

The thyssenkrupp Steel magazine

Edition 2026

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steel

compact

Steel Customer Days 2026

How do we take industrial value creation
into the future?

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Production Network of the Future

Interview with COO Marco Richrath

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Less CO₂

TSR40 as raw material for bluemint® Steel

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Steel Customer Days 2026: What really matters now

New realities and increasing demands on industry and value chains call for new forms of cooperation. This is precisely where the Steel Customer Days 2026 come in: fostering open dialog on competitiveness, transformation, and specific customer requirements.

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Transformation requires effective safeguards

thyssenkrupp Steel is pushing ahead with its transformation on multiple levels and, through innovative technology, is laying the groundwork to fully decarbonize its production by 2045. However, the success of the project also depends on having a level playing field.

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bluemint® recycled – how CO₂-reduced steel is made

The key to producing bluemint® recycled is to use the recycled raw material TSR40. Thanks to this innovative material, iron ore and coal can be saved in the blast furnace process – thereby reducing CO₂ emissions.

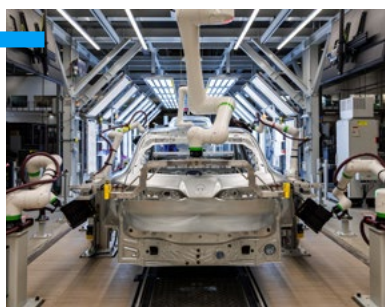
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How bluemint® Steel is conquering the world

bluemint® Steel helps companies significantly reduce their own carbon footprint throughout the value chain. Its applications range from automotive mass production in Europe to infrastructure projects on other continents.

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Reader survey:
We value your opinion



“Our customers are at the heart of what we do.”

The future isn't decided in strategy papers. In the end, what matters is what we deliver: for our customers and as part of our restructuring. That is exactly what we at thyssenkrupp Steel are working on – with a clear course and full steam ahead. Our goal is to build further on our strengths, consolidate our leading positions in attractive premium segments, and sustainably increase profitability, competitiveness, and value creation. The decisive factor is: our strategy is gradually turning into reality.

We have reached significant milestones in our restructuring efforts. We are consistently implementing our industrial strategy, investing heavily in the long-term viability of our locations, and at the same time continuing to drive the green transformation forward. Our focus remains clear: high-tech steels for the most demanding applications and for our customers' future markets.

Our first Capital Market Day in London also demonstrated that this new direction is being noticed. There, we explained to investors and analysts how we intend to position thyssenkrupp Steel as an economically independent steel company with positive future prospects. The interest and favorable feedback we have received reinforce our commitment to the course we have set: we intend to create sustainable value – for our customers, our employees, and for investors.

At the same time, we are seeing changes in some aspects of the general political situation. This is important because the industrial transformation requires both corporate responsibility and a reliable regulatory framework. These include effective carbon leakage protection, competitive energy prices, the ramp-up of the hydrogen economy, and guaranteed demand for low-carbon products.



Georgios Giovanakis,
CSO thyssenkrupp Steel

Especially when it comes to emissions trading, we still need a reality check and positive investment incentives rather than additional burdens.

No matter how much things change, one thing remains constant: our customers are at the heart of what we do. Our long-standing partnerships provide a strong foundation for the path ahead.

Our first thyssenkrupp Steel Customer Days in Duisburg also demonstrated just how valuable direct dialog is. Together, we have broken down the issues surrounding industrial transformation into the concrete realities of markets, production, and customer requirements. The enthusiastic response – and, above all, the many insights gained from our conversations – will encourage us to continue this direct dialog with our customers.

After all, the future takes shape through intercommunication, and becomes a reality where we shape it together.

I wish you an interesting read.

Yours,

Georgios Giovanakis

A fresh take on a Bauhaus classic – with bluemint® Steel

With the D4 lounge chair, thyssenkrupp Steel and furniture manufacturer TECTA are demonstrating how a nearly 100-year-old design classic by Marcel Breuer can be adapted to a new era through the use of modern materials. Combining the Bauhaus legacy, industrial roots, and innovative approaches to materials, this iconic design has been brought to life in the special edition using CO₂-reduced bluemint® Steel. The fabric panels are made from upcycled silver jackets worn by the company's workers. The special edition of the D4 lounge chair will remain on display as part of the Bauhaus exhibition in Dessau through January 31, 2027.



Web

To the movie
Bauhaus classic at the basic
oxygen steelmaking plant



More about
bluemint® Steel



Steel News

Products

pladur® Primelink: intelligently combining steel and plastic

Lightweight construction, stability, and efficient processing all in one: with pladur® Primelink, thyssenkrupp Steel has developed a new semi-finished product that significantly simplifies the permanent bonding of plastics to galvanized steel. Thanks to a specially developed adhesive bonding system, durable steel-plastic hybrid parts are created that combine the advantages of both materials. One potential application is as underbody covers for battery cases in electric vehicles. Other potential applications include, for example, the front end of passenger cars or cockpit cross members. After just one year of development, pladur® Primelink is now ready for production and is opening up new possibilities for innovative lightweight construction solutions.



Investment

The future of production: modernization of continuous casting line 3

thyssenkrupp Steel is investing a low three-digit million amount in the comprehensive modernization of continuous casting line 3 (SGA 3) at its Duisburg site. By 2027, a fully digitally controlled and highly automated facility will be built, making the production of high-quality slabs even more precise, flexible, and efficient. For customers, this modernization means one thing above all else: a long-term, secure supply of high-quality steel products, combined with even greater process stability and quality. The new facility expands metallurgical capabilities and provides additional flexibility in the production of high-performance steel grades. Continuous casting line 3 is a key component of thyssenkrupp Steel's production network. Together with the new continuous casting line 4, the renewed hot strip mill 4, and the automated slab logistics system, one of the most modern production complexes in the European steel industry is taking shape in Duisburg. In this way, the company is strengthening its competitiveness and laying the groundwork for reliably meeting customer needs in the future.

Partners

bluemint® recycled for lidded containers

For its tin plate lidded containers, Stocretec Germany will in the future rely on CO₂-reduced bluemint® recycled packaging steel from thyssenkrupp Rasselstein – from 1.25 liter cans to 30 liter hobbocks. The lidded containers are manufactured by Muhr & Söhne and filled by Stocretec. This example shows how companies can work together to drive the decarbonization of value chains and reduce CO₂ emissions throughout the entire value chain.



thyssenkrupp Steel –
on all channels!

Always keep up with the latest
information and trends in the steel
sector by following us on our social
media channels.



Company

Capital Market Day: thyssenkrupp Steel reaffirms strategy and announces medium-term targets

At its Capital Markets Day in London on September 28, thyssenkrupp Steel provided an update on the progress of its transformation and presented its strategy and medium-term financial targets. The company aims to significantly increase profitability, further expand its leading positions in attractive premium segments, and sustainably strengthen its competitiveness. Through extensive, targeted investments, thyssenkrupp Steel has already established a state-of-the-art production network, providing a high-performance, technologically advanced platform for premium steel applications. With strong positions in attractive premium segments, an exceptionally broad customer base, and a clear focus on “value over volume”, thyssenkrupp Steel is well positioned to benefit from long-term trends such as the expansion of energy infrastructure and sustainable mobility. At its Capital Markets Day, thyssenkrupp Steel also outlined its medium-term financial targets. The company aims to achieve an adjusted EBITDA of at least 1.2 billion euros, an adjusted EBITDA margin of at least 11%, and a positive free cash flow.

We'd like to hear from you

Reader survey: We value your opinion

steelcompact currently provides you with updates once a year on the latest developments at thyssenkrupp Steel – as well as other important topics affecting our industry. To help us tailor the magazine's content even more closely to your information needs in the future, we cordially invite you to participate in our brief reader survey. To do so, simply scan the QR code shown here. Your feedback will help us to make steelcompact even better for you.

To the
reader survey

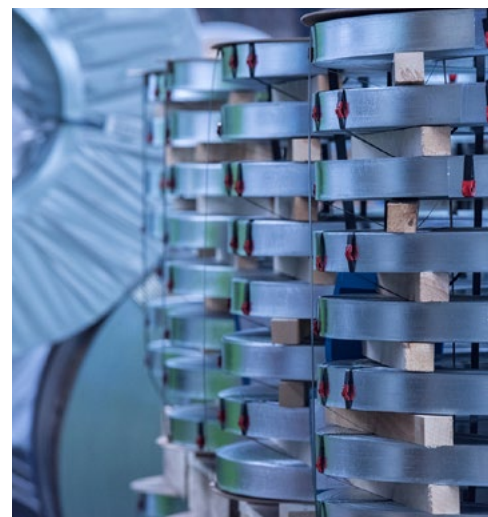


Products

Reliable corrosion protection – for components that have to withstand more.

Hot-dip galvanized steel strip from thyssenkrupp Steel provides long-lasting, all-round protection – even along cut edges. With zinc coatings of up to 500 g/m² per side, it offers high resistance to weathering and ensures a long service life in demanding applications. At the same time, the material offers excellent forming and processing properties, as well as a wide range of material options – for maximum flexibility in further processing. Whether for garage door sections, rolling grille doors, structural components, or banding solutions: hot-dip galvanized strip steel from thyssenkrupp Steel is highly versatile and is also available as CO₂-reduced bluemint® Steel – for greater sustainability in your applications.

Learn more about our hot-dip
galvanized strip steel



What really matters to customers now



A company that manufactures, processes, or uses steel in demanding applications faces a difficult challenge today: materials must remain available and cost-effective, meet the highest quality standards, and at the same time help reduce emissions. Added to this are volatile markets, new regulatory requirements, and international competition in which fair rules are by no means a given everywhere. The fact that these demands are occurring simultaneously is the new industrial reality – and calls for new ways of working together. **This is exactly the role played by the Steel Customer Days which thyssenkrupp Steel hosted in Duisburg at the end of September 2026:** a platform for exchange where customers and thyssenkrupp Steel work together to align competitiveness, quality, delivery performance, and CO₂ reduction.

Text Jan Ritterbach



The European steel industry continues to face significant challenges: high energy prices, import pressure, and global overcapacity are putting companies to the test. Added to this are increasing requirements under the European Emissions Trading System (ETS) and the Carbon Border Adjustment Mechanism (CBAM). These developments have a direct impact on industrial value creation in Europe. For thyssenkrupp Steel, this means that the transformation of steel production must be achieved while operations continue – and it must be technically feasible, economically viable, and beneficial to customers.

Transformation requires collective responses

How do we take industrial value creation into the future? This question served as the overarching theme at the 2026 Steel Customer Days. In late September, executives from key customer industries gathered in Duisburg with experts from the company as well as representatives from the political and academic communities. The focus was not on finding a single answer, but rather on the interplay of key factors: industrial value creation and competitive framework conditions, trust and investment, as well as an economically viable transformation that creates tangible added value for customers.

The location was deliberately chosen to be close to the reality of industrial life – right in the heart of the integrated iron and steel plant in Duisburg. Production facilities, the construction site of the direct reduction plant, and specialized sessions highlighted the real-world conditions, how transformation is being put into practice on the ground.

Competitiveness is key

The starting point for the discussion was industrial value creation itself. Economist Jens Südekum of Heinrich Heine University Düsseldorf focused on its importance for Europe's prosperity, employment, and competitiveness, while Robert Habeck, former Vice Chancellor of Germany and Federal Minister for Economic Affairs and Climate Action, emphasized the need for appropriate framework conditions. The Green Party politician expressed himself in general in favor of a new industrial policy strategy – particularly when it comes to goods that are critical to the system or to security for the domestic industry and society: "In the future, we must consider the state and the market together, rather than

artificially separating them," Habeck said. The goal is to broaden the political debate – which, in his view, oscillates too much between the extremes of socialism and neoliberalism – to include a pragmatic approach. "We need a new third way here. Steel is part of that."

However, even improved framework conditions alone are not enough to trigger investment. Business journalist Anja Kohl therefore turned her attention to companies and capital and advocated supporting the transformation through investment. However, because investment requires competitive companies and confidence in the region's future, thyssenkrupp Steel has derived a clear mandate for its own transformation from this: it must not only be technologically feasible, but also economically viable. thyssenkrupp Steel CEO Marie Jaroni summed it up: "We must adapt our business model and our industrial structure to changing geopolitical and economic conditions. Only if we succeed in both – industrial restructuring and the green transition – can this transformation ultimately be competitive." However, whether a transformation

thyssenkrupp Steel CEO Marie Jaroni expressed confidence in the success of the transformation during the customer event





is sustainable is not determined solely by its technical and economic feasibility. What the transformation achieves for customers is also crucial.

What customers expect from steel today

This is exactly where the debate on transformation intersects with industrial practice. Today, customers must reconcile requirements that used to be viewed as more distinct: quality and availability, cost-effectiveness and sustainability, material performance, and CO₂ transparency. Wolfgang Kirchhoff, CEO of Kirchhoff Automotive, emphasized the role of steel manufacturers such as thyssenkrupp Steel as partners on an equal footing: "I appreciate the diversity of the product portfolio, but above all the innovative strength that the collaboration between our companies is now bringing to life."

The more demanding the materials and applications become, the more important collaboration becomes in the early stages of development.

Materials, design, manufacturing, and subsequent use all influence one another. Stefan Breit, Chief Technology Officer of the Miele Group, said: "We use steel sheets from thyssenkrupp Steel in our washing machines and dryers. They are in the visible parts of our appliance housings. Together, we have taken new steps and equipped our latest generation of home appliances with innovative coatings to replace enameled surfaces."

The role of steel suppliers is therefore changing: what is required is not just the right material at the right time, but the ability to understand requirements in advance and work together to translate them into technically and economically viable solutions. Stefan Maurer, Head of Procurement Raw Materials & Sustainability at Mercedes-Benz, explained: "The development departments at Mercedes-Benz and thyssenkrupp Steel are now collaborating at a very early stage. An important factor is the

Stefan Breit, Chief Technology Officer of the Miele Group, is committed to development partnerships and innovative coatings.



thyssenkrupp Steel CSO Georgios Giovanakis highlighted the factors that play a key role in the future of the industry.

quality of the products and the fact that we have consistently managed to find viable solutions together, even under challenging conditions.”

Transformation must reach customers

For thyssenkrupp Steel, its customers’ requirements serve as a strategic anchor. The construction of a direct reduction plant in Duisburg marks the technological cornerstone on the path to carbon-neutral steel production. With bluemint® Steel, the company already offers CO₂-reduced steel. Environmental Product Declarations (EPDs) and Product Carbon Footprints (PCFs) make the associated emission reductions measurable and verifiable for customers.

However, customer benefits do not stem solely from a lower CO₂ value. The key is that sustainability goes hand in hand with material performance, quality, delivery capability, and cost-effectiveness. Digital solutions and reliable CO₂ data round out the offering. For customers, these tools are particularly relevant when they support specific decisions – such as those related to material selection, procurement, or the assessment of emissions along the supply chain.

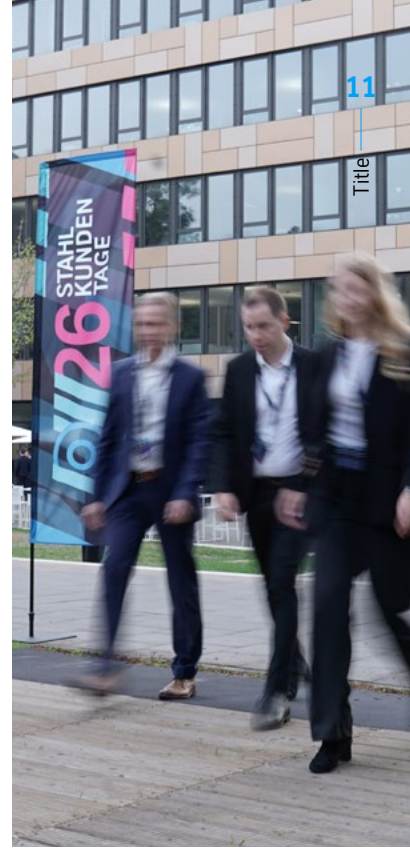
Collaboration is becoming increasingly important

At the Steel Customer Days, business journalist Nena Brockhaus adopted an outsider’s perspective to demonstrate that transformation is not merely a technological or economic challenge.

Profound change also requires a willingness to adapt, leadership, and trust – especially when the path ahead cannot yet be fully mapped out. This turns the question of the right technology into a question of how organizations facilitate change. Ultimately, these perspectives lead to a common conclusion: the more complex the requirements become, the more important efficient collaboration will be in the future.

“The future of our industry is not determined by individual companies. It is a decision that affects the entire value chain,” summarized Georgios Giovanakis, CSO of thyssenkrupp Steel, emphasizing: “You cannot solve tomorrow’s problems with yesterday’s answers. The future takes shape where we develop solutions together.”

The 2026 Steel Customer Days made it clear just how closely the major issues of industrial competitiveness are linked to customers’ day-to-day lives. We need a reliable framework, trust, and investment. Transformation must be technically feasible and economically viable. And it must prove itself in the areas where steel is used in practical applications. The result is closer collaboration along the value chain: understanding requirements earlier, pooling expertise, and collaborating on the further development of solutions.



A hot ticket: the Steel Customer Days were very well received by thyssenkrupp Steel’s customers and partners.

Stefan Maurer, Head of Procurement Raw Materials & Sustainability at Mercedes-Benz, emphasized the importance of early collaboration between material suppliers and customers.

Web

Watch the 2026 Steel Customer Days Highlight Video



Hear What Customers had to Say at the 2026 Steel Customer Days



Wolfgang Kirchhoff, CEO of Kirchhoff Automotive, values thyssenkrupp Steel’s diverse product portfolio and innovativeness.

The green transformation requires the right conditions

thyssenkrupp Steel is pushing ahead with the green transformation on multiple levels and, through innovative technology, is right now laying the groundwork to fully decarbonize its production by 2045. However, the success of the project does not depend solely on technical components, but also on a **level playing field**. The EU has already taken an important step with a new trade protection instrument for steel, but further policy measures must follow.

Text Jan Ritterbach



Erika Mink-Zaghloul, Senior Vice President for Government & Regulatory Affairs at thyssenkrupp Steel, calls for an effective Carbon Border Adjustment Mechanism (CBAM) and reliable Emissions Trading System (ETS) rules as the foundation for a level playing field in the steel industry's transformation.

Duisburg, late summer 2026. At the northern end of thyssenkrupp Steel's sprawling plant premises, not far from the Rhine and the blast furnaces, one of the so-called "energy transition real-world laboratories" – funded by the German government – is taking shape. Here, shielded from the noise of the construction site and surrounded by cranes and pipes, project manager Daniel Schubert explains the next step toward a carbon-neutral future for Germany's

largest steel manufacturer. "We are building two pilot plants at this site that are crucial to our future production."

What sounds rather matter-of-fact actually describes nothing less than an industrial quantum leap. With these two new units, thyssenkrupp Steel is conducting small-scale tests of what is to follow on an industrial scale. "The pilot plants – one for the direct reduction of iron ore and one for the smelter – will begin operating one after the other under real-world conditions starting in the fall of 2026," says Schubert.

New technology requires a learning environment

The planned test runs are paving the way for the large DR plant currently under construction on a site the size of 40 soccer fields at the Walsum South Harbor in Duisburg.

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Project Manager Daniel Schubert in front of the pilot plant at the Duisburg site. This is where future steel production is trialled and tested in a real-world laboratory.



EU strengthens the transformer value chain:

According to a decision by the European Commission, provisional trade protection measures for grain-oriented electrical steel have been in effect since September 25, 2026, and are initially due to remain in effect until the end of February 2027. They are intended to limit the sharp increase in imports of heavily subsidized materials, primarily from Asia. The special feature: For the first time, a measure of this kind will protect not just a single steel product, but an entire value chain – from electrical steel to transformer cores. Grain-oriented electrical steel is an indispensable basic material for electricity transmission and the energy turnaround. This specialty material is used in transformers, substations, data centers, and wind farms, among other applications.

one after the other under real-world conditions starting in the fall of 2026,” says Schubert. “This is Europe’s response to global overcapacity of about 620 million metric tons – which is putting significant pressure on the markets. International trade conflicts also increase the risk that additional volumes will be diverted to Europe,” explains Erika Mink-Zaghloul, Senior

Vice President for Government & Regulatory Affairs at thyssenkrupp Steel. “For companies like thyssenkrupp Steel, this represents an important step. After all, companies that invest heavily in modern, climate-friendly production processes inevitably face higher costs than competitors from regions with lower standards.” Effective trade protection is therefore essential to ensure that these investments pay off in the long term.

Ongoing massive pressure from imports

At the same time, however, it is clear that the current approach still falls short. While steel is now more heavily protected, massive pressure from imports persists throughout the value chain – particularly for processed steel products and certain specialty steels. “It is precisely these products that are located in downstream stages of the value chain – often in close proximity to our customers – and are facing increasing competitive pressure from low-cost imports,” Erika Mink-Zaghloul continues. The result: a risk of value creation gradually shifting away from Europe. “Without effective protection – including for steel products that are particularly affected – new dependencies will arise, with direct consequences for industry, employment, and security of supply. To ensure a robust industrial base, it is therefore not enough to address only the upstream stages of production. It is crucial to expand trade protection measures and the CBAM on a risk-based basis to cover downstream products that are particularly affected.” (You may read more about this on page 30)

Ensuring effectiveness of the CBAM and ETS

Emissions trading, too, requires a regulatory framework that facilitates the transition and ensures competitiveness. The CBAM is intended to impose CO₂-related costs on imports of CO₂-intensive goods and prevent carbon leakage. However, the mechanism does not yet provide sufficient protection: there are gaps relating to steel derivatives, potential circumvention strategies, and safeguarding of export-oriented companies.

Therefore, the free allocation must not be phased out faster than the CBAM has been shown to be effective. The European Commission’s proposal for ETS reform includes important measures, but thyssenkrupp Steel believes it does not go far enough. It is crucial to limit the rise in CO₂ costs in a way that is economically viable during the transition phase. This is because conventional and low-carbon facilities will need to be operated in parallel for the foreseeable future; at the same time, further investments in the transition must be generated from ongoing operations.

As long as key prerequisites – such as competitive energy prices, hydrogen at affordable costs, adequate infrastructure, leading markets for low-carbon steel, and an effective CBAM – are lacking, the rise in CO₂ costs must not force European production sites out of the market. In other words: no further reduction in free allocations, no tightening of ETS benchmarks that would hinder transition investments, and no investment requirements that turn carbon leakage protection into red tape.

At the same time, ETS revenues must be channeled back into industrial transformation projects in a targeted and unbureaucratic manner. Funding instruments can help bridge gaps in investment and operating costs, but they must not replace market-based allocation. Only when these two factors work together will investments in low-carbon technologies remain economically viable.

Erika Mink-Zaghloul: “Europe has shown that it is capable of taking action. We must now follow this path through to the end.”

Web

More information
on the climate strategy



Interview

with Erika Mink-Zaghloul
on the topic of trade protection



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Uncompromising in quality, versatile in use: How CO₂- reduced bluemint® Steel is conquering the world

Luanda, the capital of Angola, needs clean drinking water – and to that end, it is receiving line pipes made from CO₂-reduced hot strip from thyssenkrupp Steel.

The steel industry is one of the sectors worldwide with most intensive emissions. thyssenkrupp Steel has been working for years to change that. **With bluemint® Steel, the CO₂-reduced steel made in Duisburg**, the company is already helping its customers significantly reduce their own carbon footprint along the value chain. Its areas of application range from automotive mass production in Europe to infrastructure projects on other continents.

Text Jan Ritterbach

S

Steel is not only one of the most versatile and widely used materials in the world – it is also one of the most intensive when it comes to emissions. Its manufacturing accounts for about eight percent of global greenhouse gas emissions.

With bluemint® recycled, thyssenkrupp Steel offers its customers a product that can match all





Material for the mobility revolution: BMW is relying on bluemint® Steel for building the all-electric iX3.



the material properties and qualities of steels produced using conventional methods. In addition, bluemint® recycled offers a significantly reduced carbon footprint. The principle: in the traditional blast furnace process, a portion of the iron ore is replaced by specially processed steel scrap. As a result, the demand for coking coal decreases, and greenhouse gas emissions drop measurably. “bluemint® recycled makes it possible to measurably reduce the carbon footprint of production – without compromising on quality, safety, or processing properties,” says Sabine Hüwe, the product manager responsible for this area in the Business Development division at thyssenkrupp Steel. (For more information on the bluemint® recycled production process, see page 34 onward)

BMW relies on bluemint® Steel

It's no wonder that the BMW Group is relying on bluemint® Steel in the design of its new all-electric BMW iX3. In 2026, thyssenkrupp Steel will supply the Bavarian premium automaker with the innovative material, which will be used in several areas of body construction. These include, among other things, the outer panels, internal components, and the battery housing. The automotive industry places the highest demands on the outer panels in particular: the steel must be capable of being formed with precision and produce a flawless surface after painting with no quality deviations whatsoever.

These requirements are met almost exclusively by conventional primary steel. bluemint® recycled also meets them – but as a low-emission material for the blast furnace route.

In practice, the use of this material does not change anything: as verified and certified by TÜV Süd, the use of bluemint® recycled does not require any adjustments to the customer's existing manufacturing processes. And thus, the beneficial properties of CO₂-reduced steel are also put to good use, for example, in the battery housing of the electrified compact vehicle. The material can withstand high temperatures, is non-flammable, and offers improved electromagnetic shielding compared to alloys – a key advantage for fire safety and system stability. “The fact that bluemint® Steel is used both for automotive outer panels with the most stringent surface requirements and for battery housings with the highest standards for safety and stability demonstrates how bluemint® recycled makes it possible to reduce emissions across the broad spectrum of steel applications,” says Sabine Hüwe.

Carbon footprint reduced

Other industrial sectors also want to reduce their own carbon footprint. Take packaging, for example: since 2026, the global Henkel Group has been using bluemint® packaging steel from thyssenkrupp Rasselstein – Germany's only tin plate manufacturer – for selected tin plate cans of its Tangit adhesive brand.

Even without bluemint® Steel, there are compelling reasons to choose tin plate as a packaging material: in Europe, 84 percent of all tin plate packaging is recycled; in Germany, the recycling rate for household waste is as high as 94.3 percent – no other packaging material has such a high recycling rate. With bluemint® Steel, the carbon footprint during production is now also reduced. The material's reduced emissions have been externally verified and confirmed by the certification society DNV. "Our collaboration with Henkel demonstrates how we can work together to achieve ambitious emissions reduction goals across the entire value chain," says Sabine Hüwe.

Line pipes for clean drinking water

The scale at which bluemint® Steel is used is determined solely by the application. In 2026, thyssenkrupp Steel supplied approximately 1,000 metric tons of hot strip for a water project to serve the Angolan capital, Luanda. The steel will be used to construct part of a pipeline network designed to significantly improve the drinking water supply for approximately ten million people. For years, the city has been facing



Adhesive securely packaged in CO₂-reduced tin plate: Henkel has been using bluemint® Steel for its Tangit brand since 2026.

Sabine Hüwe, the product manager responsible for this area in the Business Development division at thyssenkrupp Steel, highlights the versatility of bluemint® Steel.





a daily shortage of about 1.2 million cubic meters of drinking water; in large parts of the city, water has had to be distributed by tanker trucks. The Quilonga Grande development project aims to change that with a new pipeline network approximately 105 kilometers in length.

The bluemint® Steel hot strip required for this is processed into spiral-welded pipes at Mannesmann Grossrohr in Salzgitter, Lower Saxony. Each one is up to 13.5 meters long, with diameters ranging from half a meter to nearly one and a half meters. Components of this size are installed deep underground and must function reliably for decades. Angola already relies heavily on renewable energy and has relatively low per capita greenhouse gas emissions. “Access to clean drinking water is a key foundation for quality of life and social development,” says Sabine Hüwe. “We are pleased to be contributing to the development of critical infrastructure in Luanda with bluemint® Steel. This project reaffirms our commitment to continuing to invest in the development of climate-friendly technologies.”

Creating more beautiful designs with steel

While the Angolan development project impressively

demonstrates the large-scale potential of the CO₂-reduced material, bluemint® recycled also makes an impact in intricate applications – such as in the field of design. This was evident at this year’s Milan Furniture Fair. There, the furniture manufacturer TECTA, in collaboration with thyssenkrupp Steel and the Bauhaus Dessau Foundation, presented a special edition of the iconic D4 – a folding chair designed by Bauhaus designer Marcel Breuer nearly a century ago. The steel frame of the new D4 lounge chair is made from bluemint® Steel, while the fabric panel is made from upcycled protective clothing from the steel mill. The chair will remain on display as part of the Bauhaus anniversary exhibition in Dessau through January 2027. Sabine Hüwe: “The project makes it clear that reducing emissions in steel production is important not only in large-scale industrial applications, but also in contexts where the material has cultural and design significance. The versatility of steel will continue to make it indispensable for most industries in the future. With bluemint® Steel, we are helping to ensure that the carbon footprint in manufacturing will be significantly reduced in the future.”



A Bauhaus icon with an unmistakable design: the D4 lounge chair from TECTA is made of low-emission steel from Duisburg.

Web

[More about bluemint® Steel](#)



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New approaches in lightweight steel construction: Focus on modular vehicle bodies

The automotive industry is looking for ways to make the assembly of modern vehicles faster, easier, and more cost-effective. One construction method that is also becoming increasingly important for the input stock supplier thyssenkrupp Steel is called “**modular construction**”. In this concept, the body is not assembled directly as a whole, but is divided into clearly defined, pre-assembled units that are then joined together.

Text Jan Ritterbach



A concept for the automotive body construction of the future: breaking the process down into modules significantly increases assembly efficiency.

In traditional vehicle assembly, automotive manufacturers are forced to work in extremely confined spaces: to ensure that the vehicle can be assembled as a complete unit at the factory, seats, dashboards, and other interior components must sometimes be carefully guided through the narrow openings in the body. This is exactly where the modular principle comes into play: the body is divided into front, middle, and rear sections, as well as side panels. Each module can be pre-assembled separately, with significantly better accessibility, before the finished units are assembled at the end. “The result is simplified assembly processes and greater potential for automation,” explains team leader Thomas Böttcher, who is in charge of research

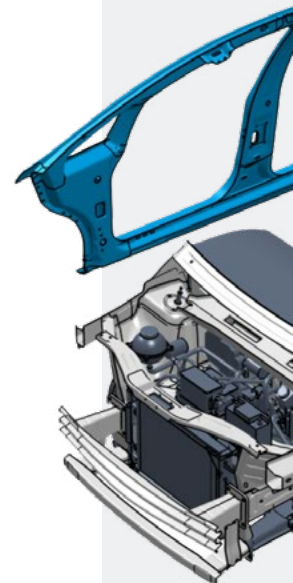
and development activities on this topic at thyssenkrupp Steel.

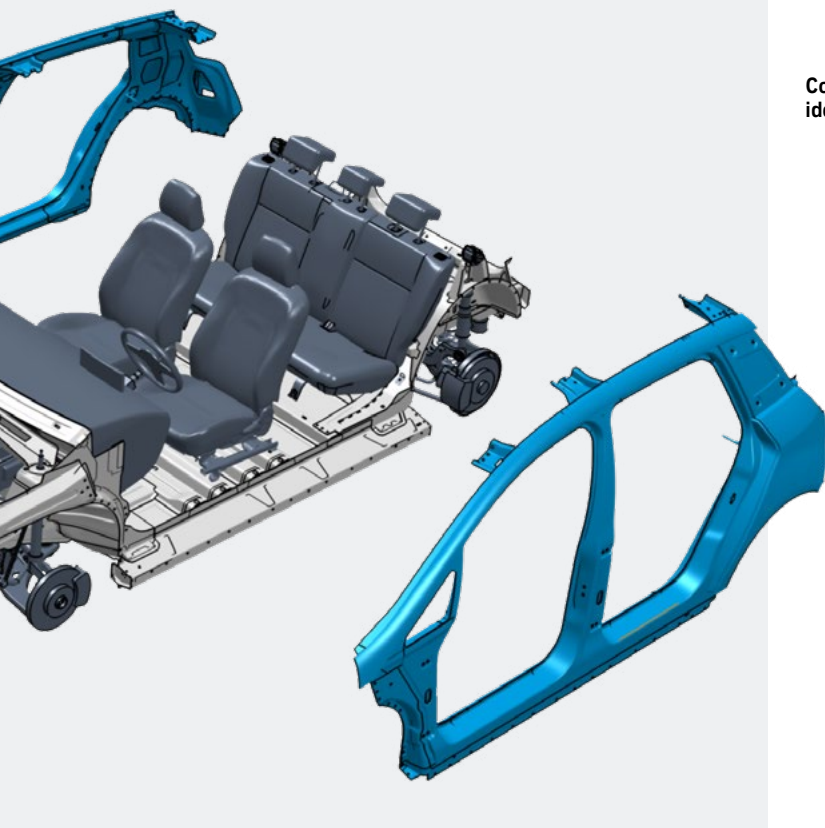
Steel as a fully viable alternative

These modularization approaches have become well known primarily through developments related to large-scale aluminum casting concepts.

This process involves the use of large-format, one-piece die-cast parts, requiring what are called giga presses to manufacture them. For established automotive manufacturers with well-established body-in-white production lines, this means significant investments in new production infrastructure. thyssenkrupp Steel’s approach takes a different path: It applies the advantages of modular vehicle designs to lightweight steel construction and enables them to be implemented on existing production lines.

Steel also offers compelling advantages in terms of material properties. “From a sustainability perspective, the way that steel trumps





Cost-effective and reducing CO₂: steel is ideally suited for modular construction.

aluminum in terms of CO₂ is certainly a factor,” says Böttcher – although that is not the main reason for developing the concept. Furthermore, there are many indications that aluminum die-cast components in existing designs can sometimes even be heavier than comparable steel structures – a fact that further underscores steel’s CO₂ advantage. Böttcher: “Steel is also an economically competitive option for modular designs, especially when you factor in the investment costs for new manufacturing equipment in addition to the material costs.” Existing body-in-white production lines can continue to be used, and the variety of derivatives – which is important to OEMs – is maintained.

Connecting what needs to be stable

The most technically challenging aspects of the modular steel body are the joints between the modules. Within the modules themselves, proven welding processes such as resistance spot welding are used – the most common and cost-effective joining method, accounting for approximately 95 percent of the joints. Thermal processes are not an option at the module junctions, however: once the seats, trims, and add-on parts have been installed, any input of heat is strictly prohibited. Screw and adhesive joints come into play here.

These joint areas are subject to high structural requirements. In the event of a head-on collision, for example, the load from the longitudinal member must be reliably transferred via the A-pillar both to the sill area and upward into the roof frame. Clemens Latuske, who is responsible for engineering development in Thomas Böttcher’s team, explains: “These joint areas

must be reinforced accordingly – if necessary, by adding additional components or adjusting the material thickness values. Structural and material concepts, joining techniques, and corrosion protection systems are specifically optimized to meet these requirements.”

Lightweight steel construction is ready for the modular future

The engineers at thyssenkrupp Steel use the “selectrify compact” body as a base of reference – a conventional sheet-steel structure that thyssenkrupp Steel has completely redesigned and transformed into a modular concept. The vast majority of the components have been redesigned for this purpose. All adjustments to weight, material thickness, and material selection are consistently measured against the conventional reference. The result: the weight was reduced by more than 17 kg compared to the reference model – which represents a first-generation electric vehicle. Measures for component integration via InPart Solutions are particularly helpful in this regard.

Discussions about the concept are already underway with OEMs, and it is being adapted to their specific requirements. At the Body Engineering Days 2026, thyssenkrupp Steel presented its concept to industry experts – setting a clear signal: lightweight steel construction is ready for the modular production future.

Web

More information about the InPart Solutions research project



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Steel for hot forming

Lightweight construction, crash safety, and process expertise – all from a single source

Hot-forming steels from thyssenkrupp Steel enable cost-effective lightweight construction with superior crash performance and great design flexibility for complex component geometries. The materials portfolio is complemented by tailored services throughout the process – from material selection to component design. MBW® AS Pro also offers an innovative further development that reduces hydrogen-induced component embrittlement, while the patented Tailored Tempering process enables different strength and elongation properties within a single monolithic component.

Web

More about
hot-forming steels



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Best surfaces for outer panels

Corrosion protection, painted finish, and process reliability

With hot-dip galvanized and electrolytically galvanized sheets, thyssenkrupp Steel is offering surface solutions specifically tailored to the requirements of the automotive industry. They combine rugged corrosion protection with an excellent painted finish, and are suitable for common forming and joining processes. Modern surface treatments thus make an important contribution to sustainable mobility, construction with efficient use of resources, and high process reliability in further processing.

Web

More about
surface refinements



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The right solutions for every application: Customized materials



Multiphase steels

Key materials for lightweight construction and safety

Multiphase steels are a key enabler for cost-effective lightweight construction in the automotive industry – particularly for crash-relevant structural components and complex geometries. Careful coordination of the structural components allows strength, formability, and other processing properties to be precisely tailored to the specific application. thyssenkrupp Steel's portfolio ranges from dual-phase, complex-phase, and chassis steels to ferritic-bainitic grades, offering customized material solutions for a variety of requirements.



powercore®

Non-grain-oriented electrical steel for efficiency and mobility

thyssenkrupp Steel is one of Europe's leading suppliers of non-grain-oriented energy efficiency and performance in electric motors and generators and are used worldwide in industry, household appliances, power generation, and automotive applications. In this way, powercore® makes an important contribution to energy technology with efficient resource usage, sustainable mobility, and renewable energy generation.



ZM Ecoprotect® Solar

Corrosion protection for long-lasting PV mounting systems

With ZM Ecoprotect® Solar, thyssenkrupp Steel offers zinc-aluminum-magnesium-coated steels for robust and cost-effective PV mounting systems. The coating reliably protects the steel substructures of solar installations from corrosion, withstands a variety of weather conditions, and performs well even when in direct contact with the ground – making it ideal for piling sections and load-bearing structures. Warranties of up to 25 years against rust penetration are available, depending on the level of corrosion exposure. In addition, ZM Ecoprotect® Solar is also available as CO₂-reduced bluemint® Steel – for durable PV mounting systems with a lower carbon footprint.

Web

More about
multiphase steels



Web

More about
electrical steel



Web

More about
ZM Ecoprotect® Solar



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thyssenkrupp Steel develops high-performance steels and surface technologies that are precisely tailored to the needs of various industries – from the automotive industry to mechanical and plant engineering, as well as household appliances, packaging, and energy. Customers benefit from a **broad portfolio of precisely tailored materials** with exactly the properties their applications require: robust, crash-resistant, corrosion-resistant, and functional.

Text Jan Ritterbach

The complete **delivery range**
is available **herer**



Digitalization and AI: how thyssenkrupp Steel is rethinking the steel industry

The steel industry is undergoing a profound technological transformation. **Digitalization and artificial intelligence are key drivers** for taking quality, reliability, and on-time delivery to a new level. thyssenkrupp Steel is actively driving this transformation.

Text Jan Ritterbach



The world is producing crises at such a rapid pace that companies barely have time to take a proactive approach. High energy costs, volatile markets, and growing global competition – the environment in which thyssenkrupp Steel operates is demanding greater responsiveness than ever before. For Volker Lang, Head of Digital Solutions at thyssenkrupp Steel, the answer is clear: “Challenges arise quickly – and opportunities

arise just as quickly. The main problem is that we sometimes take too long to capitalize on opportunities. We need to pick up the pace.”

This conviction drives the company’s sustainable digital transformation, which is characterized less by knee-jerk reactions and more by efficient, interdisciplinary collaboration across all departments and divisions. “We are networking with one another more and more to develop a shared, cross-organizational understanding of the positive impact that digital transformation

can have on us. The better we are at this, the faster we can respond to specific situations.”

The digital foundation

A solid foundation is needed for AI and data analytics to make an impact where they matter most – namely, in production. A handful of topics are of particular importance to the IT experts at thyssenkrupp Steel. In an era of cyberterrorism and hacker attacks on critical infrastructure, modern production environments must be equipped to deal with these growing threats, for example. Today, IT security is a prerequisite for system availability and process stability.

Another important concept is edge computing, which involves processing data directly at the point where it is generated. This enables real-time responses with minimal latency, while modern IoT sensors provide end-to-end transparency into machine status and production processes. To this end, centrally available, uniformly structured data lakes form the foundation for all AI models – from automated quality control to predictive maintenance. “Without these platforms, AI remains just a promise,” says Lang. “With them, it will become a real competitive advantage.”

Using AI where it really helps

Two projects from the day-to-day innovation efforts at thyssenkrupp Steel illustrate how this works in practice. In slab transport – a core process in steel logistics – experts had to decide on a daily basis how to distribute hundreds of slabs among railway wagons. What sounds simple at first is actually highly complex: even with just 1,000 slabs and 72 possible loading positions on the wagons – that is, 18 wagons each with 4 slab positions – there are 10 to the power of 221 possible combinations, which is more than the number of atoms in the entire universe. Evolutionary optimization algorithms, which apply the principle of natural selection to the loading problem, now solve this task automatically: wagon utilization rose from between 80 and 90 percent to nearly 99 percent. This means fewer trains, lower transportation costs, and more efficient warehouse logistics – while also reducing the crane travel distances for the operating crew.

The second example comes from research: Decades of in-house knowledge lay untapped in hundreds of thousands of documents stored on the company’s own servers – ranging from modern research reports to typewritten transcripts from the 1950s. An AI-powered search system based on semantic vector databases now makes this archive searchable in real time. Anyone who wants to know how a specific temperature during the hot rolling process affects the microstructure and properties of steel can get a precise answer in seconds – complete with a source citation and a direct link to the

original page. What used to take hours now takes just seconds.

What this means for customers

The benefits of measures like these extend far beyond the factory gates. Higher equipment availability through predictive maintenance means fewer unplanned downtimes and more reliable delivery commitments. AI models that automatically detect surface defects and optimize process parameters in real time minimize quality fluctuations – resulting in consistently better products. End-to-end digital transparency – from raw material procurement to delivery – enables more accurate forecasts and smoother coordination at every stage. Whether it be CO₂ reporting, new regulations, or volatile energy prices – processing data in real time makes it possible to respond more quickly and with greater confidence.

“The potential for the future lies in holistic thinking – in end-to-end processes and the optimization of the value chain,” says Lang. More interconnected supply chains, stable processes, demonstrably lower CO₂ intensity: at thyssenkrupp Steel, digitalization is not an end in itself. It delivers measurable benefits – for the company and for every customer along the chain.

Volker Lang, Head of Digital Solutions at thyssenkrupp Steel, is driving the steelmaker’s digital transformation on many levels.

Web

More about the digital transformation

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Approaching the task with positive energy: Marco Richrath has been Chief Operations Officer at thyssenkrupp Steel since early 2026.

“

We are steadfastly pursuing our course”

Marco Richrath has been Chief Operations Officer at thyssenkrupp Steel since early 2026. The former Shell executive is taking on this role at a crucial juncture: the company is in the midst of a far-reaching restructuring – **toward leaner operations and carbon-neutral production**. In an interview with steel^{compact}, Richrath discusses current challenges and how he envisions the transformation moving forward.

Text Jan Ritterbach

Mr. Richrath, your start at thyssenkrupp Steel was immediately followed by a serious test. How did you experience the fire at Hot Strip Mill 4?

The damage caused by the fire in October 2025 was extensive – gas systems, electronics, the roof, and the furnace lining. The fact that we were able to resume trial operations less than eight months later and will soon be able to begin regular operations is a remarkable achievement by the entire team. I am also very grateful that our colleagues at the Bochum hot strip mill stepped in during this time and made up for the shortfalls.

How can we ensure that something like this doesn't happen again?

We investigated the cause very thoroughly and determined that a single component had failed. As a result, we thoroughly inspected and reevaluated all safety systems. Only then did we begin trial operations. Safety is always the top priority, as you would expect at one of Europe's most modern production complexes.

What drew you to Duisburg in the first place – as someone with a background in the oil industry?

When the request came in, I was surprised at first. Up until then, I hadn't had any experience in the steel industry. But I quickly realized: the goal is to restructure large industrial complexes so that they have a future. I'm not new to this.

thyssenkrupp Steel is undergoing a period of profound transformation. Where does the company stand?

We are at a turning point – there's no question about it. Production capacities were too high for the steel that could actually be sold. That is why our work on bootstrapping our own competitiveness is ongoing. To achieve this, greater efficiency is essential. At the same time, we are making targeted investments in modern equipment to further improve our performance.

Can you give some examples?

One example is the complete overhaul of Continuous Casting Line 3. The modernization efforts



have already begun. We are planning a fully digitalized and automated facility. The project will cost a low three-digit million amount, and it is scheduled to start operating in 2027. With this project and the divider, we are successfully completing the key investments aimed at modernizing our core facilities and optimizing our production network. In doing so, we are consistently implementing the final major components of our strategy and laying the foundation for efficient, future-proof production.

You mentioned the divider – what is it, and why is it strategically important?

A divider is a machine that cuts our slabs into narrower formats, thereby producing the input stock for further processing at our precision strip mill in Hohenlimburg. With our own divider, we are laying the groundwork to ensure that our slab supply comes entirely from the Duisburg North facility. We are thus gradually ending our previous reliance on external deliveries. The divider is a key component in our strategy to strengthen and interconnect our locations. At the same time, it enhances security of supply and reliability for our customers.

And what is the current status of work on building the direct reduction plant?

Work at the construction site is progressing. Work on the foundation and peripheral areas is well underway. The tower for the DR plant is currently being built.

And in the long term? What does your roadmap look like in terms of technology?

When the DR plant starts operation, another blast furnace is scheduled to be shut down.

The plant can initially be powered by natural gas and is designed so that the proportion of hydrogen can subsequently be increased gradually. We are evaluating various technological options for the next steps in decarbonization, including an electric arc furnace. It is important to remain open to different technologies. However, economic viability is an indispensable prerequisite for any further investment decision. Only economically viable strategies will enable us to consistently pursue this transformation while ensuring our competitiveness.

What gives you confidence that this approach will succeed?

We have a clear plan that we are consistently implementing to reach the top spot amongst European competitors. We have optimized our production network at key points to improve our performance. Above all, however, we have a team that demonstrated what it is capable of during the restart of Hot Strip Mill 4. Now it's time to get all hands on deck for the transformation of thyssenkrupp Steel.

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More about
thyssenkrupp Steel





Tough on the outside, tough on the inside

In the town of Gotha in the Thuringia region, Schmitz Cargobull – a leading European manufacturer of semitrailers and trailers – builds dumper trucks for tackling the toughest jobs in the transportation industry. The fact that the load beds are **so sturdy and yet at the same time so lightweight** has a lot to do with the Duisburg steel used for making them.

Photos: Schmitz Cargobull

Text Jan Ritterbach



A tough job for high-strength materials: when bulk cargoes are loaded into dumper trucks, they drop onto the body floor with considerable force

Anyone who chooses a Schmitz Cargobull tipper trailer is purchasing a high-performance piece of equipment that must operate reliably for many years. This applies just as much to construction sites as it does to farm fields or recycling centers. Gravel, overburden, wet concrete, scrap metal: whatever is dumped into the steel bed of the truck leaves its mark. Or maybe not – if the technology and materials are right.

Change of scene: Gotha, Thuringia. Here, at the Schmitz Cargobull Group's center of excellence for dumper trucks, more than 600 employees produce tipper trailers, truck tipper bodies, as well as project and specialty vehicles. The production capacity currently stands at up to 5,000 trailers per year. What sets this production facility apart above all else is its high level of vertical integration. This gives Schmitz Cargobull control over quality and processes, which directly affects the selection of materials. "A company that welds, bends, and coats materials itself knows exactly which types of steel can be processed – and which cannot," says Dominik Henne, Head of Procurement in the Schmitz Cargobull Group.

Two steels, two tasks

Two high-strength strip plate grades that have proven themselves for structural purposes in Gotha are perdur® 450 and perform® 700 from thyssenkrupp Steel in Duisburg, a long-standing supplier. perdur® 450 is used for the rounded steel bodies of rear-tipping semitrailers, whereas perform® 700 is used within the chassis. Special attention is given to the rounded body. It is the heart of the vehicle and, at the same time, its most vulnerable part. During loading, bulk cargoes of all kinds drop onto the body floor with considerable force. "perdur® 450 is designed to withstand precisely this type of abrasive stress: with a hardness that slows down wear and a toughness that prevents cracking," explains René Reske, Senior Sales Expert at thyssenkrupp Steel.

To avoid any unpleasant surprises in practice, the metallic material is thoroughly tested beforehand in thyssenkrupp Steel's in-house wear laboratory: changing incident flow angles, varying speeds, and different levels of dryness and wetness – whatever is tested, measured, and approved in the laboratory will later prove its worth on the construction site. The same applies to perform® 700, which must withstand significant loads in the chassis: static weights, dynamic impacts, and torsional forces over thousands of operating hours. Dirk Resing, Division Manager at Schmitz Cargobull, explains: "The high-strength steel allows us to reduce wall thickness values without sacrificing structural integrity." The current generation of tipper trailers from Gotha offers up to 280 kilograms

more payload than its predecessor – an advantage that pays off in hard cash over the vehicle's service life.

A strong partnership

The partnership between Schmitz Cargobull and thyssenkrupp Steel is more than just a supplier relationship and extends beyond the supply of perdur® 450 and perform® 700. "The relationship has existed for decades and has evolved into a true development partnership through joint projects and ongoing technical exchanges," says Axel Pohl, Vice President Sales at thyssenkrupp Steel. One example of this in the past was the joint development of pladur® Multishell for the outer panels of refrigerated trucks. Another example specifically related to dumper trucks is the development of an optimized, pickled surface for perdur® plates, which has been specially tailored to Schmitz Cargobull's requirements. The result: better adhesion during painting, less waste, and more uniform surfaces on the finished vehicle.

For something like this to be possible, both sides must be transparent about their processes and work together to find solutions – a foundation of trust that cannot be mandated, but can only develop over the course of years. So it's no wonder that both companies are already planning new projects with an eye toward the future. Schmitz Cargobull has already entered into agreements to secure low-carbon steels from thyssenkrupp Steel's blue mint® range. "This is not a marketing ploy, but rather an important step in preparing for new regulatory requirements that will affect us and our customers in the future," says Dirk Resing. Until then, however, Schmitz Cargobull is taking a pragmatic approach to sustainability. "The most sustainable thing a tipper trailer can do is last a long time. A tipper trailer that runs reliably for ten years doesn't need to be replaced – that's what our customers really want from us."

Web

More information about our strip plate

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Expert discussion in the production plant: Janek Wysoglad (left) and Frank Stahnke are familiar with the new customer requirements for the passivation of steel surfaces.

Passivation without compromises – and without chromium (III)

thyssenkrupp Steel offers a completely chromium-free passivation process for hot-dip galvanized flat steel products. As an **alternative to established chromium (III) systems**, it helps industrial customers ensure compliance with material approvals, sustainability goals, and potential future regulatory requirements at an early stage.

Text Jan Ritterbach

Passivation is one of the barely visible yet functional components of galvanized steel surfaces. As a thin, transparent protective layer, it helps to protect the surface from white rust – during transport, storage, and further processing, from the coil to the finished component. At the same time, they create stable conditions for downstream process steps such as forming, painting, and joining. In many industrial supply chains, systems based on chromium (III) have been established for years.

At the same time, requirements are changing. “Our customers expect solutions that are technically reliable and, at the same time, offer long-term assurance regarding material approvals, customer-specific specifications, and sustainability requirements,” explains Janek Wysoglad, product manager at thyssenkrupp Steel. This is due to regulatory developments concerning chromium (VI) compounds, as well as customer-specific requirements that view pre- and post-treatment media containing chromium increasingly critically. Wysoglad: “It is precisely for these cases that we have qualified

Chromium (III), chromium (VI), chromium-free – what do these terms mean?

Chromium (III)-based passivation treatments contain chromium in the trivalent oxidation state. They have been established in industrial supply chains for years and are used as a chromium-containing but chromium (VI)-free post-treatment.

Chromium (VI) compounds are significantly more problematic: they are subject to strict regulations in Europe. They have already been replaced in many applications; at the same time, possible further restrictions are being evaluated in light of the EU chemicals regulation REACH.

Chromium-free passivation processes completely eliminate the use of chromium and utilize alternative chemical systems. The goal is to reliably meet technical requirements and avoid discussions regarding chromium-related material specifications at an early stage.

and thoroughly tested a chromium-free passivation process and brought it to production readiness.”

What the chromium-free version can do

The path to a new solution was not a sprint. Over the course of several years, thyssenkrupp Steel has systematically tested corrosion resistance, surface stability, and suitability for downstream processes in laboratory and field tests. The result: the selected chromium-free passivation system holds its own against the established chromium (III) system – even offering advantages in some areas while providing the same level of corrosion protection.

Its tribological behavior is particularly striking. While chromium (III) passivation can lead to slight variations in the coefficient of friction under unfavorable forming conditions, the chromium-free alternative demonstrates significantly greater stability in this regard. The coefficients of friction are lower and remain constant even under multiple loads. For fabricators, this means a more predictable and robust forming process with fewer fluctuations.

The chromium-free solution also performs very well when it comes to painting. Powder coatings provide good adhesion and are less affected by adverse conditions, such as moisture exposure, than chromium (III) systems are. A noteworthy aspect: the strength of the joints is also comparable when using adhesive bonding, as in the case of resistance spot welding in which equivalent results can be achieved using standard parameters. Frank Stahnke from the Surface Development department at thyssenkrupp Steel emphasizes: “We offer a technically validated solution in every respect, which we deploy specifically where customers really need it.”

Not a replacement, but a deliberate addition

thyssenkrupp Steel views chromium-free passivation as a specifically tailored option for customers who wish to secure their material approvals for the long term, consistently meet sustainability requirements, or serve markets with specific requirements. It opens up additional possibilities without calling existing chromium (III) systems into question across the board.

“Using a chromium-free passivation treatment should always be considered in conjunction with the specific manufacturing process. Forming, painting, joining, and internal approvals – what matters is that the solution performs reliably in the specific application,” explains Stahnke. That is why he, Janek Wysoglad, and the team support customers throughout the entire process – from suitability testing of specific components and comparative tests to the preparation of documentation for internal approval processes. Our consulting services draw on experience from the steel packaging industry, where chromium-free passivation has been used for years.



Pink power: thyssenkrupp Steel has upgraded its production facilities with new equipment to enable chromium-free passivation, allowing it to serve markets with specific requirements.



Web

[More About chromium-free passivation](#)

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For industrial customers who want to secure their supply chains for the long term, this is a concrete solution: identifying and evaluating chromium-free options early on and reliably implementing them as required – with a partner who combines expertise in materials and applications.”

Janek Wysoglad,
Product manager at thyssenkrupp Steel

Stamping companies call for protection from the EU

No electric motor can run without interlocked stacks made from electrical steel. Whether in cars, industrial plants, or household appliances – at the heart of every electric drive are **rotor and stator laminated core assemblies made of non-grain-oriented electrical steel**. One of the leading European vendors of these key components is Waasner GmbH, based in Forchheim. However, the business model of this long-established Upper Franconian company is under pressure: due to inadequate trade protection in the EU and low-cost competition from Asia.

Text Jan Ritterbach



Managing Directors Michael Waasner (left) and Simon Waasner at the production facility in Forchheim.

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ore than 380 employees, annual revenue of approximately 90 million euros, and many well-known clients in the automotive sector and other industries: Waasner is a classic “hidden champion” among German small and medium enterprises. Managing Director Michael Waasner, who holds a Ph.D. in physics and has worked at the Boston Consulting Group and the Carl Zeiss Group, is now leading the company as part of its third leadership

generation. The industry has undergone fundamental changes during this time. “The electric motor isn’t the same as it was ten years ago,” he says. “The mechanical requirements on the material – sheet thickness tolerance, homogeneity, strength – have increased dramatically.”

Waasner processes non-grain-oriented electrical steel in ultra-thin gauges ranging from 0.2 to 0.65 millimeters. A laminated core assembly for a high-performance motor can consist of hundreds of such delicate layers, each made individually from an electrical steel strip, precisely stacked and joined. Tolerances in the range of one-hundredth of a millimeter are the norm. A company that wants to master this needs not only excellent machinery, but also materials they can rely on absolutely. That is precisely why thyssenkrupp Steel has been one of Waasner’s most important suppliers for decades. 75 percent of the electrical steel processed by this long-established Upper Franconian company comes from Europe, with thyssenkrupp Steel accounting for a large share of that.

A strong partnership spanning decades

“What sets our partnership apart is technical reliability that has lasted for decades. In the automotive sector, the electrical steel is sampled and certified in collaboration with us and the end customer – the material supplier thyssenkrupp Steel thus becomes part of the qualification process,” explains Michael Waasner. What matters to him is that thyssenkrupp Steel not only understands the growing demands of modern motor generations but also plays an active role in shaping them.

“The material has undergone continuous development over recent years, and its properties have been improved. We can feel that on the shop floor – and our customers can feel it in the product.” Anja Brüggemann, Executive Manager for Non-Grain-Oriented Electrical Steel at thyssenkrupp Steel, echoes this sentiment: “For us, Waasner is not just a customer, but an important partner. We are all facing the same challenges – and that brings us together.”

Inadequate trade protection

Among these challenges is a trade issue involving imports of processed products from Asia that is being systematically exploited. Specifically, Chinese companies supply electrical steel to Serbia, have it processed there into interlocked stacks at their own or controlled plants, and then export these stacks to the EU largely duty-free. As a processed steel product, the material falls under a different tariff code and is therefore exempt from the existing EU protection measures. The Carbon Border Adjustment Mechanism (CBAM) has not yet been applied to rotor and stator laminated core assemblies either.

“A 50 percent punitive tariff has been imposed on electrical steel since July 1,” explains Waasner. “But these tariffs do not apply to interlocked stacks. There are three major Asian competitors based in Serbia that are taking full advantage of this – completely legally.” This results in cost advantages of up to 40 percent compared to European providers. That is why Waasner has significantly scaled back its investments since 2025. Between 2021 and 2024, the company had reinvested over 85 percent of its profits – in new press lines, more modern tools, and increased capacity. “These investments will be the last ones for quite some time unless the situation changes,” says Waasner. “If protective measures for electrical steel end at the border, but Chinese material continues to flow unhindered into the market as an interlocked stack, domestic suppliers will be pushed out – no matter how good they are,” says Brüggemann. “This poses a threat not only to individual companies, but to the entire European supply chain.”

A strong signal from Forchheim

In April 2026, the frustration felt by the affected industries was publicly voiced. About 150 employees at the Waasner plant went on strike. This high-profile media campaign was coordinated with stamping companies in Italy, France, Spain, and Slovenia. thyssenkrupp Steel also demonstrated its support for the campaign at its Bochum site. The companies’ demands are specific: in the future, interlocked stacks with a high proportion of steel should be included in the scope of protection provided by EU trade



Anja Brüggemann, Executive Manager for Non-Grain-Oriented Electrical Steel at thyssenkrupp Steel

measures and the border adjustment mechanism. In addition, a mandatory percentage of European content should be required for products that attract public grants.

“The EU has not thought these measures through properly,” says Michael Waasner. “It is protecting electrical steel – but not what is made from it. An interlocked stack consists almost entirely of electrical steel, yet it can still be imported unimpeded as a finished product.” There is a real danger that Europe will relinquish control over parts of a key value chain – and with it, its influence over the energy and mobility revolution that is currently such a major concern for businesses and society. These products are also of central importance to other value chains in which technological autonomy plays a key role: drones and robotics – especially humanoid robots.

Trade protection with loopholes

A new trade protection measure with country-specific import quotas and punitive tariffs applies to steel in the EU – including non-grain-oriented electrical steel. However, products that have undergone further processing, such as interlocked stacks, are subject to only a low customs duty of about 2.7 percent. They can therefore serve as a gateway for circumventing existing protective measures. For years, imports have increasingly shifted toward higher value-added stages, driven by global overcapacity, particularly in Asia.

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Find out more
powercore® electrical steels



Interview

with Erika Mink-Zaghloul
regarding the topic of
trade protection



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We don't just want to maintain our quality advantage – we want to build on it.”

Thorsten Krenke has been CTO at thyssenkrupp Rasselstein since March 2026. In an interview with steel^{compact}, he explains what inspires him about the company, which innovations he is driving forward – and why packaging steel offers far more than many people realize.

Text Jan Ritterbach

Mr. Krenke, you have been CTO at thyssenkrupp Rasselstein since March 1. How have your first few months been?

I've been with thyssenkrupp Steel for 20 years – but this role takes things to a whole new level. I have to take a much broader view of the business model, shoulder more responsibility, and at the same time I must leave a lasting mark on day-to-day operations. I was impressed by how warmly I have been welcomed. Rasselstein has a rich tradition. Many employees in the company are following in the footsteps of their parents or grandparents, or else have been here since they began their apprenticeship. You can tell how proud they are of their company. This sense of identity is something really special.

What sets Rasselstein apart from the competition in terms of technology?

Rasselstein is one of the top quality providers worldwide – I hear this not only internally, but directly from our customers and partners. What sets us apart is our combination of consistent product quality, on-time delivery, and close technical consultation with our customers. Our products are considered the benchmark: that is why tin plate processors, for example, rely on our material for demanding tests and process approvals – because they can count on its consistently high quality. That's the kind of trust you build up over many years.

As CTO, what are your current priorities?

Essentially, there are three key areas: ensuring stable production, implementing innovations,

and workplace safety. Stabilization involves increasing equipment availability, systematically analyzing any malfunctions, and optimizing material usage throughout the process chain. In parallel, we are working with our Research and Development department to develop an innovation roadmap that defines new products and markets for the coming years. And for me, workplace safety is part of a CTO's culture and function as a role model – the likelihood of accidents can be measurably reduced through consistent, attentive guidance for employees.

What is expected of packaging steel today – and where does Rasselstein have the greatest leverage?

In the past, three things mattered: the can had to protect its contents, and the tin plate had to be easy to work with and cost-effective. That's no longer enough nowadays. Sustainability, food safety, and material efficiency are now being added to the mix. Steel used in packaging scores highly in terms of its recycling rate. Here in Germany, that figure has consistently remained above 90 percent – and is currently even topping 94 percent. That's a real competitive advantage over other packaging materials. In addition, we are already testing burner technologies for using hydrogen in our production processes, and we are continuing to increase the share of green electricity in our production. We plan to begin construction of a photovoltaic system on our factory premises in early 2027 – using a substructure made of ZM Ecoprotect® Solar, which is manufactured from CO₂-reduced bluemint®



Impressed by the workforce's loyalty to thyssenkrupp Rasselstein: CTO Thorsten Krenke in an interview with steelcompact.

recycled material. The construction project is being carried out in collaboration with VSB Integrated Energy Solutions GmbH, a subsidiary of TotalEnergies. Starting in mid-2027, the system will supply green electricity and is part of our overall strategy: we already get more than 30 percent of our electricity from renewable sources today.

Specifically, what product innovations are you driving forward?

A good example of efficient materials is our rasselstein® D&I Solid packaging steel grade, which is used in two-piece food cans – it offers the same mechanical properties with reduced sheet thickness. We won the company's internal Steel Tomorrow Award for this in the spring. The customer saves on material without compromising can stability. Another highlight is rasselstein® CUP – Cup Ultimate Performance. Our latest innovative product for the valve mounting cup in aerosol cans – the small but technically highly complex component that forms the opening for the valve and the spray head. rasselstein® CUP combines excellent formability and low burr formation with significantly higher strength – while offering a downgauging potential of as much as 20 percent. That's a real technological edge: we see ourselves as the market leader and recently showcased the product at the Aerosol & Dispensing Forum in Paris.

As CTO, how do you want to be judged – and where do you see Rasselstein in a few years?

In terms of key figures, of course: energy, environment, accident rate, production output. But it is just as important for me to develop an organization that is robust and can function independently. If, one day, I am no longer in this role then I would wish to know that the team is a strong one even without me. From a technological standpoint, I clearly see Rasselstein as one of the top – and we intend to remain there through the consistent further development of our premium products. Digitalization will be another key component in this process: we want to provide customers with digital transparency throughout the value chain. That's real added value. My goal is to foster a culture of innovation that identifies niches and new applications at an early stage. And a Rasselstein that not only maintains its quality edge but continues to build on it.

Web

This is
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bluemint® recycled – how CO₂-reduced steel made in Duisburg is already being produced today

With bluemint® recycled, thyssenkrupp Steel is producing a steel that generates up to 56 percent fewer CO₂ emissions during manufacturing compared to conventional hot strip. **The key is the use of the recycled product TSR40.** Thanks to this innovative material, iron ore and coal can be saved in the blast furnace process – thereby reducing CO₂ emissions.

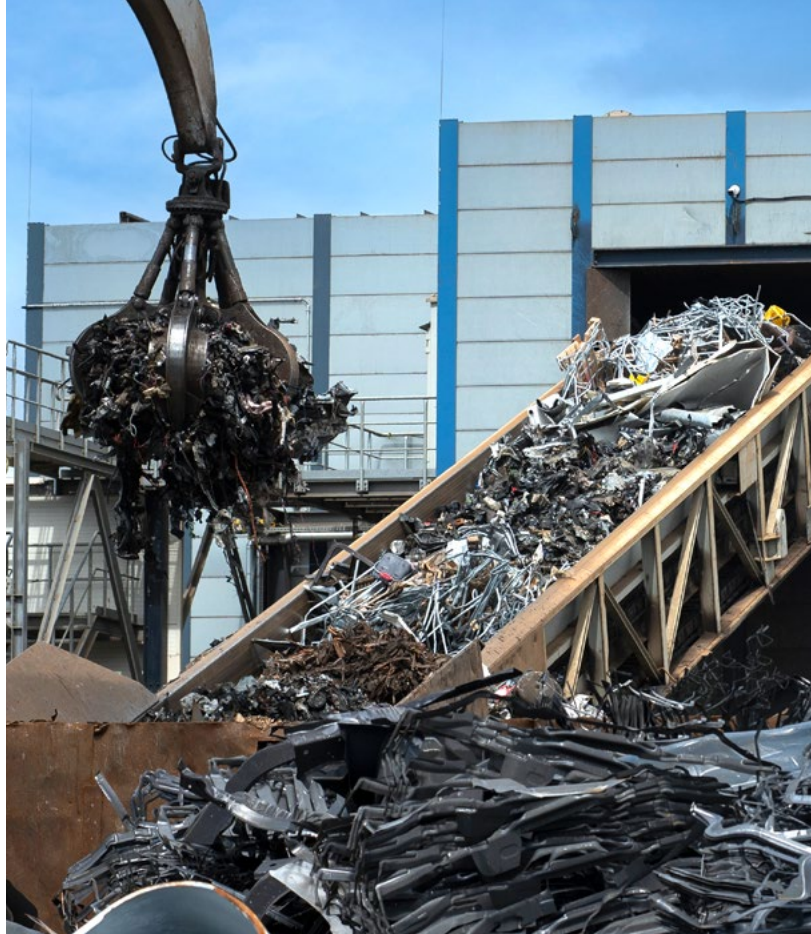
Text Jan Ritterbach



Aron Brümmer, Head of Quality and Product Management at TSR, inspects freshly produced TSR40 for crude steel production in the blast furnace process.

There is hardly any other place where modern society's consumption of raw materials and goods is as visible as at the Duisburg inland port. There, on what is called the Raw Materials Island – an artificially created peninsula in the Meiderich district – lies one of the largest scrap handling and recycling centers in Europe.

The company that operates a facility here is the TSR Group. It is part of the Remondis Group and has been a partner of thyssenkrupp Steel for many years. Every day, dumper trucks unload items at TSR that are so broken or worn out that they can no longer be used in industry or in private households. End-of-life vehicles, large



Steel scrap is transported by conveyor belt into the facility, where various processes are used to produce TSR40 from the material.

household appliances, production waste. Huge grabs weighing as much as three full-grown elephants are needed to sort the tons of various materials and stack them into separate piles. A Herculean task for the men in the machines – but one that pays off. Above all, for the climate. This is because the careful preparatory work involved in separating recyclable materials ensures that high-quality recycled raw materials can later be reintroduced into the economic cycle. For example, as innovative charge materials for the production of CO₂-reduced hot metal.

Everyday scrap as the foundation

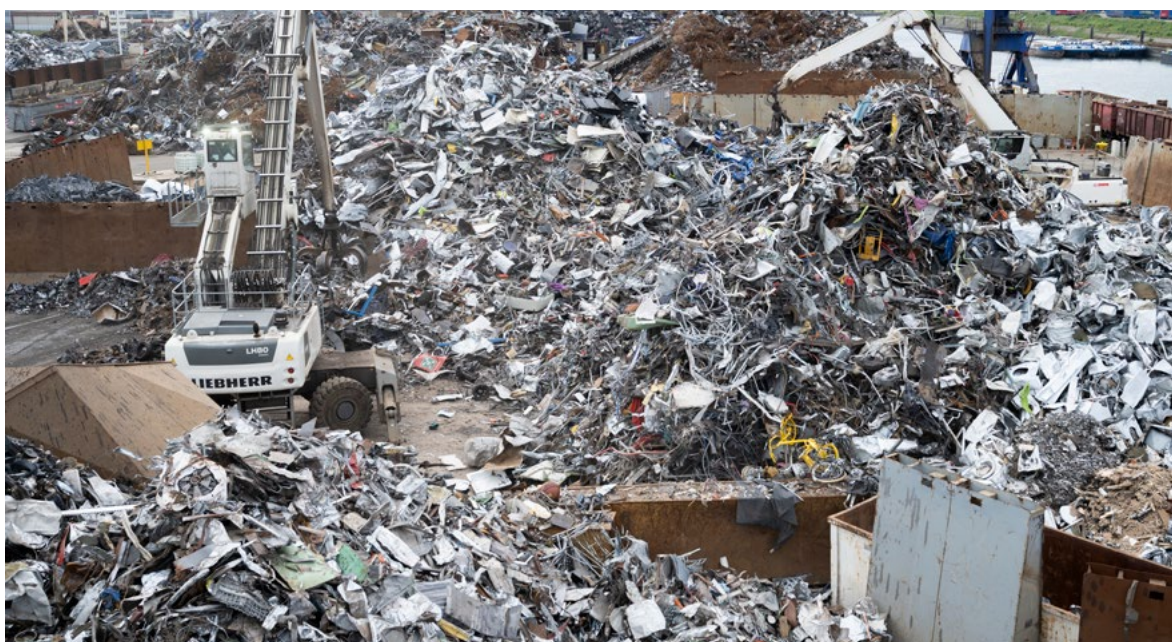
A good example of this is TSR40, a material manufactured using a patented process that was developed specifically for use in blast furnaces. It is produced directly on the Raw Materials Island at a processing plant that began operations only in 2023. The raw material used is post-consumer scrap from everyday life: End-of-life vehicles, mixed scrap, large household appliances. It continuously feeds the rectangular production facility – which is approximately 180 meters long – via a steeply inclined conveyor belt. What happens next is invisible to the observer. “Inside, the feedstock is automatically shredded, sorted, and processed in a multi-stage process. The chemical purity of the final product is crucial. That’s because the process in the blast

Cooperation for recycling management

The way that thyssenkrupp Steel and TSR work together goes far beyond a traditional customer-supplier relationship. It is the result of the publicly funded research and development project REDERS. Material specifications, analysis and control mechanisms, and logistics solutions have been developed in collaboration with the VDEh Institute for Applied Research (BFI) and the Hüttenwerke Krupp Mannesmann (HKM). What began as a research project is now an established industrial cycle.



Materials for more sustainable industrial production: TSR40 is stored outdoors before it can be shipped onward.



The Raw Materials Island on the Rhine in Duisburg is one of the largest scrap handling and processing centers in Europe.



Entrance toward the blast furnace: the material arrives by rail at thyssenkrupp Steel's Duisburg site.

furnace does not tolerate uncontrolled by-element,” explains Aron Brümmer, Head of Quality and Product Management at TSR.

Less carbon, less CO₂

The company addresses this challenge with newly developed measurement, detection, and separation technologies. The chemical composition of the scrap is monitored in real time. The result of the process is TSR40, which is discharged at the back end of the plant in the form of palm-sized chunks of metal. TSR40 is nearly pure iron. Where it replaces iron ore in the blast furnace, reduction steps that would otherwise require carbonaceous products are eliminated. Less carbon means less CO₂ – and that is exactly what makes this raw material so attractive for thyssenkrupp Steel.

“We’re not waiting until we’ve completed our transformation; rather, we’re already taking advantage of every opportunity here at the steelworks to reduce CO₂ emissions. With TSR40, thanks to the high-quality processing



Transport by railway wagon: TSR40 is loaded onto trains at the Raw Materials Island and sent on its way from there

thyssenkrupp Steel experts
Falco Lischk (left) and Alexander
Spatzker inspect the delivered
batch after it has arrived by train.



of steel scrap, it is now possible for the first time to use a top-quality, certified product as a raw material in the blast furnace. Consequently, with bluemint® recycled, we are already able to offer our customers a CO₂-reduced steel without any compromises in quality,” says Falco Lischke from the Sustainable Steel Production area at thyssenkrupp Steel.

The processed and finished TSR40 leaves the Raw Materials Island by rail. It is transported by goods wagons directly to the thyssenkrupp Steel plant – a short, inner-city supply chain within Duisburg. For Blast Furnace 8 in Hamborn, the material is transported via the elevated railway directly into the designated material silos. For Blast Furnace 1 in Schwelgern, it is unloaded by dumper truck and fed through existing conveyor lines. “The introduction of TSR40 did not require any significant modifications to the plant technology. We simply made adjustments to the feed rates and implemented minor process modifications,” explains Alexander Spatzker from the Hamborn blast furnace operations.

Emissions reduced by two-thirds

The result is very impressive: while conventional hot strip generates specific CO₂ emissions of about 2.1 metric tons of CO₂ per metric ton, bluemint® recycled – produced using TSR40 – generates only about 0.9 metric tons of CO₂ per metric ton of hot strip. This corresponds to a reduction of up to 56 percent. These values have been validated by TÜV SÜD, and compliance with them is regularly verified. The quality remains the same – this applies across the entire thyssenkrupp Steel portfolio, which includes all electrical steel products.

For customers, using bluemint® recycled is a way to achieve their own climate goals directly.

The validated emissions values can be directly incorporated into Scope 3 accounting based on ISO-compliant life cycle analyses. The steel we source is fully comparable to standard grades in terms of quality and workability, but it also offers the added benefit of being more environmentally friendly.

Recertification of bluemint® recycled

In October 2026, TÜV SÜD once again confirmed that the methodology used to calculate the Product Carbon Footprint of bluemint® recycled complies with international standards. Site-specific production data and verified emissions data from the European Union Emissions Trading System (EU ETS) are prioritized over generic database values. This approach ensures a particularly accurate representation of actual production processes at the Duisburg site. The result is a transparent and traceable carbon footprint based on reliable, independently verified data.



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More about
thyssenkrupp Steel's
climate strategy



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Putting it to the test:
a steelworker inspects
the quality of the material
at the blast furnace at
thyssenkrupp Steel.

Energy for the transformation

For industrial companies, this transformation is a major undertaking in terms of energy use. thyssenkrupp Steel is a good example of this: The company aims to produce its steel in a carbon-neutral manner by 2045 – and to achieve this, demand for electricity, natural gas, and hydrogen will increase significantly. That is why the **Energy Functional Area** is already working today to ensure that supply remains secure tomorrow.

Text Jan Ritterbach

Already today, thyssenkrupp Steel consumes just under five terawatt-hours of electricity per year across all its sites – which is equivalent to nearly one percent of Germany's total electricity consumption. In addition, natural gas consumption is of a similar magnitude. But what sounds like a lot is just the tip of the iceberg: once the new direct reduction plant (DR plant) in Duisburg starts operations, current demand will multiply, and hydrogen will be added as an energy carrier. In addition, numerous new pipelines must be laid to the new DR plant. The transformation is therefore also a task for the energy sector, in which various challenges must be addressed simultaneously.

A clear mission, a complex environment

Dennis Becher, Head of Energy at thyssenkrupp Steel, emphasizes the growing importance of his bailiwick: "Generating and purchasing energy and media cost-effectively, safely, and as sustainably as possible – as well as the transportation aspect – contribute significantly to the implementation of our decarbonization strategy and the company's future economic success. Energy is no longer a marginal issue for us." That is why all energy-related topics at thyssenkrupp Steel are consolidated within the interdisciplinary Energy Functional Area: power plants, distribution networks, control and economic activity, procurement, energy and CO₂ management, as well as billing.

Becher's team faces at least a twofold challenge: energy prices have risen to a permanently

higher baseline since the war in Ukraine began. Geopolitical crises, such as that in Iran, cause sharp fluctuations time and time again. At the same time, electricity demand is rising as part of the transformation, and with the gradual decommissioning of blast furnaces, part of the company's own electricity generation from blast furnace by-product gases will be lost – electricity that thyssenkrupp Steel will have to purchase from the public grid in the future. "thyssenkrupp Steel is undergoing at least two transformations at the same time – a performance transformation and a green transformation. At the same time, the energy industry in Germany and Europe is also undergoing a profound transformation. This challenging and dynamic environment makes industrial energy management extremely demanding," says Becher.

Green electricity from wind and solar power

A key component of thyssenkrupp Steel's energy strategy on the path to climate neutrality concerns the supply of renewable electricity. Here, the Energy Team, together with colleagues at the sites, has ensured that the subsidiaries thyssenkrupp Electrical Steel in Gelsenkirchen, thyssenkrupp Hohenlimburg in Hagen, and thyssenkrupp Rasselstein in Andernach have been supplied with green electricity by a total of four new providers since early 2026, covering at least 30 percent of their respective energy needs. The contract volume of approximately 230 gigawatt-hours corresponds to the annual energy consumption of about 70,000 households and avoids more than 70,000 metric tons of CO₂ emissions each year. The energy comes

Energy consumption on par with a major city: thyssenkrupp Steel's Duisburg facility requires large amounts of natural gas, electricity, and – in the future – hydrogen as well



from photovoltaic systems and onshore wind farms in Germany.

In addition, the Hohenlimburg site has had a direct connection to the neighboring SL Naturenergie wind farm since 2024. A new ground-mounted solar power system will be built in Andernach near Rasselstein in 2027 in collaboration with an external partner. In addition, thyssenkrupp Steel has signed a contract with RWE to supply the direct reduction plant with offshore wind power from the Kaskasi North Sea wind farm in the future. The green energy portfolio is thus being expanded step by step.

Hydrogen: the next big step

Procuring hydrogen also remains a challenging task. It is intended to replace coal in the production process. The Energy Team is working on bidding processes and long-term supply contracts. "Hydrogen is the key to the transformation. Unlike with electricity and gas, we cannot source our supplies from existing markets – so we continue to need regulatory support from Berlin and Brussels to facilitate the market's ramp-up," Becher emphasizes. His team is therefore in constant contact with the Governmental & Regulatory Affairs department to raise awareness among policymakers about the needs of energy-intensive industries.

Energy management with the customer in mind

The work of the Energy Team also has a direct impact on thyssenkrupp Steel's customers: a reliable energy supply is essential for stable production processes and predictable supply chains. The increasing share of green electricity reduces the carbon footprint of the steel produced and directly contributes to customers' Scope 3 climate goals. Last but not least, further improvements in energy efficiency and the continued development of Duisburg's complex energy network also play a major role. "The cleanest kilowatt-hour is, of course, the one you don't use in the first place," says Becher. In a world of high and volatile prices and growing regulatory requirements, he and his team are working to ensure competitive energy costs and are actively driving decarbonization. Today and on the long road to climate neutrality by 2045.

Web

Our portfolio
for the energy sector



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Dennis Becher (right), Head of Energy at thyssenkrupp Steel, and some of his team members: Julia Brüne, Silke Klapdor, and Ulrike Siebert (from left).

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As one of the first movers on the path towards “green steel”, we are laying the foundation for climate-neutral production by building our direct reduction plant with innovative melting units.

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