ArcelorMittal

XCarb®

Recycled and renewably produced

"At ArcelorMittal, our goal is to help build a better world with smarter steels. Steel made using innovative processes which use less energy, emit significantly less carbon, and reduce costs. Steels that are cleaner, stronger, and reusable."

Aditya Mittal,
CEO, ArcelorMittal

XCarb® initiative towards net zero steel

XCarb® is designed to bring together all of ArcelorMittal's reduced, low and zero-carbon emissions products and steelmaking activities, as well as wider initiatives and innovation projects, into a single effort focused on achieving demonstrable progress towards net zero steel.

XCarb® serves as evidence of our determination and accelerating commitment to achieve net zero by 2050. We will continue to drive innovation to meet our decarbonisation goals and are committed to leading the industry transition towards net zero steel. We have the scale, resources, technology prowess and ambition required to make a significant impact.

Alongside the XCarb® brand, we have launched three XCarb® initiatives: the XCarb® innovation fund, XCarb® steel certificates and XCarb® recycled and renewably produced for products made via the Electric Arc Furnace route using scrap.

The initiatives that are part of XCarb® aim to reduce the carbon footprint of ArcelorMittal and of our customers.

XCarb® recycled and renewably produced

100% renewable electricity

Up to **100%** scrap[1]

One of the first decarbonisation initiatives from ArcelorMittal Europe – Long Products is XCarb® recycled and renewably produced. To produce XCarb® recycled and renewably produced, ArcelorMittal Europe - Long Products uses at least 75 % of steel scrap[2] in the EAF.

All of the electricity needed to transform the scrap into XCarb® recycled and renewably produced steels comes **from renewable sources from solar and wind power.** The energy is provided by suppliers who are connected to the same grid as our production sites and whose projects are recent.

The combination of recycled content and renewable energy allows ArcelorMittal Europe – Long Products to offer steels **with very low levels of CO_2 emissions per tonne of finished steel.** ArcelorMittal Europe – Long Products estimates that XCarb® recycled and renewably produced steel can have a CO_2 footprint as low as 300kg per tonne of finished steel when the metallics are 100% scrap.

This is significantly lower than the average for the global steel industry which is around 2.3 tonnes of CO_2 emissions per tonne of steel products.[3]

Scan or click to watch the animation

[1] minimum 75 % scrap content, except for some batches with minimum 50 %. Please contact us for more information.

[2] for specific products: minimum scrap content of 50 %. Please contact us for more information.

[3] Material Economics, 2018 The circular Economy: A powerful force for climate migration

What guarantees do we offer to our customers?

The order system of XCarb® recycled and renewably produced steel is externally audited and certified. The certificate guarantees that the electrical energy used to make the steel came from renewable sources from solar and wind power.


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Certificate presented to:

This certificate attests that ArcelorMittal has produced for of XCarb® recycled and renewably produced for this order based on recycled scrap combined with 100% renewable electricity.

Certificate number Order number XCarb® recycled and renewably produced volume Issue date

Environment Product Declaration

An EPD is available for this product. Independent verification of the declaration and data according to ISO 14025:2017 was conducted by the Institut Bauen und Umwelt e.V. (IBU). The embodied carbon footprint, expressed as Global Warming Potential (GWP in $kgCO_2$-Eq per tonne of steel, is disclosed in the EPD. It is 320 $kgCO_2$-Eq per tonne of XCarb® recycled and renewably produced sections and merchant bars.

To access the EPD, please scan QR code

Authorised by:

Pierre Jacobs
CEO ArcelorMittal Belval and Differdange
Plant of Esch-Belval
L-4008 Esch-sur-Alzette

Ronstar Roy
Head of Metallics and Purchasing
Plant of Esch-Belval
L-4008 Esch-sur-Alzette

What are the advantages for ArcelorMittal's customers?

Purchasing our XCarb® recycled and renewably produced steel allows you to reduce the global CO_2 footprint of your projects, products, and finished goods.

To calculate the total carbon footprint of their products, our customers can use the figures reported in the EPDs: they are independently certified by a third-party.

Environmental Product Declarations (EPDs) and similar national Environmental Product Declarations (such as FDES in France) are instruments used to communicate publicly about the key environmental impact of specific products. They are intended to inform prescribers and consumers and to ease the comparison between similar products based on environmental criteria.

All European EPDs for the construction industry are based on a life cycle assessment (LCA) and follow the ISO 14025 and EN 15804 standards.

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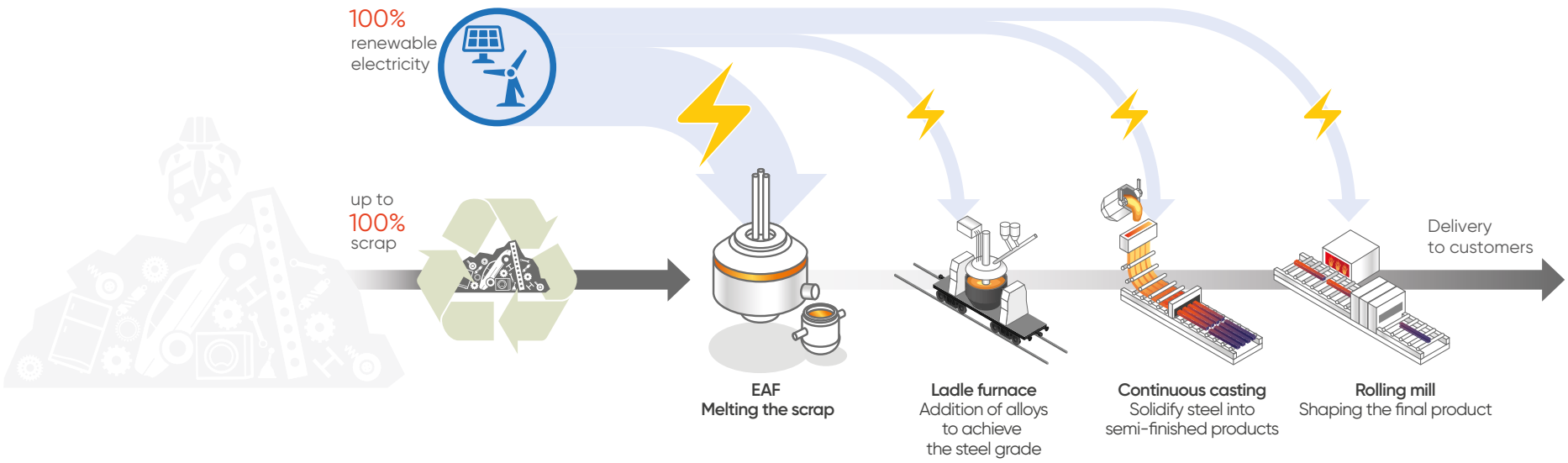
Why is renewable electricity so important?

The process of melting scrap into **an electric arc furnace (EAF) consumes a large quantity of electricity** to reach the high temperatures required. The manufacturing steps that follow the initial melting of the scrap, such as the addition of alloys to obtain the steel grade, the continuous casting where the steel solidifies into semi-products and finally the rolling mill where the steel takes its final shape, also consume electricity.

Using only **renewable electricity is the best solution** to reduce carbon emissions in the steel production made through the EAF route.

©Differdange Grey rolling mill; Arcelormittal Photo Library

EAF-steelmaking process

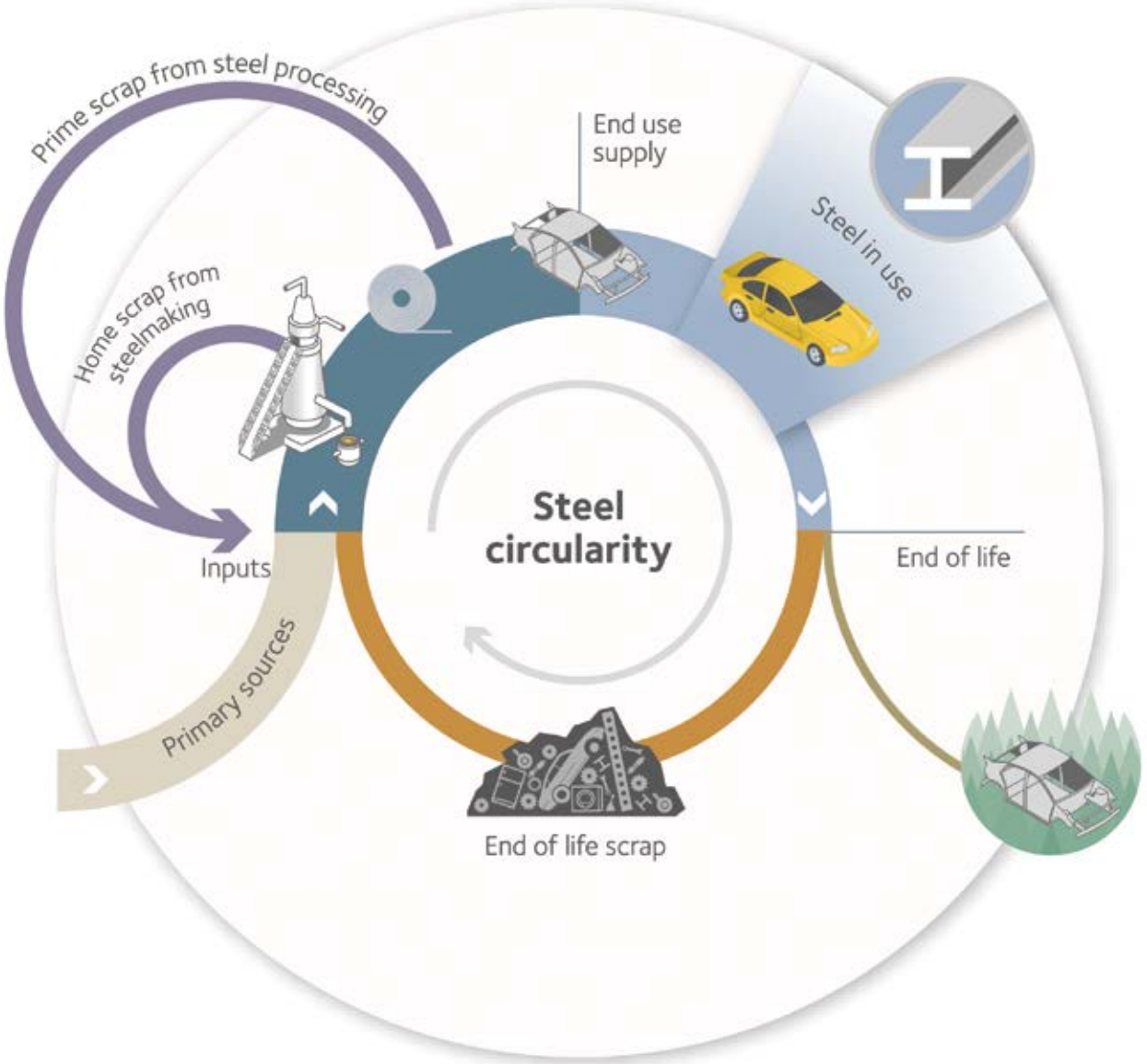


What is the circular advantage of steel?

Steel is infinitely and fully recyclable with no loss of quality in most cases.

85-95% of end-of-life steel is currently recycled back into new steel products and accounts for over 20% of today's steel production.

However, end-of-life steel is only the beginning for XCarb® recycled and renewably produced steel, which is made from up to 100% scrap.



Source : ArcelorMittal Corporate Strategy

The intelligent construction choice

Steligence®

The Steligence® holistic approach offers a broad range of thinner, lighter, and high-performance steel solutions for constructive creations ranging from outstanding bridges, office buildings, industrial halls, data centers to the tallest living spaces.

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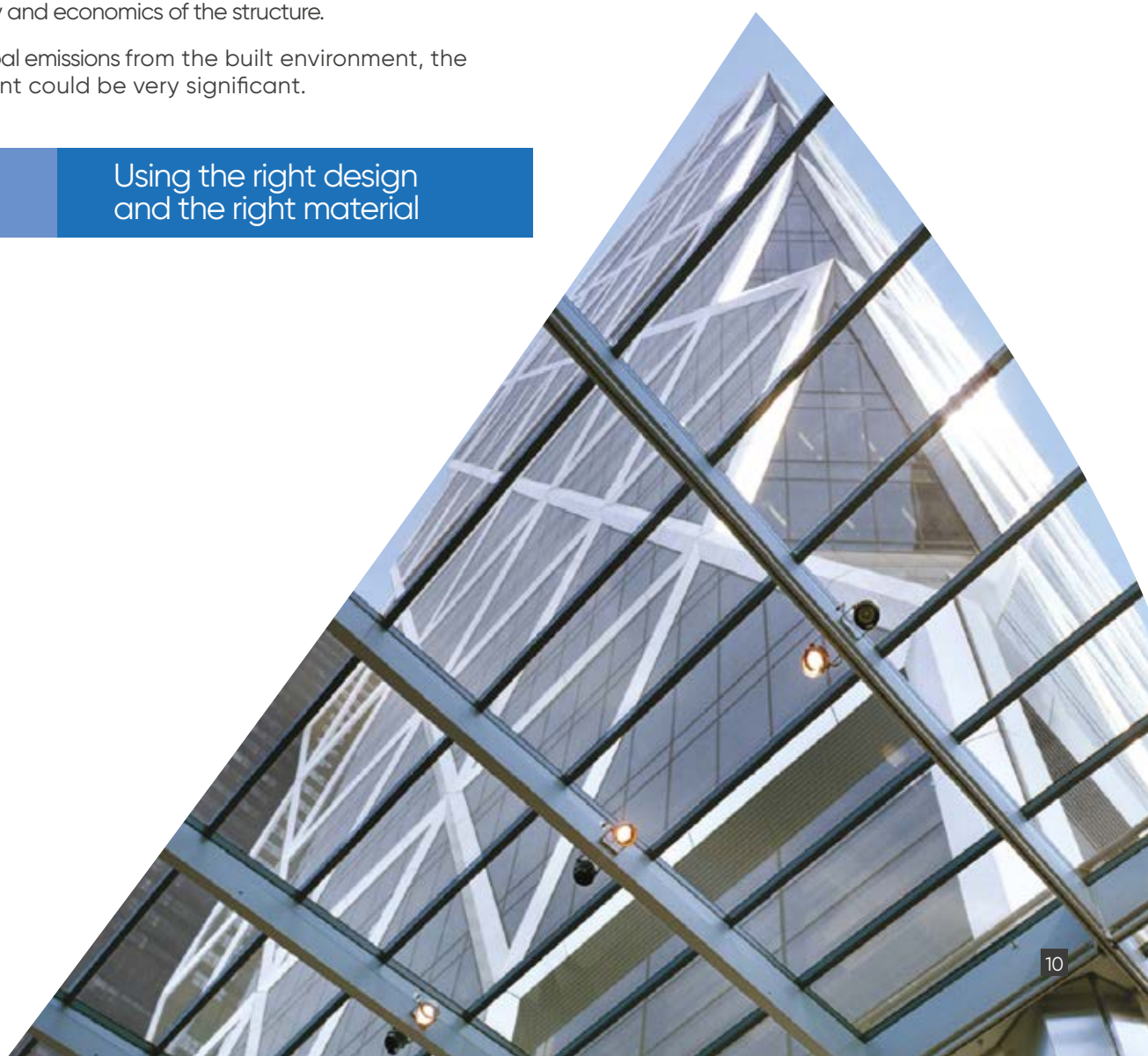
Material and mass optimisation: the Steligence® approach

Designing a building in the right way can reduce its embodied carbon. The use of high strength steel sections combined with XCarb® recycled and renewably produced allows a complete building optimisation and has the potential to reduce the embodied carbon footprint of an office building for example by 54 percent while enhancing the flexibility and economics of the structure.

Considering the share of global emissions from the built environment, the impact of such improvement could be very significant.

CO_2 ↓ 54% Using the right design and the right material



EcoSheetPile™ Plus

- part of the XCarb® recycled and renewably produced initiative
- based on the Electric Arc Furnace (EAF) route
- using 100% recycled material and 100% renewable electricity
- 80%* lower carbon footprint than traditional route BF-BOF based (LCA available)

*Reference: published EPDs of steel sheet piles available in Europe, accessed online in March 2025.

Click or scan

Reusing steel products: the example of the steel sheet piles

Sheet piles are sections of steel with interlocks that can be connected. They are used to form impervious retaining walls for infrastructure projects, ports and waterways, flood protection barriers and urban transport. Sheet piles fit perfectly into the circular economy concept.

Around a quarter of the sheet piles produced are used in temporary applications, such as cofferdams or construction pits. They can be reused up to five times before they are recycled.

5X	re-used in temporary applications, before being recycled

- part of the XCarb® recycled and renewably produced initiative
- based on the Electric Arc Furnace (EAF) route
- using a high level of recycled material and 100% renewable electricity
- 85%* lower carbon footprint than traditional route BF-BOF based (LCA available)

Click or scan

*Reference: published EPDs of Bars&Rods

available in Europe,
accessed online in March 2025

Partnering with our customers to reduce the carbon footprint

We comply with the most stringent requirements of our customers!

Hjulsbro Steel is a major customer of ArcelorMittal bars and rods, and for their new GreenStrand brand, they showed a great interest in our XCarb® recycled and renewably produced steel.

The PC-strands they produce are used for the pre-stressing of the railway sleepers in concrete. Homologation was needed to use our XCarb® recycled and renewably produced steel for concrete reinforcement.

Thanks to the efficient cooperation between the teams of both ArcelorMittal and our customer, the homologation has been achieved for our WR HC PC from the Hamburg mill with a high level[1] of scrap steel, and always the 100% of renewable electricity.

[1] minimum 75 % scrap content, except for some batches with minimum 50 %. Please contact us for more information.

Picture: courtesy of Hjulsbro Steel

Crapal® Optimum solutions for vineyards

- part of the XCarb® recycled and renewably produced initiative
- based on the Electric Arc Furnace (EAF) route
- using a high level of recycled material and 100% renewable electricity
- with Crapal®Optimum in XCarb® recycled and renewably produced steel, 20 tonnes of CO_2 are saved per truck

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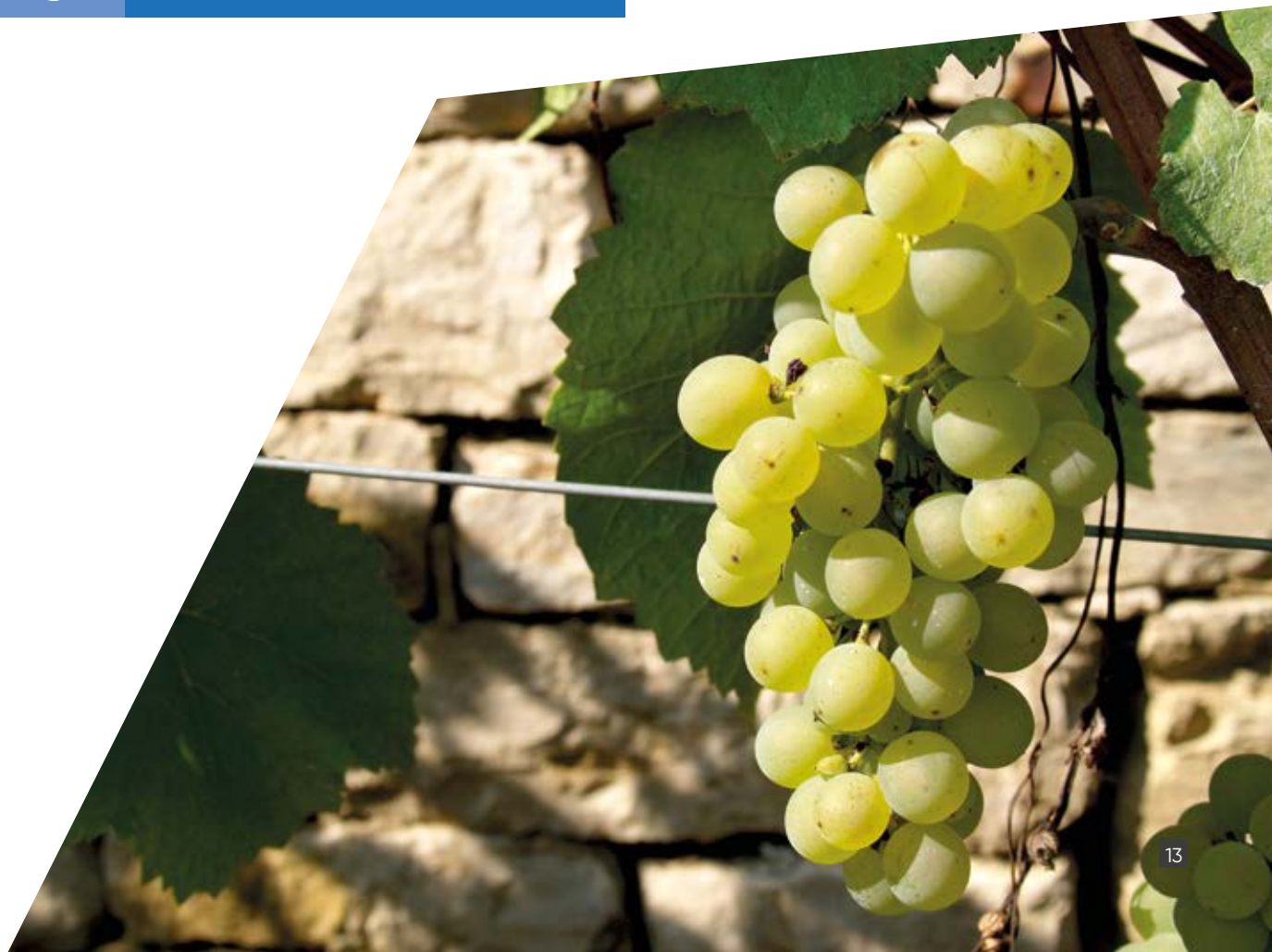
Decarbonising a whole market segment: the example of Crapal®Optimum wire

Crapal®Optimum is now fully available in low carbon-emission steel with XCarb® recycled and renewably produced, while the excellent quality of our wire remains unchanged, with Crapal®Optimum unique long life span and its strong Zn+Al+Mg coating.

CO_2e saving	20 tonnes per truck



Sections

- part of the XCarb® recycled and renewably produced initiative
- based on the Electric Arc Furnace (EAF) route
- using 100% recycled material and 100% renewable electricity

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Minimising buildings' embodied carbon: the outstanding impact of low CO_2 steel frames

Sections are the most popular and versatile way to build steel frames all over the world. XCarb® recycled and renewably produced sections allow up to 83% CO_2e reduction compared to the world average sections or usual plate products.[1]

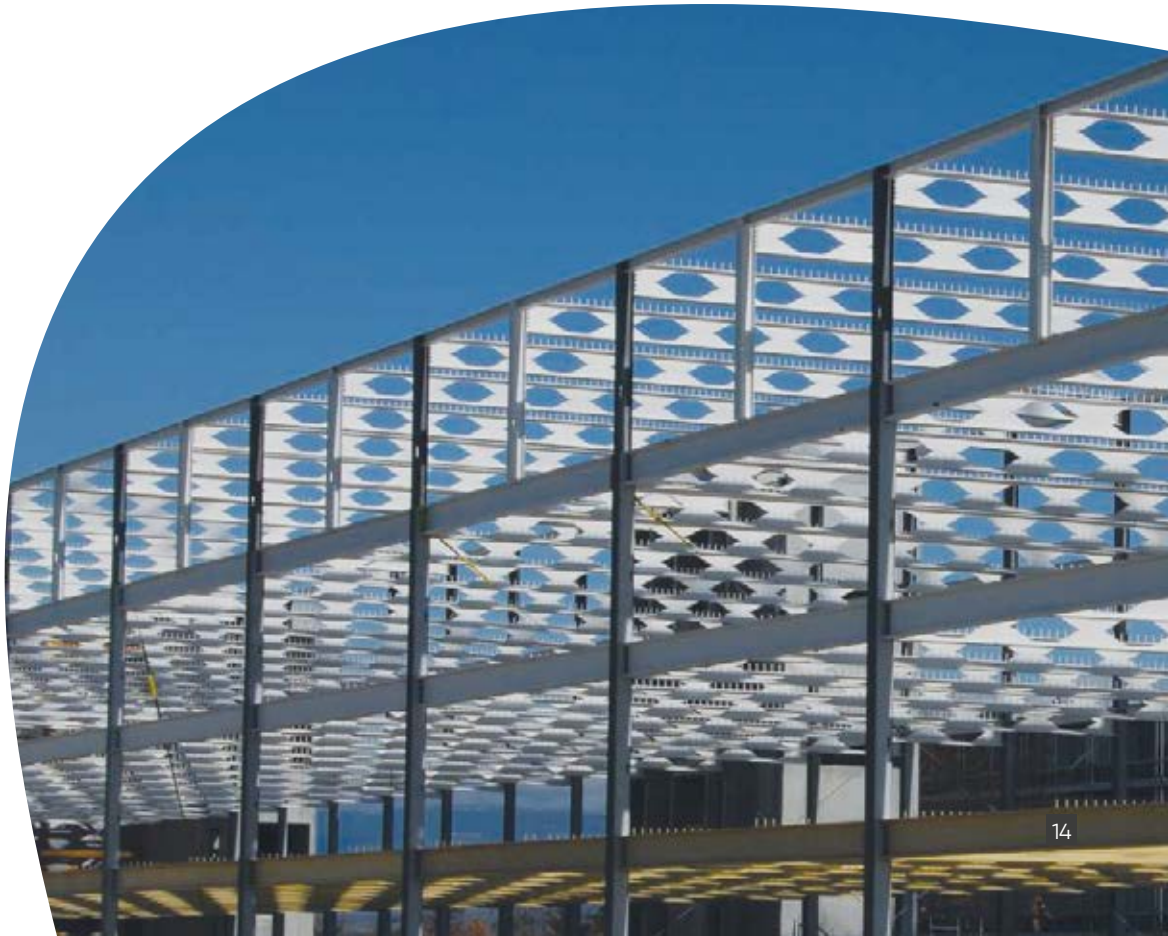
CO_2e ↓ 83% Compared to the world average for sections

[1] *https://worldsteel.org/steel-topics/life-cycle-thinking/lca-eco-profiles/*

Did you know?

The structure can account for more than 50% of the embodied carbon of a building.

Reducing the frame footprint is key to delivering a low carbon project.



Driving the climate transition for steel

ArcelorMittal is committed to playing a leading role in decarbonising the steel industry, but we cannot do this alone. We need a strongly collaborative approach based on cooperation and mutual commitment from companies at all levels of the steel supply chain, representatives of civil society, and other stakeholders.

We are a member of business and civil society organisations that impact on various levers in the market from the industrial processes to the behaviour of customers. With them, we are working to create the conditions needed to make net-zero steel a reality. Our actions on climate change are externally recognised.

Steel has been recognised by the European Union as a permanent material. This designation recognises that steel can be infinitely recycled without loss of quality, no matter how many times it is recycled.

Responsible Steel standards & certification

While reducing emissions is a key goal for ArcelorMittal and our customers, we are also considering sustainability in a broader context. As part of that approach, ArcelorMittal has played a pivotal role in establishing the ResponsibleSteel™ standard since 2015.

ResponsibleSteel™ is the steel industry's first global multi stakeholder standard and certification initiative. Now established as a non-profit organisation, ResponsibleSteel™ develops sustainability performance standards and has established an independent third-party certification programme for the steel value chain. This ground breaking initiative now involves over 40 members and associates, made up of companies and civil society organisations from around the world.

Independent audits verify performance

The standard is based on 12 Principles which, in turn, include a variety of criteria and requirements. To achieve ResponsibleSteel™ certification, each site must undergo a rigorous third-party audit, with the resulting report reviewed by an independent Certification Committee which makes the final certification decision. The audits are designed to verify that a steel site's activities meet a set of rigorously defined standards across a broad range of social, environmental and governance criteria and stakeholder relations, including:

- Climate change and greenhouse gas emissions
- Water stewardship and biodiversity
- Human rights and labour rights
- Community relations and business integrity

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Sustainability CHAMPION worldsteel 2025

ArcelorMittal is among the steel-producing companies recognised as the 2025 Steel Sustainability Champions.

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How can I find out more about XCarb® recycled and renewably produced?

For more information about XCarb® recycled and renewably produced steel, contact your local support team.

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XCarb® recycled and renewably produced - ArcelorMittal Europe

ArcelorMittal Europe - Long Products
66, rue du Luxembourg
L-4221 Esch-sur-Alzette

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