



Annual report

# Belgian steel in 2022

Meeting challenges and transforming in turbulent times



# A word from our Chairman



In 2022, the world was rocked by the war in Ukraine. Our thoughts and sympathies go out, first and foremost, to the victims of this tragedy. In addition to the human suffering, the consequences have been considerable: a weakening of the economy, skyrocketing energy prices, disruption of supply chains and soaring inflation.

## The economic downturn and its impact on the steel industry

Although 2022 started promisingly, the economic situation deteriorated as the months passed. For the first time in many years, global steel demand fell by 2,3%, mainly due to declining Chinese consumption. Steel market prices collapsed from the middle of the year onwards, while energy costs reached unprecedented highs. **In the energy-intensive steel industry – with an annual electricity consumption of around 4.000 GWh and gas consumption of around 6.000 GWh – some production sites were forced to shut down due to the surge in energy costs.**

Inflation rose to levels not seen for decades. Automatic wage indexation increased labour costs and our wage disadvantage compared to neighbouring countries, which further weakened the competitive position of Belgian companies. From the second half of the year onwards, high raw material prices and CO<sub>2</sub> costs have impacted on profitability.

Amounting to 29 million tonnes in 2022, steel imports from outside the EU have once again risen to the particularly high levels of recent years. **For flat carbon steel, this means that 1 in 4 tonnes on the market is of non-EU origin. For stainless steel, this ratio rises to 1 in 3 tonnes.** Meanwhile, EU steel exports to non-EU countries have been declining for years. **Over the past decade, the EU has gone from being a net exporter of around 15 million tonnes of finished steel to a net importer of around 13 million tonnes.** Given the EU's annual production of around 150 million tonnes, the impact is considerable.

Consequently, I am calling for a strengthening of European competitiveness using adequate trade, climate and energy instruments to ensure a rebalancing of trade. **We are calling, in particular, for a solution to be found for exports with regard to the phasing out of emission rights**, so that the European (steel) industry does not suffer additional burdens compared to its non-European competitors.

## Progress towards the sustainability and greening of our sector

Despite the difficult economic situation, the 'Fit-for-55' package was finalised in 2022. Shortly before the end of the year, agreement was reached on strengthening the ETS and introducing a border carbon tax (CBAM). **Although these instruments are highly ambitious, we remain fully committed to significantly reducing CO<sub>2</sub> emissions by 2030, in line with European targets.**

The investment programmes launched at several Belgian sites over recent years – which are dedicated to the most innovative and

efficient technologies – continued in 2022. In Ghent, an installation was inaugurated that converts industrial-scale CO emissions into bioethanol, which can be used as a raw material for other industries. This example of Carbon Capture & Usage (CCU) is a European first and marks an important step towards climate neutral steel production by 2050.

It goes without saying that we want to make progress with the greening of our industry. To do this, three central factors are essential:

- **Regulation:** Clear and swift regulation in all areas is essential. We are calling, in particular, for a tightening of the 'Waste Shipment Regulation' for the export of scrap metal. This will allow more scrap metal to be kept in Europe and help to achieve the circular economy.
- **Infrastructure:** The development of the necessary infrastructure to transport CO<sub>2</sub> and hydrogen through pipelines and hubs is paramount. It is, likewise, vital to increase the production and transport of sufficient quantities of affordable, carbon-free electricity.
- **Financing:** Adequate and transparent funding with simple support mechanisms that also respond to events elsewhere in the world is key.

## Living, working and developing together

The ambition to achieve climate-neutral production means the European and Belgian (steel) industries are facing the biggest transformation and most significant challenge they have ever been confronted with. **It will require not only revolutionary technologies, but disruptive thinking and appropriate accompanying measures. Otherwise, countries outside the EU offering an attractive investment climate will attract European production, which will further compromise our strategic autonomy.**

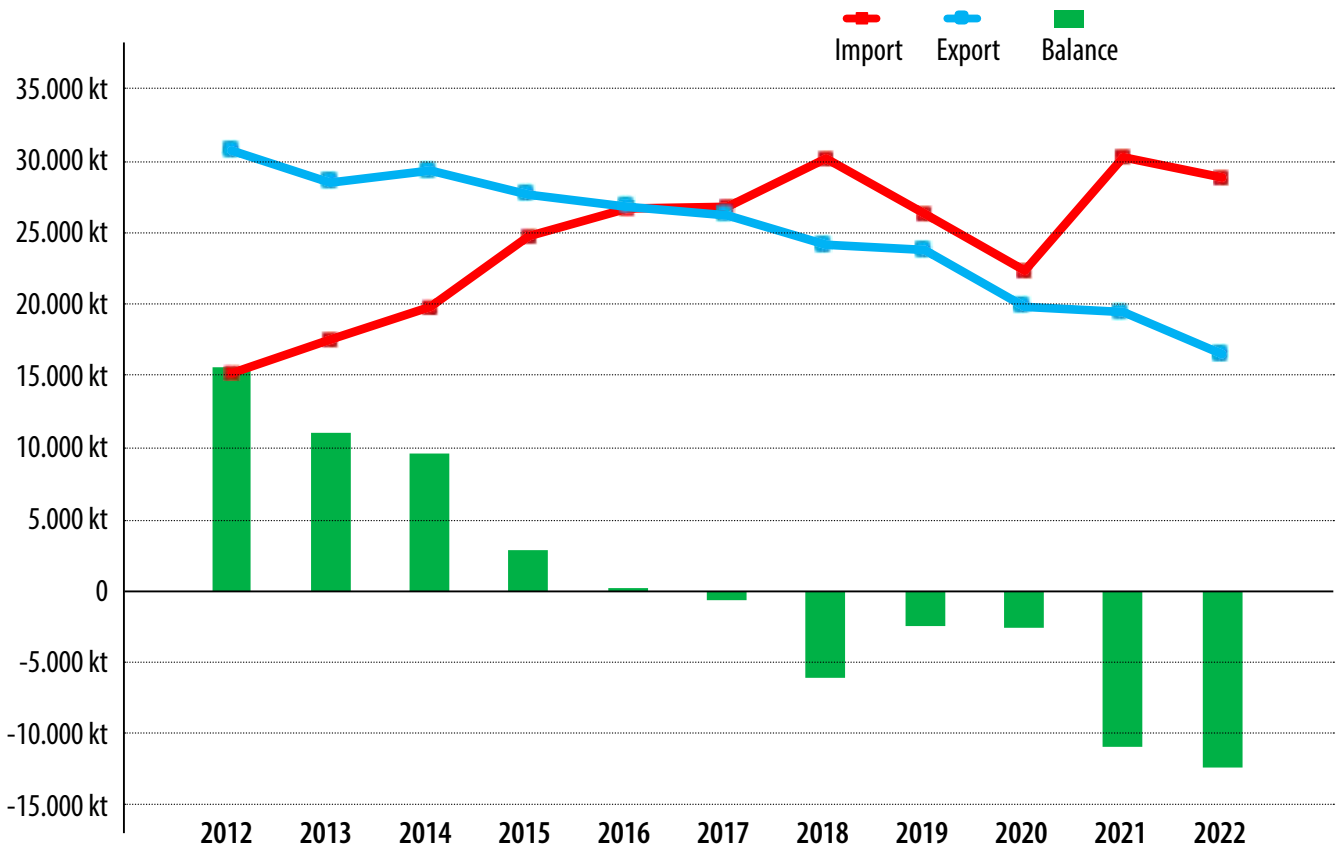
This transition is only possible thanks to the efforts, knowledge and dedication of all employees and players involved in our sector. They are the ones who contribute to the concrete realisation and local anchoring of our industry. Recent events have, once more, underlined the importance of maintaining a steel industry in Belgium and in Europe.

**Steel is the ultimate raw material for the future: infinitely and 100% recyclable, it is essential to the production of tomorrow's renewable energy. This is an opportunity to transform, not only our sector, but society as a whole. The technologies exist and we are committed.**

Manfred VAN VLIERBERGHE  
Chairman



### 3. Steel trade balance EU27



#### ArcelorMittal Ghent - Steelanol's inauguration celebrated on 8 December 2022

The Steelanol project is a first of its kind for the European steel industry. The new plant will capture waste gas from blast furnaces and recycle it into bioethanol. The Torero project, which converts wood waste into biofuel, will reduce ArcelorMittal's CO<sub>2</sub> emissions by 350,000 tonnes per year. Biofuel can be used in the transport sector or as a basic raw material for chemical companies. It can also be used in the production of cosmetics, perfumes, paints, and clothing.

The technology – which functions through gas fermentation – was developed in collaboration with the US technology company LanzaTech. The conversion of industrial gas into sustainable ethanol takes place in four bioreactors. Each bioreactor consists of a tank containing liquid, nutrients, and natural micro-organisms. Once production reaches full capacity, the Steelanol plant will produce 80 million litres of bioethanol per year.



# Energy challenges and climate ambitions

## High energy prices threaten the competitiveness of the Belgian steel sector

The year 2022 proved to be particularly challenging for the energy-intensive Belgian steel sector. Energy prices in the European Union rose sharply after the Russian invasion of Ukraine, reaching record highs in the summer. The European Commission and EU member states proposed measures to cope with this crisis, such as 'REPowerEU' and the 'Temporary Crisis Framework' (TCF). The TCF allowed member states to support companies affected by high energy prices. Although support packages worth €250 million were approved by Flanders and Wallonia, they had limited impact due to their strict terms and conditions.

To ensure the competitiveness of the Belgian steel sector against major economies and neighbouring countries with access to more cost-effective energy resources, it is essential for our governments to prioritize the provision of affordable green energy to the industry.

## Europe's energy dilemma and its implications for the steel sector

The availability of affordable energy is a pressing concern at the European level. The interruption of gas supplies from Russia highlighted the need for sustainable measures to guide the European Union towards climate neutrality. In response, the European Commission proposed an analysis of the current electricity market and its possible reform. Although the primary focus was on renewable energy, storage, and flexible production, these may not be compatible with the requirements of the steel industry. Mandatory flexibility could have adverse effects on production capacity.

The Belgian Steel Federation expressed its concerns in a position paper on the possible reform of the European electricity market. The Belgian steel sector supports any reforms that offer energy-intensive companies access to green energy at affordable prices. This will be critical in the context of the US 'Inflation Reduction Act' (IRA), which offers significant subsidies to promote the development of renewable energy in the United States. Europe's initial response to this topic indicates a renewed focus on its own efforts and support

for key industries through industrial policy and financial mechanisms. We consider this to be a positive first step.

## The Belgian steel sector is determined to achieve climate neutrality by 2050

The Belgian steel sector emphasises its commitment to significantly reduce its greenhouse gas emissions by 2030 and to be climate neutral by 2050. Belgium is already facing the consequences of climate change and is developing an ambitious climate policy at both the national and regional levels, guided by the 'Fit-for-55' package of the European Green Deal.

The Belgian Steel Federation highlights the importance of these climate objectives while requesting adequate time to make investments, obtain permits, establish new installations and acquire the necessary expertise.

## Achieving a sustainable transition through the gradual phasing out of ETS quotas

The 'European Union Emissions Trading System' (EU ETS) is the largest emissions trading scheme in the world, involving approximately 10,000 European companies and accounting for 45% of the EU's CO<sub>2</sub> emissions. Each year, the European Commission reduces the number of emission allowances, determining how much CO<sub>2</sub> companies are permitted to emit.

To enable the Belgian steel sector to transition to climate-neutral steel production, the Belgian Steel Federation advocates a gradual phasing out of emission rights by 2030. The preconditions for a green economy, such as the hydrogen market, carbon-free electricity and CO<sub>2</sub> distribution systems, require sufficient time to develop. Therefore, an overly strict and rushed climate policy would not be effective in enabling the Belgian steel sector to transition to climate-neutral steel production.

## Final agreement for CBAM, but no export measures

In late 2022, the European Parliament and the Council of the European Union reached a final agreement on the 'EU Carbon Border Adjustment Mechanism' (CBAM), which is the world's

### Aperam Genk completes photovoltaic installation of 23 MWp

This second biggest photovoltaic installation in Belgium generates 23 MWp with a yearly energy production of 20.300 MWh. This will result in 7.300 ton of avoided CO<sub>2</sub> emissions, an equivalent of the emissions of 5.900 average households. It is equal to the CO<sub>2</sub> adsorbed by 720 hectares of forest. Aperam will consume at least 97% of the generated power directly by the plants in Genk.

This counts as a big step towards a green future, and will further secure the position of Aperam as a sustainable long-term employer in the region. At the same time, EV charging stations are being deployed to be used for the cars of the company and the employees. This will guarantee the fleet of Aperam gradually becoming emission free.



first border adjustment mechanism designed to prevent carbon leakage. Initially, the CBAM will only apply to certain specific products in carbon-intensive sectors: steel, cement, fertilisers, aluminium, electricity and hydrogen. From October 2023, a simplified CBAM mechanism will apply, accompanied by reporting requirements. The full CBAM system will come into effect in 2026, gradually replacing the free quotas for the sectors concerned. This is part of the revised ETS regime, which should ensure compatibility of the CBAM mechanism with international trade agreements.

During the CBAM negotiations, Belgium held a firm position regarding exports. The Belgian steel sector stressed the need to find concrete solutions on exports, as exports outside the EU account for 10% of the sector's total production and are crucial for the profitability. However, the CBAM does not currently include any such measures. It is therefore recommended that this issue be re-examined in 2026, after an evaluation period.

## Steel, at the centre of the circular economy

The circular economy is viewed by the EU as a means of achieving climate goals through the reuse of waste to create new materials and products. The Belgian steel sector considers steel scrap as an essential raw material for steel production. New steel products can be produced by melting down steel scrap in electric blast furnaces, and there is also an aim to incorporate up to 30% steel scrap in conventional blast furnaces. Steel suffers no loss of quality and is an ideal product for the circular economy. The use of scrap allows steel to be produced with a significantly reduced CO<sub>2</sub> footprint. Steel scrap, therefore, plays an important role in our decarbonisation strategies.

However, ensuring an adequate supply of steel scrap is crucial. Therefore, the Belgian Steel Federation closely monitors the 'Waste Shipment Regulation' (WSR), as scrap

is the most exported 'waste' in the EU. It is essential that the high European standards for waste treatment are also applied elsewhere to ensure a level playing field. The Belgian Steel Federation advocates for qualitative waste treatment that prioritizes environmental protection (ESM), as well as human health and social rights.

## Reflection on a targeted industrial climate policy

In 2022, the Climate Change Department of FPS Public Health engaged the industry in climate policy by hosting 'Round Tables on Climate'. The Belgian Steel Federation participated in the discussions on the circular economy. This was an excellent opportunity to highlight the ambitions and challenges of the Belgian steel sector.

In Wallonia, discussions have begun on the upcoming generation of 'Accords de Branche'. It is important to find a balance between the ambitious goals of the Walloon Region and the support needed by Walloon industry in combating carbon leakage, with high energy prices posing a significant competitive disadvantage.

**Despite the challenges faced in 2022, the Belgian steel sector continues its ongoing commitment to climate neutrality and emphasises the importance of sufficient affordable carbon-free energy. With consistent policies, expeditious permits and targeted financial instruments, the sector can contribute to reducing greenhouse gas emissions by 2030 and achieve climate neutrality by 2050.**

### A new rewinder for Aperam Châtelet's rolling mill

To keep up with the production rate, two winding machines have been installed in the plants for the past 20 years. This new investment, the largest made in the 'rolling mill' over the past 2 decades, allows the teams to produce new steel grades and improve the quality of the coils. These will no longer have to change axis once rolled.

The installation of this new rewinder, launched early 2022, required the help of several subcontractors and the mobilisation of maintenance teams. At the same time, numerous training sessions were organized to familiarise operators with the new way of working with this machine.



### Aperam Châtelet - Sentinel bees, excellent bio-indicators

Aperam works with a beekeeper to manage the bee colonies on the Châtelet site throughout the seasons. Sentinel bees are excellent bio-indicators : they pollinate and forage within a radius of about 4 km around the plant. By analysing the collected pollen and honey, Aperam Châtelet is able to measure the heavy metal content and evaluate the impact of its stainless steel production activity on its immediate environment.

Today, 3 apiaries are installed on the site. The annual honey production is stored with the intention of distributing it to the 750 employees.



# Social affairs

After the health crisis, which began in 2020 and transformed our way of life, 2022 thwarted any expectations of a hypothetical 'return to normality'.

New, primarily geopolitical and climatic, crisis factors have appeared, once again severely impacting our industry.

## Tools required in times of crisis

The energy crisis hit the steel sector particularly hard, forcing it to make large-scale use of the 'energy unemployment' scheme, which applied from 1 October 2022. The steel sector naturally welcomed the rapid introduction of a dedicated scheme, characterised by the administrative simplification that was so urgently needed by large energy-intensive companies.

However, the Belgian Steel Federation is calling for a structural reform of the temporary unemployment regimes to:

- Standardise the various types of temporary unemployment,
- Drastically reduce the administrative formalities for companies,
- Fully harmonise the blue-collar and white-collar schemes.

In 2022, as in previous years, the Federation advocated the need to reform the temporary unemployment regime to ensure flexibility and adaptability that can be directly implemented in the event of new crises.

## Inadequate regulatory framework

The Federal Government has begun to implement its '*Deal pour l'Emploi*' (Deal for Jobs) measures, which it presented as a reform of the labour market to achieve its 80% employment rate target.

This long list of measures is not the most appropriate response to help companies in our sector to better address their challenges in the labour market, such as staff shortages, the transformation of employee skills in the context of the energy and digital transition, or a better work-life balance for employees.

Throughout 2022, the Belgian Steel Federation carefully analysed these measures and all the new regulatory frameworks to properly inform companies in the sector and to pass on any of the sector's opinions and objections to the relevant bodies.

## Interprofessional dynamics

In the autumn of 2022, the Central Economic Counsel was finally allowed to publish its technical report on setting the maximum available margin for the next two years.

This margin was set at zero, leading to the immediate collapse of the interprofessional bargaining.

At the very end of 2022, and in the absence of a consensus from social partners, the Government provided the legal tools to both fix this (zero) margin while offsetting it with a 'bonus' system similar to the famous 'Corona' bonus and establish the various regulatory frameworks relating to the distribution of the welfare package and other measures.

The repeated breakdown of interprofessional negotiations on the wage margin and/or other issues are a worrying signal for the Belgian bargaining model.

While the dynamics of this consultation reside largely with the sectors and companies, these levels of consultation need an interprofessional echelon capable of autonomously concluding balanced agreements for all social partners.

In 2022, the Belgian Steel Federation raised companies' concerns about the development of the interprofessional negotiations and about the introduction of a regulatory framework providing for the granting of a 'purchasing power' premium.

**In summary, when it comes to social relations, steel companies require, more than ever before, appropriate support measures, a reliable legal framework and a positive dynamic of social relations, especially in the context of multi-crisis situations.**

### NLMK Clabecq completes state-of-the-art rolling mill upgrade

NLMK Clabecq has successfully completed its state-of-the-art rolling mill upgrade valued at 40 million euros. The upgrade includes a new descaling system and the revamping of the finishing mill, a unique layout for plate producers. These investments will also reduce direct gas consumption and direct and indirect CO<sub>2</sub> emissions by providing steels that reduce life-cycle CO<sub>2</sub> emissions.

The upgraded rolling mill will provide customers with best-in-class surface, flatness, and dimensional tolerances. These product ranges allow users to design lighter solutions that reduce life-cycle costs and emissions while maintaining top-notch quality.





At CRM Group, our activities are centred on the production, transformation, coating and use of metallic materials. We combine skilled and experienced research teams (275 employees) with unparalleled testing facilities covering the whole manufacture chain of metals, from raw materials to advanced steel applications, ranging in size from laboratory scale to pilot and even semi-industrial production lines. Recent activities are focused on climate neutrality and the digital transition of industry, in particular the steel industry.

For the European steel industry, facing the challenge of carbon neutrality by 2050, the transition from the Blast Furnace route (Coke based) to Direct Reduction route (Natural Gas and in the future Hydrogen based) will play a key role. Hence CRM Group has the complete set of skills and simulation & pilot tools to support the steel industry with the integration of the Direct Reduction route in their plants.

- The simulation of the reduction paths (gas composition and temperature) representative of Direct Reduction shafts is possible in small reactors as well as in the HUGE pilot facility able to produce DRI up to 30kg per batch.
- The melting behaviour of DRI can be assessed at different scales from lab (coffee cup size) to semi-industrial scale (Pilot plasma furnace – 1.2 t, 125l). CRM Group is indeed commissioning a highly versatile pilot plasma furnace that will support the development of the new emerging steelmaking routes (hydrogen reduced DRI melted in electric arc furnace, smelting furnace...). As a research tool, the furnace will be highly instrumented (gas analysis, dust emission, temperatures...) and a digital twin will be developed.

- To increase the steel scrap recycling capacity and energy efficiency, while keeping competitiveness of the steelmaking sector, innovative technologies to pre-treat and clean the scrap before it reaches the steel furnaces need to be implemented. CRM Group is therefore investigating different innovative tracks related to scrap sorting and characterisation technologies as well as scrap upgrading solutions such as Cu removal in the liquid state or removal of Zn from galvanised scrap. The impact residuals and tramp elements may have on microstructure development and properties is also investigated in a systematic study allowing to model the behaviour of steels containing different residual levels.

Although the prime objective is to avoid the emissions of CO<sub>2</sub>, the capture of CO<sub>2</sub> on industrial fumes followed by purification and finally utilisation and/or storage of the pure CO<sub>2</sub> is expected to remain an important pathway. We are therefore currently revamping a semi-industrial CO<sub>2</sub> capture pilot plant based on the absorption technology with amine solvent, able to process up to 1000 Nm<sup>3</sup>/h of flue gas. Herewith we offer to our industrial partners a tool to assess CO<sub>2</sub> absorption technology at large scale for their application and help them to achieve their CO<sub>2</sub> emission reduction goals. The development of this pilot is done in parallel with the development of two other CO<sub>2</sub> capture pilot plants, one dedicated to adsorption processes (PSA, TSA, etc) and one which will be mobile, to be used directly on partners' industrial site.



HUGE Thermo-conversion pilot facility in 'Direct Reduction' configuration and DRI produced in the HUGE reactor



Pilot plasma furnace



CO<sub>2</sub> capture pilot for industrial processes



Infosteel is the steel construction sector's information and promotion centre. Its slogan is 'Together, for more steel in construction'. The activities are built around 3 core principles: connect - inform - inspire. These 3 aspects are present in almost all actions, among which the following deserve to be highlighted.

## Info\_Steel magazine

An important cornerstone in communication is the Info\_Steel magazine which is dropped – largely free of charge – 4 times a year in over 2.600 letterboxes. A selection of different steel applications is presented more extensively in text and, above all, in pictures.

To organise all these actions, close collaboration with the main segments of the key value chain is essential : steel producers, steel traders and the steel construction sector.

## Score With Steel

Where the main focus is on inspiring architects and contractors, the approach is placed under the umbrella of 'Score With Steel'. In recent years, significant investments were made in the development of this specific communication strategy, and this approach has been successfully continued in 2022.

## Training courses

In parallel with the end of the corona measures, traditional training has also resumed. In addition, a partnership was established with the SCI (Steel Construction Institute) to offer their online training courses to Infosteel members.

## Manuals

The 'Steel Design Books' project is a good example of international cooperation : sister organisations from the Netherlands, Germany and Switzerland, together with Infosteel, conceived a series of modern handbooks for BeLux on the design of steel structures according to the Eurocodes. The first book has also been published as an e-book.

## Steel Construction Contest

The 2022 edition was again a great success with 97 spectacular steel construction projects. It highlights the parties involved but can also be a vital source of inspiration for future constructors. All editions combined, more than 2.000 projects were put in the spotlights.





Belgian Steel Federation

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GSV is the professional organization representing the Belgian steel industry

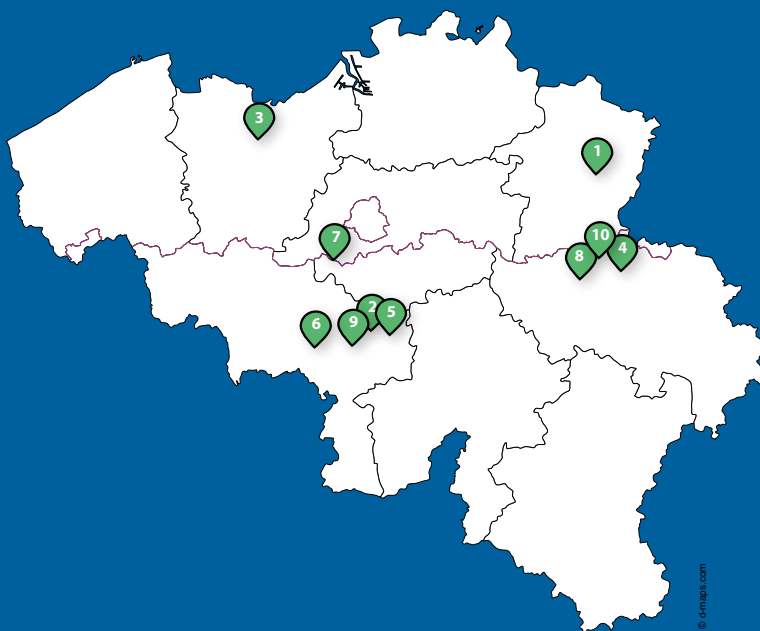
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- 1 Aperam Genk - [www.aperam.com](http://www.aperam.com)
- 2 Aperam Châtelet - [www.aperam.com](http://www.aperam.com)
- 3 ArcelorMittal Gent - <https://belgium.arcelormittal.com>
- 4 ArcelorMittal Liège - <https://belgium.arcelormittal.com>
- 5 Industeel Belgium - <https://industeel.arcelormittal.com>
- 6 NLMK La Louvière - [www.eu.nlmk.com](http://www.eu.nlmk.com)
- 7 NLMK Clabecq - [www.eu.nlmk.com](http://www.eu.nlmk.com)
- 8 Segal (Tata Steel) [www.segal.be](http://www.segal.be)
- 9 Thy-Marcinelle (Group Riva) [www.thy-marcinelle.com](http://www.thy-marcinelle.com)
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Steel production at Thy-Marcinelle, photo Riva Group // Theunis bridge in Antwerp, photo jvdb // Steel production at NLMK La Louvière, photo NLMK