Schlassgoart, works by Bertrand Ney (winner) and Sophie Medawar (special mention). Liliane Heidelberger and Danielle Grosbuch «The instinct of stone and engraving” exhibited their engravings and

paintings until the beginning June. Since November 2020, and until at the end of 2021, Franz Ruf winner of the Prize Grand Duke Adolphe 2019, exhibit his engravings, drawings and paintings «Four decades of creation»

As part of the ceremonies of Esch2022, the gallery will organize an exhibition around the works by Auguste Trémont, painter and sculptor Luxembourgish: “Auguste Trémont in 2022 – A meeting revisited”.

Are also scheduled, on time current exhibition «Open Circle» of the Cercle Artistique de Luxembourg until June 24, 2022, the presentation of the monograph dedicated to Bettina Scholl-Sabbatini on June 28, 2022 as well as the Nathalie Decoster exhibition until September 2022.

Learn more about Esch2022 and the exhibition: <https://esch2022.lu/fr/news/zoom-sur-les-projets-auguste-tremont-tigre-couche/>

### Signing the Lëtzebuerg Diversity Charter

On October 6, 2020, during an official online ceremony in the presence of Corinne Cahen, Minister for Family and Integration and sponsor of this initiative, ArcelorMittal in Luxembourg confirmed its commitment to diversity by becoming a signatory of the «Lëtzebuerg Diversity Charter».

The objective of this charter is to provide the signatory Luxembourg organisations with a shared vision of diversity by bringing them together around a common text in order to implement diversity management, beyond legal obligations. The development of practices that promote social cohesion and equity is nurtured through network exchanges, workshops and conferences.

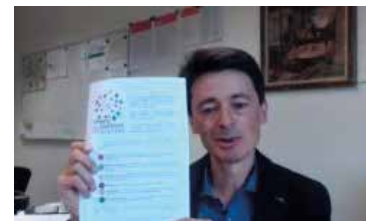
In this context, ArcelorMittal Luxembourg commits to continue:

- Strengthening a long-term approach to diversity
- Combating all forms of discrimination
- Enhancing its equal opportunities policy, notably through an objective and fair recruitment and internal promotion process



Today, ArcelorMittal Luxembourg represents 67 nationalities (Europeans of all backgrounds, of course, but also Japanese, Indians, Chinese, Brazilians, etc.), just over 500 women (a proportion that increases regularly each year) and a population composed mainly of people aged between 30 and 50.

Diversity is a real driver for the company. In order for it to generate wealth, innovation and sharing, every company employee must feel committed to this approach. The next steps involve formalising an action plan and publishing the actions carried out to promote diversity in two years.



Henri Reding, CEO ArcelorMittal Rodange, signed the Lëtzebuerg diversity charter for ArcelorMittal Luxembourg.

- ArcelorMittal Luxembourg :
- 67 nationalities
  - Over 500 women

For more information: <https://chartediversite.lu/fr/pages/quest-ce-que-la-Diversite>

### International Women's Day 2020

On the occasion of International Women's Day in early March 2020, a round table discussion was held at Pétrusse Headquarters. ArcelorMittal in Luxembourg is committed to diversity and inclusion in the workplace. Many employees attended the event «virtually», despite the fact that they had to cancel their physical presence due to the initial preventive health measures. Panel members included internal speakers and guests from different fields in Luxembourg: digital expert and «entrepreneur-mum» Marina Andrieux, executive director and co-founder of WIDE (Women in Digital Empowerment), M. Maurice Bauer, alderman of the city



of Luxembourg, Anne van Ysendyck, from the Legal Department of ArcelorMittal Group and Mark Van Dongen, Head of Human Resources at

ArcelorMittal Mining. Sapna Malhotra, Head of Internal Communications at ArcelorMittal Europe, moderated the discussion, participating via Skype.

### Mini-grants 2020

As it does every year, and regardless of the pandemic, ArcelorMittal launched a call for applications with a view to supporting the Luxembourg and Greater Region associations where our employees are active. Employee volunteering is encouraged by ArcelorMittal, who cares about its local roots.



#### PASSERELL Financing the CIVIS project (Global Citizen)

PASSERELL is a non-profit association promoting the establishment of contacts and links between asylum seekers or refugees and Luxembourg residents. It organises events involving refugees and volunteers in order to promote their integration in Luxembourg. It also aims to raise public awareness of the status of asylum seekers.

[www.passerell.lu](http://www.passerell.lu)



#### Emergency Volunteer Aid Team Volunteer firefighter

27 volunteers for this association located in Pétange, which intervenes as a voluntary association and is also responsible for meteorology in Luxembourg. The volunteers provided assistance during the tornado in Pétange in 2019. The aim of E.V.A.T. (Emergency Volunteer Aid Team) is to help people in distress.

[www.evat.lu](http://www.evat.lu)



#### Enfants de l'Espoir (Children of Hope) Projet Chemin de Paix (Path of Peace Project)

Enfants de l'Espoir (Children of Hope) is a non-profit NGO founded in 1991, by a nurse from Luxembourg. In Colombia the peace agreements between the government and the FARCS were signed in 2017. Enfants de l'Espoir put forward a project to the Luxembourg Ministry of Cooperation and Humanitarian Aid on conflict resolution in eight communities. The objective of the project is to develop fun educational, social and family tools in six schools in the department of Quindío, located in central-eastern Colombia, in order to ensure that children have access to quality education.

<http://cercle.lu/ong/enfants-de-lespoir/>

and <https://enfants-de-lespoir.org/>



**MEDAF**  
**Construction of school canteens in Madagascar**

MEDAF Luxembourg is a non-profit association created in Luxembourg in 2008. It specialises in project management in the fields of health, health education, and education. It contributes to improving the living conditions of populations in Africa and to promoting local development by finding funding for real-life projects. Several of them have been supported, in diverse locations as Guinea, Senegal and Madagascar, where since this year, ArcelorMittal has been a partner of this association. In 2017, the association built a school in the Brickaville area, and the project continues with the construction of six canteens.

<https://www.facebook.com/medafluxe>



**Study-Help**

The Study-Help association was created in 2011. It helps young people in need to continue their studies by offering them coaching and assessment for their future career choices. Based on the experiences of numerous visits to Romania, the project, which aims to support a home for children from a difficult family background, ensured that these young people would be able to attend their final year of secondary school. Study-Help asbl is an association without administrative staff, which guarantees the full and transparent transfer of the amounts paid to students.

<http://www.study-help.lu>



**Blue Cross France, Longwy**

The Blue Cross helps all people who have difficulties with alcohol and/or other addictions and who are trying to overcome them. The association's actions are based on the experiences of each member in order to promote dialogue by creating a relationship other than with professionals, in a complementary way. In the long run, these people find a physical and moral balance thanks to the association.

[www.croixbleue.fr](http://www.croixbleue.fr)

**Une Main pour un Espoir (A Hand for Hope) So that a Child... remains a Child**

Une Main pour un Espoir works in the Grand Est region for the benefit of children placed in foster homes under the Aide Sociale à l'Enfance scheme, by welcoming them to fun and sporting events, and by collecting gifts and other items useful for their personal development. Most of these children have suffered the worst possible experiences (abuse, neglect, rape, abandonment, etc.) and have not had the chance to grow up with loving parents. This is why the association organises moments of sharing and love for them, so that they too can share them with their school friends: Christmas party, Easter egg hunt, Halloween party and support for the start of the school year. These actions help to give them confidence in life and hope for relationships with adults. At the same time, the association works for the most disadvantaged by collecting basic necessities, whether for the homeless, families in extreme poverty, isolated people or women who are victims of domestic violence.

<https://www.helloasso.com/associations/une-main-pour-un-espoir>

and on the Facebook page <https://www.facebook.com/construisons.unmonde.meilleur>



**Fondation Veuve Emile Metz-Tesch**

ArcelorMittal in Luxembourg administers the Fondation Veuve Emile Metz-Tesch, the first public utility foundation created in Luxembourg in 1928.

Edmée Metz-Tesch started philanthropic work in memory of her husband Emile Metz (1835-1904), a former director of the Dommeldange plant, and one of the founding families of the Arbed. The aim of the «Fondation Veuve Emile Metz-Tesch» was to allow working youths to acquire a theoretical and vocational education which, up to that point, had been sorely lacking for workers in the Luxembourg steel industry. With no heirs, Mrs Metz-Tesch gifted her holding in Arbed to the first public utility foundation created in Luxembourg. It is chaired by the Chairman of ArcelorMittal Luxembourg and managed by a Board of Directors composed of Group representatives, two representatives from families of descendants, and one representative appointed by the state. The Foundation is involved in projects that are complementary to those of ArcelorMittal Luxembourg, mainly in the educational field (STEM), in projects benefiting young people, and with Luxembourg associations that have a steering group for projects that can be developed in various countries around the world where ArcelorMittal has activities.

# Key Issue 9 : Pipeline of talented scientists and engineers for tomorrow



Science, Technology, Engineering and Mathematics (STEM) represent the future of our society, and more specifically of our Group. By investing in the development of these disciplines, ArcelorMittal Luxembourg guarantees its capacity for product and process innovation. STEM reflects the competitiveness of the company and is a key issue.

Indicators	2018	2019	2020
<b>Amount invested in STEM (science, technology, engineering, mathematics) projects</b> From 2020 onwards, donations to student associations on the sites are included in the reported amounts.	172,500	212,500	215,500

In this 4.0 era, the need to promote the development of STEM knowledge, skills and competences is crucial. Digital literacy is already an essential condition for the social, economic and cultural integration of citizens. It goes without saying that its use will increase and it is already indispensable, both personally and professionally. The arrival of the Covid-19 pandemic has only fuelled and accelerated its development and spread.

At ArcelorMittal we are aware that today's young people, tomorrow's workers, will inevitably be confronted with a transformed labour market, with growing needs in the STEM disciplines. We are committed to continuing to support and motivating these young talents of tomorrow - our talents of tomorrow.

<sup>1</sup> \*STEM is an acronym for Science, Technology, Engineering and Mathematics. The French version of this acronym is «STIM» (Science, Technologie, Ingénierie et Mathématiques).

## The integration of young people during Covid-19 poses a real challenge

The year 2020 was marked by the global health crisis of Covid-19, which led to a strict lockdown from the beginning of the year.

This crisis was triggered in the middle of the internship period for many of the graduating classes and caused great concern among students and their parents. Indeed, it should not be forgotten that the work placement is a very important step in young people's education: it is an opportunity to validate their ability to integrate into a team, to take initiatives and to assume their autonomy in a real, professional environment.

For ArcelorMittal Luxembourg, 50% of the planned internships were suddenly cancelled by the national education

authorities of the border countries, mainly for health reasons imposed by their governments.

Internally, some departments were severely affected, and had to abandon the idea of taking on a trainee, either because their activity had slowed down or come to a halt, or because they could no longer guarantee a minimum level of supervision for the trainees. Thus, 30% of them switched to teleworking insofar as it was possible. Although this persistent global pandemic was very quickly accompanied by various hygiene measures that were put in place over time in our daily life, as well as in all our factories and administrative buildings in Luxembourg, only 20% of the internships could be postponed to

September 2020.

Like many companies, ArcelorMittal has had to adapt and face new challenges related to human resources management on several levels. We had to demonstrate our ability to adapt and be flexible in organising remote working for a large number of trainees, and in building the confidence and motivation of those trainees who remained in person at the various production sites. We also had to deal with a degree of occasional absenteeism of some internship sponsors, who had to take extraordinary family leave, and with members of staff or our future talent pool having to self-isolate.

In this context, a digital transition appears all the more essential.

## Towards an enforced digital transformation

Directly impacted by the health prevention measures, ArcelorMittal Luxembourg had to accelerate, in just a few days, the digitisation of its collaborative spaces in order to upgrade its structure, remain competitive on the global market and be visible as a brand employer to

talented young people and to border partner schools.

In addition, ArcelorMittal Luxembourg redesigned its practices in order to continue to support local actors such as FEDIL, schools and universities in their race to digitise, to compensate for the cancellation or postponement

of a large number of face-to-face events.

Today, including social networks and local media in our digital strategy has become indispensable. This is one of the best ways to promote our company and the industry to young people.

**HelloFuture** by FEDIL, aims to promote professions in industry and technology in Luxembourg to pupils and students of all levels of study. The aim is to offer innovative and interactive tools to help them orient their professional future towards the industrial world of tomorrow.

The novelty of **HelloFuture** lies in the creation of an Instagram page entitled "HelloFuture goes Instagram" primarily aimed at young people. ArcelorMittal has been selected to participate in the **HelloFuture** digital adventure, featuring a young Luxembourg employee in a short film presenting the world of the steel industry, to inspire future generations.

In the same context we had the opportunity to promote the group and our professions by participating in the television project "Eis Industrie meng Zukunft" in collaboration with RTL Télé Lëtzebuerg. The idea was to create a two-minute TV commercial that portrays a Luxembourg employee working in a technical job in our company, a major employer in the country.

Our partnerships with schools and universities have not been affected, in this difficult context with the cancellation of internships and recruitment forums, which are generally conducted face-to-face. Despite this, we continued to support them by attending the various virtual events organised by them, such as the IUT of Metz-Nancy Lorraine, the

Ecole Polytechnique de Nancy and the Université Catholique de Louvain-la-Neuve.

The past few months have highlighted how indispensable digital tools are, which are now essential to the smooth running of our society and economy. The advance of technology worldwide means that

more and more jobs in STEM fields are needed. We have learned to live and work under the new constraints of Covid-19. The health and economic consequences are considerable. Although new solutions are emerging, the long-term challenges remain and the extent of the impact on young people and their qualifications is yet to be determined.

## Developing an inspiring, innovative industrial ecosystem

Since 2010, ArcelorMittal has supported the University of Luxembourg and is one of its main partners thanks to the Chair in Steel and Engineering of Façades. This makes it possible to train the next generation of future talent, from bachelor to doctorate level, and to develop joint research projects.

### ArcelorMittal Chair in Steel Construction: 10 years of collaboration

Launched in 2011 by the University of Luxembourg and ArcelorMittal, the Chair in Steel Construction has achieved many successes thanks to the support and motivation of both partners. Many new projects are expected in the coming years.

The Chair's research work focuses on the research and development of efficient, sustainable steel solutions for high-tech buildings, composite steel materials and glass. Façades are a key element in modern buildings. Construction technology, ventilation, and climate control all have a role to play in the consumption of building resources, especially in terms of energy. To keep this consumption down, the

basic structure, technology and façade must complement one another. This is the whole point of researchers' work in relation to this Chair, focusing on several areas: how building surfaces are utilised, glazing systems, intersections between the building structures and the façade system, sustainability of the façades, modular construction and material flows, composite steel/concrete solutions, and so on.

From 2011 to 2021, the Chair has been renewed, each time with different teaching and research orientations in line with industrial needs. The ArcelorMittal Chair in Steel Construction headed by Professor Christoph Odenbreit, who heads the

Laboratory for Steel and Composite Steel Construction at the University of Luxembourg. For ten years, Professor Odenbreit with the help of four senior researchers (Oliver Hechler, Renata Obiala, Matthias Braun and Jie Yang) and 11 doctoral students managed to carry out 11 research projects and successfully complete their doctoral theses. They have **published around 25 articles in renowned journals, participated in around 66 conference contributions and given 10 lectures every year for undergraduate and master's students.** ArcelorMittal has supported the Chair with a total of **over 1.6 million euros.**

### From façade engineering to sustainable steel structures

**The first agreement (2011-2015)** focused on the development of energy-efficient high-tech buildings made of steel, steel composites and glass. Four research projects were carried out to improve the connections between steel beams and steel supports, to use numerical models to detect corrosion in steel sheet piles, to secure steel beams at high loads on concrete components and to examine the service life of steel dowels in composite steel bridges.

In the **second agreement (2016-2019)**, the Chair continued to explore in detail the relationship between steel and glass. They also paid particular attention to optimising

high-strength steel products for structural engineering and high-rise construction. In addition, the team worked in collaboration with the University of Bradford, the Technical Universities of Darmstadt and Stuttgart, as well as the Steel Construction Institute in London and ArcelorMittal as part of a Research Fund for Coal and Steel (RFCS) / Horizon 2020 project. In the follow-up to this project, Professor Odenbreit led a subgroup, who developed proposals for European standardisation.

The **third agreement (2019-2022)** is dedicated - as part of the European Commission's Green Deal policy - to

making steel construction more efficient and sustainable. The main objective is to further enable a circular economy approach to steel building components. The Chair is working on modular systems of steel beams and connectors that would allow the dismantling and reuse of these parts once a building has reached the end of its life cycle. This requires research in different areas: the design of modular components that have to meet certain load-bearing capacity requirements, a push for standardisation of construction parts, the development of digital tools to store the history and technical specifications of each individual component.

## Several awards for the ArcelorMittal Chair

Various works carried out by doctoral students within the framework of the Chair have been rewarded.

- In 2019, Valentino Vigneri was rewarded for his outstanding paper «Different load-bearing mechanisms in headed stud shear connections in composite beams with profiled steel sheeting» at the **Nordic Steel Construction Conference**.
- Dr. Andras Kozma presented his results in a **TEDx conference at the University of Luxembourg**, <https://www.youtube.com/watch?v=aAN3s14pSyY&t=516s>



*“The recent FNR award for an outstanding doctoral thesis is truly amazing as it is the first time this award has been given to researchers in the field of engineering.”*

Olivier Vassart, CEO Steligence® at ArcelorMittal

In 2020, **Maciej Chrzanowski** received an award from the Fonds National de la Recherche (FNR -National Research Fund) award for his outstanding doctoral thesis “Shear Transfer in Heavy Steel-Concrete Composite Columns with Multiple Encased Steel Profiles.”

To find out more, watch the video: [https://youtu.be/LA\\_InmYN1Mg](https://youtu.be/LA_InmYN1Mg)

In parallel, the Chair has made a significant contribution to the development of European standards in the field of steel and composite structures. In particular, the team has been actively involved in the **revision of Eurocode 4 “Design of composite steel and concrete structures”**.

## New laboratory, new projects

From 2021 onwards, structural tests will be carried out in the **new building of the civil engineering laboratory in the Halle des Essais on the Belval campus**. Among other things, this new infrastructure increases the **competitiveness of the laboratory** by allowing tests with much larger structural elements and greater forces.



*“This partnership is highly symbolic for the University of Luxembourg and demonstrates our excellent collaboration and trust over the past ten years. In particular, I would like to highlight the large number of projects, the increasing focus on sustainability and digitisation and the recent prestigious awards”*

Jens Kreisel, Vice-Rector for Research at the University of Luxembourg.





*“The engineering department is in a phase of renewal with a new strategy and new academic posts. Collaboration with industry will continue to play a key role, as demonstrated by the success of the ArcelorMittal Chair.”*

**Jean-Marc Schlenker**, Dean of the Faculty of Science, Technology and Medicine (FSTM).



*“I really appreciate the efforts of the Chair team, which always works with dynamism and enthusiasm. The excellent quality of the work has been rewarded with several awards, which is really satisfying!”*

**Nicoleta Popa**, Head of Applications, Infrastructure and Long Products at ArcelorMittal Global R&D Construction.

The Chair’s work in figures for the period January 2019 to December 2020

Research work		Teaching activities	
Research projects in progress	3	Bachelor degree lectures	7 (civil and mechanical engineering)
Completed projects with doctorates	3	MSc lectures	2 (Civil Engineering)
New research proposals submitted in 2020	2	Bachelor theses	4 (in combination with projects in association with ArcelorMittal)
Publications		Master’s theses	7 (of which 6 in collaboration with ArcelorMittal)
Published journal articles	10		
Published conference papers	8		
Conference participation (presentations)	12		
Journal articles planned for 2021	8		
Contributions to conferences planned for 2021	4		



# Key Issue 10 : Our contribution to society measured, shared and valued

ArcelorMittal reasserts its Luxembourg roots through its industrial sites, and the presence of its head office in Luxembourg City. The company is still a major social and economic partner, providing jobs for local subcontractors, and a major taxpayer.

Indicators	2018	2019	2020
<p><b>ArcelorMittal's economic contribution to Luxembourg</b> Payroll (pay and employer contributions) allocated to ArcelorMittal employees in Luxembourg, and expenditure to our suppliers and subcontractors in Luxembourg for their services.</p> <p>The decrease is explained by the amount of the wage bill which is much lower than last year (2019 = €304,778,192.40) for several reasons:</p> <ul style="list-style-type: none"> <li>• The LTC contribution was included in the total last year, but it is an employee contribution, not an employer contribution, so it should be excluded. The amount of this contribution last year was €3,677,478.15</li> <li>• Wages and contributions are reduced due to partial unemployment in 2020</li> <li>• Wages and contributions are also reduced as a result of the NHF taking over from the 1st day of illness between 01/04/2020 and 30/06/2020.</li> </ul>	490,086,755	500,640,678	435,098,709

## Industrial conversion: a source of shared, sustainable value

Thanks to progress and to innovation in the economic, social and environmental fields, industrial activities are being transformed. Today's infrastructure is more

digital and less labour-intensive; the transition towards Industry 4.0, and a third industrial revolution is underway. In addition to our company's responsibility to support its employees

in the shift towards higher added-value operations, we must ensure the conversion of our former industrial sites to contribute, in a different way, to the development of our territory.



Representatives of the Government of the Grand Duchy of Luxembourg, ArcelorMittal Luxembourg, as well as the deputy mayor of the city of Esch-sur-Alzette and the mayor of the municipality of Schiffflange make official their decision to proceed with the conversion of the site.

To this end, we undertake industrial conversions through the Agora company, or else directly with property developers.

**Agora**, a company created in 2000 jointly and equally with the Luxembourg state, is responsible for the conversion of Luxembourg's largest brownfield sites. Its work resulted in the development of the Belval urban district over an

area of 120 hectares, shared with the municipalities of Esch-sur-Alzette and Sanem, bringing together universities, housing units, shops and office space. Today, it is in charge of the feasibility study and redevelopment of the former steel plant at Esch-Schiffflange. In 2020, the urban revitalisation project for the **"Quartier Alzette"** site was validated and entrusted to Agora

by the "Government - ArcelorMittal - Municipalities," which met at the Ministry of Energy and Spatial Planning on 23 October 2020.

The first planning stages are underway with the revision of the General Development Plans (GDP) of the two municipalities and the preparation of a first Specific Development Plan (SDP).

*"We are convinced that the realisation of this project, with the support of the municipalities, will enable us to successfully pursue the strategy of strengthening the southern region. Its launch will also offer the opportunity to give pride of place to innovative solutions in the fields of transport, the environment, energy supply and the control of carbon emissions. It invites us to provide concrete answers to important social issues, such as affordable housing"*

*"The development of this district must be a showcase for urban development made in Luxembourg."*

Claude Turmes, Minister for Energy and Spatial Planning

*"Each of our factories plays an important economic and social role in its immediate environment. As a responsible company, we want to ensure that former industrial sites continue to fulfil this function. We are therefore even more enthusiastic to actively participate in this new operation. Over the next few years, a new urban district for future generations will be created on the site of the former Metzschmelz, on the very spot where steel flowed for 144 years. Steel will also have its place, illustrating its ability to contribute to a circular economy. Our involvement in Belval has demonstrated the value of this approach for the population, for the economy and for the territory. With this new project we are adopting the same approach."*

Michel Wurth, Chairman of the Board of Directors of ArcelorMittal Luxembourg.

## Official handover of the keys of building IV to the frEsch non-profit association

On 13 July 2020, Margaux Radici, Head of Real Estate Luxembourg and Germany, handed over the keys to Building IV of the industrial wasteland in Esch-Schifflange to the elected representatives of Esch.

This building is the former

management building of Esch-Schifflange, and was also used to host a school for health professionals and has not been occupied since 2014.

It will become a place of artistic and cultural creation and social innovation, as well as a place for

living, continuous education and meetings. The building will house several associations.

The Bâtiment IV projects for Esch 2022, European Capital of Culture, thanks to the support of the City of Esch-sur-Alzette.



From left to right, Margaux Radici, Head of Real Estate Luxembourg and Germany, Georges Mischo, Mayor of Esch-sur-Alzette and Pierre-Marc Knaff, Alderman for Culture of Esch-sur-Alzette

The conversion project at Lentille Terres Rouges (“Rout Lëns” in Luxembourgish) is a symbolic urbanisation project carried out by property developer IKO, in accordance with recommendations issued by ArcelorMittal. It is a former industrial steel production site, active from 1870 to 1977. Located southwest of the town of Esch-sur-Alzette, the space occupies more than 10 hectares between the town centre and the French border.

The new space created will be carbon

neutral and will include housing, public facilities (schools, medical centres, sports centres, and so on), offices, shops and local services while enhancing the area’s industrial and natural heritage. To achieve this, the favoured approach is that of collaboration and participation of all residents and local stakeholders.

Remediation work began at the end of August 2020 and will be completed by the end of 2021. In parallel, the collection and movement of protected species has been extended during

2021 during the favourable periods (spring/summer) by Luxplan.

The site was sold to IKO in 2020, but ArcelorMittal Luxembourg continues rehabilitation operations.

In December 2020, demolition and asbestos removal operations were the main activities carried out at the site. The special development plan (SDP) is currently being examined and should be delivered in 2021. The first building is scheduled for delivery in 2024.

## “Studentewee” for pedestrians and cyclists between Esch/Alzette and Belval

Work on the «Studentewee» cycle path between Esch and Belval started in 2020. A large section of the latter crosses the Belval steel site.

With a total length of approximately 1.9 kilometres, the starting point is in Esch. The route follows the boundary

between the steelworks site and the railway line. Resting benches will be installed along the route. The path will partly overlook the supports and be borne by steel cables. The last section of the footbridge will be connected to Belval by a curved path. Along the route, the pedestrian will move along a path

optimised by screens that will ensure a harmonious balance between the city and industry. The supports for this section will be made of steel beams of self-patinated quality, i.e. naturally resistant to corrosion.

“Studentewee” is expected to be commissioned in spring 2023.

## Art as close as possible to Luxembourg employees

In the summer of 2020, Luxembourg artists expressed their attachment to the industry that forged their country.

A new bird has taken up residence on a hilltop near the church in Rodange. From this point, he watches the steelworkers with a benevolent eye, the ballet of lorries entering and leaving and the live rolling mills of our site in Rodange.

This new inhabitant, admittedly lifeless but not soulless, was created by Bettina Scholl-Sabbatini, an artist from Luxembourg. We noticed that its wings are created from numerous strips of grooved rails, which make up each of its feathers.

Rolled in the nearby ArcelorMittal factory, these grooved rails are a tribute to the factory's employees who are able to produce this quality of rail. The grooved rails are intended for tramways and have been developed in Rodange for several years, representing the permanent evolution of our sites in the Grand Duchy.

The giant owl was assembled by the Guy Gardula workshops in Eherange, under the direction of Jean-Luc Juncker.

Another work of art has appeared in one of the country's largest steelworks a few kilometres from Rodange, still in the Minett region. One artwork? No fewer than five gigantic urban murals covering the entire façade of the cooling towers of the Differdange plant.

This monumental project is in continuation of the initiative of the municipality of Differdange to develop art in urban spaces. And there's nothing like combining the city's greatest local urban artist with the industry that has made the city famous since the beginning of the 20th century. Cooling towers appeared to be the ideal playground for Alain Welter and his team. In addition to being

gigantic canvases, they overlook the city and allow the frescoes to be seen for miles around, not only by passers-by but also by ArcelorMittal employees. One of the towers reads «Minettsdapp» with colourful miners, trains and industrial buildings depicting some of the processes involved in steel processing as a tribute to the region's industrial past.



Work in Differdange by Alain Welter.

# Ensuring transparent governance

All our stakeholders, employees, customers, suppliers, and the communities around us must be considered with dignity and respect. Compliance with the law and ethical standards is fundamental to ArcelorMittal, who wishes to lead by example.

Indicators	2018	2019	2020
<p><b>Number of complaints received by the Internal Audit service</b> These complaints relate to internal shortcomings identified by employees concerned to uphold ArcelorMittal's reputation for honesty and integrity.</p> <p>Three complaints were received in 2020 in relation to the «Luxembourg steel sites» alert system concerning honesty and integrity.</p>	4	0	3
<p><b>Percentage of employees trained in the Code of Business Conduct</b> The ArcelorMittal Code of Business Conduct provides a set of guidelines to be followed by all employees when conducting their business. The aim is to uphold ArcelorMittal's reputation for honesty and integrity in its management practices as well as in all business transactions.</p> <p>Training on the Code of Ethics is mandatory and valid for three years. Before the end of this period, all employees must renew their training certificate. To keep all these certificates up to date, we have to anticipate employee turnover, training revalidation constraints or long-term absences.</p> <p><i>* Please note that, exceptionally, the 2020 data only concern the following sites: AOB, Belval, Differdange, Dommeldange, Rodange, Bissen and ArcelorMittal Europe – Flat Products EPO. The year 2020 cannot be compared to previous years.</i></p>	93.66 %	93 %	95.7 % *
<p><b>Percentage of employees trained in Human Rights</b> ArcelorMittal has published a comprehensive policy on Human Rights, in order to coordinate the group's efforts as a whole, focusing on the priority areas identified.</p> <p>Human rights training has been mandatory for certain functions and for all management staff since September 2016 and is valid for three years. Before the end of this period, the employees concerned must renew their training certificate. To keep all these certificates up to date, we have to anticipate employee turnover, training revalidation constraints or long-term absences.</p> <p><i>* Please note that, exceptionally, the 2020 data only concern the following sites: AOB, Belval, ArcelorMittal Differdange, Dommeldange, Rodange and Schifflange, Bissen and ArcelorMittal Europe – Flat Products EPO. The year 2020 cannot be compared to previous years.</i></p>	92.72 %	97 %	86.4 % *

# Glossary

**Angle:**

L- or V-shaped metal profile.

**Beam:**

I- or H-shaped hot-rolled steel product.

**Continuous casting:**

Continuous solidification method used on molten metal. The liquid metal flows continuously into a mould that has been cooled sharply. A layer of solidified metal then forms which is taken up as it leaves the mould by a device called a segment where it is supported and continues to cool until all the metal has solidified. The bar is then cut to the appropriate length. Continuous casting facilities have one or more strands.

**DRI :**

Pre Reduced Iron ore.

**Electric arc furnace plant:**

Electric arc furnaces are used to produce steel from scrap melted using electricity, in contrast to the cast iron sector (blast furnace – converter) where it is produced from iron ore.

**Electro galvanisation:**

This is an electro galvanising (zinc coating) technique. The steel section is coated in a zinc layer by electrolysis, by means of an electric current.

**Flat steel:**

Any steel that has been rolled into a thin sheet. Flat steel is mainly used in the manufacture of outer coverings for household appliances, motor vehicles and ships.

**Hot-dip galvanising:**

Hot-dip galvanising is a technique used to coat a section of steel with zinc or a zinc-based alloy, by soaking it in a bath. The coating makes the product more corrosion resistant.

**Long steel:**

Any steel that has a relatively small cross-section and a relatively large length. This includes railway tracks, I-beams, concrete reinforcing bars and sheet piles. Long steel is mainly used in construction.

**Lost-time injury frequency rate:**

This is the number of injuries with lost time of more than one day per million hours worked.

**Rolling mill:**

Manufacturing facility designed to reduce the thickness of a material while giving it a very specific section (see also 'Long steel' and 'Flat steel'). This deformation is obtained by continuous compression as the metal passes between two rollers rotating in opposite directions.

**Sections:**

Profiled (sectioned) material is one that has been given a profile, or specific shape.

**Sheet pile:**

Profiled pile designed to be beaten into the ground or into sediment and which connects to neighbouring piles through lateral veins called 'locks' or 'claws'. Sheet piles are mainly used for retaining walls, quay walls, cofferdams and waterproof screens.

**Wire-drawing Mill:**

Plant specialising in wire drawing, i.e. reducing the section of a metal wire via mechanical traction, by passing it through the holes of a die.

# Complaint management procedure for our external stakeholders

ArcelorMittal has set up national and local procedures for handling complaints from external stakeholders. Complaints should be addressed:

by telephone on

**(+ 352) 4792 1**

by post to the following address

**ArcelorMittal**  
Country Management  
Luxembourg  
24-26, boulevard d'Avranches  
L – 1160 Luxembourg

by e-mail to

**contact.luxembourg@arcelormittal.com**

Belval site by phone

**(+352) 8002 2014**

Differdange site by phone

**(+352) 8002 4282**

ArcelorMittal Rodange & Schifflange by phone

**(+352) 5019 2300**



In 2019, we developed a unique new tool to manage complaints from our internal and external stakeholders: Ethicspoint. This tool is managed by an independent body and provides multilingual support.

By phone in Luxembourg:  
**+352 8008 5260**

Via the dedicated platform:  
<http://arcelormittal.ethicspoint.com>



# Methodology note on materiality

To undertake the materiality analysis exercise, ArcelorMittal Luxembourg, accompanied by consulting firm KPMG Luxembourg, completed three major steps from October 2017 onwards:

## Identify

In the first step, ArcelorMittal Luxembourg set the objective and the scope of its materiality analysis. The scope of the study included all its ten sites located in Luxembourg to date.

Next, according to the Sustainable Development reporting principle in line with GRI standards, ArcelorMittal Luxembourg drafted a comprehensive list of aspects that may have an economic, social and/or environmental impact. This list was subsequently shortened, retaining only the 28 most relevant topics.

## Prioritise

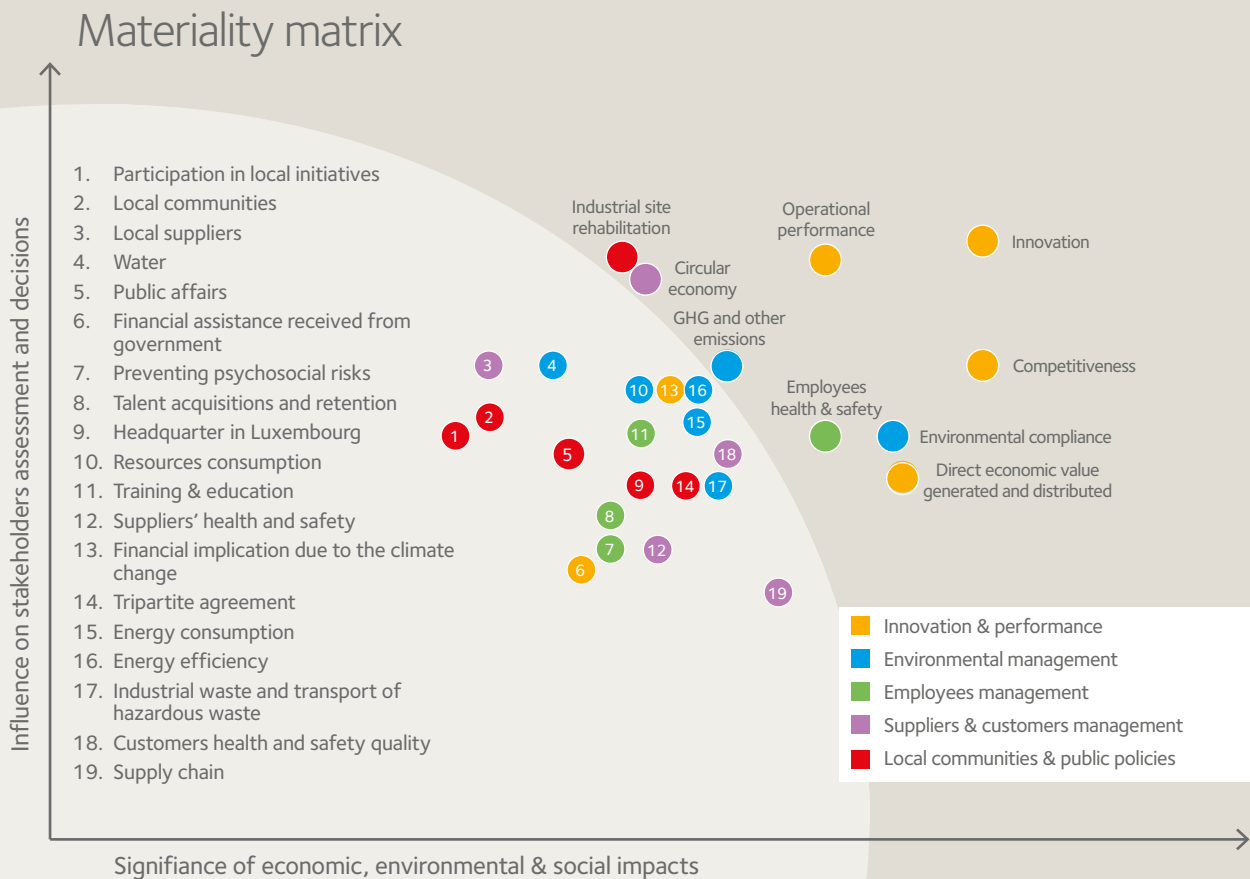
In the second step, the ArcelorMittal Luxembourg Sustainable Development Committee assigned a degree of importance to each topic in line with the following six criteria: financial impact, regulatory impact, investor confidence, customer loyalty, employee satisfaction, and reputation. The same weighting was applied to each criterion. Likewise, and in line with the stakeholder inclusion principle, ArcelorMittal Luxembourg identified its main stakeholders from the government and public administration, local communities, employees, media, suppliers and customers; it then conducted qualitative interviews with 11 of them to discuss the list of topics identified.

These topics were then ranked according to their influence on stakeholders, with each one weighted in the same way.

## Validate

Finally, the last step consisted of creating a materiality matrix to highlight those topics considered as material.

The materiality threshold was drawn up by the Sustainable Development Committee according to topic importance. This matrix was validated in late March 2018.



## Definition of matrix topics

### Direct economic value generated and distributed

Value generated: revenue generated.

Value distributed: employee wages and benefits paid, operating costs such as payments for contract workers, payments to providers of capital, payments to government, community investments, etc.

### Financial implications due to climate change

Financial implications due to either physical, regulatory or other risks and opportunities due to climate change.

### Financial assistance received from government

Financial assistance received from government such as tax relief and tax credits; subsidies; investment grants, research and development grants, and other relevant types of grant; awards; royalty holidays; financial assistance from Export Credit Agencies (ECAs); financial incentives; other financial benefits received or receivable from any government for any operation.

### Competitiveness

Competitiveness in relation for instance to commercial dumping, mergers or anti-competitive behaviors (trust, and monopoly practices, etc.) as well as to the strategic action plan 'Action 2020' related to cost optimization, mix products and higher volumes.

### Innovation

Innovation in relation for instance to R&D to develop new products, to better recycle materials and products as well as to improve energy efficiency of current products.

### Operational performance

Operational performance linked to efficient process and infrastructures set-up to avoid production downtimes/shutdowns.

### Resources consumption

Resources consumption such as input materials used (renewable/non-renewable) to manufacture the organization's primary products.

### Energy consumption

Energy consumption within the organization and outside the organization (renewable/nonrenewable).

Reduction of energy consumption (during manufacturing process, transportation, etc.).

### Energy efficiency

Reductions in energy requirements of products.

### Water

Use of water to manufacture products, water sources significantly affected by withdrawal of water  
Water recycled and reused.

### GHG and other emissions

GHG emissions reductions.

Evolution of the EU emissions trading system.

Management of other emissions: emissions of ozone-depleting substances (ODS), Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions.

### Industrial waste and transport of hazardous waste

Waste generated by type and disposal method (including the significant spills).

Hazardous waste transported (local treatment, imports, exports, including international shipments).

### Environmental compliance

Significant fines and non-monetary sanctions for non-compliance with environmental laws and/or regulations.

Compliance with environmental management system (ISO 50001, ISO 14001).

Products in compliance with environmental standards (locally and internationally).

### Employees' health and safety

Workers representation in formal joint management–worker health and safety committees.

Injuries, occupational diseases, absenteeism, work-related fatalities, risk level.

Health and safety topics covered in formal agreements with trade unions.

### Preventing psychosocial risks

Psychosocial risks related to all aspects of work design, management of work, social and environmental context, which may have the potential to cause psychological or physical harm (work-related stress, burnout, diseases).

### Training and Education

Trainings offered to employees and programs for upgrading employee skills and transition assistance programs.

Employees receiving regular performance and career development reviews.

Promotion of education (partnership with universities, training organisms).

### Talent acquisition and retention

Finding, acquiring, assessing, and hiring candidates to fill roles that are required to meet company goals.

Strategy or ability to retain its best employees and hence maintain a low turnover.

### Local suppliers

Procurement budget used for significant locations of operation that is spent on local suppliers.

### Supply chain

Supply chain linked to procurement of raw materials, production & storage and expedition of manufactured products.

### Circular economy

Looking beyond the current take-make-dispose extractive industrial model, a circular economy aims to redefine growth, focusing on positive society-wide benefits.

Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. It is based on three principles: design out waste and pollution, keep products and materials in use, regenerate natural systems.

### Suppliers' health and safety

Injuries, occupational diseases, work-related fatalities and risk level.

### Customers' health and safety

Assessment of the health and safety impacts of product and service categories.

Incidents of non-compliance concerning the health and safety impacts of products and services.

### Tripartite agreement

Tripartite agreement following «Lux2016» and socioeconomic compliance (significant fines and non-monetary sanctions for non-compliance with laws and/or regulations in the social and economic area).

### Local communities

Operations with significant actual and potential negative impacts on local communities, local community engagement, impact assessments, and development programs, sponsoring, pro bono.

### Public affairs

Public relations efforts of a firm that are associated with government agencies, mass media, and public interest and pressure groups.

### Headquarter in Luxembourg

Global headquarters of ArcelorMittal located in Luxembourg.

### Participation in local initiatives

Participation in Luxembourg clusters (materials and manufacturing cluster, cluster for logistics).

Participation in national reflexions such as the «Third Industrial Revolution», the INDR's Label, IMS Luxembourg.

### Industrial sites rehabilitation

Agora project, reconversion of industrial sites (Belval, Schifflange).

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# To our readers and stakeholders

Please take a few minutes to send us your feedback, suggestions and needs by answering the questions below.  
It will only take 5-10 minutes of your time.

## 1. In relation to the ArcelorMittal Group, you are:

Internal  External

## 2. If you are external, please specify:

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## 3. Is the document clear and legible?

Yes  No

## 4. Do you think that ArcelorMittal Luxembourg's CSR approach as described in this document is clearly set out?

Yes  No  Neutral

## 5. Why did you consult the SD report?

To obtain non-financial information  Commercial relationship  
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## 6. Did you find the information you were looking for?

Yes  No  Not applicable



7. Based on your perceptions and expectations, how important is it to you that ArcelorMittal should report on the following themes:

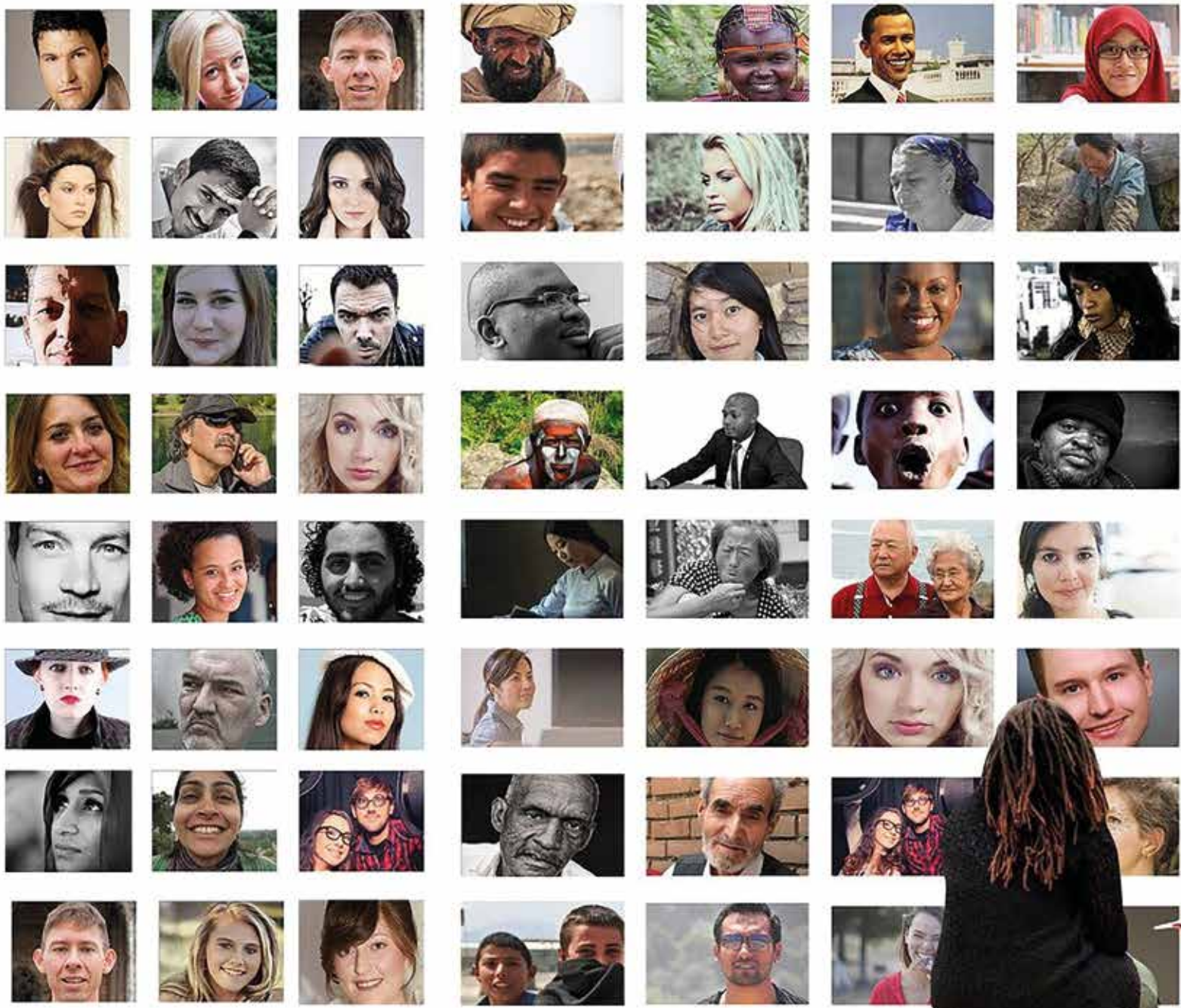
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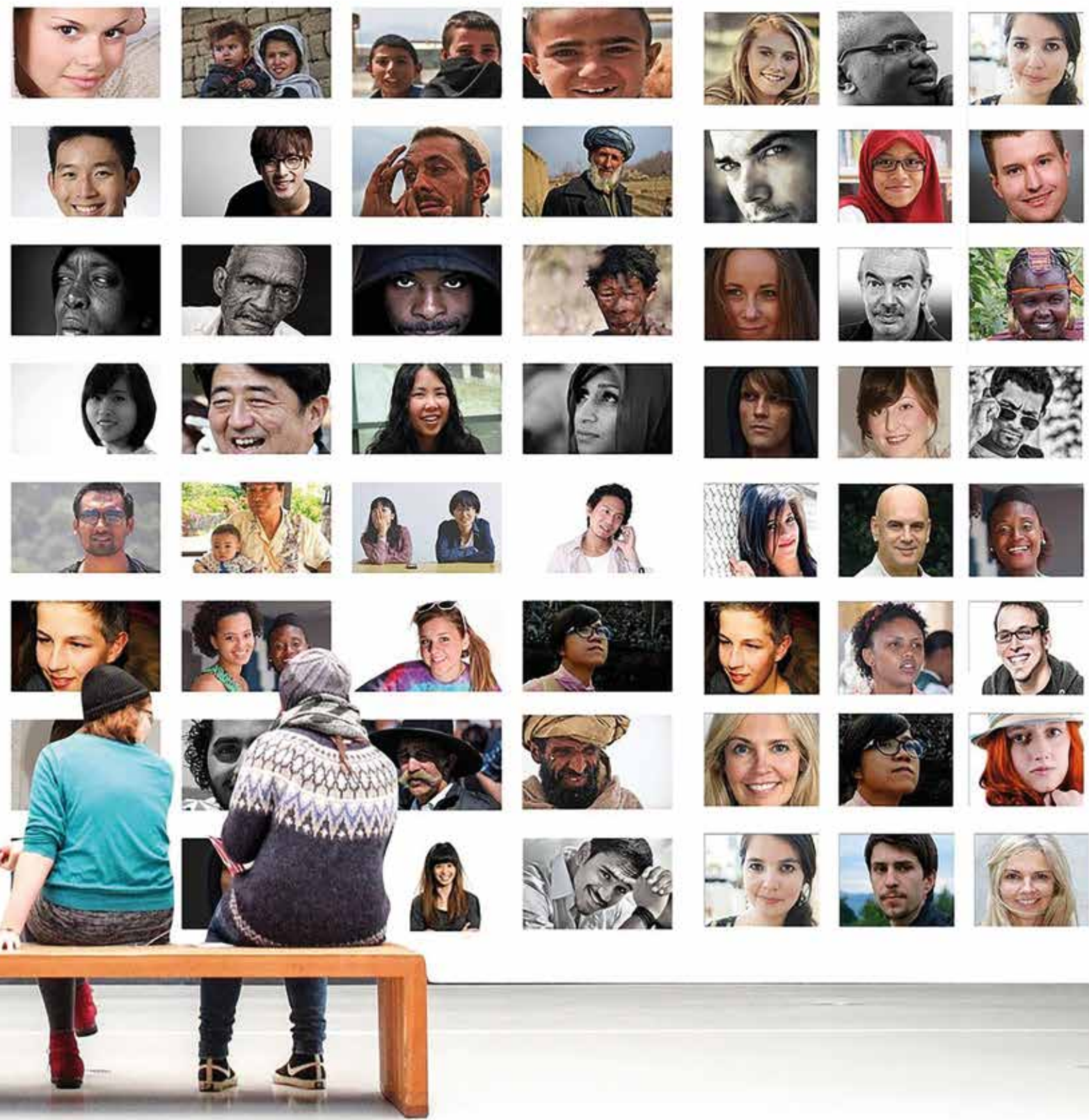
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Innovation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitiveness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental compliance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Economic value created and distributed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operational performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employee health and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Greenhouse gases (GHG) and other emissions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Circular economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rehabilitation of former industrial sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participation in local initiatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relations with local communities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local purchases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public affairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public financial assistance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prevention of psychosocial risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Talent acquisition and retention	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Head office in Luxembourg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resource consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training and education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supplier health and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial consequences of climate change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tripartite agreement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Energy efficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial waste and transport of hazardous waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Customer health and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supply Chain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please send your completed responses to [contact.luxembourg@arcelormittal.com](mailto:contact.luxembourg@arcelormittal.com).

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