ArcelorMittal

Climate Action in Europe

Our carbon emissions reduction roadmap: 30% by 2030 and carbon neutral by 2050

Our commitment

Climate change is one of the greatest challenges facing us all. With global emissions continuing to rise and extreme weather occurrences intensifying, we cannot afford to ignore it. Much of this report was written before the outbreak of Covid-19 that we now find ourselves in the midst of. Solving the Covid-19 problem is clearly everyone's first priority at present and despite the many uncertainties that exist today, I hope that path will become clearer in the coming months and progress is made with the development of a vaccine and other treatments.

Climate change, however, remains a huge long-term challenge that will require diligent attention and progress for decades to come. And like Covid-19, it is not something that one country or one company can solve alone. As we discuss in this first climate action report for Europe, carbon emissions also know no border, so it will take a global effort, with all nations and companies playing their part.

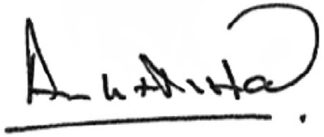
Leaders will emerge; and Europe has stepped up to the challenge by making a clear commitment to be carbon neutral by 2050. As the continent's leading steel company, we have a significant role to play. We are committed to the transition to carbon-neutral steelmaking, in line with the Paris Agreement and the EU's commitment. Last year, we announced a target to reduce carbon emissions in our European operations by 30% by 2030, with a longer-term ambition to be carbon neutral by 2050.

Significant work is underway. By far the largest component of steel's carbon emissions come from using coal and coke in the blast furnace to reduce oxygen from iron ore.

We have spent the last few years testing technologies to produce steel in a carbon neutral way. As outlined in our first global climate action report published in 2019, we have identified different technology pathways which offer the potential for significant carbon emissions reduction. These range from circular carbon in the form of renewable biomass and bio-waste; clean electricity; to carbon capture and storage.

These technologies have the potential to make a big impact. And with our plans for rolling them out across Europe, we are taking important steps forward. But we can't do it alone. We need the support of the EU and member states to ensure we have well-designed policy, including available finance, access to alternative clean energy sources at competitive prices and public guarantees on initial ramp-up projects. Furthermore, a carbon border adjustment is required to support a successful transition to low-carbon steelmaking during the implementation of the EU's Green Deal, while other regions may not be working at the same pace.

With this approach, we can make a difference: steel is an incredible material. It is strong, versatile and infinitely recyclable. It has the potential to be made without carbon emissions. With these credentials, steel should and can play a leading role in achieving the vision for Europe as outlined in the Green Deal. But that will not happen without the right policy. The time is now, and we cannot afford to fail.



Aditya Mittal
President and CFO, ArcelorMittal,
and CEO ArcelorMittal Europe

"Steel has the potential to be made without carbon emissions. But that will not happen without the right policy. The time is now and we cannot afford to fail."

Our roadmap

ArcelorMittal Europe has committed to reduce CO_2 emissions by 30% by 2030, with a further ambition to be carbon neutral by 2050, in line with the EU's Green Deal and the Paris Agreement. As Europe's largest steelmaker, with blast furnace, electric arc furnace and direct reduced iron (DRI) operations across seven countries, we have a significant role to play in contributing to the EU's green ambitions.

With the right support, reducing carbon emissions is certainly achievable, but there is no denying it represents a significant challenge. Making steelmaking carbon neutral is complex and will cost billions of euros.

To transform our operations to become carbon neutral, we need to move primary (iron ore-based) steel production away from a reliance on fossil fuel energy, towards the use of "clean energy" – in the form of clean electricity, circular carbon, and carbon capture and storage (CCS).

To enable us to use these clean energies, we are pioneering two breakthrough carbon-neutral technology routes: the first, we call Smart Carbon and the second is an innovative DRI-based route.

Both routes will benefit from a shift towards hydrogen in the long term. The important difference is the evolution and commercial viability of the Smart Carbon technology route in the medium term, and the added value this can bring to the low-emissions circular economy.

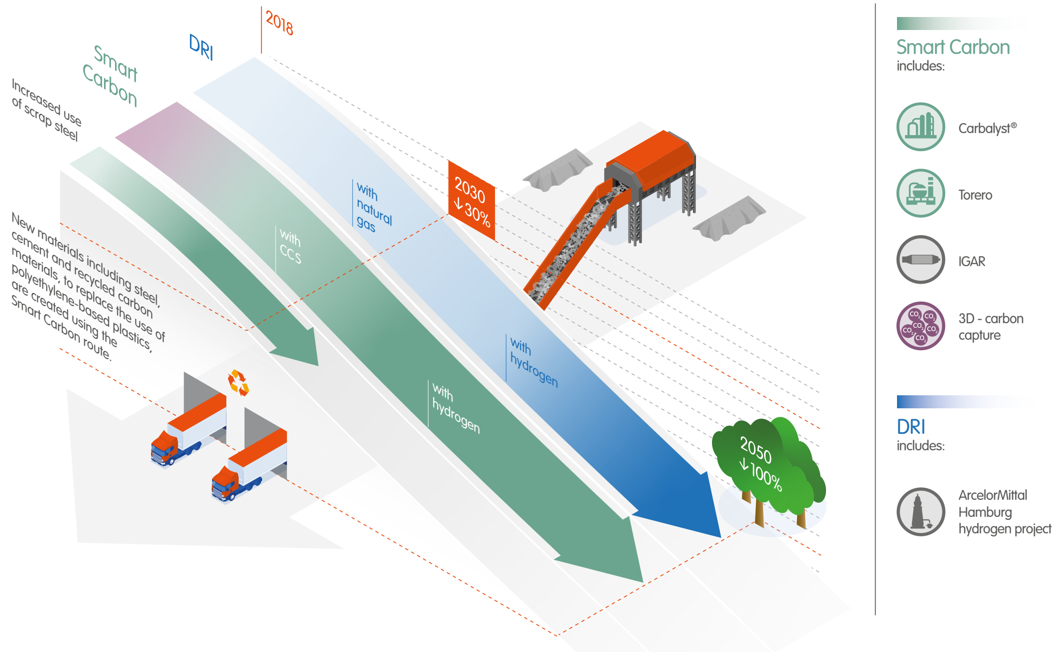
We believe pursuing both routes to carbon neutrality is an advantage, as it means we can significantly reduce our scope 1 CO_2 emissions, which include all process emissions, by 2030 (see Basis of Reporting, page 12) without having to wait for the large-scale, affordable, renewable energy needed for hydrogen-based steelmaking. We will reduce our European Scope 1 CO_2 intensity by 30% by 2030, over a 2018 baseline (see page 12).

We believe it is prudent to pursue both routes because of the technological and economic uncertainties, the scale of the challenge, and the political and natural variations between countries and regions, for example in terms of the funds available to invest in the vast energy infrastructure needed to achieve carbon-neutral steelmaking.

We have committed around €300 million towards carbon-neutral technology via both routes to date, leveraging our R&D facilities around the world, and the support of public funding. The progress we are making gives us confidence some technologies could reach commercial maturity before 2025, but scaling this up will require continued public funding, given the billions of euros needed to achieve large-scale carbon-neutral steelmaking.

In the medium term, our 2030 target will be achieved through the partial deployment of Smart Carbon as well as developing new ways to increase the use of low quality scrap metal in our primary steel production process.

One of the most attractive elements of the Smart Carbon route is that it features a number of complementary technologies which enable incremental progress and can be combined to deliver additional value. These include Torero (turning waste wood into bio-coal to replace coal as a reductant in ironmaking); IGAR (making synthetic gas from waste CO_2 as a replacement for fossil fuels); and Carbalyst® (converting off-gases into bio-ethanol). Based on market conditions today, the Smart Carbon route is less capital-intensive than the innovative DRI route. By 2030,



we believe many of our Smart Carbon technologies will be mature and partially deployed across our facilities in Europe.

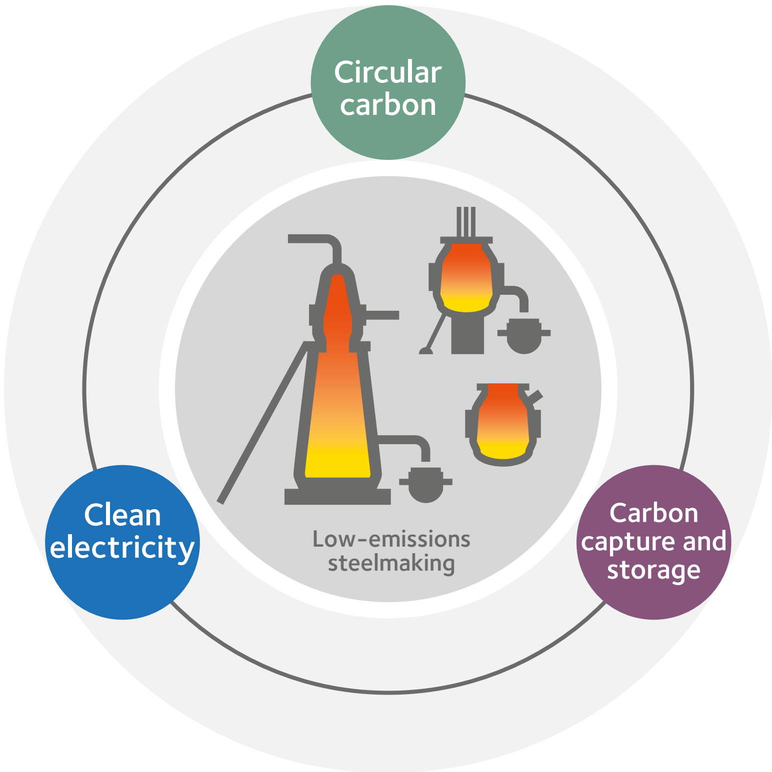
Although CCS is not yet a major contributor to our 2030 target, it is quite conceivable that within a decade, progress will be made on its deployment. We believe this technology has an important role to play in enabling a net-zero economy and in the medium term, while we await sufficient amounts of clean energy to produce green hydrogen, CCS could offset the continued use of fossil fuels, such as natural gas, be it via the Smart Carbon route or the DRI route.

In summary, while there is no doubt that innovative DRI technology – particularly when using green hydrogen – also offers huge potential, this abatement route is much higher cost today than Smart Carbon and it is unlikely that enough progress will be made for it to play a meaningful role before 2030. Beyond 2030, we do expect Hydrogen DRI technologies to feature more, and in anticipation of this, we are creating one of Europe's first industrial-scale DRI plants that uses hydrogen for the direct reduction of iron ore, instead of natural gas. We are also testing the increased use of hydrogen in the Smart Carbon route.

The road ahead is not straightforward, but with cross-sector collaboration and supportive public policies, to scale up the technologies and ensure the large-scale deployment of clean energy infrastructure, we know we can transition to carbon-neutral steelmaking and play a significant role in helping Europe achieve its climate ambitions.

The transition to clean energy

Today, primary (iron-ore based) steel production relies on fossil fuel-based energy sources that emit CO_2. We recognise the vital need to transition to clean energy to be carbon neutral. This clean energy will be in the form of clean electricity, circular carbon and carbon capture and storage (CCS). Alone, each of these three clean energies can in theory be carbon neutral. But the reality is that the scale of investment in the infrastructure that will deliver clean electricity, circular carbon and CCS is different, and the availability and access to them varies. As a result, we will use different combinations of these three clean energies to reach carbon neutrality. This means we can move faster to reduce our CO_2 emissions. And where we deploy circular carbon technology, not only will we produce carbon-neutral steel, we could also put steelmaking at the heart of the circular economy by avoiding CO_2 emissions from other industries: we will create recycled carbon materials to replace polyethylene-based plastics. And, through creating a carbon-neutral primary production process, we could generate carbon-neutral slag (a direct substitute for cement).



Circular carbon means we can achieve carbon neutrality by relying on the earth's natural carbon cycle and making use of biowaste materials, such as sustainable forestry and agriculture residues, to produce bioenergy for steelmaking. Additionally, using waste plastics as the source of energy, in combination with our carbon capture and use technology, we can convert carbon that would otherwise be emitted as CO_2, into hydrocarbon liquids (ethanol) or solids (plastics). This creates a carbon-neutral, circular carbon cycle while addressing society's waste challenge with plastics. If the European steel industry switched to using bioenergy, around 200-250 million tonnes of biomass and waste would be needed each year. Additionally, the steel industry would be producing up to 30% of today's plastic needs in a carbon-neutral way. **Although today it is not technically possible to make a complete shift to bioenergy, the investment in a clean energy system to transition the entire European steel industry to bioenergy is estimated at €50-70bn.**

Clean electricity is a carbon-neutral energy that comes from sources such as solar and wind energy, that do not emit CO_2. For the steel industry, clean electricity can be used by extracting hydrogen from electrolysis of water. This hydrogen is then used to reduce iron ore into iron. While innovations should drive costs down, the timetable remains unclear and it is likely to be decades before clean electricity and hydrogen are available on a scale and cost that would benefit the steel industry. If the European steel industry fully switched to clean electricity today, this would imply a 15% increase in power consumption. **The energy infrastructure investment needed to move the entire European steel industry to clean electricity via hydrogen would be €450-700bn.**

Carbon capture and storage (CCS) technology captures CO_2, transports it and stores it safely underground. Avoiding emissions from fossil fuels renders industrial processes such as steelmaking carbon neutral. The North Sea basin alone is estimated to have up to 300,000mt of CO_2 storage capacity. Longer term, combining CCS with circular carbon can move the industry beyond carbon neutrality, turning the steel industry into an agent to remove CO_2 from the atmosphere. If the entire European steel industry became carbon neutral through CCS, we estimate 150-200 million tonnes of CO_2 transport and storage would be needed annually, **needing investment of €100-150bn in clean energy infrastructure.**

Smart Carbon

We are developing a carbon-neutral steelmaking route that leverages all clean energies within the high temperature-controlled reduction environment of ironmaking. Since the high-temperature gas used to reduce iron ore can be either predominantly carbon or hydrogen, this route is flexible to adapt as the external energy infrastructure evolves. This route has the potential not only to provide carbon-neutral steel, but also carbon-neutral cement and carbon-neutral biomaterials – this is what we call Smart Carbon. Smart Carbon can also use CCS to capture any CO_2 emissions from remaining fossil fuels and ensure the process remains carbon neutral.

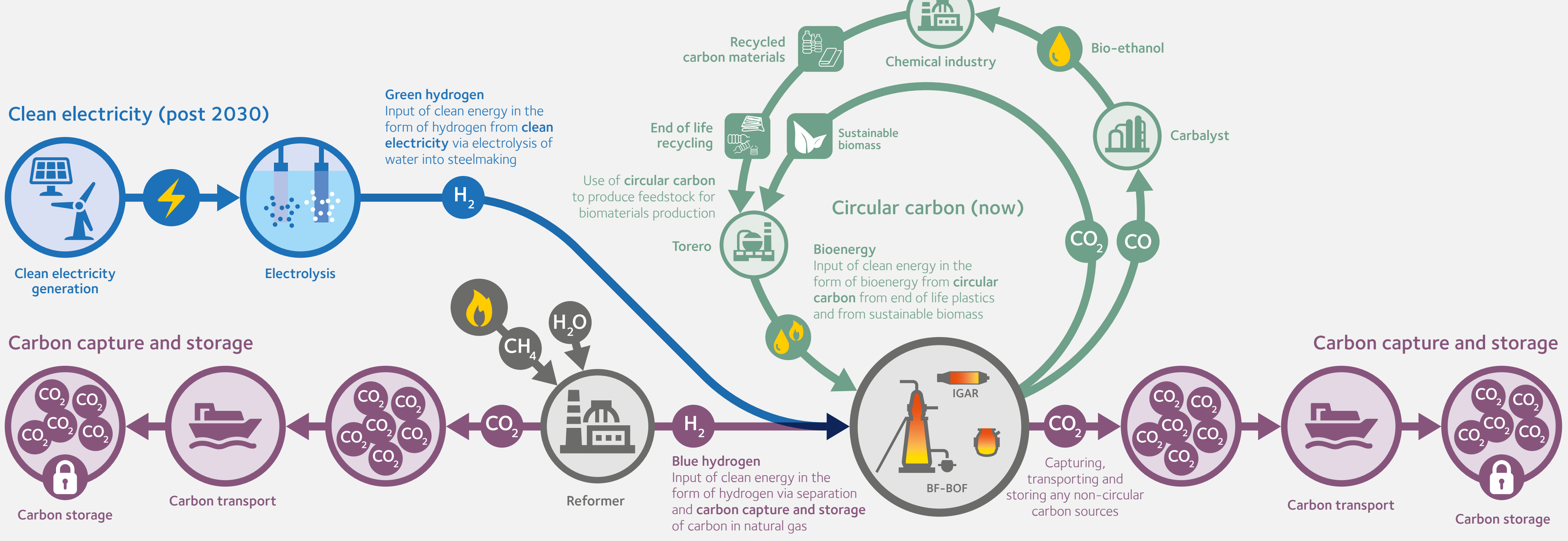
Initially the Smart Carbon route will focus on leveraging sources of circular carbon from waste streams, and then capturing the resulting carbon emissions for reuse or storage. During this phase, natural gas can also be used in the process as a lower-carbon form of energy than coal, and complemented with CCS. Later, as the hydrogen economy evolves and cost-effective hydrogen becomes available, we will transition to Hydrogen Smart Carbon, where hydrogen – increasingly green hydrogen made with clean electricity – becomes a key reductant in the process.

Smart Carbon uses end-of-life plastic packaging and textiles and wastes to create bioenergy. A carbon-neutral cycle is then created by using carbon from end-of-process emissions to produce equivalent new recycled carbon materials.

The Carbalyst® process provides the building blocks the chemicals industry needs to produce these recycled carbon materials.

We estimate the cost of deploying Smart Carbon across ArcelorMittal Europe is €15-25bn. Additionally, investments of €15-30bn would be needed to build the clean energy infrastructure to enable bioenergy and CCS-based Smart Carbon.

Making carbon-neutral steel: the Smart Carbon route



The Smart Carbon route: technologies under construction

Carbalyst® (Steelanol): At ArcelorMittal Ghent in Belgium, we are building an industrial-scale demonstration plant to capture carbon off-gases from the blast furnace and convert it into 80 million litres of bio-ethanol a year. This €165 million project is expected to be completed in 2022.

3D (DMX™ Demonstration in Dunkirk): Construction of a carbon capture pilot project, 3D, is underway at ArcelorMittal Dunkirk in France. The technology will allow us to capture 0.5 metric tonnes of CO_2 an hour from off-gases, by 2021. ArcelorMittal is involved in the Northern Lights and Porthos carbon transport and storage projects.

IGAR (Injection de Gaz Réformé): At ArcelorMittal Dunkirk in France, we are building an industrial-scale pilot to capture waste CO_2 and waste hydrogen from the steelmaking process and internally convert it into synthetic gas. The synthetic gas will replace the use of fossil fuels in ironmaking.

Torero: At ArcelorMittal Ghent in Belgium, we are building a €50 million large-scale demonstration plant, to convert waste wood into bio-coal, replacing the coal currently injected as a reductant in iron and steelmaking. The plant is expected to be operational by the end of 2022.

Fully implemented, the Smart Carbon route results in:	
One tonne of carbon-neutral steel	
250kg carbon-neutral cement	The high temperature controlled reduction environment of iron making produces 250kg carbon-neutral slag, a direct substitute for cement. Production of slag through this route in Europe covers approximately 10-15% of demand for cement, meaning 10-15 million tonnes of CO_2 emissions from cement are avoided.
200kg carbon-neutral biomaterials	In Europe, polyethylene-based plastics account for more than half of the 64 million tonnes of plastics and fibres produced. If the entire European steel industry switched to Smart Carbon, we could supply more than 60% of Europe's polyethylene-based plastic needs, equivalent to 30% of the entire demand for plastic and fibre.
Carbon removal potential	Increased use of circular carbon, using sustainable biomass and waste combined with scaling up CCS not only makes steelmaking carbon neutral, but can turn the industry into a net contributor to removing CO_2 from the atmosphere.

Making steel using the Smart Carbon route: what will it cost, compared with today?

+30% using mostly circular carbon and CCS

+60% using mostly green hydrogen

The DRI route (Hydrogen DRI post-2030)

Using the natural gas DRI-EAF production route initially, we foresee a longer-term transition to carbon-neutral Hydrogen DRI-EAF steel production. This will be dependent on when the technology matures, and when enough cost-effective hydrogen is available. ArcelorMittal is in a unique position to leverage its European and global DRI-based steel production footprint.

Reaching carbon-neutral steelmaking via the DRI involves moving from using predominantly natural gas to hydrogen as the key reductant. As this hydrogen becomes 'green' – made using clean electricity – we will bring the entire steelmaking process close to carbon neutrality.

To achieve full carbon neutrality, however, we will still need to incorporate some circular carbon into the process by using sustainable biomass to produce bioenergy.

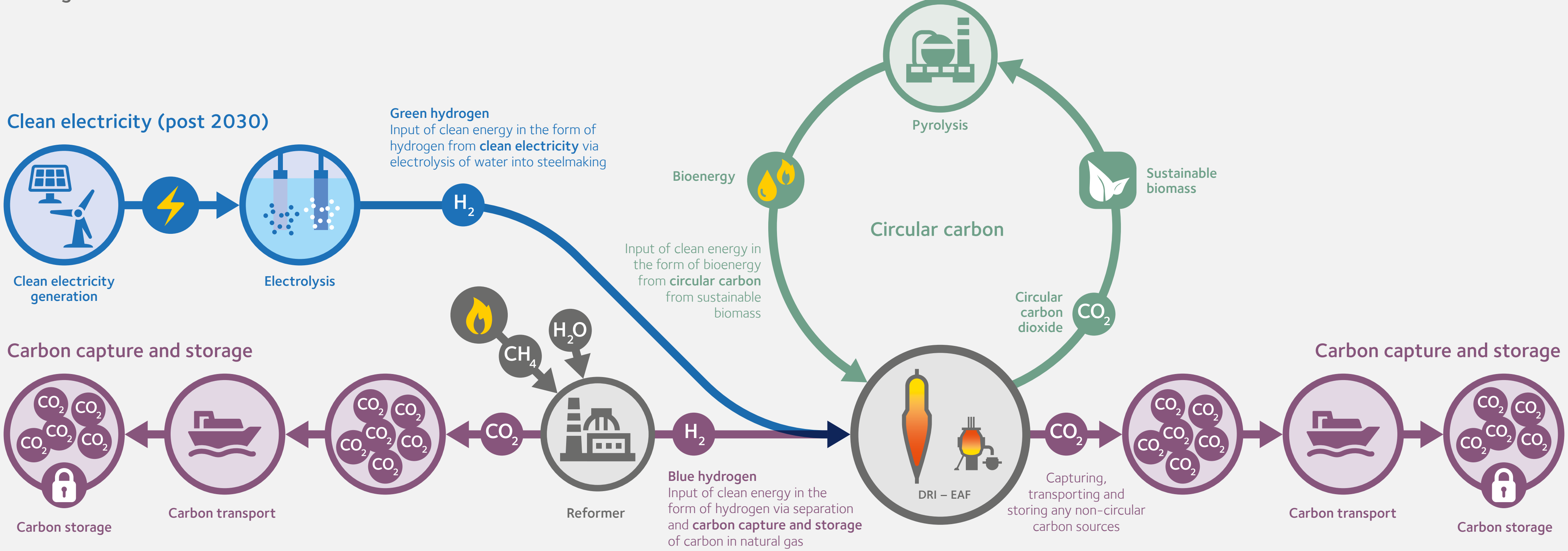
We believe with the right funding support we could have one of the first Hydrogen DRI demonstration plant operating in Europe by mid-2020s.

The plant's major technological challenge for this route is bringing hydrogen-based DRI production to commercial maturity and so industrial scale production is unlikely to be significant before the 2030s.

To ramp up, we could use blue hydrogen: sourced by extracting hydrogen from natural gas and capturing and storing the CO_2 generated in the process.

In the longer term, we could use green hydrogen: sourced by extracting hydrogen from water through electrolysis, by using clean power and heat. Unlike the Smart Carbon route, the Hydrogen DRI route doesn't create any other carbon-neutral products such as cement and bio-materials.

Making carbon-neutral steel: the DRI-based route



Making steel using the DRI route: what will it cost, compared with today?

+50% using mostly blue hydrogen and CCS

+80% using mostly green hydrogen

As the Smart Carbon diagram shows (see page 4), we will leverage three clean energies in order to produce carbon-neutral steel.

Today, the costs associated with these three energies differ and over time, the cost of supplying clean energy will reduce as the technologies mature and the infrastructure expands.

But with the urgent need to reduce CO_2 emissions significantly in order to ensure global warming is kept to a maximum of 1.5ºC, we intend to use the clean energy source that is the most cost effective, and deployable, in order to make progress in reaching our 30% CO_2 emissions reduction target by 2030.

We believe Smart Carbon technologies are sufficiently mature in the short term to make a significant contribution to our 2030 emissions reduction target. These technologies will leverage primarily bioenergy and CCS, which are clean energy sources with a lower cost compared with today's high-cost hydrogen.

Longer term, the evolution of the cost of hydrogen for steelmakers, and the sustained availability of bioenergy and CCS, will be key factors in determining the level of adoption of hydrogen in steelmaking. We estimate green hydrogen costs would have to decrease by at least 50% to become competitive with other clean energy sources, and more than 75% compared with current fuels.

By 2050, our analysis concludes that the additional cost of using green hydrogen will converge with CCS and circular carbon, meaning that we will then adjust the blend of clean energies that we use to achieve carbon-neutral steel.

"We could have the first Hydrogen DRI demonstration plant operating in Europe by the mid-2020s."

The Hydrogen DRI route

ArcelorMittal Hamburg's hydrogen project:
We are in the design and funding phase of an industrial-scale project to use hydrogen instead of natural gas in the direct reduction of iron ore (DRI). The objective is to reach industrial commercial maturity of the technology by the mid-2020s, initially producing 100,000 tonnes of sponge iron a year.

Increased use of scrap

Steel scrap from end-of-life products can be recycled back into new steel products with a potentially very low CO_2 footprint, once the power source is decarbonised. Given the limits on availability, however, today's challenge is to use all forms of scrap in the most efficient way. For example, using scrap locally to avoid emissions from transportation. As scrap availability increases in the regions where we operate, we will increase our use of local scrap as part of our overall strategy both to reduce emissions and to enhance the use of scrap in the circular economy.

We are using digitalisation and mathematical optimisation algorithms to optimise our procurement of scrap, making sure the right quantities and qualities of scrap are reaching our different sites to achieve the most efficient and cost-effective use of scrap.

ArcelorMittal also intends to invest in new and innovative technologies to be able to melt more and lower quality scrap in our primary steel production facilities in Europe.

What will our roadmap to 2050 cost?

	Investment needed		Production cost increase
	ArcelorMittal Europe steel footprint	Clean energy infrastructure	
Smart Carbon	€15-25 billion	€15-165 billion[1]	+30-60%[1]
DRI route	€30-40 billion	€40-200 billion[2]	+50-80%[2]

1 Lower end of range leveraging bioenergy and CCS infrastructure; high end of range leveraging green hydrogen infrastructure.
2 Lower end of range leveraging CCS and blue hydrogen infrastructure; high end of range leveraging green hydrogen infrastructure.

The right framework

We are leading the innovation in the key technologies to be ready for roll-out across Europe. We have committed around €300 million in innovation to date and with continued public funding support, some of these technologies could reach commercial maturity before 2025. We believe that by 2030 we can have many of the Smart Carbon technologies mature and partially deployed across our facilities in Europe. This will form a big part of the picture.

However, the steel industry is a low margin business, requiring long-term capex investment, and operating in a highly-competitive market. Today, the biggest barrier to transitioning to carbon-neutral steel, beyond the necessary technologies reaching commercial maturity, is the absence of the right market conditions.

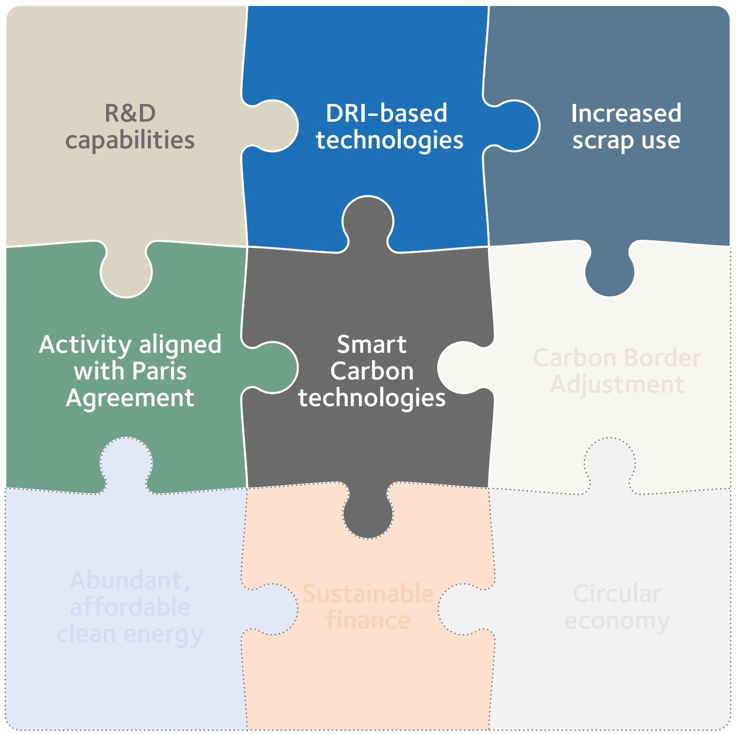
We estimate that carbon-neutral steel will result in 30-80% higher cost versus today's CO_2 intensive steel. Additionally, not all steel and steel intensive goods are subject to the same carbon costs, creating uneven incentives for carbon neutrality between market participants, including between domestic production and imports, and between steel produced from primary and secondary sources. Without a shift in market conditions, we will not be able to unlock the means to reduce emissions from steel globally, while the European steel industry increasingly risks becoming uncompetitive.

But with the right market conditions, we create strong foundations to transition the steel industry to carbon neutrality. The medium-term market conditions needed include:

1. Creating an environment where carbon-neutral steel is more competitive than steel which is not carbon neutral
2. A fair competitive landscape that accounts for the global nature of the steel market, addressing domestic, import and export steel dynamics, as well as the distinction between primary and secondary sources to make steel.
3. Financial muscle to innovate and make long-term investments.
4. Access to clean energies – the scale of the steel industry's energy needs are such that concerted cross-sector and government efforts will be required to develop the necessary clean energy infrastructure.
5. Public instruments to accelerate innovative technology deployment to transition to carbon-neutral steelmaking.

In the long term, we believe the most effective system for society will be creating a materials-wide system that accounts not only for CO_2 emissions, but also accounts for the full circularity of materials. This will create healthy competition between materials (e.g. steel, cement, aluminium) in overlapping applications, accelerating the advent of a carbon-neutral and circular economy.

Carbon neutral by 2050: the pieces we bring



The missing pieces

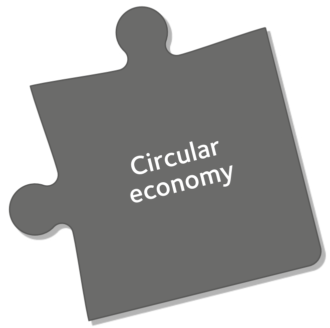
However, we cannot do it alone and there are pieces of the puzzle missing.

- **A Carbon Border Adjustment (CBA):** is a key policy mechanism needed to decarbonise, equalise the market and create a fair competitive landscape, by aligning the carbon costs of EU domestic steel producers with that of imports. EU domestic steel producers are increasingly exposed to carbon costs through the EU's Emissions Trading System (ETS), while imports are exempt yet continue to be responsible for a significant part of CO_2 emissions of steel used in Europe.

- **Access to abundant and affordable clean energy:** This is currently not available nor economically viable in Europe. Improvements are therefore needed in the EU state aid rules for energy and environment to enable the roll-out of low-emissions steelmaking.

- **Access to sustainable finance for low-emissions steelmaking:** Some of our current R&D projects are funded by EU Horizon 2020. Accelerating and rolling out low-emissions steelmaking will need further public funding through, for example, the EU ETS Innovation Fund or the European Union's Important Projects of Common European Interest (IPCEI). The EU Sustainable Finance legislation should enable these investments to make a positive contribution to the low-carbon circular economy, with realistic criteria.

- **Accelerate transition to a circular economy:** EU climate and materials policy should be integrated, taking a lifecycle perspective to ensure that materials are used in a circular way as much as possible.



Carbon Border Adjustment

ArcelorMittal supports the introduction of a Carbon Border Adjustment (CBA) as proposed in the EU Green Deal. This would mean that when steel comes into the EU, the carbon costs that European producers pay would be added to the imported steel. This would ensure that EU-produced steel and imported steel tonnes that are in direct competition would have an equal carbon cost, creating a fair market and, crucially, encouraging investment in lower-emissions steel production.

A CBA can be applied in various ways, as long as it neutralises the disparities in carbon costs between domestic products and imports, and incentivises the transition to low-carbon steel production. Crucially, the CBA can be designed in a WTO-compatible way, depending on how the environmental objective is set. This is how it could work best:

- Producers exporting to the EU should be charged the same marginal carbon emission cost as European producers pay under the ETS. This should serve as a catalyst to other countries to introduce their own carbon reduction schemes and invest in technologies to decarbonise. Introducing a CBA based not on marginal carbon costs, but average carbon costs spread over all EU steel production, would not align EU domestic producers' true carbon costs with imports. Not only would this continue to erode EU producers' competitiveness and threaten their future, it would mean the CBA had failed in its objective of climate protection.
- The CBA should initially be applied to primary goods, rather than end products like household appliances and everyday tools. This is the most practical way to introduce the CBA.
- To be effective, free allocation of ETS allowances, which are gradually being phased out by the European Commission, should be maintained in the first stage of the CBA, alongside compensation for high energy costs as an indirect result of the ETS. This is crucial to enabling European steel to stay competitive and ensure a smooth transition without disruption. A CBA based on full auctioning of ETS allowances from the start, would mean that the EU steel industry has to be sure it can pass through all its decarbonisation costs, including full auction costs. This is not currently possible, as importers set the price and can absorb levies at the border: their import volumes only represent a small portion of their portfolio. This would be counterproductive and is why there needs to be a transition period to allow the decarbonisation of the EU industry.
- To mirror this, European producers exporting to countries without carbon costs could apply for a rebate so that they are able to compete on a fair footing with other market participants.
- The CBA levy should be a default one by sector, but can be reduced or removed if there is an "Agreement of Equivalence" with a third country regarding their decarbonisation policy for that sector. Only with this system can the EU exercise its climate diplomacy and show leadership globally. Such leadership cannot be reached by basing a CBA on site-specific emissions for producers outside the EU. In practice, it would also be too difficult and could lead to gaming by non-EU producers, who could send the steel made with a low-carbon footprint to the EU and steel made with a higher carbon footprint to other markets; this would not help their decarbonisation, or help to lower worldwide CO_2 emissions.

Ultimately, the CBA would encourage Europe's trading partners and companies to adopt equivalent policies, in effect expanding the umbrella of CBA beyond the EU, moving towards a truly global net-zero drive for steel.

We believe a poorly designed CBA that dilutes carbon costs for imports and includes a drastic reduction in free ETS allowances without a transitional period, would be ineffective as it would fail to create the necessary carbon conditions to transition to net-zero steel. It could even increase the detrimental effects on EU domestic industry's viability, due to significant increased CO_2 costs without providing an effective increase in price to offset these costs.

The Energy Transitions Commission estimates that the total annual investment requirements to decarbonise the steel industry globally are around $80 billion per year. A well designed and fair CBA and public and private financing to roll out the technology, would be a big step closer to making this happen.

We know we need to invest more to decarbonise our industry, but a CBA will ensure we all contribute equally to a low-carbon world. It means that the price of steel will go up, adding a maximum of 1% to the cost of a car for example. However, crucially, the proceeds will be invested in large-scale green technologies that lead to a new era of lower carbon emissions and a cleaner, greener steel industry.

Long term – valuing goods and products for their carbon and circularity footprint

To meet the targets in the Paris Agreement and prevent the average global temperature rising by more than 1.5 degrees Celsius, a long-term, fundamental shift in the way we consume goods and products will be required.

Long term, we believe policies should converge towards regulation that both minimises the carbon footprint of goods and products and maximises their circularity.

Such a policy framework would provide the necessary incentives to accelerate consumer behaviour change, encouraging a switch to materials, products and energy sources with a lower carbon footprint and better circularity credentials.

Any revenues generated from such a policy framework could in turn be invested in carbon-neutral and circular innovation projects, further accelerating the transition to a carbon-neutral circular economy.

We believe such policy would better valorise the emissions and circularity advantages of steel over other material groups in overlapping applications. Transparency of the real carbon and circularity footprint of a product, from production to end-of-life, will create healthy competition between materials (e.g. steel, cement, aluminium), accelerating the advent of a carbon-neutral and circular economy. We welcome the European Commission's commitment to building a circular economy for Europe, as one of the foundations of the Green Deal.

We recognise that developing such a framework is some way off, so the current focus should be to complement existing policies to create an effective CO_2 policy framework by incorporating a CBA. This can effectively kick start the decarbonisation of the steel industry through to 2030.

As we have said in this report and in the Global Climate Action Report published in May 2019, we know we have a role to play, recognising that we are all responsible for stopping climate change. Now we need to go beyond recognising the problem, to collectively make a difference.

"We welcome the European Commission's commitment to building a circular economy for Europe, as one of the foundations of the Green Deal."

Appendix

Additional data

ArcelorMittal Europe CO_2 intensity – 2018 baseline for 2030 target

In 2018, ArcelorMittal Europe's carbon intensity was 1.6 tonnes of CO_2 per tonne of crude steel.

ArcelorMittal Europe includes ArcelorMittal Europe – Flat Products, ArcelorMittal Europe – Long Products, and Industeel.

Our target to reduce our European Scope 1 CO_2 intensity by 30% by 2030, over a 2018 baseline, does not include Ilva, as the baseline is set from 1 January 2018; Ilva joined the ArcelorMittal group on 1 November 2018. However the decarbonisation of Ilva is central to our business plan and details of this will be published in due course.

Basis of Reporting

We differentiate as follows:

'Direct emissions' are the actual emissions coming out of the chimneys of the sites. This data is based on a carbon balance at site level.

'Process emissions' are the aggregate of direct emissions + emissions resulting from the combustion of exported waste gas used in the power plant to generate electricity.

Operational boundary: we report on our CO_2 emissions using the control approach of the GHG Protocol.

For more information, visit corporate-media.arcelormittal.com/media/bjidbiwc/arcelor-mittal-basis-of-reporting-2019.pdf

Further reading

Mission Possible: Reaching net-zero emissions in harder-to-abate sectors by mid-century
www.energy-transitions.org/mission-possible

Energy Transitions Commission, November 2018

Energy Transitions Indicators:
www.iea.org/articles/energy-transitions-indicators

IEA, December 2019

Sustainability at ArcelorMittal

Sustainable development is at the heart of our purpose: inventing smarter steels for a better world. This means preparing for and responding to the most significant long-term environmental and social trends that are transforming the context in which we operate. And so we listen carefully to stakeholders, both locally and globally, and recognise a trend of rising expectations.

ArcelorMittal has been recognised by CDP for its leadership on corporate transparency and action on climate change. In January 2020, ArcelorMittal reached CDP climate leadership level with an 'A-' grade for the first time, following its comprehensive response to the CDP Climate Change survey, which is now aligned with the TCFD (Task Force on Climate related Financial Disclosures) recommendations.

ArcelorMittal was ranked first in five categories relating to steel companies' readiness for a low-carbon transition, in the July 2019 CDP report 'Melting Point'.

The ResponsibleSteel™ site standard was publicly launched in December 2019, the first multi-stakeholder environmental, social and governance (ESG) standard for the steel industry. ArcelorMittal has played a leading role in developing ResponsibleSteel and has committed to certifying 100% of ArcelorMittal Europe – Flat Products sites by the end of 2020.

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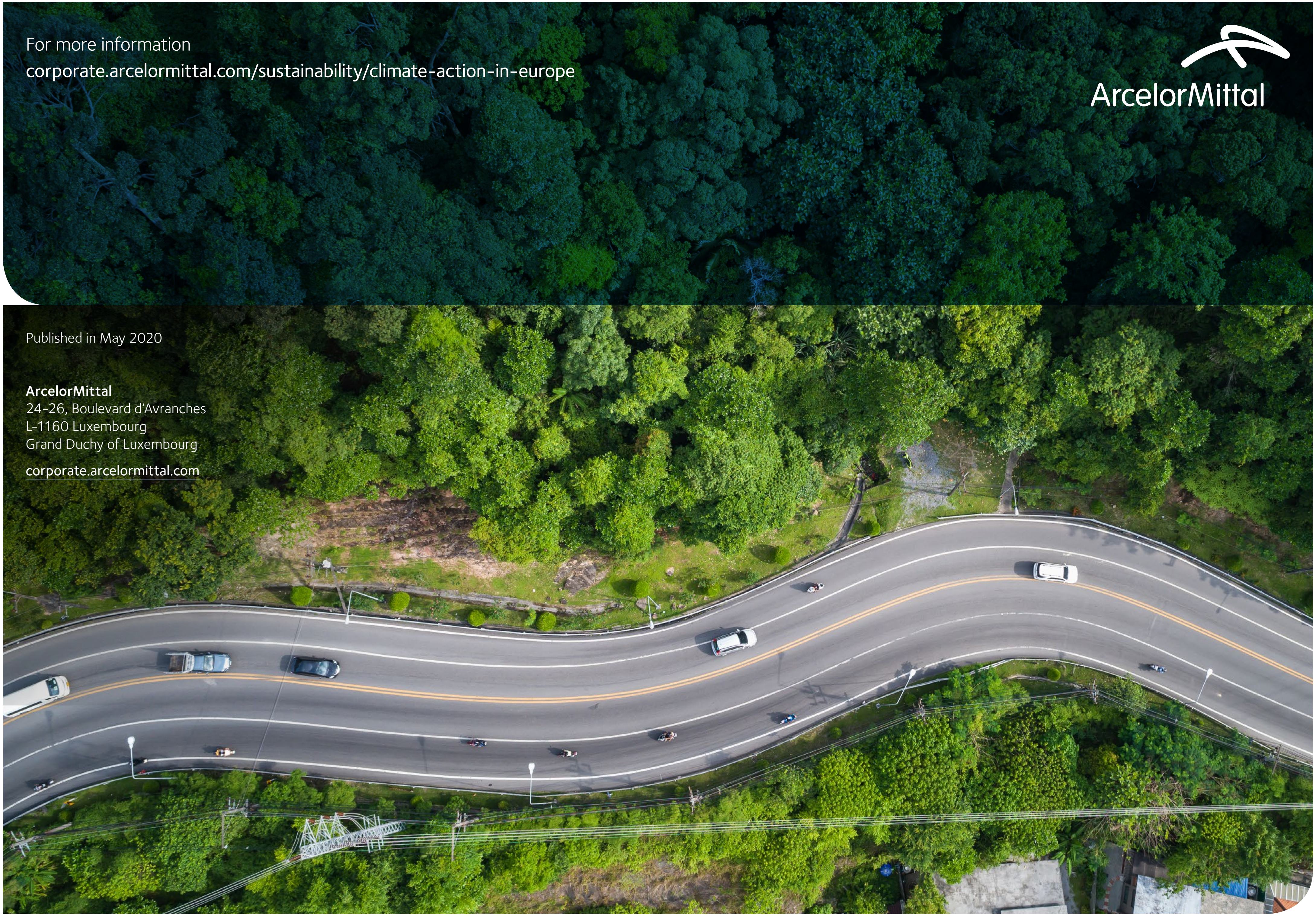
For more information
corporate.arcelormittal.com/sustainability/climate-action-in-europe

ArcelorMittal



Published in May 2020

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