# Environmental Protection in the Aurubis Group

## and Consolidated Aurubis AG Environmental Statement 2026 — Hamburg and Lünen Sites

Aurubis
Metals for Progress

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Consolidated Aurubis AG Environmental Statement 2026

## Hamburg Site


Consolidated Aurubis AG Environmental Statement 2026

## Lünen Site

## Dear readers,

At Aurubis, using resources responsibly and protecting the environment are fundamental elements of our strategy and daily operations. As a leading global multimetal producer and recycler, we convert complex raw materials and recycling materials into valuable and strategically critical metals — playing a vital role in enabling a functioning circular economy.

Over the past 160 years, we have built unique metallurgical capabilities that allow us to efficiently process even the most complex materials and keep metals in the economic cycle for as long as possible. Today, this expertise is more essential than ever.

We are living in the "decade of metals." Global megatrends like electrification, digitalization and the worldwide expansion of renewable energies are significantly increasing demand for metals. Copper, nickel, tin and precious metals are the indispensable key raw materials powering this transformation. This also heightens our responsibility to use resources sustainably and to continuously advance our production processes — both ecologically and technologically.

We made more significant progress over the past year. We commissioned a steam storage facility at our Lünen multimetal recycling site, for example, that enables us to use process energy more efficiently and balance peak loads. At our Bulgarian site, we executed numerous modernization measures as part of an extensive, scheduled maintenance shutdown, contributing to more stable, efficient and environmentally friendly production over the long term.

Additionally, we further expanded the photovoltaic capacity for captive power generation at our Pirdop site in Bulgaria, upping the site's use of renewable energy.

The start of commissioning of our new multimetal recycling plant in the US state of Georgia marked another important milestone in September 2025. With Aurubis Richmond, we recover strategically critical metals from complex recycling materials while also strengthening sustainable value cycles in a growing market.

Our key performance indicators reflect this progress: Our copper cathodes now contain an average of around 45 % recycled material. In addition, nearly all major production sites are certified according to the internationally recognized Copper Mark standard. This underscores our commitment to producing metals responsibly and consistently preserving their value creation in a circular system.

We see protecting the environment not as a project but as an ongoing process. Together with our employees, partners and customers, we continuously advance our processes, technologies and standards. This Environmental Statement serves as an invitation and opportunity to form your own impression of our achievements, progress and targets in environmental protection.

**Inge Hofkens**
Chief Operations Officer
Multimetal Recycling

"Sustainability is not an afterthought at Aurubis — it is an integral part of our value creation and so much more than just an obligation. It is a true a competitive advantage for Aurubis."

# 1. Company profile and business model

**The Aurubis Group**

Aurubis AG is globally active company in the basic materials industry. As an integrated group, we process complex metal concentrates, scrap metals, organic and inorganic metal-bearing recycling raw materials, and industrial residues into metals of the highest purity. Copper cathodes are the starting material for the manufacture of copper products, primarily comprising standard and specialty products made from copper and copper alloys.

In addition to our main metal, copper, our metal portfolio also includes gold, silver, lead, nickel, tin and zinc, minor metals such as tellurium and selenium, and platinum group metals. Sulfuric acid, iron silicate, and synthetic minerals round off the Aurubis Group's product portfolio.

The company headquarters, also home to one of our two primary smelters, is in Hamburg, Germany. Most of our sites are located in Europe, with larger production centers in Germany, Belgium, Bulgaria and Spain, as well as cold-rolling mills for flat rolled products and rod plants in Germany and elsewhere in Europe. Outside Europe, Aurubis began building the first secondary smelter for mulimetal recycling in the United States — Aurubis Richmond in Augusta (Richmond County, Georgia, US) — in June 2022. Gradual commissioning of the first phase of the Aurubis Richmond site started in September 2025. Phase two of the site will be gradually commissioned in the 2025/26 fiscal year. The Aurubis Group also has a global sales and service network.

**Business model and Group structure**

Metals are essential raw materials for many forward-looking applications. Ongoing industrialization, automation and digitalization, along with the transition to a climate-neutral economy and society, are posing increasing challenges for modern technologies. Innovations in artificial intelligence and new geopolitical challenges are further amplifying these. Key sectors such as e-mobility, renewable energy, defense and security, and high-performance data center expansion would be impossible without metals. These global and profound changes act as long-term structural drivers, fundamentally reshaping the industrial landscape and lastingly boosting the demand for metals.

With a broadly diversified portfolio of around 20 metals and other elements — including copper, precious metals, platinum group metals, and other specialty metals — Aurubis delivers the critical raw materials needed to meet the challenges of the future. As a leading multimetal supplier, Aurubis is strategically well positioned to meet the growing global demand for metallic raw materials and to actively help shape the global economy.

The Aurubis Group's business model is based on our decentralized smelter network, which is focused on processing raw materials from the mining industry, integrating recycling material inputs, and the fabrication and marketing of products. For raw materials and recycling materials, we concentrate on complex copper concentrates and recycling materials that contain copper and a wide range of other metals. Due to their composition, these materials require advanced processing capabilities. Aurubis combines specialized technologies with the flexible processing capabilities of its smelter network to meet these complex demands and extract the valuable metals they contain. Within the smelter network, the sites utilize their specific processing capabilities and continuously optimize their material flows to enhance the recovery of marketable metals and generate valuable products from all input materials. This helps the plants reduce waste streams and take advantage of scalability, such as in the large tankhouses and in precious metal processing in Hamburg. This provides Aurubis with a high level of efficiency and flexibility in managing raw material procurement, production and sales. Different market cycles influence the business as well.

We process copper concentrates that are obtained from ores and are offered by mining and trading companies on the global market. The necessary input materials for our two primary smelters (Hamburg and Pirdop) are purchased worldwide. The production entities do not hold any stakes in mines, and each has a globally diversified supplier portfolio.

A significant portion of our copper concentrates is sourced from South American countries such as Chile, Peru and Brazil. Furthermore, raw materials are purchased from regions such as Bulgaria and Turkey. As a buyer of copper concentrates, the Aurubis Group competes here with other international primary smelters, particularly in China and Japan. Copper concentrates for the Hamburg site are primarily transported by waterway and are transshipped via the port terminal in Brunsbüttel. There the different copper concentrates are pre-mixed in accordance with the requirements of our production process. Concentrates reach the Pirdop site in Bulgaria directly by land and by sea via the port of Burgas.

In addition to copper concentrates, copper scrap and various types of organic and inorganic metal-bearing recycling raw materials, industrial residues, and bought-in metallurgical intermediates are used as feed material. The five secondary smelters in Lünen (Germany), Olen and Beerse (both in Belgium), Berango (Spain), and Richmond County (US) buy most of the copper scrap and metal-bearing recycling raw material input on the European and North American markets. Furthermore, we use copper scrap with high copper content to control the processes in both of our primary smelters in Hamburg and Pirdop. The primary site in Hamburg also processes small quantities of precious metal-bearing recycling materials. Metal trading companies are the primary suppliers of recycling materials, though some of these recycling materials also make their way to us directly from industry into the production cycle through our closing-the-loop approach.

The Aurubis Group's main demand-side competitors for these input materials include other copper and metal smelters, as well as metal processors that also utilize recycling materials.

Our production processes convert concentrates and recycling materials into products like copper cathodes. This is the standardized product format traded on the international metal exchanges. Copper cathodes are the starting product for fabricating additional copper products, but they can also be sold directly.

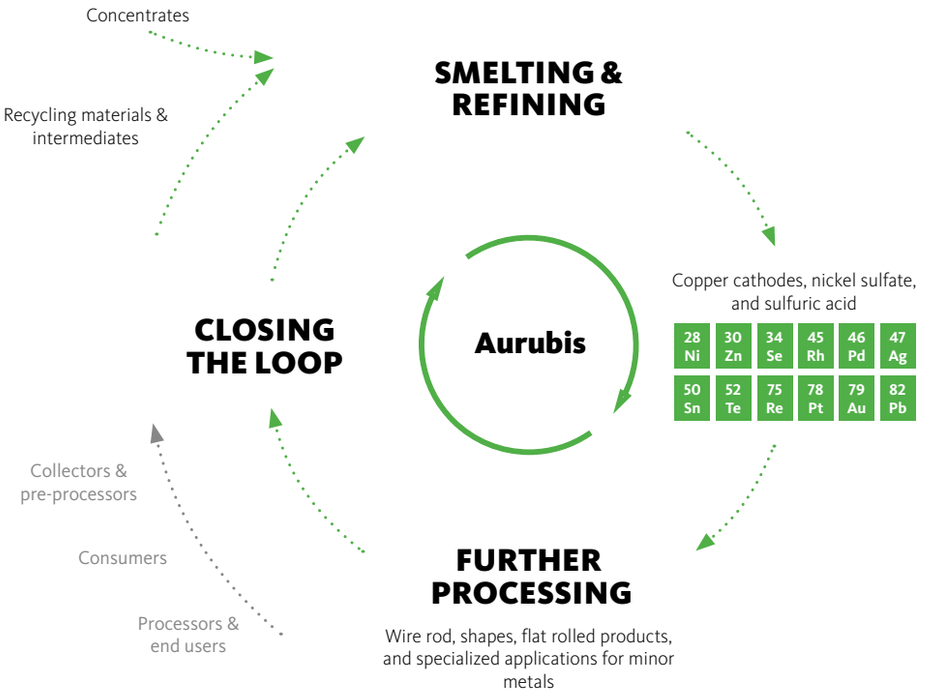
The Aurubis Group's product portfolio mainly comprises standard and specialty products made of copper and copper alloys. In processing, we have manufacturing capacities for continuous cast copper wire rod, continuous cast shapes, rolled products, strip, specialty wire, and profiles.

Additional products are fabricated by processing the non-copper elements in the feed materials. The Group's respective production entities make targeted purchases of some of these elements. In particular, these include various metals such as gold, silver, lead, nickel, tin and zinc, minor metals like tellurium and selenium, and platinum group metals. Iron silicate and synthetic minerals are also produced.

Sulfuric acid forms as a by-product of copper concentrate processing. Sulfuric acid customers are very diverse and include international companies from the chemical, fertilizer and metal processing industries.

The sales markets for our products are varied and international. The production entities' customers include companies from the copper semis industry, the cable and wire industry, the electrical and electronics sector, and the chemical industry, as well as suppliers from the renewable energy, defense and security, construction and automotive industries, and the banking sector.

**Fig. 1.1: The Aurubis AG business model**



We place a high priority on the closing-the-loop approach to close the value chain for copper and other metals. The focus of this approach is on materials like production waste and residues that accumulate along the metal processing value chain, such as with production entity customers. The materials range from copper scrap with very high copper content, which can be directly fed into the copper fabrication process again, to stamping waste containing precious metals and high levels of copper, alloyed scrap, slags from foundries, and other industrial residues.

We predominantly hedge fluctuations in metal and energy prices and the US dollar exchange rate as part of our hedging strategy.

Our strategy defines sustainable action and business practices as a core element across all areas of the company. Using binding targets and appropriate measures in the areas of environment, social responsibility, and governance, we are further embedding sustainability throughout the entire company and in all of our workflows, processes and strategic projects in particular. We have also acknowledged the importance of sustainability in our organizational structure: The sustainability function is positioned at the highest level directly in the CEO's business division.

## Our Group structure

In the reporting period, the Aurubis Group's organizational framework was aligned with its underlying business model. The two Multimetal Recycling and Custom Smelting & Products segments have formed the fundamental organizational structure since the 2021/22 fiscal year.

The **Multimetal Recycling (MMR) segment** comprises the recycling activities in the Group and thus the processing of copper scrap, organic and inorganic recycling raw materials containing metal, and industrial residues. The segment mainly includes the sites in Lünen, Olen and Beerse along with Berango. The secondary smelter, Aurubis Richmond in the US state of Georgia, is also part of this segment.

The **Custom Smelting & Products (CSP) segment** comprises the production facilities for processing copper concentrates and for manufacturing and marketing standard and specialty products such as cathodes, wire rod, continuous cast shapes, strip products, sulfuric acid, and iron silicate. The CSP segment is also responsible for precious metal production. The sites in Hamburg (Germany) and Pirdop (Bulgaria) manufacture copper cathodes. Together with the copper cathodes produced in the MMR segment, they are further processed in the CSP segment into wire rod and continuous cast shapes at the Hamburg (Germany), Olen (Belgium), Emmerich (Germany), and Avellino (Italy) sites. The Stolberg (Germany) and Pori (Finland) plants produce flat rolled and specialty products.

| | Multimetal Recycling (MMR) | Custom Smelting & Products (CSP) |
|---|---|---|
| **Input materials** | Scrap/blister<br>E-scrap<br>Slags/residues<br>Other recycling materials | Concentrates<br>E-scrap<br>Scrap/blister<br>Other recycling materials |
| **Products** | Cu cathodes<br>Other minor metals<br>Synthetic materials | Cu cathodes<br>Wire rod<br>Sulfuric acid<br>Shapes<br>Precious metals<br>Rolled products, other<br>Minor metals<br>Iron silicate |
| **Sites** | **Recycling plants:** Beerse (BE), Berango (ES), Lünen (DE), Olen (BE), Richmond (US) | **Primary smelters:** Hamburg (DE), Pirdop (BG)<br>**Other sites:** Avellino (IT), Buffalo (US) until August 30, 2024, Olen (BE), Pori (FI), Emmerich (DE), Röthenbach (DE), Stolberg (DE) |
| **Earnings drivers** | Refining charges (RCs) for recycling materials, cathode premium, metal result | Treatment and refining charges (TC/RCs) for concentrate processing, RCs for scrap and blister, metal result, revenues from sulfuric acid, cathode premium, product surcharges |

## 2. Our environmental policy — Company guidelines on environmental protection

**To ensure our environmental protection standards are maintained throughout the Group and continuously optimized, we have established the following principles as company-wide guidelines:**

- We target the continuous improvement of environmental performance, particularly in water pollution control, soil protection, and immission control, as a key objective of the Environmental Protection division.
- We apply the hierarchy of environmental pollution prevention and control, prioritizing measures that avoid environmental impacts at the source and, where this is not feasible, reduce emissions to air and water as well as waste accumulation. This approach minimizes impacts through the use of best available techniques. We design our environmental and climate protection activities to conserve natural resources, safeguard ecosystems and biodiversity, and prevent or minimize impacts on the environment and our employees to the greatest extent technically feasible.
- We give equal consideration to environmental protection in the planning and development of new products and production processes.
- We reintegrate processed raw materials and intermediates into the economic cycle as completely as possible, and ensure that unavoidable waste is properly recycled or safely disposed of. We provide guidance to our raw material suppliers on environmental protection topics as needed.
- We implement technical and organizational measures to prevent accidents and operational disruptions so as to avoid or minimize environmental hazards for our employees and local communities, as well as impacts on the environment.
- We strengthen our employees' sense of responsibility for environmental protection and foster objective, open and respectful dialogue with them as well as with relevant authorities and the public.
- We provide our customers with appropriate information on our product characteristics and necessary safety measures, and advise them on product disposal issues.
- We select, inform and support the contractors who work for us in a way that ensures compliance with legal regulations and our environmental protection standards.

**Compliance with legal regulations is the basis and minimum standard for our activities. Ongoing improvement in environmental protection is enshrined in our corporate strategy and is one of our key responsibilities.**

## 3. Environmental protection in the Aurubis Group

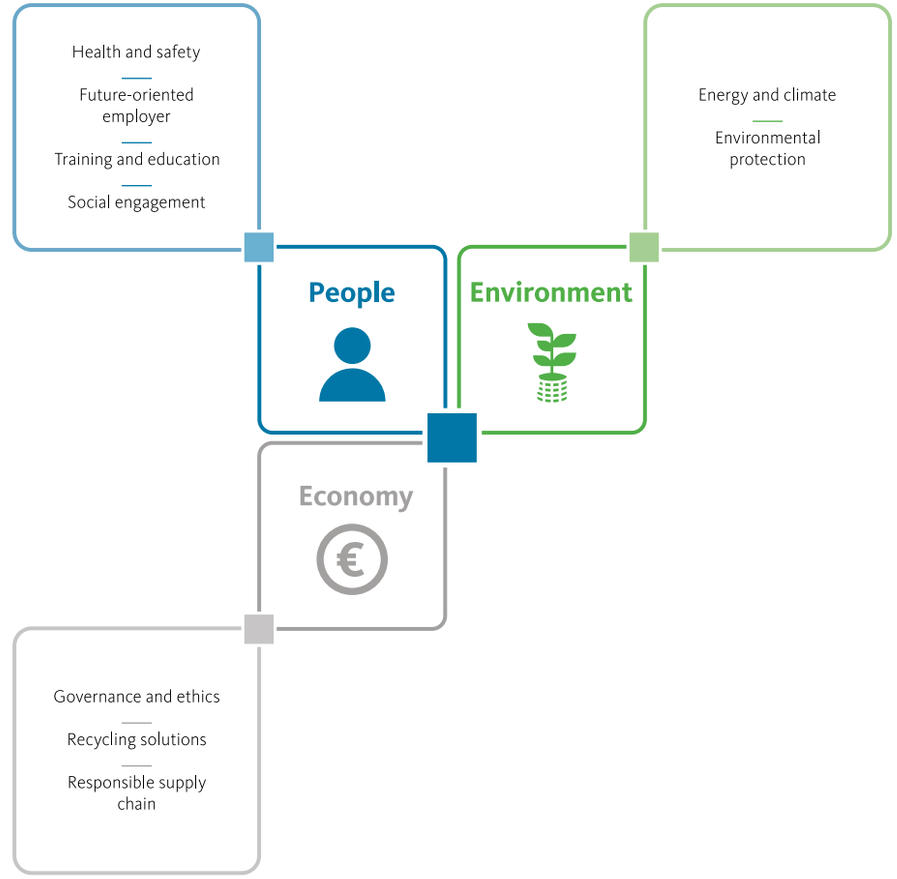
**Environmental protection is part of the corporate strategy**
Environmental protection is an integral element in the Aurubis corporate strategy. Responsible corporate governance is a key factor in ensuring the company's long-term competitiveness and future viability.

With its "Metals for Progress: Driving Sustainable Growth" strategy, Aurubis firmly embedded the ambition to integrate sustainability across all business areas and activities. This strategic direction was reaffirmed and further refined in 2025 as part of the revised "Performance 2030 – Forging resilience. Leading in multimetal." strategy. Our focus is on the circular economy, decarbonization, resource efficiency, and environmental and climate protection.

Sustainability is therefore not a secondary consideration but a core element of Aurubis' value creation. We aim to make a meaningful contribution to the transformation toward climate-friendly and resource-efficient industry through innovative and efficient multimetal production and the expansion of recycling.

In line with our ambition to lead in sustainable industrial practices, Aurubis continues to bundle its activities into the fields of environment, people and economy. We have defined and continuously update long-term targets for these areas.

Fig. 1.2: Our key topics




**For more information on sustainability in the Aurubis Group, please see our current sustainability reporting at:**
www.aurubis.com/en/responsibility/reporting-kpis-and-esg-ratings

**For more information about environmental protection at the Aurubis sites, please visit:**
www.aurubis.com/en/responsibility/environment-energy-and-climate/environmental-protection-at-the-sites

We are recognized as an environmental protection leader in our industry and remain committed to continuous improvement. Environmentally friendly multimetal production from primary raw materials, such as ore concentrates, and recycling are the foundation for a responsible metal supply in line with demand. This is how we are securing the long-term viability of our sites and establishing a basis for future-oriented investments.

As a multimetal group, Aurubis assumes responsibility for protecting the environment and the climate. Efficient use of natural resources and energy along with reducing $CO_2$ emissions are key elements of the company's ecological and economic corporate responsibility and have long been an integral part of our corporate culture and business activities. Aurubis takes a holistic view of the entire value chain, aiming to strike a balance among the economy, the environment, and people.

Across all production sites and business processes, Aurubis prioritizes modern and energy-efficient plant technologies that meet high environmental standards. We also develop innovative and energy-efficient environmental protection technologies that often set new benchmarks worldwide and contribute to establishing best available techniques (BAT) at the European level. We are working closely with the University of Düsseldorf on developing advanced methods for detecting diffuse emissions using drones, for example. The insights gained will support ongoing improvements and the development of efficient and effective measures.

Metals are necessary for technical progress and a high standard of living. The surge in global demand is constrained by finite resources. Metal recycling is therefore an important source of raw materials — especially for countries like Germany with limited natural resources. It plays a vital role in ensuring supply security, protecting the environment and natural resources, and advancing decarbonization. The importance of recycling products once they reach the end of their life cycle is steadily increasing. We use valuable raw materials efficiently, conserving resources and minimizing environmental impact. Copper, our core product, is ideally suited for recycling, as it can be reused indefinitely without any loss of quality. This means that copper of the highest purity can be produced from recycling materials again and again. At Aurubis, value creation is intrinsically linked with recycling: By combining product sales with the return of recyclable materials, we create closed material loops where customers also act as suppliers. This ensures efficient resource use, minimizes waste, and allows residual materials to be recycled wherever possible.

**Environmental management organization**

Chief Operations Officer for Multimetal Recycling Inge Hofkens and Head of Corporate Environmental Protection Dr. Karin Hinrichs-Petersen are responsible for the strategic positioning of environmental protection in the Group. Environmental officers oversee the environmental protection duties at the individual sites under the technical supervision of Corporate Environmental Protection. If the site concerned falls under another member of the Executive Board's remit, that member is also involved.

With the involvement of employees, plant managers/managing directors, and the Executive Board, uniform environmental protection standards were developed, formalized in a corporate policy, and implemented across the Group as part of the environmental management system (ISO 14001 or EMAS).

EMAS (Eco-Management and Audit Scheme) fulfills ISO 14001 environmental management standard requirements while extending beyond a pure management system. It is geared toward performance and designed to advance the organization beyond the requirements laid out under environmental law. The system and the internal documents, including a report (the Environmental Statement), are audited by external, independent, state-approved, and monitored environmental auditors. This environmental protection report includes the Environmental Statements of Aurubis AG, covering the Hamburg and Lünen sites as part of the EMAS registration. More information on the topic is available at: www.emas.de/en

Moreover, energy management systems in accordance with ISO 50001 have been implemented and certified at all sites. The annual external audit in the scope of the certification framework is an opportunity to have our successful environmental protection measures validated by an independent third party and to identify additional potential for improvement.

The Corporate Environmental Protection Policy defines areas of activity and responsibility, establishes information and reporting requirements, and outlines the roles of Corporate Environmental Protection. It also governs cooperation with the local environmental protection officers as well as managing directors and plant managers. This ensures a uniform approach to environmental protection within the Group and with respect to public image. Group headquarters supports the sites with expertise and technology transfer. Together, these efforts significantly contribute to implementing our new Group environmental protection strategy.

Compliance with legal regulations is the basis and minimum standard for our activities. Key regulatory requirements relevant for our production include in particular the German Federal Immission Control Act (BImSchG), the Circular Economy Act (KrWG), the German Federal Water Act (WHG), and the EU chemicals regulation REACH. The findings of internal and external assessments confirm that the applicable legal regulations and permit conditions are complied with in all material respects.

In 2017, Aurubis AG introduced an integrated management system (IMS) covering the areas of environment, energy, quality management, and occupational health and safety. The IMS has since been certified across all these areas. It leverages synergies, standardizes processes, and enhances management effectiveness in all these areas.

In addition, we define key environmental protection factors (KPIs), which are uniform within the Group and are reviewed and verified by external auditors annually.

Environmental matters are regularly addressed across the Group and employees receive ongoing training on environmentally relevant subjects.

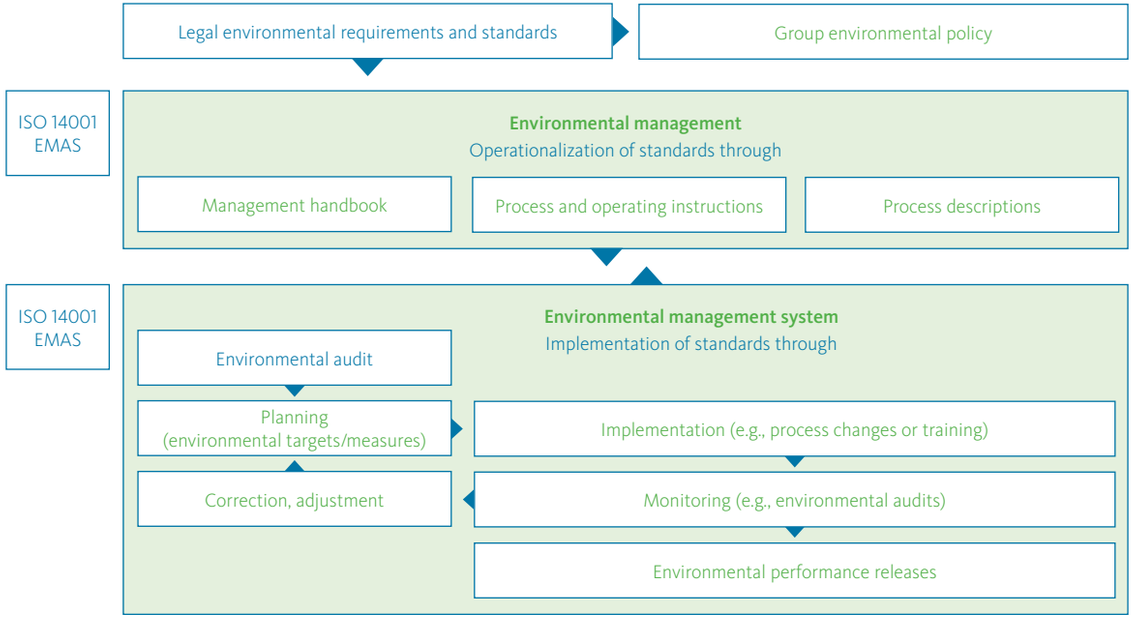
Emergency response plans as well as alarm and hazard prevention plans have been established for emergency situations and accidents. These measures effectively prevent environmental impacts and ensure that employees and the community are protected. We regularly conduct training sessions and emergency drills and document and evaluate the procedures. Emergency response plans are developed in coordination with the responsible authorities. The Corporate Environmental Protection Policy also covers responsibilities related to implementing the European chemical regulation, REACH.

Supported by the Aurubis Operating System (AOS), introduced in 2017, production processes are systematically analyzed and continuously optimized with due consideration for environmental aspects. The environmental management system therefore ensures that environmental protection targets are achieved alongside production targets while enabling the realization of development opportunities.

We routinely evaluate the opportunities and risks facing the company to ensure we are ready for future challenges and initiate targeted projects to leverage any opportunities we identify. Risk management is in place to prevent environmental damage, non-compliance and unexpected costs. Environmental risks are routinely assessed and proactively mitigated through the implementation of precautionary measures. For this purpose, we engage external experts to carry out regular environmental risk assessments at all production sites. These assessments cover topics like emissions to air and water, water management, and the handling of hazardous substances, along with the challenges that climate change poses.

In 2025, the environmental risk assessment was updated for all majority-owned production sites in Aurubis' multimetal production network and was specifically expanded to include the evaluation of environmental-related human rights risks within the company's own operations.

**Fig. 1.3: Environmental management in the Aurubis Group**



## Fig. 1.4: Site certifications

| Site | EMAS | ISO 14001 | ISO 50001 | ISO 45001 | ISO 9001 | ISO 27001 | IATF 16949 | EfbV | WEEELABEX[1] | Copper Mark |
|---|---|---|---|---|---|---|---|---|---|---|
| Hamburg, headquarters (DE) | x | x | x | x | x | x | | | | x |
| Lünen (DE) | x | x | x | x | x | x | | x | x | x |
| Pirdop (BG) | | x | x | x | x | x | | | | x |
| Olen (BE) | | x | x | x | x | x | | | | x |
| Beerse, Metallo (BE) | | x | x | x | x | x | | | | x |
| Berango, Metallo (ES) | | x | x | x | x | x | | | | |
| Emmerich, Deutsche Giessdraht (DE) | | x | x | x | x | x | | | | x |
| Avellino (IT) | x | x | x | x | x | x | | | | Committed[2] |
| Röthenbach, RETORTE (DE) | | x | x | x | x | x | | | | |
| Hamburg, Peute Baustoff (DE) | | x | x | x | x | x | | | | |
| Pori (FI) | | x | x | x | x | x | | | | |
| Stolberg (DE) | | x | x | x | x | x | x | | | x |
| Stolberg, Schwermetall (DE)[3] | x | x | x | x | x | | | | | |

[1] WEEE label of excellence.
[2] Audit conducted in March 2026. Certification is expected to be granted in May/June.
[3] Not majority-owned by Aurubis (50 % stake).

**EMAS:** system of specifications for environmental management systems and environmental audits
**ISO 14001:** standard for environmental management systems
**ISO 50001:** standard for energy management systems
**ISO 45001:** standard for occupational safety management systems
**ISO 9001:** standard for quality management systems
**ISO 27001:** standard outlining requirements for information security management systems
**IATF 16949:** standard for quality management systems in the automotive industry, based on ISO 9001
**EfbV:** Ordinance on Specialized Waste Management Companies (German certificate)
**WEEELABEX:** standards for the collection, sorting, storage, transport, preparation for reuse, treatment, processing and disposal of waste electrical and electronic equipment
**Copper Mark:** quality seal for the copper sector for responsible copper production based on 33 internationally recognized sustainability criteria

**Dialogue with interested parties and engagement**
We have identified and evaluated the stakeholders that are relevant for Aurubis: Governmental authorities, non-governmental organizations, customers, and employees play an important role in particular. Throughout the past year, Aurubis maintained an open dialogue with authorities, citizens and other stakeholders across the Group. This helps us understand external expectations and requirements and systematically incorporate them into our activities. We also actively participate in various environmental projects.

In 2013, the European Commission recommended the Product Environmental Footprint (PEF) and the Organisation Environmental Footprint (OEF) methodologies for measuring environmental performance based on reliable, verifiable and comparable data. Since then, Aurubis has been actively involved in further developing these methodologies and has contributed to the definition of product-specific category rules for metal sheets as well as organization sector rules for copper production. The Organisation Environmental Footprint Sector Rules for Copper Production were subsequently updated following methodological advancements and were adopted by the Technical Advisory Board in February 2024.

Today, Aurubis applies these methodologies not only to assess and improve the environmental performance of its products and processes, but also as a robust basis for evaluating environmental materiality. They enable the systematic identification of relevant impact categories, life cycle stages, and processes and elementary flows, and facilitate the objective and transparent determination of material environmental impact contributions. This creates a sound basis for the targeted prioritizing of measures and aligning of environmental management decisions with the priority action areas material for the company and its stakeholders.

Since 2003, the Hamburg site has been a member of the Environmental Partnership as well as the Partnership for Air Quality and Low-Emission Mobility, an initiative coordinated by the city of Hamburg. The latter aims to reduce nitrogen dioxide emissions, which are caused by transport in particular. So in 2016, we also joined the national Mobil.Pro.Fit.® model project in collaboration with the B.A.U.M. e. V. environmental organization, which has led to a variety of measures to promote low-emission mobility.

Since 2015, Aurubis has successfully participated in the Carbon Disclosure Project (CDP), which surveys companies about risks and opportunities related to the climate, as well as about $CO_2$-reduction potential. Aurubis' ambitions received a B rating in 2025.

Since 2021, we have also taken part in the CDP Water Security questionnaire, which addresses current and future water-related risks and opportunities. As a result, Aurubis' ambitions were rated A– in 2025 (previous year: B).

**Targets and successes in environmental protection**
In defining its environmental protection targets as part of the revised Sustainability Strategy, Aurubis accounted for the company's transformation from a copper to a multimetal producer. Since then, the specific reduction targets and the associated reporting of specific emissions have been solely based on our multimetal indicator — the copper equivalent.

The calculation is based on an approach already established at the European level within the framework of the EU life cycle assessment (environmental footprint) of organizations and products project, the Organisation Environmental Footprint and the Product Environmental Footprint. The copper equivalent is a standard metric representing all the metals Aurubis produces. It standardizes the entire multimetal production using a weighting factor based on the respective average metal prices. The observation period for the relevant metals ranged from seven to nine years. To avoid distortions from value fluctuations, the average prices used for the metals are fixed for the duration of the Sustainability Strategy. The calculation methodology was verified by external auditors.

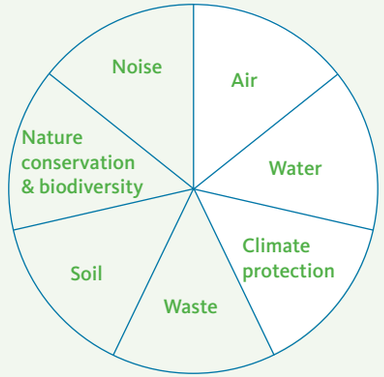
**For more information on our ESG rating, please visit:**
https://www.aurubis.com/en/responsibility/reporting-kpis-and-esg-ratings

## Fig. 1.5: Our environmental and climate targets

**Noise**
» **Target: Reducing noise emissions, especially in new technical projects**

**Nature conservation & biodiversity**
» **Target: Improving nature conservation at the production sites**
› Example: Participation in the NABU project UnternehmensNatur in Hamburg

**Soil**
» **Target: Reducing input of harmful substances into soil**
› Example: Extensive paving of plant premises in Lünen




**Waste**
» **Target: Increasing recycling rates**
› Example: Stronger marketing of fayalite in Pirdop

**2030 sustainability targets**
**Air**
» **Target: Reducing specific dust emissions in multimetal production by 15 % by 2030 compared to 2018**
**29 % reduction achieved in 2025[1]**
› Example: Reducing fugitive emissions

**Water**
» **Target: Reducing specific metal emissions to water in multimetal production by 25 % by 2030 compared to 2018**
**23 % reduction achieved in 2025[1]**
› Example: Optimizing existing water treatment facilities

**Climate protection**
» **Target: Reducing absolute Scope 1 and Scope 2 emissions by 50 % compared to 2018**
**35 % reduction achieved in 2025[1]**
› Example: Implementing decarbonization projects

» **Target: Reducing specific Scope 3 emissions by 24 % compared to 2018**
**30 % reduction achieved in 2024[2]**

[1] The Aurubis sites in Beerse and Berango have been included since 2020.
[2] Data for Scope 3 emissions is not yet available for calendar year 2025 and will follow at a later date as part of Aurubis reporting.

### Our environmental and climate targets as part of the 2030 Group Strategy

As part of the 2030 Group Strategy, we defined group-wide environmental and climate protection targets along with concrete targets for the individual sites. The effectiveness of these targets and measures is reviewed continuously.

In 2025, dust emissions in multimetal production per ton of copper equivalent output were reduced by 29 % compared to 2018 (target: -15 %). Emissions remain low overall. The RDE (Reducing Diffuse Emissions) project with a total investment of about €85 million so far has particularly contributed to this success In focus: Our flagship projects in environmental protection. Our goal now is to maintain this low emissions level in the future as well, and to continue improving through technical measures like the expansion of RDE.

In 2025, metal emissions to water per ton of copper equivalent in multimetal production were reduced by 23 % compared to 2018 (target: -25 %). As expected, the one-off effects from the previous year that led to an increase in emissions did not recur in the reporting year. Emission levels have returned to a low level and can therefore be considered normalized. We aim to consistently meet our 25 % reduction target by 2030 by implementing new projects and making improvements to existing facilities.

In 2025, Scope 1 and Scope 2 emissions were reduced by 35 % compared to 2018. This positive trend was largely driven by the realization of energy efficiency projects and the increasing integration of green electricity into the electricity sourcing strategy.

**Fig. 1.6: Specific dust emissions in Aurubis Group multimetal production**

in g/t of copper equivalent

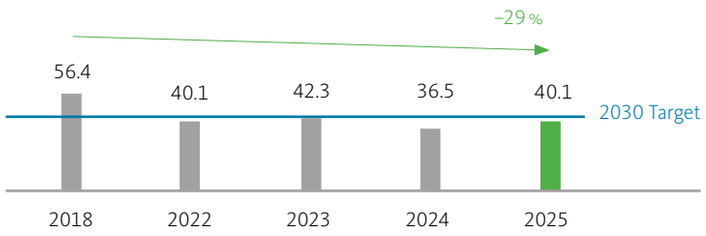



**Fig. 1.7: Metal emissions to water in Aurubis Group multimetal production**

in g/t of copper equivalent

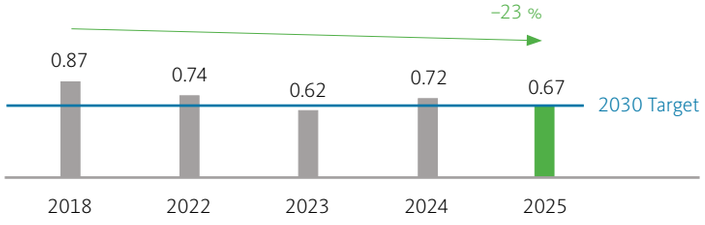
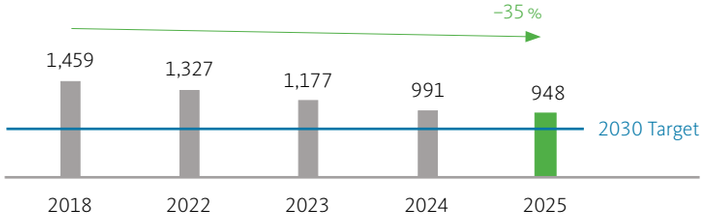



**Fig. 1.8: Absolute Scope 1 and Scope 2 emissions in the Aurubis Group**

in t $CO_2$




We successfully reduced Scope 3 emissions by 30 % in 2024 compared to 2018. Updated data is not yet available for 2025 and will follow at a later date as part of Aurubis reporting. The Copper Mark certification requires our suppliers to set science-based $CO_2$-reduction targets aligned with the Paris Climate Agreement. Our 2030 target to double the share of certified or audited copper concentrates serves as an incentive for suppliers, who play a crucial role in helping us achieve our Scope 3 target.

**Biodiversity**

We are actively involved in creating and maintaining good conditions for species conservation and biodiversity in our plants and the surrounding environments. Having recognized that protecting biological diversity is one of the greatest environmental challenges of our time, we adopted it as an additional dimension in our sustainable development. Biodiversity has been part of our environmental targets for a number of years and was included in our Corporate Policy on Environmental Protection at the start of 2023. We aim to further expand and systematize our engagement in this area and our biodiversity management practices.

Biodiversity aspects were also reviewed by the competent authorities as part of authorization processes involving environmental impact assessments. We applied the required offsetting measures where impacts on biodiversity were anticipated. Furthermore, we conserve animal and plant habitats in the areas around our sites through our extensive water treatment, air emission reduction, and waste treatment methods.

Wherever possible, we maintain or expand green areas on the grounds of every plant: We take part in the Hamburg UnternehmensNatur initiative to promote biodiversity at the site, for instance. Due to long-time industrial use, however, there may be soil contamination typical for industrial areas, which we work to prevent from mobilizing and spreading. We commissioned a new sewer line at the Olen site to protect the Olens Broek nature conservation area in late 2015. When we have to expand the usable area for any plant premises, we choose areas that naturally have limited biodiversity.

Additional measures are currently being devised to protect and reinforce biodiversity as well. For example, a fayalite landfill that was closed at the Pirdop site in late 2018 was ecologically restored. At the Hamburg site, a pilot project to install a green facade was implemented to promote biodiversity and improve the ambient air. Measures to enhance urban biodiversity were also developed in coordination with the environmental protection agency and NABU.

Generally the options for promoting biodiversity are assessed for every construction or other type of project.

## Fig. 1.9: Conservation areas in close proximity to copper production sites

| | Site size | Operations at the site | Name | Type | Distance | Direction | Area type |
|---|---|---|---|---|---|---|---|
| **Hamburg (DE)** | 874,230 m² | Custom Smelting & Products | Hamburger Unterelbe | Natura 2000 | 200–600 m | Southeast | Biodiversity-sensitive area |
| | | | Holzhafen | Natura 2000 | 600–1,000 m | East | Biodiversity-sensitive area |
| | | | Heuckenlock/Schweenssand | Natura 2000 | 3,600 m | South | Biodiversity-sensitive area |
| **Pirdop (BG)** | 3,569,154 m² | Custom Smelting & Products | Tsentralen Balkan — bufer (nature conservation area) | Natura 2000 | approx. 1,000 m | North | Biodiversity-sensitive area |
| | | | Tsentralen Balkan — bufer (bird conservation area) | Natura 2000 | approx. 1,700 m<br>approx. 2,300 m | North<br>East | Biodiversity-sensitive area |
| | | | Sredna Gora[1] | Natura 2000 | approx. 3,600 m | South | Biodiversity-sensitive area |
| **Lünen (DE)** | 316,279 m² | Multimetal Recycling | In den Kämpen, Im Mersche, and Langerner Hufeisen | Natura 2000 | <2,000 m | Northeast | Biodiversity-sensitive area |
| | | | Lippeaue | Natura 2000 | <5,000 m | Northwest | Biodiversity-sensitive area |
| | | | Lippe-Unna, Hamm, Soest, Warendorf | Natura 2000 | <2,500 m | Northwest | Biodiversity-sensitive area |
| **Olen (BE)** | 328,218 m² | Multimetal Recycling and Custom Smelting & Products | Valleigebied van de Kleine Nete met brongebieden, moerassen en heiden benedenstrooms | Natura 2000 | approx. 1,000 m | North | Biodiversity-sensitive area |
| | | | De Vallei van de Kleine Nete | VEN[2] | approx. 1,000 m | North | Biodiversity-sensitive area |
| | | | Het Olensbroek en Langendonk | VEN[2] | approx. 1,000 m | North | Biodiversity-sensitive area |
| **Beerse (BE)** | 448,794 m² | Multimetal Recycling | Eksterheide | Natura 2000 | approx. 500 m | West | Biodiversity-sensitive area |
| | | | Duivelskuil | Natura 2000 | approx. 750 m | Southwest | Biodiversity-sensitive area |
| | | | De Pomp-Poelberg | Natura 2000 | approx. 1,000 m | Northwest | Biodiversity-sensitive area |
| **Berango (ES)** | 94,669 m² | Multimetal Recycling | Ría de Mundaka-Cabo de Ogoño Marine Area | Natura 2000 | approx. 3,500 m | North | Biodiversity-sensitive area |
| | | | Ría del Barbadún | Natura 2000 | approx. 10,000 m | Southwest | Biodiversity-sensitive area |

[1] The nature conservation area Sredna Gora is home to the Dushantsi Reservoir, which was created at the same time the copper smelter was constructed in the 1950s to supply industrial water to the Pirdop plant and is operated by Aurubis.
[2] VEN: Vlaams Ecologisch Netwerk (Flemish Ecological Network).

## 4. Energy, climate protection, and decarbonization

**Our climate, our contribution**

With the Green Deal, the EU has set an ambitious target for 2050: a resilient economy and society that achieve carbon neutrality through high innovative strength and competitiveness. We confirm that this aligns with our targets as evidenced by our commitment to the Science Based Targets initiative (SBTi). In 2021, SBTi validated Aurubis AG's $CO_2$-reduction targets, thus confirming that our targets contribute to limiting global warming to 1.5°C pursuant to the Paris Climate Agreement. We have set out to reduce absolute Scope 1 and Scope 2 emissions, meaning $CO_2$ emissions generated by burning fuels in internal facilities and those related to purchased energy, by 50 % by 2030 compared to reference year 2018. We want to reduce Scope 3 emissions, which arise in the upstream and downstream stages of the value chain, by 24 % per ton of copper cathodes during the same period as well. To integrate our reduction targets into project planning, Aurubis reviews the achievement of the group-wide sustainability targets, which include $CO_2$-reduction targets, during project assessments.

We will continue implementing our detailed roadmap to achieve our climate targets. For Scope 1 and Scope 2 emissions, this includes technical measures like decarbonizing plant facilities by using green hydrogen or biogenic substitutes instead of fossil fuels and electrifying our production. Utilizing industrial waste heat from our production process, further increasing energy efficiency, generating renewable energies, and expanding the purchase of green electricity are further steps we are taking to enhance our environmental performance. Since the majority of our Scope 3 emissions originate from the mining companies that supply our copper concentrates, most emission reduction strategies focus on collaborating with supply chain partners and enhancing recycling efforts. We regularly communicate with our main suppliers about decarbonization to monitor their progress. Consequently, we have been able to verify that the mining companies are increasingly prioritizing the use of renewable energies and electrifying their processes. We aspire to make our production carbon-neutral before 2050.

Our life cycle assessments indicate that we are on the right track, as today we are already producing many metals with less than half the global average carbon footprint. The challenge inherent in decarbonization is that no one single technology will get us there. A diversified approach is needed, especially since our sites have very different baseline conditions. Our path to carbon neutrality is multifaceted.

**Management approach**

The individual production steps in the Aurubis value chain are very energy intensive overall. Accordingly, the effective and efficient use of energy is an issue of ecological stewardship and fiscal responsibility. Energy input is the main source of $CO_2$ emissions in the Group. Looking at the entire value chain, over half of $CO_2$ emissions are upstream and downstream, i.e., they originate from our suppliers, customers, and service providers (Scope 3 emissions). Most of the Scope 3 emissions derive from the activities of the mining companies from which we source ore concentrates.

At the same time, the products we manufacture contribute to reducing $CO_2$ emissions in our society because they play an important role in renewable energies, energy efficiency applications, and electric vehicles. Electric cars contain nearly four times more copper than vehicles with conventional combustion engines, and building and connecting an offshore wind turbine to the energy grid requires up to 30 t of copper.

By identifying climate-related opportunities and risks and deriving related actions, we create a direct link between our risk management and our energy, climate and decarbonization strategy. In doing so, we consider current and pending legal requirements, technological advancements, and compliance-related, reputational and physical risks.

The development and implementation of the group-wide energy and climate strategy and the corresponding coordination of the targets and measures are the central responsibility of the head of Corporate Energy & Climate Affairs, who reports directly to the Executive Board. The corporate division coordinates the development of the energy management and monitoring systems across the Group, providing for a uniform approach and facilitating the exchange of expertise regarding best practice examples — such as an energy efficiency network for the German Aurubis sites' energy management officers and a regular international Aurubis workshop. Topics include completed and planned energy efficiency projects, results of energy audits, the current regulatory framework, and aid programs and implementation guidance related to new requirements.

Aurubis is an energy efficiency leader. However, as we increase productivity and efficiency, we are also reaching our technical limits. Past efficiency enhancements cannot serve as a blueprint for future development, as each successive gain in energy efficiency makes it more difficult to further optimize energy demand. Due to technological limits on reducing energy consumption and emissions, continued high capital expenditure yields only marginal improvements today compared to past years.

**For an overview of our energy, climate protection, and decarbonization efforts, please see:**
Our commitment to the climate

To optimally control energy consumption using energy performance KPIs and identify additional energy-saving potential in pursuit of continuous improvement, all sites are certified in accordance with DIN EN ISO 50001:2018.

Group Decarbonization within the Corporate Sustainability Group function is responsible for further developing and steering the decarbonization strategy, targets and roadmap — as integral components of the overarching transition plan for climate change mitigation — across the Group as well as for coordinating the site-specific roadmaps and managing their implementation. To ensure a uniform approach, create synergies, and identify best practice measures, new formats were established, such as an annual Group Decarbonization Workshop and multiple cross-site working groups for exchanging experience on decarbonizing comparable processes and facilities. Group-wide and site-specific progress is monitored through regularly convened strategic committees and meetings.

A transition plan for climate change mitigation was drafted for the first time in fiscal year 2024/25 and published in the Sustainability Statement 2024/25. It serves to define and monitor target achievement in the "Energy and climate" area, define responsibilities, and identify both decarbonization activities and investment needs. The transition plan thus contributes to aligning Aurubis' business activities with the 1.5°C target from the Paris Climate Agreement.

## 5. In focus: Our flagship projects in environmental protection

**Producing with new, innovative environmental protection technologies**

We are a multimetal production leader in reducing our environmental impact on air, water and soil. We have a long tradition of developing new and innovative environmental protection technologies.

The €85 million Reducing Diffuse Emissions (RDE) filter system has been reducing diffuse emissions in primary copper production at the Aurubis Hamburg site since 2021. The project involved closing roof openings on the building housing the primary smelter and connecting a new, high-performance extraction and filter system. New technologies are being used and combined in revolutionary ways for RDE. The specially developed, dynamic control of the ridge turrets uses a level of digitalization that is unique for environmental protection in the metals industry to this day, and ensures efficient implementation with high exhaust air volumes. This has already resulted in a 40 % reduction in the diffuse emissions discharged from primary copper production.

By expanding the existing system and doubling its capacity, we are once again significantly boosting the facility's efficiency to 80 %. Commissioning is scheduled for completion in the second quarter of 2026.

This project is further proof that modern urban development and copper production — just a few kilometers from downtown Hamburg — can sustainably coexist.

**Improved slag treatment in Pirdop**

Aurubis is investing in improving the treatment of slag from copper refining at the site in Bulgaria. The new process involves cooling slags in pots instead of in pits as before. Although the previous process is an established practice in the industry, our innovative method is setting new benchmarks in environmental protection and clearly surpasses the previous standard. This improvement enhances on-site safety and improves our environmental performance. The new process also enables the recovery of more copper. This investment represents a key contribution to achieving our ambitious sustainability targets, while also highlighting our dedication to continuously improving our efforts to mitigate climate change and protect the environment. The full commissioning of the optimized process is planned for fiscal year 2026/27.

View of the new exhaust system at the Hamburg site close to the city

## Our commitment to the climate

### Solar energy for copper production

On-site renewable electricity generation is an important lever for decarbonizing the sites. A 10 MWp (megawatt peak) captive solar plant, Aurubis-1, went online at the Aurubis Pirdop site at the end of 2021. In April 2024, construction began on the Aurubis-2 and Aurubis-3 expansion projects, with capacities of 7 MWp and 6.5 MWp respectively. Aurubis-3 was commissioned in the third quarter of 2025. An additional expansion stage (Aurubis-4 with a capacity of 18 MWp) is planned for 2026. Altogether, the four plants will have a combined capacity of 41 MWp and are expected to reduce $CO_2$ emissions by approximately 16,500 t per year. Once fully operational, the four plants will generate an estimated 54 million kWh of electricity annually.

This corresponds to around 15 % of the Pirdop site's electricity needs. Total investment for the entire project is expected to be around €35 million.

**New technology for decarbonization**

In spring 2021, we became the first company in the copper industry to test the use of hydrogen on an industrial scale at our Hamburg site. Here we used a gaseous mixture of hydrogen and nitrogen in place of natural gas to pole copper melt in the anode furnace during production. Poling is a metallurgical purification process or a reduction process in melted metal.

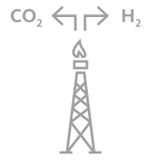
The pilot project, which was awarded first prize in the 2021 Responsible Care competition held by the German Chemical Industry Association (VCI) at the national and state levels, went according to plan and tested how the facility reacted to the introduction of hydrogen. We were able to get this production step up and running smoothly. The procedural results of this test series have encouraged us to pursue additional activities related to hydrogen. We were one of the first copper smelters worldwide to invest in hydrogen-ready anode furnaces.

With the investment of about €40 million, Aurubis took another important step in the transformation towards carbon neutrality with the new technology that provides a savings potential of around 5,000 t of $CO_2$ per year in Hamburg when only hydrogen is used. The conversion in the Hamburg plant was carried out as part of the plant's routine maintenance shutdown in spring 2024. In addition to decarbonizing production, the new furnaces will improve process control flexibility as well. Compared to the previous equipment, the new furnace technology enables the processing of complex metal-bearing copper concentrates. This will help Aurubis in Germany extract additional valuable raw materials even more efficiently in the future to satisfy rising demand coming from electric vehicles, for example.

Although at the current time there is simply not enough green hydrogen to cover German industry's huge demand at internationally competitive prices, with this step, we are leading the way and showing that we are ready.

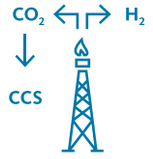
Along with hydrogen, ammonia can also contribute to the decarbonization of industry. Ammonia is not just an ideal hydrogen carrier; it can also be directly used as a fuel. Furthermore, ammonia is much easier to transport over longer distances than hydrogen. We started a pioneering test series on blue ammonia use in copper rod production at the Hamburg site. The blue ammonia used for testing was supplied as part of the deepened hydrogen cooperation between Germany and the United Arab Emirates. In blue hydrogen production, the resulting carbon dioxide is captured and stored underground using carbon capture and storage (CCS). The target that Aurubis had envisioned of directly using ammonia as fuel proved unfeasible in view of environmental regulations and high product quality standards. As a result, Aurubis does not plan to pursue the direct use of ammonia as a fuel in this application. In addition to its use as a fuel, ammonia has the ideal properties for serving as a hydrogen carrier. Hydrogen recovery from ammonia is achieved using an ammonia cracker, which splits the gas into hydrogen and nitrogen. The feasibility of constructing an ammonia cracker to generate hydrogen was evaluated. Technical feasibility was confirmed, though the project is currently not economically viable.

**Gray hydrogen**



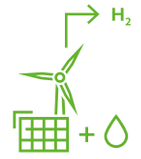

Recovered with the help of fossil energy sources. This creates $CO_2$.

**Blue hydrogen**




Recovered with the help of fossil energy sources, but the $CO_2$ is captured and stored (CCS = carbon capture and storage) or further processed as a raw material.

**Green hydrogen**



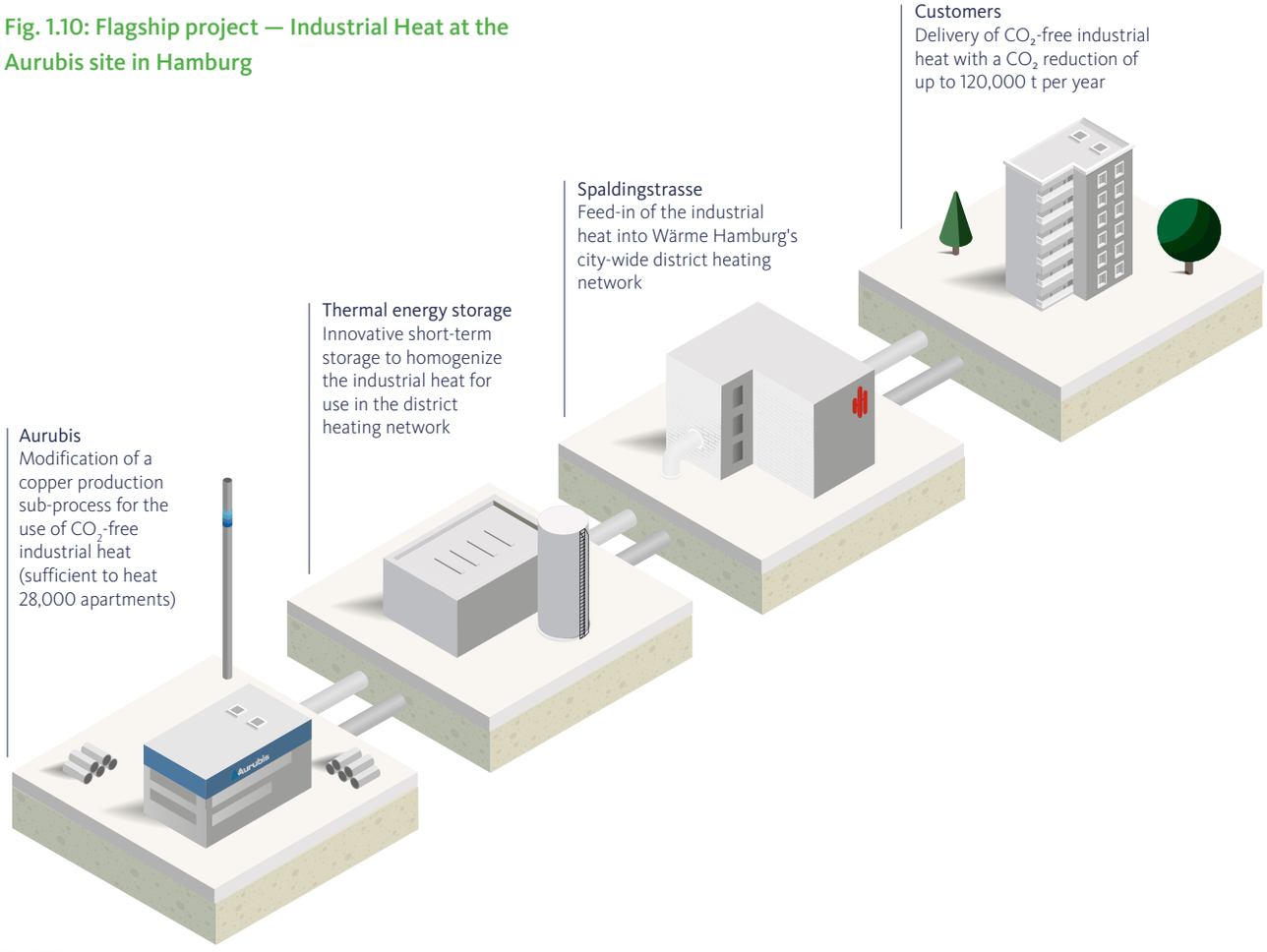

Produced exclusively with renewable energies, so without $CO_2$ emissions.


Responsible Care – ein Beitrag zur Nachhaltigkeitsinitiative Chemie[3]

**Industrial Heat 2.0: Carbon-free heat from Hamburg**

The first phase of the project, which has been supplying carbon-free industrial heat from the Hamburg plant since 2018, facilitates an energy-efficient heat supply for the eastern part of the HafenCity. This reduces annual consumption of cooling water and Elbe River water by 12 million m³, as the industrial heat is now used for heating. However, there was still room for more: We began with the expansion of the Industrial Heat project in Hamburg at the start of 2022. By converting a sub-process in copper production at the Aurubis plant in Hamburg, up to 20,000 additional households will be heated each year in cooperation with Hamburger Energiewerke energy utility starting with the 2024/25 heating period, reducing $CO_2$ emissions in the city by up to 100,000 t. The Industrial Heat flagship project at the Aurubis site in Hamburg has garnered a lot of attention nationally and internationally. The second stage of this highly complex project was implemented in 2024 during the routine, scheduled maintenance shutdown at the Hamburg plant and is the largest project of this kind in Germany. The industrial heat supply was symbolically launched on January 9, 2025.


Fig. 1.10: Flagship project — Industrial Heat at the Aurubis site in Hamburg



## Expanding our pioneering role in recycling

The economy, industry and society are facing enormous challenges. As a leading multimetal company, we are committed to being part of the solution — because a sustainable future is impossible without metals.

In line with our "Metals for Progress: Driving Sustainable Growth" strategy, which was further refined when "Performance 2030 — Forging resilience. Leading in multimetal." was developed in the 2024/25 fiscal year, we continue to focus on growth in recycling and are systematically investing in expanding our capacities. This is how we are making an important contribution to the circular economy in Europe and beyond, while taking another step toward becoming one of the most efficient and sustainable integrated smelter networks in the world.

**Largest multimetal recycling plant in the United States — Aurubis Richmond**

With the start of gradual commissioning of the first US multimetal recycling plant in September 2025, Aurubis kicked off production of strategic metals like copper, nickel, tin and precious metals for American energy infrastructure, data centers, AI applications, and the defense industry. We created more than 240 jobs in Georgia with an investment of approximately €740 million. With the expansion phase, from 2026 onward the site will process up to 180,000 t of complex recycling materials annually — including printed circuit boards, copper cables, and other metal-containing products — and serves as an ideal springboard for further growth in the country, with options for expanding the value chain and establishing additional strategic partnerships. This is how we are scaling our value creation closer to the key raw material and customer flows of the future.


The site at the beginning of December 2024

**Recycling plant for nickel and copper in Belgium**

In December 2024, Aurubis commissioned BOB (Bleed Treatment Olen Beerse), a state-of-the-art and energy-efficient facility for the hydrometallurgical treatment of electrolyte, referred to as bleed, at the site in Olen, Belgium. This hydrometallurgical process recovers valuable metals, such as nickel and copper generated in the refining process at the Aurubis Beerse and Olen sites, in Olen instead of selling the bleed as an intermediate. BOB enables Aurubis to retain even more strategically relevant metals for Europe in the value loop.


The new facility under construction in early November 2024


**Innovative recycling of metals from residues**

We celebrated the opening of the Advanced Sludge Processing by Aurubis (ASPA) facility at our Aurubis Beerse site (Belgium) at the beginning of September 2024. Since then, the hydrometallurgical ASPA facility has processed anode sludge, a valuable intermediate product from electrolytic copper refining produced at the recycling sites in Beerse and Lünen. The new process offers two significant advantages: faster extraction of precious metals and the complete recovery of lead and tin from anode slime. ASPA bolsters recycling activities in the company and generates significant added value for the circular economy. Construction on the new facility began in December 2022. This investment is Aurubis' clear commitment to advancing the Beerse site and underscores our position as one of the most efficient and sustainable integrated smelter networks in the world.

**Taking the circular economy to new heights**

In December 2022, we announced another investment in securing and strengthening Aurubis' core business — Complex Recycling Hamburg (CRH). The project will enable Aurubis to process around 30,000 t of additional recycling materials and internal, complex smelter intermediary products on a larger scale, making a valuable contribution to the circular economy of metals in Europe. The investment in the Hamburg site will keep significantly more added value in the company in the future and generate additional metallurgical capacities. Following first melt in March 2026, the plant is currently in the ramp-up phase.

## 6. Our raw materials — Responsibility in the supply chain

We take responsibility for sustainability standards, and not just in our own production processes and in our own actions, but in our supply chain as well. This is all the more important because we source raw materials from around the world. The extraction of the raw materials we process can have a direct or indirect impact on human rights and ecological aspects. Our suppliers' raw material extraction and production processes can affect biodiversity, the climate, or the conservation of air, water and soil quality, for example. Other environmental aspects such as the handling of mining waste and the use of energy and water are relevant as well. As a result, we systematically analyze the risks of our suppliers and supplier countries.

In addition to copper concentrates, we use copper scrap and various types of organic and inorganic metal-bearing recycling raw materials, industrial residues, and bought-in metallurgical intermediates as feed material. Most of the copper scrap and metal-bearing recycling raw materials for our five secondary smelters in Lünen, Olen, Beerse, Berango and Richmond are sourced on the European and North American markets. Furthermore, we use copper scrap with high copper content to control the processes in both of our primary smelters in Hamburg and Pirdop. Unlike primary raw materials, secondary raw materials are largely purchased on the basis of short-term supply contracts, which is customary for the market.

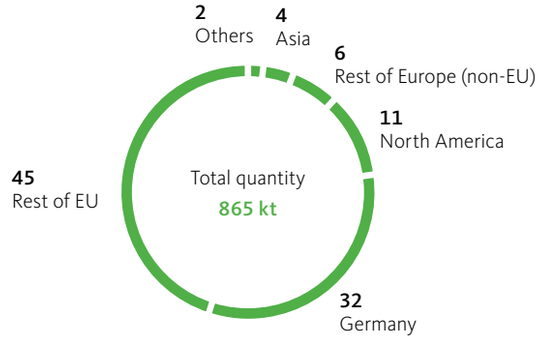
We place a high priority on the closing-the-loop approach to fully integrate the value chain for copper and other metals. This approach focuses on materials such as production waste and residues that accumulate along the copper value chain in production, including at our customers' facilities.

To fulfill our due diligence obligations with regard to all of our material topics in the supply chain area, we implemented the Business Partner Screening system based on the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (OECD DDG), as well as the German Supply Chain Due Diligence Act (LkSG). In our risk analysis, we consider both abstract country and sector risks as well as the concrete risks associated with our business partners' activities, prioritized based on a risk-based approach. The central issues here include anti-corruption, upholding human rights, health and safety, and environmental and climate protection, as well as responsible sourcing strategies. The results of a media search are also included in the screening. In the 2024/25 fiscal year, all procurement processes were revised with a particular focus on supply chain due diligence to drive continuous improvement. The updated Responsible Sourcing Policy entered into force on September 17, 2025.

**Fig. 1.11: Origin of concentrates and throughput**
for the Aurubis Group in 2024/25[1] in %


[1] Percentages have been rounded.
[2] All countries with a less than 3 % share included here.

**Fig. 1.12: Origin of recycling materials and throughput**
for the Aurubis Group in 2024/25[1] in %




[1] Percentages have been rounded.

The Aurubis Business Partner Code of Conduct outlines our environmental, social and governance standards for our business partners. Compliance with these standards is the most important requirement for our successful collaboration with business partners. To obtain contractual reassurance from our suppliers, we have also adopted human rights, environmental and security clauses in 100 % of our long-term primary raw material contracts.

Aurubis' policy statement on compliance with human rights and environmental obligations pursuant to Section 6(2) of the German Supply Chain Act (LkSG) summarizes Aurubis' human rights strategy. It describes Aurubis' processes for adhering to legal requirements, outlining the human rights and environmental risks identified as part of an annual risk analysis, and the resulting expectations for our employees and suppliers.

We expect our business partners to report substantiated suspicions of human rights violations, for example via our Compliance Portal and the whistleblowing system. Complaints about sites that are taking part in the Copper Mark process can also be submitted through the Copper Mark's grievance mechanism.

https://secure.ethicspoint.eu/domain/media/en/gui/107757/index.html

www.aurubis.com/en/responsibility/whistleblower-system

**Regulations and standards for responsible metal production**

When it comes to carrying out human rights and environmental due diligence, Aurubis is subject to the requirements of the German Supply Chain Act (LkSG). Pursuant to the LkSG, Aurubis conducts a systematic risk analysis in the supply chain to identify, prevent and mitigate risks related to the destruction of natural habitats due to environmental pollution, prohibited production, use and/or disposal of mercury (Minamata Convention), prohibited production and/or use of substances within the scope of the Stockholm Convention (POP), and prohibited import/export of hazardous waste under the Basel Convention. Furthermore, to monitor human rights risk management in accordance with the stipulations of the LkSG in fiscal year 2024/25, we established the role of Human Rights Officer in our own business operations and in the supply chain under the Head of Corporate Sustainability.

We have participated in the United Nations Global Compact since 2014 and are committed to working towards implementing its ten principles related to human rights, labor standards, the environment, and anti-corruption. We have pledged to comply with the OECD Due Diligence Guidelines to promote responsible supply chains. As part of the Copper Mark certification process at our sites in Hamburg, Lünen, Stolberg, Olen, Beerse and Pirdop, we underwent audits in accordance with the Copper Mark criteria on human rights and labor and social standards as well as responsible sourcing practices. This audit verified our human rights approach to our business activities and in the supply chain. The plant-specific audits sometimes generate suggestions and plans for improvement that Aurubis AG has taken as inspiration and guidance for increasing performance regarding the 33 Copper Mark sustainability criteria. The Deutsche Giessdraht Emmerich site and Aurubis Italy in Avellino will undergo the Copper Mark certification process in fiscal year 2025/26.

Since 2013, Aurubis' gold production has been annually certified as conflict-free according to the standards of the London Bullion Market Association (LBMA). This certificate verifies that we carry out our due diligence processes in accordance with the OECD standards. This certification option has been available for silver since 2019, and Aurubis' silver production has been certified as conflict-free since then as well. Tin production at our Beerse and Berango sites has been certified as conflict-free in accordance with the Responsible Minerals Assurance Process (RMAP) standard since 2015. This standard is also based on the OECD guidelines for conflict minerals.

## 7. Risks and opportunities

**Risk management in the Aurubis Group (risk management system)**

Our objective in risk management is to manage and monitor the risks associated with our business with the help of a risk management system (RMS) tailored to our activities. Identifying and monitoring risk development early on is of major importance. Furthermore, we strive to limit negative effects on earnings caused by risks by implementing appropriate and economically sound measures.

Risk management is an integral component of the centralized and decentralized planning, management and monitoring processes and covers all of the Aurubis Group's main sites, business sectors, and central functions. The planning and management system, risk reporting, an open communication culture, and risk reviews at the sites create risk awareness and transparency with regard to our risk situation and promote our risk culture.

Risk management officers have been appointed for all sites, business sectors, and central functions, and they form a network within the Group. The Group headquarters manages the network. Group Risk Management has regular discussions with Corporate Environmental Protection, Corporate Sustainability, and Corporate Energy & Climate Affairs, for example to report on new legislative proposals, broadly identify risks related to them, and prepare for early risk management as needed. These discussions also promote the risk culture and risk awareness in the Aurubis Group. Alongside the risk management officers, the Aurubis Group established a Group Risk Management function that reports directly to the Chief Financial Officer. The RMS is documented in a corporate policy.

Standard risk reporting takes place bottom-up each quarter using a uniform, group-wide reporting format. The identified risks and risks that exceed a defined threshold are explained within this format. The likelihood of their occurrence and the extent of the damage they could cause are evaluated, and instruments and measures used to manage them are outlined. The risks reported to the Group headquarters are evaluated by the Internal Control System & Risk Management function, aggregated qualitatively into material risk clusters, and reported to the entire Executive Board. The report also establishes the basis for the report to the Audit Committee as well as external risk reporting.

**Local risk management and opportunities**

Based on the system described above, every site and every centralized function is required to maintain and carry out "local" risk management. For example, the Environmental Protection and Energy & Climate Affairs corporate divisions have codified their own corporate policies that govern the way they handle risks in their specific areas of responsibility — in alignment with the Corporate Risk Management Policy.

Moreover, the environmental risks for all Group sites are regularly analyzed and assessed by external experts. Measures are developed and defined to effectively address possible risks.

Since 2022, risk analysis has also included the areas of biodiversity, water availability, and nature conservation. Opportunities are systematically analyzed as well. In 2025, the environmental risk assessment was updated for all majority-owned production sites in Aurubis' multi-metal production network and was specifically expanded to include the evaluation of environmental-related human rights risks with the company's own operations. Anytime key findings from these analyses exceed the thresholds mentioned above, they are included in the risk reporting that is submitted to Group Risk Management.

One opportunity is the substantial contribution Aurubis is making towards meeting the targets of the European Green Deal. We enable a more efficient use of resources and an increase in recycling in particular. At Aurubis, we produce multiple metals using environmentally compatible methods and play a role in a circular, climate-friendly economy. Aurubis is further enhancing its performance and secondary material processing capacity with the integration of the new Aurubis Richmond plant. Recycling is crucial for a sustainable society.

Aurubis is committed to the target of becoming carbon-neutral before 2050. In late 2019, we joined the UNGC initiative Business Ambition for 1.5 °C, which requires the Group to set science-based emission-reduction targets and thus to contribute to achieving the 1.5 °C target set out in the Paris Climate Agreement. In June 2021, the Science Based Targets initiative (SBTi) validated our $CO_2$-reduction targets and confirmed our contribution. Our metals are a key component of modern environmental technologies, and the energy transition would not be possible without our products. Aurubis is also taking advantage of the opportunity to continue developing best available techniques (BAT). In spring 2021, we were the first company in the copper sector to begin exploring the use of hydrogen in our copper smelter in Hamburg with the aim of engineering new innovative environmental protection techniques and reducing emissions even further.

**Explanation of risks**

The material risks in the "Energy and climate," "Sustainability," and "Environmental protection" risk clusters, including the specific measures to control the risks, are explained in the Risk and Opportunity Report in the Annual Report Annual Report 2024/25. In addition, the (Group) Sustainability Statement contains further details — particularly in Section E1 – Climate Change (p. 128) — on risks arising from climate change and their long-term significance for Aurubis' business.

## 8. Iron silicate: A versatile and sustainable substitute for primary raw materials

For us, practical resource conservation includes using our raw materials as completely as possible and reintegrating them into the value chain. One example is our synthetic iron silicate minerals, which are produced during our metal refining and recycling processes. We specifically adjust and monitor their properties for applications in the construction sector in particular.

### What is iron silicate?

Iron silicate is an industrially produced mineral comparable to natural stone from quarries with the advantage of a significantly lower impact on ecosystems. Aurubis is a leading global provider of non-ferrous metals and one of the largest copper recyclers worldwide. Iron silicate has a variety of applications, especially in construction as a replacement for primary building materials.

### What is iron silicate made of?

As the name indicates, it primarily consists of the mineral iron silicate, along with aluminum and calcium silicates. It may also contain traces of non-ferrous metals, which are mainly bound in the silicate phases and are characterized by high binding stability and low leachability.

**There are three basic products, depending on the process:**

Iron silicate stone, with edges up to 450 mm in length, comparable to igneous rock

Iron silicate granulate, similar to natural volcanic glass, e.g., obsidian

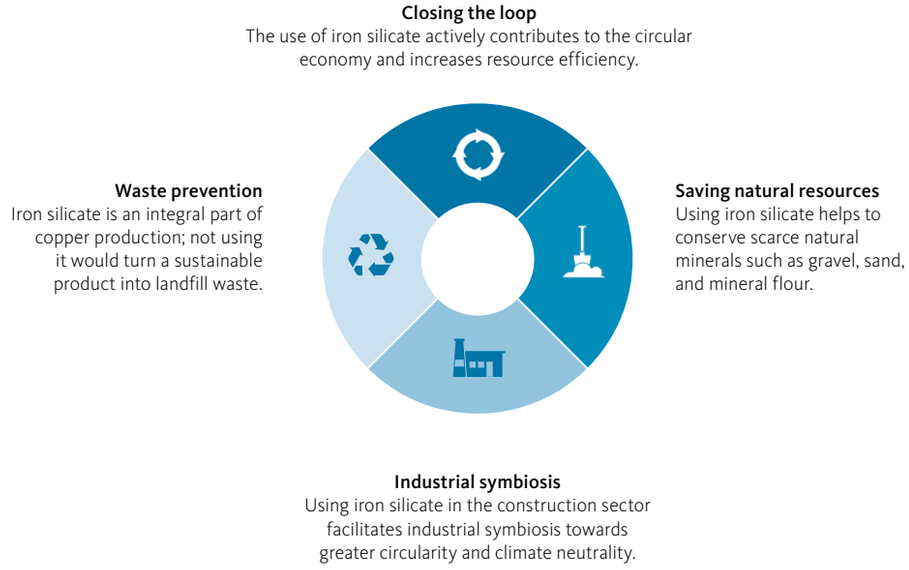
Iron silicate fines, similar to mineral flour

**Advantages of iron silicate**

- High dry bulk and specific density
- Ideal volume stability
- Optimal surface coarseness
- Very durable
- Very low water absorption
- High hardness
- Dense pore structure
- Very good frost resistance
- Cubic grain shape
- High weather resistance
- No linear deformations

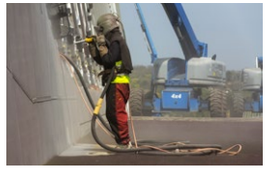
**A long-lasting, sustainable replacement for natural building materials**

Fig. 1.13: Considerable potential for the circular economy and climate protection



**What is iron silicate used for?**

Its technical properties enable iron silicate to be deployed in a wide range of applications. Fifty years of practical experience and substantial testing demonstrate that it is safe to use throughout its entire life cycle. Iron silicate is registered in compliance with the EU's REACH regulation and is available at a consistent quality throughout the year.

| Area | | Purpose | Special advantages |
|---|---|---|---|
| **Hydraulic engineering** |  | Protecting embankments and riverbeds, canals and harbor basins against tidal and wave erosion | » Thinner stone layers and less excavation work<br>» Stability through high dry bulk density, cubic particle shape, and optimal surface texture |
| **Road construction** |  | Anti-frost and gravel-bearing layer | » Very good load-bearing capacity<br>» Frost resistance<br>» Water permeability |
| **Cement** |  | Iron additive in clinker production | » Ready-to-use iron source<br>» Decreases burning temperature and therefore fuel consumption |
| **Concrete production** |  | Versatile use as a substitute for natural aggregates | » Enhances workability in its fresh state, improves mechanical properties, improves durability<br>» Enables special types of concrete, e.g., radiation shielding concrete, heavyweight concrete |
| **Abrasives** |  | Granulate used in blast cleaning | » Provides a perfect grit for blasting steel, stone and concrete |

In addition to these application, iron silicate can also be used in asphalt, ceramics, dry mixtures, coal flotation, soil stabilization, and many other applications.

**Powerful environmental performance with clear benefits for climate and resource efficiency**

Iron silicate is registered in the EU REACH Regulation as "iron silicate, copper smelting and refining" (EC No. 701-480-0). Extensive studies confirm that iron silicate is not classified as hazardous and that its specific applications pose no risks to human health or the environment.

Life cycle assessments of the environmental footprint of construction materials show that using iron silicate instead of natural mineral materials significantly reduces $CO_2$ emissions. This is particularly true for concrete and cement applications.

Replacing crushed natural rock aggregates with iron silicate can reduce $CO_2$ emissions by up to 10 %, particularly where it can be regionally sourced. When used as supplementary cementitious materials in cement mixtures, partial Portland cement replacement (20 %) cuts greenhouse gas emissions by around 19 %. Replacing both cement and aggregate in concrete (20 % each or proportionate) enables $CO_2$ savings of up to 25 %. This corresponds to approximately 42 kg $CO_2$ equivalent per ton of concrete.

Furthermore, using iron silicate helps conserve natural resources by reducing the demand for primary mineral raw materials. And lowering virgin material extraction activities minimizes impacts on landscapes and ecosystems. Using regionally available materials also strengthens existing supply chains in the construction materials sector.

https://www.aurubis.com/en/responsibility/environment-energy-and-climate/footprint-of-our-products/life-cycle-assessment-iron-silicate

Environmental product declarations (EPDs) were drafted for iron silicate in 2025 to transparently document its environmental performance. These have been independently verified and comply with EN 15804, the leading European standard for environmental declarations of construction products.

The EPDs are published via the Institut Bauen und Umwelt e. V. (IBU), one of the leading program operators in the European EPD system. EPDs provide verified data on environmental impacts across the entire life cycle and support users in integrating iron silicate into building assessment frameworks, sustainable procurement processes, and certification systems.

## 9. A comparison — Life cycle assessments for our metal products

**Growing importance of life cycle assessments**

Life cycle assessments (LCAs) have become a key tool for evaluating and managing the environmental impacts of products in increasingly complex and globalized value chains. Unlike single-indicator approaches, LCAs enable a holistic assessment of environmental performance across the entire life cycle of a product — from raw material extraction through to production at the factory gate (cradle to gate). LCAs' multidimensional approach makes it possible to identify material environmental impacts while avoiding the transfer of these impacts from one life cycle stage or impact category to another.

The importance of life cycle assessments is increasing significantly, especially in light of the European Green Deal, the Clean Industrial Deal, and other initiatives aimed at establishing lead markets for low-carbon and sustainable products. These initiatives require robust, life cycle-based evidence to support climate neutrality, the circular economy, and resource efficiency.

Metals such as copper, tin, silver and gold play a crucial role in the energy transition and digitalization. They are essential for renewable energy, electrification, grid expansion, and e-mobility. As demand for these materials continues to grow, so does the importance of transparent and scientifically sound information on their environmental performance for customers, policymakers, and society.

Life cycle assessment has evolved from a voluntary analytical tool into a key cornerstone of environmental reporting and regulatory frameworks. New and pending EU regulations — including the Ecodesign for Sustainable Products Regulation, the Critical Raw Materials Act, and the Batteries Regulation — increasingly rely on life cycle-based environmental KPIs. Life cycle assessment therefore not only supports well-informed internal decision-making; it also serves as an important interface between environmental management systems such as EMAS and requirements along the value chain.

**Aurubis' pioneering role in life cycle-based environmental assessment**

Aurubis has conducted life cycle assessments of its products for many years and is among the first companies in the metals industry to regularly publish verified environmental profiles. This long-standing commitment underscores our strong sense of responsibility for climate protection, environmental performance, and resource conservation along the entire value chain.

Aurubis life cycle assessments are conducted in accordance with the internationally recognized ISO 14040 and ISO 14044 standards. Since 2023, LCAs have been carried out in line with the European Commission's Environmental Footprint method (EF 3.1), which covers a total of 16 environmental impact categories. This methodology is currently regarded as the most advanced and harmonized scientific approach at the European level and ensures alignment with future regulatory requirements.

All analyses are based on detailed, site-specific primary data collected annually from Aurubis' production sites. The published average values represent the integrated production network. Independent verification by TÜV NORD in accordance with ISO specifications ensures methodological robustness, data quality, and transparency.

A key feature of Aurubis' life cycle assessments is the consistent inclusion of multimetal production. The recovery of numerous valuable by-products is represented using allocation approaches based on ISO standards, the Environmental Footprint method, and International Copper Association guidelines. This enables a fair and robust reflection of the environmental impacts and benefits of individual products.

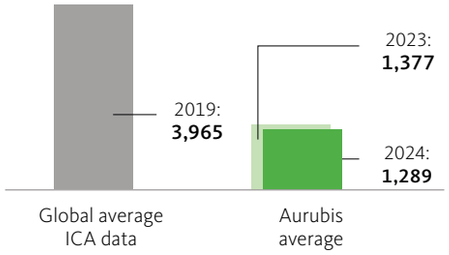
**The most important life cycle assessment impact categories:**

| Impact category | Description |
|---|---|
| **Climate change potential** | A measure of greenhouse gas emissions, such as $CO_2$ and methane. These emissions are causing an increase in the Earth's absorption of radiation emitted by the sun, increasing the greenhouse effect. This can in turn have adverse impacts on the health of ecosystems, human health, and material welfare. |
| **Eutrophication potential** | Eutrophication covers all potential impacts of excessively high levels of macronutrients, the most important being nitrogen (N) and phosphorus (P). Nutrient enrichment can cause an undesirable shift in species composition and elevated biomass production in both aquatic and terrestrial ecosystems. In aquatic ecosystems, increased biomass production may lead to depressed oxygen levels because of the additional oxygen consumed in biomass decomposition. |
| **Acidification potential** | A measure of emissions that cause acidifying effects to the environment. The acidification potential is a measure of a molecule's capacity to increase hydrogen ion (H+) concentration in the presence of water, thus decreasing the pH value. Potential effects include fish mortality, forest decline, and the deterioration of building materials. |
| **Photochemical ozone formation** | A measure of emissions of precursors that contribute to ground level smog formation (mainly ozone), produced by the reaction of volatile organic compounds and carbon monoxide in the presence of nitrogen oxides under the influence of UV light. Ground level ozone can be detrimental to human health and ecosystems and may also damage crops. |
| **Resource use, fossil** | A measure of the entire quantity of the non-renewable fossil resources (crude oil, natural gas, etc.) extracted from the Earth and used for primary energy production. |
| **Water use** | Water deprivation potential (available water remaining method). Based on the inverse of the difference between water availability per unit area and water demand per unit area. |

## Global average ICA data, Aurubis average[1]

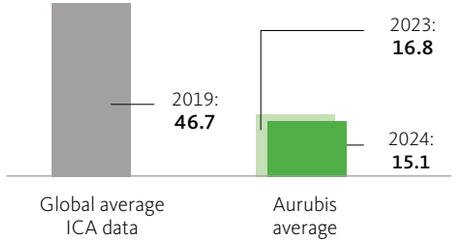
### $CO_2$ (climate change potential) EF 3.0

in kg $CO_2$ eq./t Cu



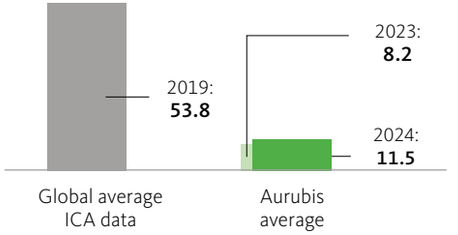

### Resource use, fossil EF 3.0

in GJ/t Cu



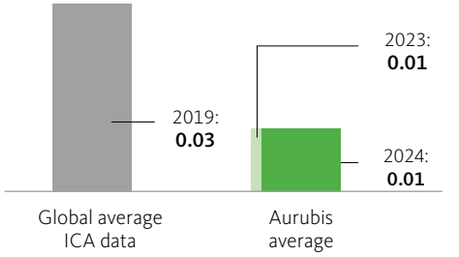

### Acidification potential EF 3.0

in Mol $H^+$ eq./t Cu



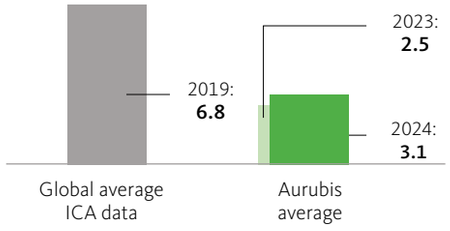

### Eutrophication potential, freshwater, EF 3.0

in kg phosphate eq./t Cu



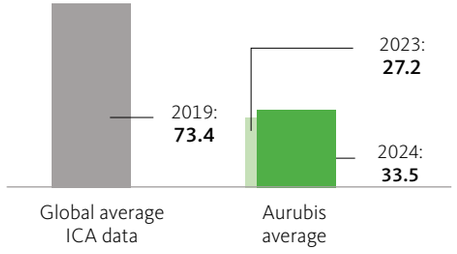

### Eutrophication potential, marine, EF 3.0

in kg nitrogen eq./t Cu



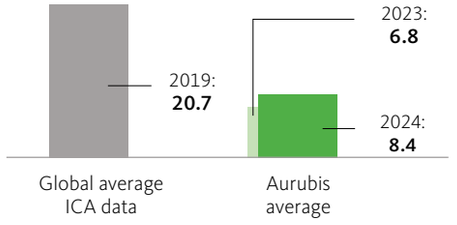

### Eutrophication potential, terrestrial, EF 3.0

in Mol nitrogen eq./t Cu



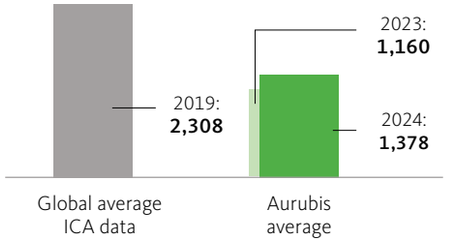

### Photochemical ozone formation EF 3.0

in kg NMVOC eq./t Cu




### Water use EF 3.0

in m³ global eq./t Cu




[1] The diagrams show the industry's global average results for reference year 2019 (left bar) and the Aurubis average results for copper cathodes in 2023 and 2024 (right bar).

**Regular publication of environmental profiles and footprint declarations**

Aurubis regularly publishes annually updated environmental profiles for its products. They reflect environmental performance improvements and changes in input materials, energy sources, and production conditions. Here the company goes well beyond statutory minimum requirements, highlighting its commitment to transparency and continuous improvement.

To address growing demand from customers and stakeholders for concise and comparable environmental information, Aurubis has introduced environmental footprint declarations (EFDs) for its key products. These are based on the principles of ISO 14025 and present the key results of life cycle assessments in a structured and accessible format. Although no specific Product Category Rules currently exist for intermediate metal products, the EFDs provide equivalent, third-party verified information based on comprehensive LCAs.

The environmental footprint declarations published in 2025 are based on a cradle-to-gate approach and reference the 2024 reporting year. They cover all relevant environmental impact categories and include comparisons with global industry averages.

**Verified environmental performance and continuous improvement**

Aurubis' life cycle assessments clearly show how long-term investments in environmental protection, energy efficiency, and recycling deliver tangible benefits. Greenhouse gas emissions for copper cathodes were reduced to 1,289 kg of $CO_2$ equivalent per ton in the 2024 reporting year. This represents a significant improvement compared both to the global industry average and to the company's 2019 baseline.

The Aurubis copper cathode's environmental footprint falls significantly below the global average for all relevant impact categories — including climate change, acidification, eutrophication, photochemical ozone formation, fossil resource use, and water use.

Our other products, like wire rod, precious metals, tin and nickel sulfate, also show similar advantages over industry benchmarks, where comparable data is available.

These improvements are primarily attributable to:

- the increased use of secondary raw materials and high recycling efficiency across the Aurubis network,
- the ongoing optimization of production processes and emission reduction technologies,
- advances in energy efficiency and a rising share of renewable energy, and
- investments in innovative technologies, such as off-gas treatment and heat recovery.

In addition, updating life cycle assessments annually enables continuous monitoring of developments, the identification of material environmental impacts, and the targeted prioritization of further improvement measures.

**To access all Aurubis product environmental footprint declarations, please visit:**
https://www.aurubis.com/en/responsibility/environment-energy-and-climate/footprint-of-our-products/environmental-profiles-of-our-products

## $CO_2$ footprint of Aurubis products in 2024 compared to global averages

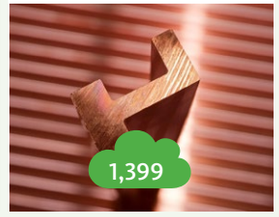
**Aurubis copper cathode**
in kg $CO_2$ equivalent per t copper cathode


**Aurubis SHAPES**
in kg $CO_2$ equivalent per t shapes

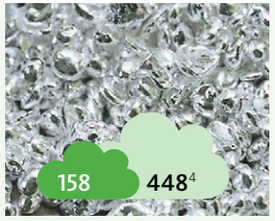

**Aurubis ROD I RheinROD**
in kg $CO_2$ equivalent per t wire rod


**Aurubis FOXROD**
in kg $CO_2$ equivalent per t oxygen-free rod


**Aurubis BARS + PROFILES**
in kg $CO_2$ equivalent per t product

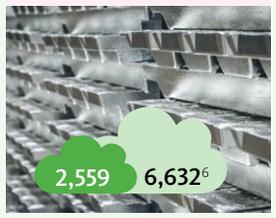



**Aurubis Silver**
in kg $CO_2$ equivalent per kg silver

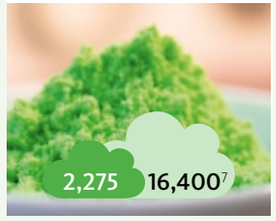



**Aurubis Gold**
in kg $CO_2$ equivalent per kg gold


**Aurubis Tin**
in kg $CO_2$ equivalent per t tin




**Aurubis nickel sulfate**
in kg $CO_2$ equivalent per t Ni content




**Aurubis Selenium**
in kg $CO_2$ equivalent per kg Se in selenium products


[1] International Copper Association, Copper Environmental Profile, Global, 2023.
[2] No comparable industry average available.
[3] International Copper Association, Copper and Copper Alloy Semi-Fabricated Products LCA Life Cycle Assessment of Wire Rod Global, March 2023.
[4] Ecoinvent, 2021 database.
[5] World Gold Council, Gold and climate change: Current and future impacts. Oct. 2019.
[6] International Tin Association, Life cycle assessment of average tin production. Please note that the ITA data is provided pursuant to the CML method, which is only comparable to a limited extent.
[7] Nickel Institute, Nickel Sulphate life cycle data, 2024.

**Contribution to environmental management systems and outlook**

Within the EMAS framework, life cycle assessment serves as a key tool for linking operational environmental performance and product responsibility across the value chain. It supports informed management decisions, enhances transparency for stakeholders, and reinforces the credibility of the Environmental Statement.

Aurubis will continue to advance its life cycle assessments in line with scientific progress, methodological advancements, and regulatory requirements. The company actively supports harmonized European environmental assessment approaches and is committed to providing reliable, verified and comparable environmental information.

By continuously improving its environmental performance and transparent reporting based on life cycle assessments and environmental footprint declarations, Aurubis underscores its leading position as one of the most efficient and sustainable integrated smelter networks worldwide.

## 10. Tomorrow Metals
## Shaping Tomorrow. Together. Today

Over
**€1.1 billion**
INVESTED IN ENVIRONMENTAL PROTECTION SINCE 2000

Approx.
**50 %**
LOWER CARBON FOOTPRINT THAN THE GLOBAL AVERAGE: OUR PRODUCT PORTFOLIO

More than
**150**
CLOSING-THE-LOOP PARTNERSHIPS ESTABLISHED

**7**
AURUBIS SITES ALREADY CERTIFIED BY THE COPPER MARK

We are guided by passion and the highest quality standards in everything we do. This also extends to the one of the central challenges of our time: sustainable economic activity. As an energy- and resource-intensive company, we recognized the need to act very early on and have made significant progress in making our products and processes more sustainable. We number among the best in the industry. We make this commitment tangible by summing it up in our sustainability promise: **Tomorrow Metals**.

We stand by our pledge to customers and all stakeholders that our entire product range is produced and delivered in line with the highest ecological and social standards — both today and in the future. This is especially true of our responsibility in the supply chain. Using comparable figures, our life cycle assessments also show that we perform considerably better than the industry average A comparison — Life cycle assessments for our metal products. Tomorrow Metals serves as the responsible and resilient foundation for the major societal transformations of our time — transformations that depend on our metals. They pave the way for renewable energy generation, digitalization, sustainable mobility, and much more.

**Tomorrow Metals stands for our commitment to deliver more value with a lower footprint, in all sustainability areas: environment, people and economy.**

Tomorrow Metals — The Aurubis Sustainability Promise

**Environmental impact:** We consistently strive to create more value with a lower environmental footprint. So we reduce emissions, promote the circular economy, and invest in global standards to future-proof our processes. We are not only shaping the metals industry of tomorrow; we are actively contributing to protecting our planet today.

**Decarbonization:** By decarbonizing our production, we are actively contributing to the 1.5°C target of the Paris Climate Agreement. Our carbon footprint is already less that half the global average for many metals — and we are steadily working to cut our emissions by up to 50 %.

**Circularity:** We continue to expand our multimetal recycling to strengthen the circular economy and conserve natural resources. With an annual capacity of over 1 million t and 45 % recycled content in our copper cathodes, we are setting global standards — and aiming to increase this share to 50 % by 2030. Over 150 partnerships and new facilities, like our flagship recycling plant in the US, are driving this progress forward.

**Responsibility:** Everything we do is centered on maintaining a balance among the economy, people and the environment. We instill sustainability and transparency into every stage of the value chain, guarantee accountability in all business relationships, and foster strong partnerships. This is how we build trust, strengthen supply chains, and deliver metals that meet the needs of today — and anticipate those of tomorrow.

## 11. Environmental protection — Facts and figures

As in previous years, this year's Environmental Statement is based on internationally recognized guidelines and reporting standards, in particular the guidelines of the Global Reporting Initiative (GRI) and EMAS.[1]

As described in the Environmental Statement 2023, our specific reduction targets and the associated reporting of specific emissions have been solely based on our multimetal indicator — the copper equivalent — for two years Targets and successes in environmental protection.

Reporting on additional environmental KPIs will remain based on copper production to represent medium- and long-term trends.

The European Union's new Corporate Sustainability Reporting Directive (CSRD) applied to Aurubis for the first time in 2024. The corresponding CSRD report for fiscal year 2024/25 has since been completed and published Annual Report 2024/25. It fulfills the applicable regulatory requirements and is aligned with the Aurubis AG fiscal year.

In the environmental protection field, environmental data is generally collected and reported on a calendar-year basis in accordance with statutory and regulatory requirements. Accordingly, the calendar-year data reported in the environmental report serves as the authoritative basis for assessing environmental performance.

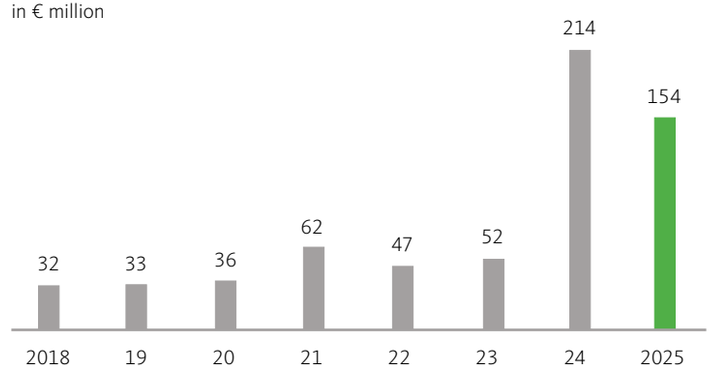
We have invested more than €1.1 billion since 2000 and about €800 million since 2012 in measures to improve environmental protection throughout the Group Fig. 1.13.

Investments were high during the past fiscal year as well. They included the expansion of a project to reduce diffuse emissions (RDE) as well as environmental measures as part of a project to boost processing capacity for recycling materials and internal complex smelter intermediates (CRH) at the Hamburg site. The modernization of a wastewater treatment plant at the Pirdop site and environmental protection systems at the new Aurubis Richmond site were among the additional focal points.

The dust emissions arising during copper production can contain metals and metal compounds. The consistent use of the best available plant techniques has led to a 97 % decline in dust emissions in copper production per ton of copper since 2000.

**Fig. 1.13: Capital expenditure for environmental protection in the Aurubis Group[2]**

in € million




[1] This report may include slight deviations in the totals due to rounding. Some of the data is preliminary since it had not been validated externally as of the editorial deadline.
[2] Environmental investments of all production sites that are majority-owned by Aurubis (>50 %). The Aurubis sites in Beerse and Berango have been included since 2020. The data relates to environmental investments per fiscal year. Single years are provided for readability, for example 2025 for fiscal year 2024/25.

Compared to reference year 2012, dust emissions per ton of copper have fallen by 39 %. Using the copper equivalent, this translates to a 29 % drop since 2018 Fig. 1.14.

One of the main focuses in the 1990s was the use of state-of-the-art filter technologies for all directed emission sources, such as chimneys. Today, projects to reduce fugitive emissions are a top priority. Diffuse emissions can arise around hall openings — such as gates, doors or ridge turrets — and during material storage and handling. We have already leveraged technical measures to very successfully reduce directed dust emissions and have nearly exhausted the technical options. Ongoing developments concerning non-directed emissions pose additional challenges for the future that will require innovative technologies and the exploration of new technical solutions.

Apart from copper, sulfur is one of the main components of the copper concentrates in use. The gaseous sulfur dioxide produced when concentrates are smelted is converted into sulfuric acid in the sulfuric acid plant using the modern double catalysis process. When compared internationally, Aurubis is a forerunner in reducing sulfur dioxide emissions: Emissions per ton of copper output have been curtailed by 89 % since 2000 Fig 1.15.

**Fig. 1.14: Successful reduction of dust emissions in Aurubis Group copper/multimetal production[1]**

Dust emissions in g/t of copper output and in g/t of copper equivalent

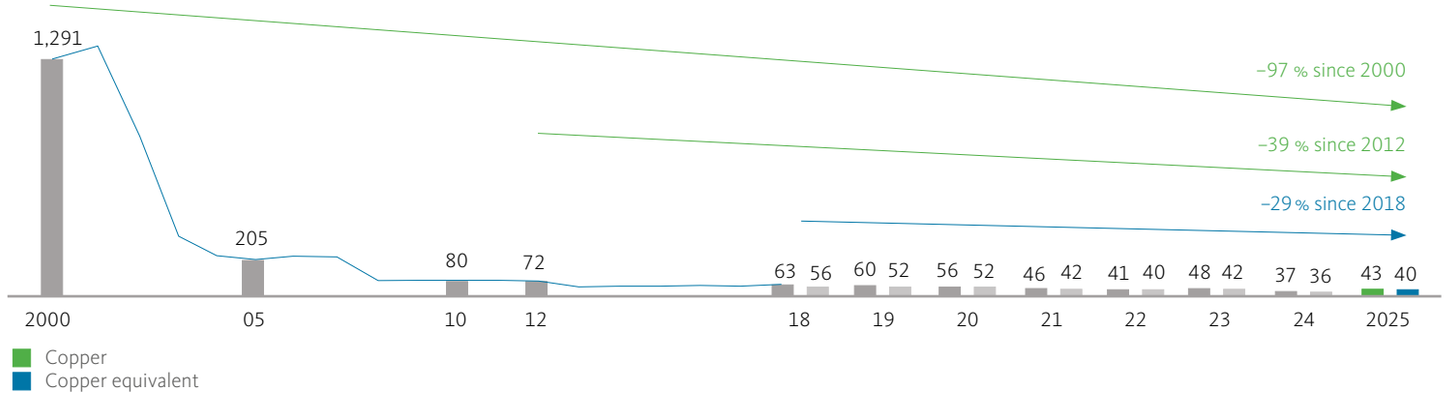
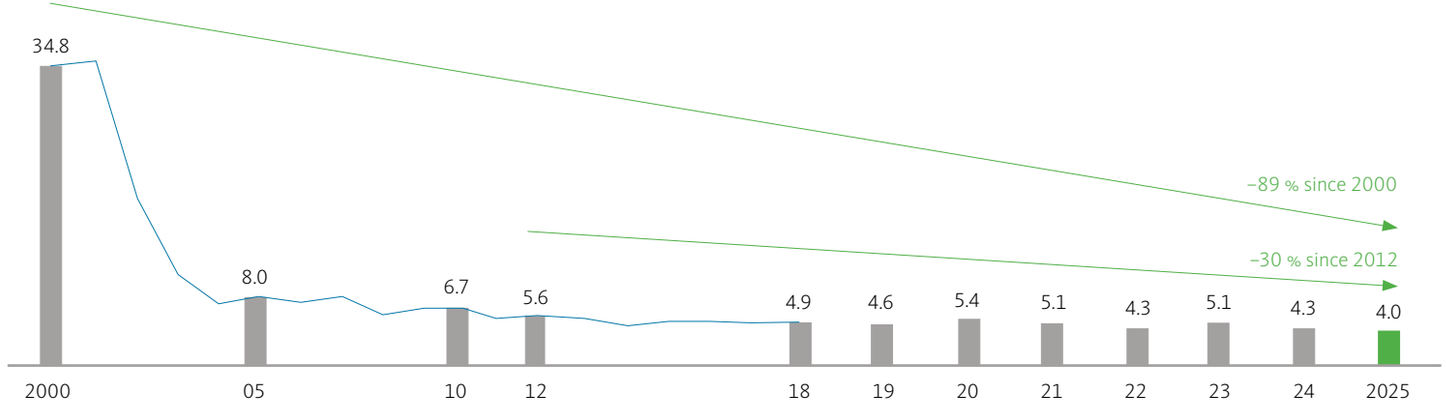



**Fig. 1.15: Sulfur dioxide emissions in Aurubis Group primary copper production**

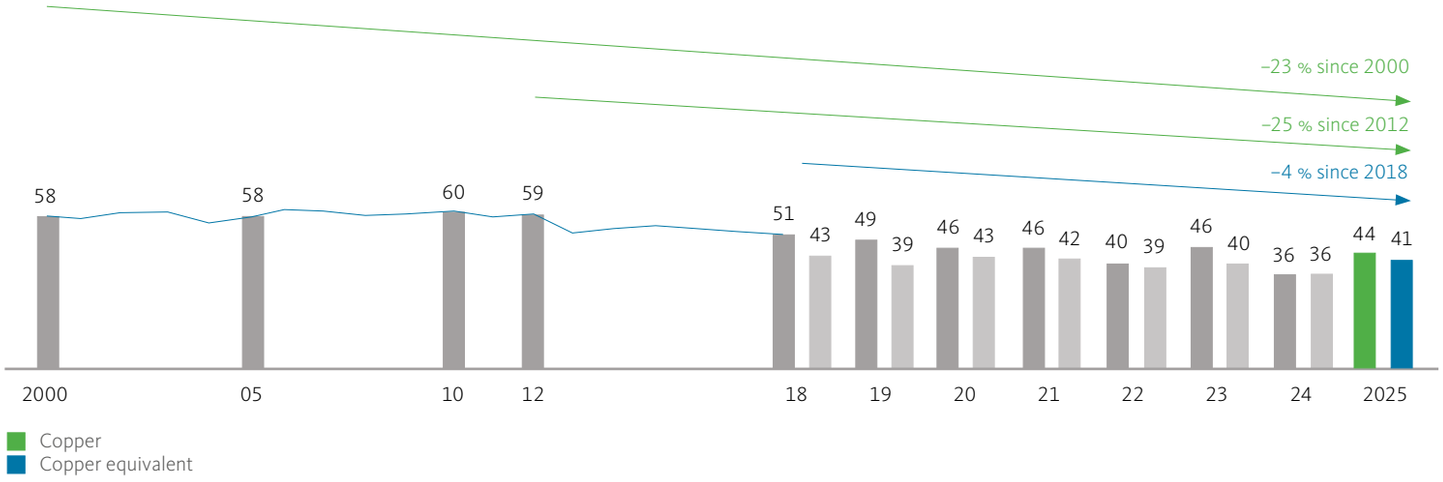
$SO_2$ emissions in kg/t of copper output




[1] The Aurubis sites in Beerse and Berango have been included in the assessment of specific emissions based on copper production since their acquisition in 2020. With the changeover to and target-setting based on the copper equivalent, the Aurubis sites in Beerse and Berango have been included in reporting since 2018.

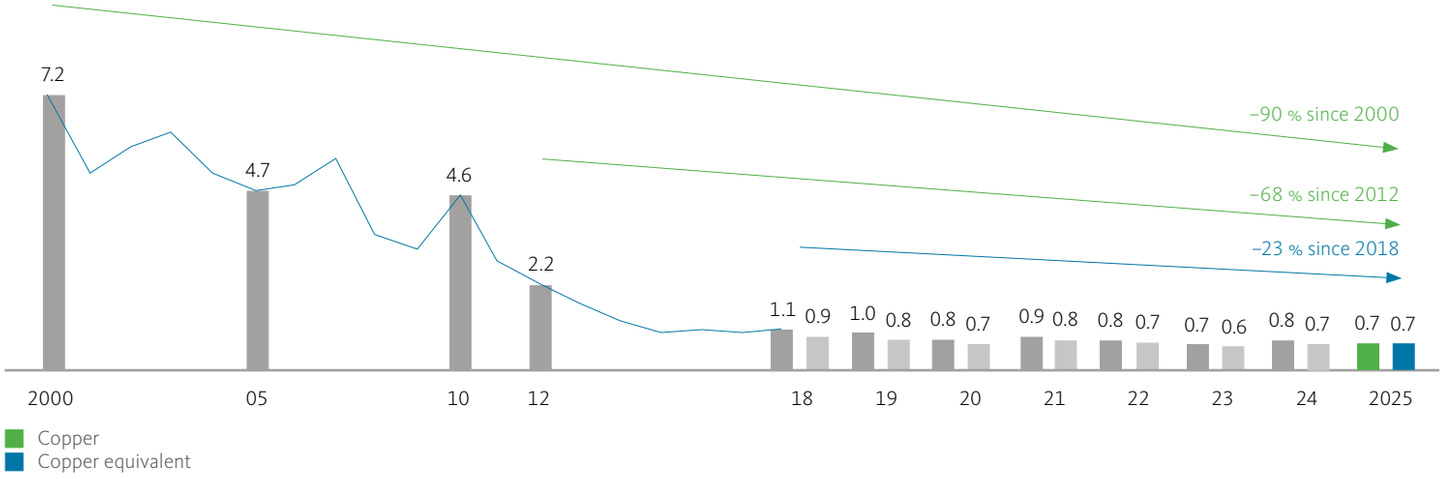
### Fig. 1.16: Water withdrawal in Aurubis Group copper production[1]

Water withdrawal in m³/t of copper output and in g/t of copper equivalent




### Fig. 1.17: Metal emissions[2] to water in Aurubis Group copper/multimetal production[3]

Metal emissions to water in g/t of copper output and in g/t of copper equivalent




Apart from conserving water, treating wastewater and thus avoiding environmental pollution is one of our fundamental responsibilities in industrial environmental protection since water may contain metals after use. We have reduced metal emissions to water in copper production processes from 7.2 to 0.7 g per ton of copper output since 2000. This is a 90 % decrease.

Compared to reference year 2012, metal emissions to water per ton of copper were reduced by 68 %. Using the copper equivalent, this translates to a 23 % drop since 2018 Fig. 1.17.

[1] The Aurubis sites in Beerse and Berango have been included since 2020.
[2] KPI includes the following metals: Cu, As, Cd, Hg, Pb, Ni, Zn.
[3] The Aurubis sites in Beerse and Berango have been included in the assessment of specific emissions based on copper production since their acquisition in 2020. With the changeover to and target-setting based on the copper equivalent, the Aurubis sites in Beerse and Berango have been included in reporting since 2018.

## 12. At a glance — Environmental KPIs for the Aurubis Group[1]

| | Unit | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|
| **Emissions to air** | | | | | | |
| Dust | t | 86 | 77 | 81 | 61 | 67 |
| $NO_x$ | t | 820 | 877 | 805 | 939 | 988 |
| $SO_2$ | t | 5,212 | 4,789 | 4,799 | 4,472 | 4,145 |
| **Emissions to water** | | | | | | |
| Metal emissions to water[2] | t | 1.78 | 1.55 | 1.44 | 1.62 | 1.82 |
| **Water use** | | | | | | |
| **Total water withdrawal** | **million m³** | **77.9** | **70.7** | **73.2** | **63.0** | **71.6** |
| **Water withdrawal by source** | | | | | | |
| Surface water | million m³ | 74.2 | 67.4 | 69.8 | 60.1 | 68.9 |
| Rainwater | million m³ | 0.6 | 0.6 | 0.9 | 0.8 | 0.5 |
| Groundwater | million m³ | 0.7 | 0.4 | 0.4 | 0.4 | 0.4 |
| Municipal water | million m³ | 2.1 | 2.0 | 1.8 | 1.2 | 1.3 |
| Other | million m³ | 0.4 | 0.3 | 0.4 | 0.6 | 0.4 |
| **Total water discharge** | **million m³** | **70.3** | **66.4** | **67.5** | **57.9** | **64.4** |
| **Water discharge by destination** | | | | | | |
| Surface water | million m³ | 69.1 | 65.3 | 66.5 | 57.7 | 64.2 |
| Municipal wastewater system | million m³ | 1.2 | 1.1 | 1.0 | 0.3 | 0.2 |
| Wastewater to third parties | million m³ | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |

[1] These KPIs include all production sites that are majority-owned by Aurubis (>50 %).
[2] KPI includes the following metals: Cu, As, Cd, Hg, Pb, Ni, Zn.
Some of the data is preliminary since it had not been validated externally as of the editorial deadline. The table may include slight deviations in the totals due to rounding.

| | Unit | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|
| **Waste** | | | | | | |
| **Hazardous waste** | **t** | **50,543** | **47,361** | **44,392** | **52,828** | **48,040** |
| Landfilling | t | 36,653 | 36,333 | 31,976 | 40,455 | 35,645 |
| Disposal (thermal) | t | 1,254 | 159 | 79 | 128 | 50 |
| Thermal utilization | t | 445 | 659 | 721 | 535 | 512 |
| Recycling | t | 10,338 | 8,035 | 10,117 | 10,516 | 10,220 |
| Internal utilization/recycling | t | 436 | 1,919 | 253 | 1,194 | 1,612 |
| **Non-hazardous waste** | **t** | **41,984** | **38,740** | **38,496** | **27,972** | **40,379** |
| Landfilling | t | 4,439 | 2,731 | 2,032 | 379 | 495 |
| Disposal (thermal) | t | 583 | 643 | 628 | 733 | 792 |
| Thermal utilization | t | 950 | 802 | 939 | 1,510 | 1,068 |
| Recycling | t | 34,970 | 33,828 | 33,722 | 22,687 | 36,798 |
| Internal utilization/recycling | t | 832 | 664 | 885 | 2,663 | 1,226 |
| **Construction waste** | **t** | **28,554** | **126,730** | **94,359** | **131,019** | **71,272** |
| **Energy and $CO_2$** | | | | | | |
| **Total energy consumption** | **million MWh** | **3.79** | **3.62** | **3.35** | **3.33** | **3.22** |
| Primary energy consumption[1] | million MWh | 1.85 | 1.76 | 1.73 | 1.72 | 1.61 |
| Secondary energy consumption[2] | million MWh | 1.94 | 1.85 | 1.62 | 1.61 | 1.61 |
| Direct $CO_2$ emissions[3] | kt $CO_2$ | 559 | 555 | 564 | 496[4] | 500 |

[1] Including energy consumption for on-site vehicle traffic.
[2] Including electricity for oxygen generation.
[3] According to the emissions trading system excluding road transport $CO_2$ emissions.
[4] The KPI has been revised.
Some of the data is preliminary since it had not been validated externally as of the editorial deadline. The table may include slight deviations in the totals due to rounding.

# Hamburg Site



# 1. Site profile

### The Hamburg plant

The largest Aurubis AG production site and the Group headquarters is located on the Elbe island Peute, only about four kilometers, as the crow flies, from Hamburg's city hall. At the Hamburg plant, Aurubis AG operates facilities for producing copper and other non-ferrous metals as well as for processing copper.

The plant was constructed in 1908 on an area of about 870,000 m² in Peute, an industrial inland harbor area in the Veddel district. Following reconstruction after World War II, the production facilities were continuously expanded and steadily modernized. Today, Aurubis AG's Hamburg site is one of the world's most state-of-the-art primary and secondary copper smelters and has an authorized production capacity of 450,000 t of copper cathodes each year. A total of about 2,500 people are employed at the Hamburg site, including about 200 apprentices.

The individual production sectors at Aurubis AG in Hamburg are divided into three plant areas Fig. 2.1. Plant North is mainly comprised of the administrative buildings, the workshops, sampling, the secondary copper smelter, and precious metal production. Plant South includes the sludge decomposition plant, the cracking acid cleaning facility, the wastewater treatment facility, the concentrate delivery area, the chemical plants, workshops and the casting line in particular. Plant East includes the main primary copper production facilities: the primary smelter (RWO), the contact acid plant (KAWO), and the tankhouse. This section also houses the rod plant.

Fig. 2.1: The Aurubis plant in Hamburg — a downtown copper smelter


1 Continuous casting plant 2 Secondary smelter/precious metals 3 Rod plant 4 Tankhouse 5 Primary smelter (RWO) 6 Administrative building

### Our processes

Copper production is based on the use of primary raw materials (copper concentrates) and secondary raw materials (recycled materials, including electrical and electronic scrap).

In the primary copper smelter, copper anodes (with a copper content of about 99.5 %) are produced from the primary raw material, copper concentrates, in multi-step pyrometallurgical processes. The metals in recycling materials can be drawn out in each step of the existing processes. The sulfur in the primary and secondary raw materials is oxidized into sulfur dioxide and converted in the downstream double absorption contact acid plant into sulfuric acid and oleum, two marketable products. These products are primarily used in the fertilizer and chemical industries.

Copper cathodes with a copper content of over 99.99 % are produced from the copper anodes in the copper tankhouse using electrochemical methods. The cathodes are used to manufacture copper intermediates (continuous cast rod, copper shapes) Fig. 2.2. The cathodes are traded on the global metal exchanges.

Intermediates primarily produced in copper refining, such as flue dusts and slimes, are further treated in an electrothermal process in the secondary copper smelter's electric furnace.

Minor metals such as zinc, nickel, antimony, selenium and tellurium are collected and enriched in a targeted way in the matrix metals copper and lead. In the subsequent pyro- and hydrometallurgical processes of multimetal recovery, these elements are brought out in metallic form or as metal compounds.

Internal intermediates and purchased recycling materials rich in precious metals are processed to extract these metals. In the process, primarily internal and external anode slimes from the copper tankhouse, as well as skimmings rich in precious metals and bullion containing sulfur, are used as input in the top-blown rotary converter.

In the precious metal smelter, precious metals (silver, gold, platinum group metals) are separated using hydrometallurgical procedures and then extracted as commercial products.

## 2. Environmental protection organization and management systems

### Environmental management organization

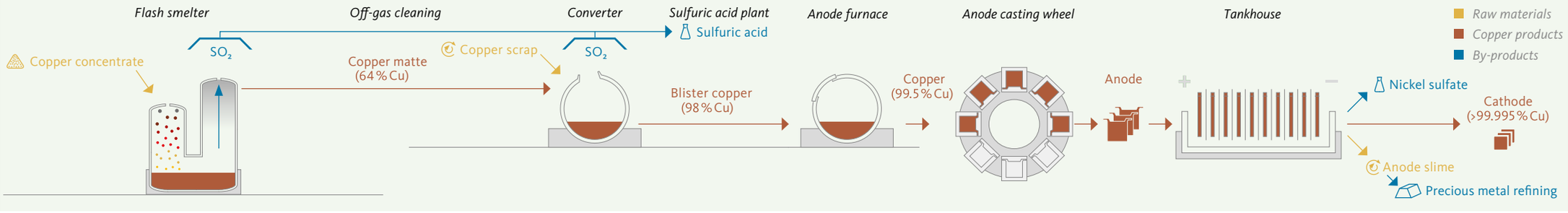
As the operator of facilities requiring a permit in accordance with Section 52b of the Federal Immission Control Act (BImSchG) and Section 58 of the Circular Economy Act (KrWG), an appointed member of the Aurubis AG Executive Board is responsible for compliance with environmental protection regulations.

All environmental protection issues are coordinated, organized and monitored in the Environmental Protection department to support the different business areas. The officer functions for:

- Immission protection and accident prevention
- Waste management
- Hazardous substance management
- Specialist company under the Water Management Act
- Water pollution control

are carried out by Hamburg plant employees.

**Fig. 2.2: From copper concentrate to cathode**



Corporate Environmental Protection centrally oversees the tasks related to implementing the European chemical regulations REACH and CLP (Classification, Labelling and Packaging), which are outlined in the Corporate Environmental Protection Policy.

**The integrated management system for occupational health and safety, energy, quality and the environment**
Aurubis AG has had an environmental management system at the Hamburg site since 2002, which is certified in accordance with ISO 14001 and EMAS.

The energy management system at the Hamburg site was implemented in 2005. The audit was performed within the scope of environmental management until 2013. In May 2013, the energy management system was certified for the first time in accordance with ISO 50001 due to the energy policy parameters.

The quality management system for the entire Hamburg plant is certified in accordance with the ISO 9001 standard. In 2017, the three separate management systems for the environment, energy and quality were combined into an integrated management system (IMS) and jointly certified. The switch of the energy management system in accordance with ISO 50001 to the revised 2018 standard took place in 2019, accompanied by internal workshops and coordinated dialogue about experiences within the Aurubis Group.

Occupational health and safety management was certified pursuant to ISO 45001 as an integral part of the IMS for the first time in 2021.

**Tasks of the environmental management system**
The environmental management system is responsible for maintaining and improving our environmental performance, ensuring compliance with our legal obligations, and strengthening our market position. Processes, targets and measures are defined, and their implementation monitored accordingly. Situational evaluations form the basis for decisions about the type, extent, suitability and execution of environmental protection measures. The EMAS environmental management system also helps implement the Aurubis Group's defined sustainability targets at the Hamburg site. www.aurubis.com/sustainabilitystrategy

The Hamburg Environmental Protection department tracks changes in legal requirements, reviews their effects on the different areas of our company, and ensures that our facilities are operated in conformity with the law. Because of the high complexity of the legal standards and requirements that have to be applied, the existing legal register has been supplemented by a web-based EHS software.

**Management review and internal auditing of environmental management**
The effectiveness of the integrated management system is reviewed with internal audits pursuant to EMAS regulations, ISO 9001, ISO 14001, ISO 45001, and ISO 50001.

The management review is based on the status of follow-up measures from past management reviews, targets and KPIs, changes involving the management system, information about the performance and effectiveness of the management system, summaries of the results of internal audits, the status of preventive and corrective measures, risk assessments, and information about resources and potential improvements.

## 3. Environmental aspects and performance

Following fundamental investments in filtering technologies in the 1980s and 1990s, about €555 million has been invested in environmental protection in the Hamburg plant since 2000. With total capital expenditure of approximately €2.2 billion in the same period, environmental measures account for approximately 25 % of overall capital expenditure on average. Among other things, dust emissions have been halved compared to the year 2000 with these investments. This makes a significant contribution to improving air pollution control in the environment. Investments are being made in the areas of water and noise as well Fig. 2.3.

When compared worldwide, Aurubis Hamburg holds a top position in environmental protection that extends beyond staying up to date with the state of the art. Additional improvements require higher and higher capital expenditure for the same level of reduction and the development of modern technologies. The objectives of plant management are to continue improving the plant's environmental performance and to expand its top position in environmental protection.

### 3.1. Air

**Emissions**
It is crucial for Aurubis AG to develop innovative technologies for air pollution control and to enter new technical territory in the process. About 70 % of the remaining metal emissions from the Hamburg production site come from fugitive sources, the majority of which stem from hall ventilation facilities.

Additional investments in air pollution control were made in both primary and secondary copper production in 2021. The first part of a large-scale investment to continue reducing fugitive dust emissions

in primary copper production started up in October 2021. Since 2022 this system has sustainably reduced fugitive dust emissions from the converter hall by 40 %.

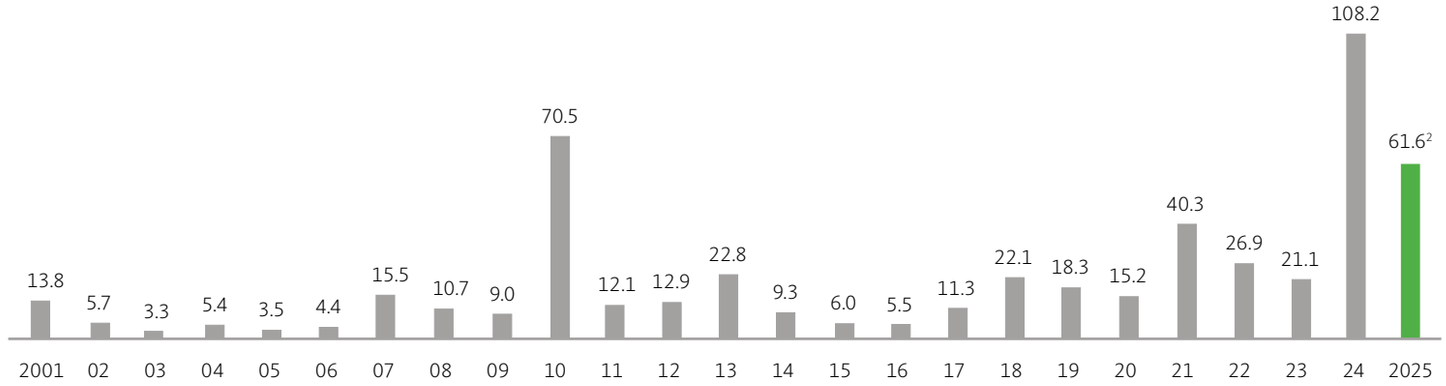
The new metal phase separation line in the secondary copper facility was commissioned in 2024. The secondary e-furnace's output is separated into multiple phases on a new semi-automatic casting line for targeted further processing. In contrast to the previous version, this casting line is equipped with mobile suction hoods and suction ports that operate selectively.

New metal phase separation line with modern suction technology

All of the information in this chapter is based on the current Emissions Report, which is issued annually by the immission protection officer. The values outlined on the following pages are made up of a number of individual recordings. Directed emissions are mostly recorded as classified values from continuous measurements taken with a system provided by DURAG DATA SYSTEMS GmbH. Fugitive emissions from hall ventilation facilities, etc. are determined on a representative basis in recording campaigns carried out by both external recording institutes and the company's own Environmental Monitoring department and are used to calculate the annual loads. Fugitive emissions due to

**Fig. 2.3: Capital expenditure for environmental protection measures at the Hamburg site[1]**

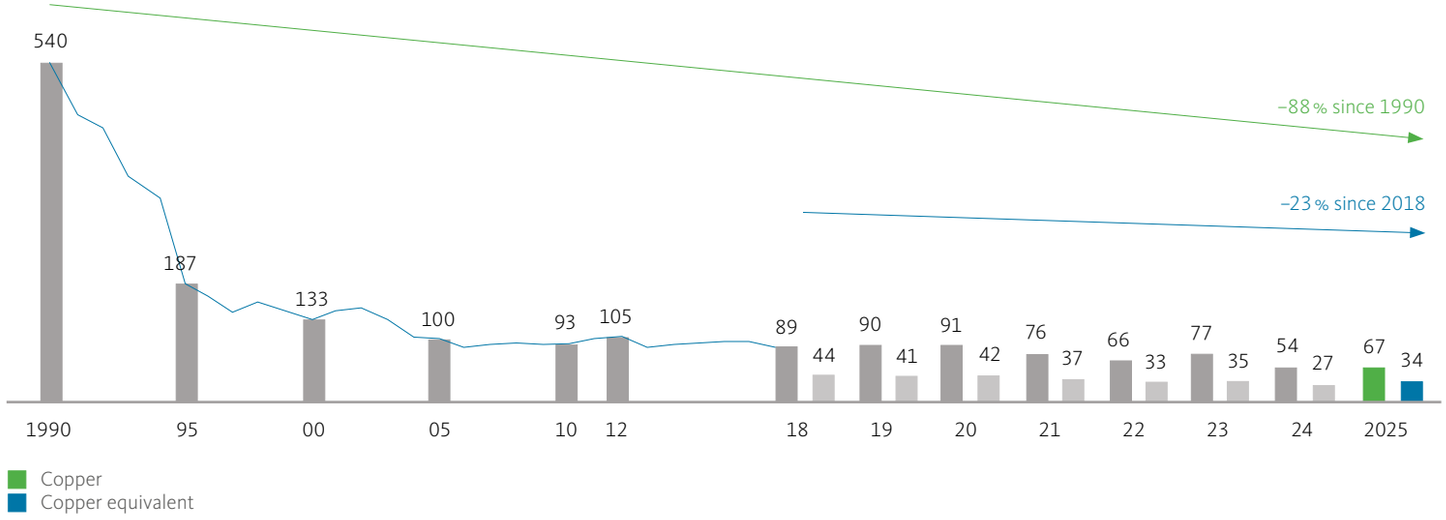
in € million




[1] The data relates to environmental investments per fiscal year. Single years are provided for readability, for example 2025 for fiscal year 2024/25.
[2] Top three environmental protection investments: environmental protection measures in the CRH project (about €28 million), stage 2 of the Reducing Diffuse Emissions project (about €12 million), and environmental protection measures in the construction of the new precious metals smelter (about €12 million).

**Fig. 2.4: Dust emissions at the Hamburg site**

Dust in g/t of copper output and in g/t of copper equivalent



transshipments in storage areas, etc. are calculated using the corresponding emission factors pursuant to regulations (primarily VDI 3790) and from measurements.

Specific dust emissions have been considerably reduced since 1990 and 2010 Fig. 2.4.

Targets and successes in environmental protection

Copper is the main metallic substance in the dust at the Hamburg production site. Specific copper emissions have been considerably reduced since 1990 and 2000. The already low level was further reduced, with the changes compared to the previous year resulting from utilization of the facility and the production volume at the site. The large-scale shutdown in primary copper production and downstream facilities in 2024 led to a deviation in the figure accordingly Fig. 2.5.

Specific lead emissions have been considerably reduced compared to 1990 and 2000 as well. Here too, the fluctuation between 2024 and 2025 is due to the scheduled large-scale shutdown in 2024 Fig. 2.6.

Arsenic is a natural component of copper concentrates. Specific arsenic emissions have been reduced by over 90 % since 1990 in various steps of the copper refining process. Emissions remain at this very low level, reflecting only production-related fluctuations Fig. 2.7.

**Fig. 2.5: Copper emissions at the Hamburg site**

Copper in g/t of copper output

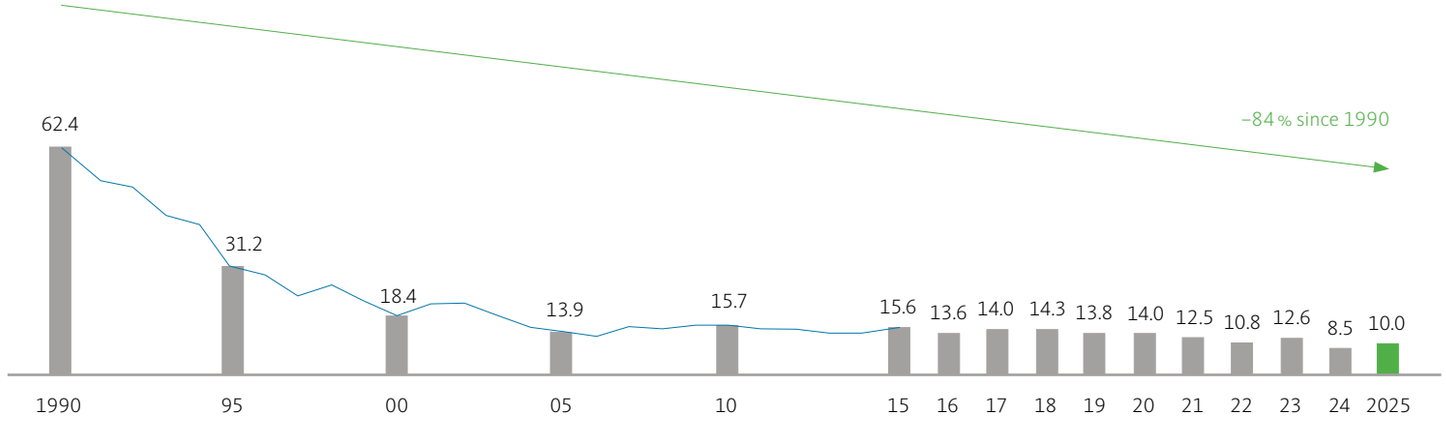
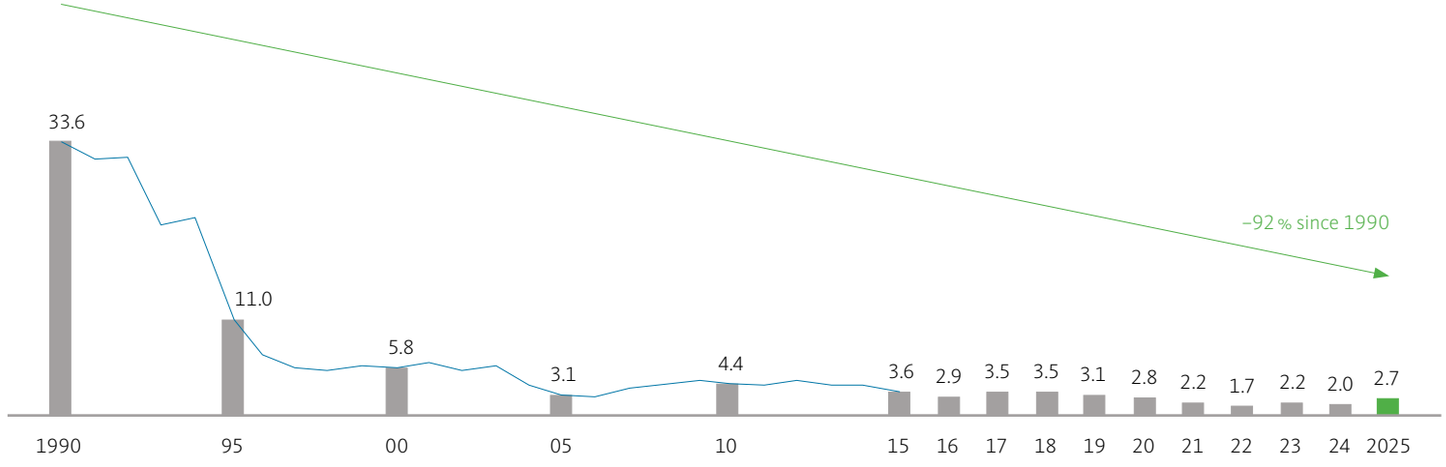


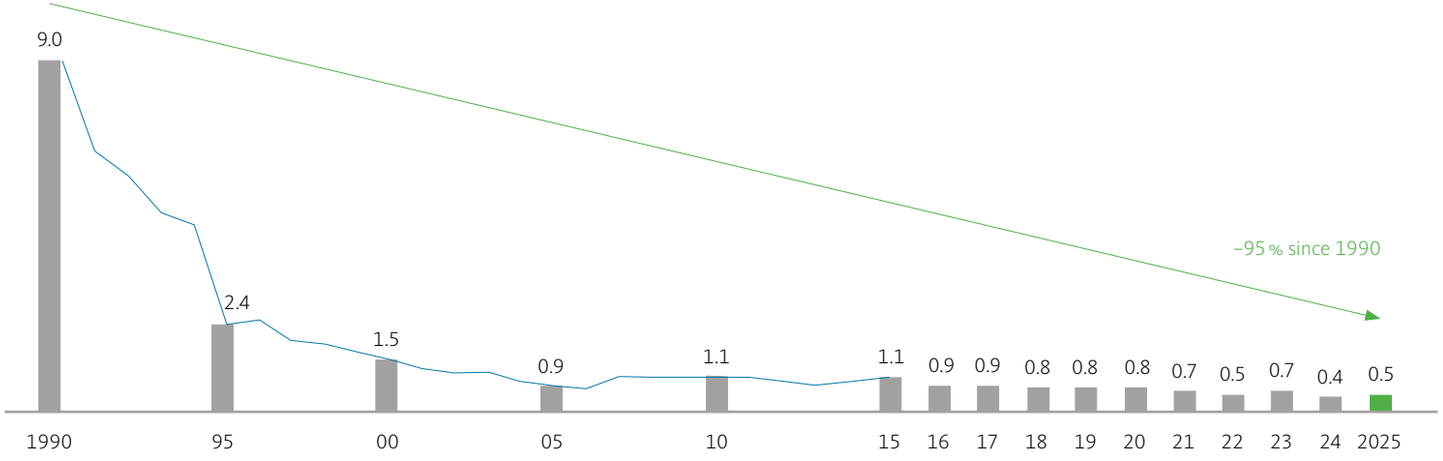

**Fig. 2.6: Lead emissions at the Hamburg site**

Lead in g/t of copper output



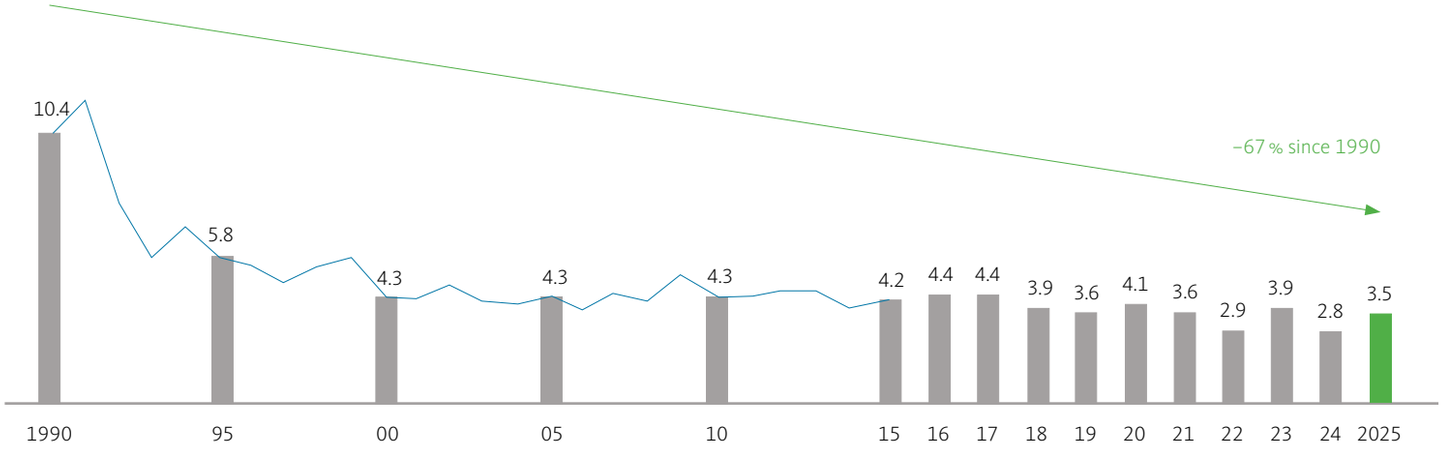
### Fig. 2.7: Arsenic emissions at the Hamburg site

Arsenic in g/t of copper output




### Fig. 2.8: $SO_2$ emissions at the Hamburg site

$SO_2$ in kg/t of copper output




Sulfur is one of the main components of copper concentrates. The gaseous sulfur dioxide produced when copper concentrates are smelted is converted into sulfuric acid in the sulfuric acid plant using the modern double catalysis process. The sulfuric acid is mainly used in the chemical industry. Specific sulfur dioxide emissions have been considerably lowered since 1990 and 2000 and remain low Fig. 2.8.

As a primary copper smelter, Aurubis AG's Hamburg site continues to be a forerunner in reducing specific sulfur dioxide emissions when compared internationally.

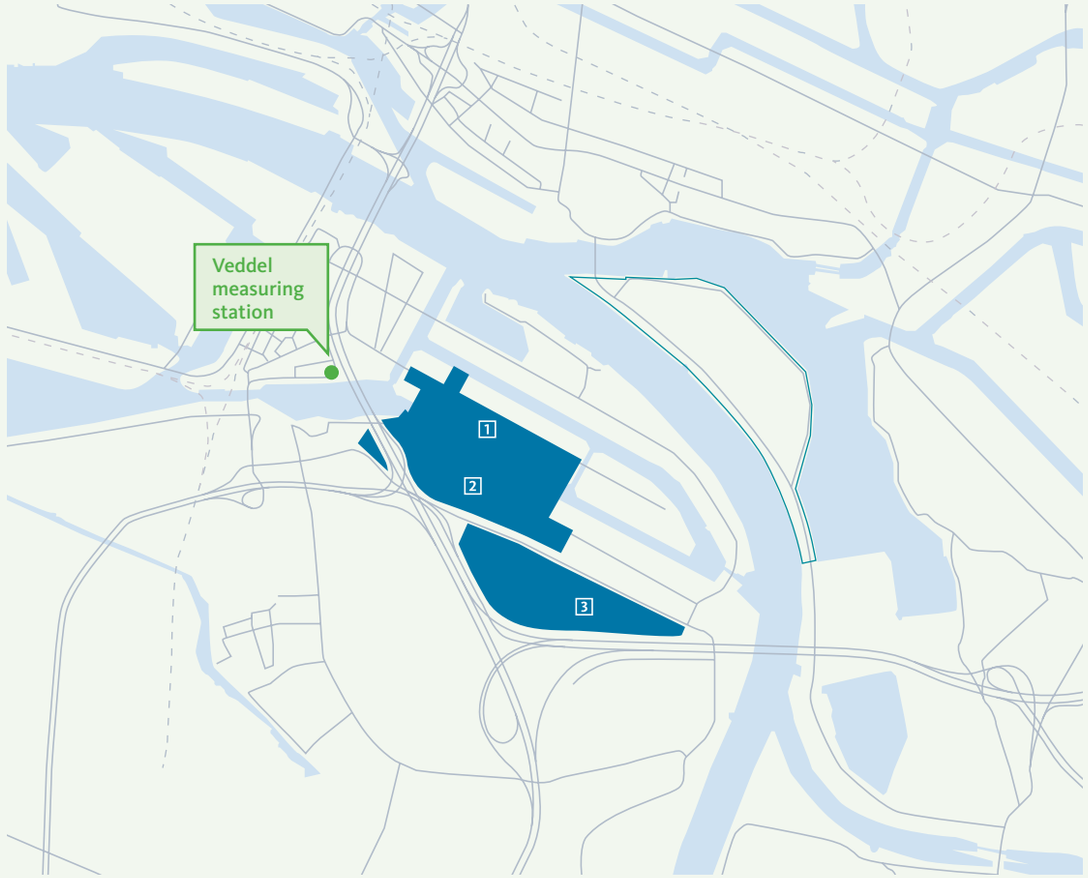
Aurubis again adhered to and fell significantly below the emission thresholds established in the permits based on the Technical Instructions on Air Quality Control (TA Luft) for sources of collected and fugitive emissions in 2025. The limit values from the TA Luft relevant for Aurubis are detailed in chapters 5.2.2, 5.2.4, 5.2.5, 5.2.7, and 5.4.3.3.1 in particular.

**Immissions**

Projects to reduce fugitive emissions have high priority. The success of measures to reduce fugitive emissions is illustrated by the fact that the results of the suspended particulate recordings taken by the Hamburg environmental authority indicate continued low levels. The Veddel measuring station of the Hamburg Air Quality Measurement Network is relevant for the official air quality recordings. It is located in the adjacent neighborhood, about 500 m west of the plant premises.

Due to extensive investments in emission reduction, the immission situation has improved continuously since the 1990s. Limit values for air pollutants in the ambient air have not been exceeded in the area surrounding Aurubis AG's Hamburg site for many years.

**Fig. 2.9: Location of Veddel measuring station near the Aurubis plant in Hamburg**




1 Plant North 2 Plant South 3 Plant East

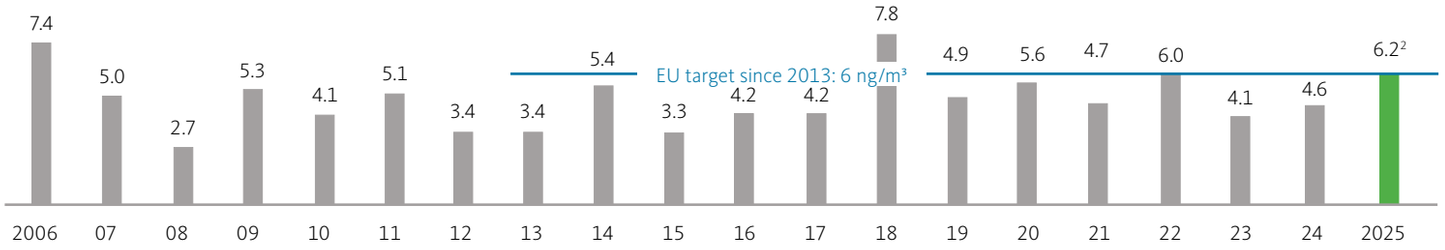
The value measured for arsenic at the Veddel measuring station did not exceed the target level (a yearly average of 6 ng/m³) in 2025. Aurubis' goal is to reduce its contribution to the immission values related to particulate matter in the ambient air through additional measures in order to ensure that immission values stay below the limit in the long term, even in the case of declining climate conditions and increasing aridity.

To continue reducing the site's immissions into the surrounding area, a project to capture fugitive emissions from the primary smelter production hall as needed began in 2020. Roof openings will also be closed, the air will be captured, and an adjustable amount of over 1,500,000 m³/h will be filtered in an innovative and highly efficient installation. The project has an investment volume of over €100 million. The first stage was commissioned in October 2021. In addition to equipment to capture emissions on the current ridge turrets (openings in the roof that serve to conduct the heat released in the production process away from the hall), the existing suctioning equipment will be optimized and the flow conditions in the production hall will be improved through an adjusted air intake duct. In 2025, technical implementation began for the final step to close the remaining roof openings. Commissioning is scheduled for mid-2026.

https://www.verwaltungsvorschriften-im-internet.de/bsvwvbund_18082021_IGI25025005.htm

### Fig. 2.10: Low immission values (arsenic) at the Veddel measuring station[1]

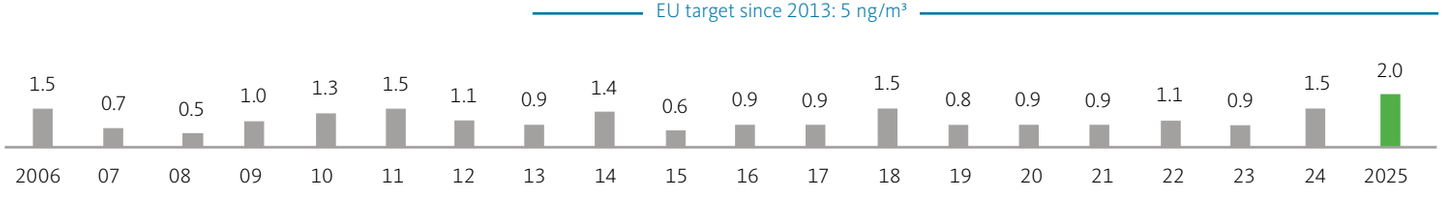
Arsenic immissions at Veddel measuring station in ng/m³




[1] Data published by the State Ministry for the Environment, Climate, Energy and Agriculture.
[2] Figure subject to rounding by the regulatory authorities; the target was adhered to.

### Fig. 2.11: Low immission values (cadmium) at the Veddel measuring station[1]

Cadmium immissions at Veddel measuring station in ng/m³




[1] Data published by the State Ministry for the Environment, Climate, Energy and Agriculture.
1 gram (g) = 1 billion nanograms (ng)

## 3.2. Water

The wastewater from Aurubis AG's entire Hamburg plant is composed of precipitation, indirect and direct cooling water, condensate, process wastewater, and desludging water. All of the plant's precipitation is collected separately and cleaned in two separate processing facilities. Precipitation is reused in some cases — for instance, as cooling water. Sanitary wastewater is discharged into the city sewer system.

2025 was a good year with respect to water pollution control, with no notable incidents and consistently low discharge loads.

**Direct discharge**

In the plant's three internal wastewater treatment facilities, process wastewater and precipitation are cleaned using state-of-the-art technology. The Hamburg plant has water law permits for direct discharge into the Elbe River and observes their requirements. Compliance with these requirements is closely monitored both as part of the internal company audits and through the audits performed by the governmental authorities.

To improve operational stability and ensure adherence to emission limits, for instance in cases of chemical bottlenecks, facilities were connected to each other for optimal use of the plant's available cleaning capacities. There were no other significant changes to wastewater treatment facility operation in 2025. Cleaning performance remained consistently high in 2025 — production volume-related metal loads connected to direct discharges were kept to 1.4 g/t of copper product.

Process transparency and inflow-dependent process control were further improved in 2025. This continuously reduces both chemical use and discharge concentrations of metals. One target within the scope of our Sustainability Strategy is to reduce discharged metal loads by 30 % by 2030 compared to 2018. This target can be achieved through large-scale technical measures executed as part of development projects.

Work continued on the feasibility study for a newly designed process wastewater treatment plant in 2025, contributing to plant availability in the long term and the transformation to fossil-free copper production. Implementation is scheduled for 2030.

**Indirect discharge and potable water**

The consumption of potable water has declined by around 40 % since 2000. Potable water for the most part has not been used to produce steam since 2002. Recirculated condensate and available canal water, mainly as a supplement, are used to conserve resources. More potable water volumes were needed in 2025 year-over-year, particularly for dust control in a number of construction projects in the plant.

Conserving water resources is part of the company guidelines. This applies to potable water in particular. This target also aligns with the national water strategy: The action program includes the development of water infrastructure adjusted to climate change.

All development projects are evaluated with respect to their resource requirements, which are adapted as necessary.

**Cooling water**

In 2025, cooling water was managed without any disruptions or negative impacts on the water balance. All of the limits for discharge temperature, temperature increase, heating of water, and heat input were maintained. Further limiting the volume of cooling water by 2030 is a part of the Sustainability Strategy.

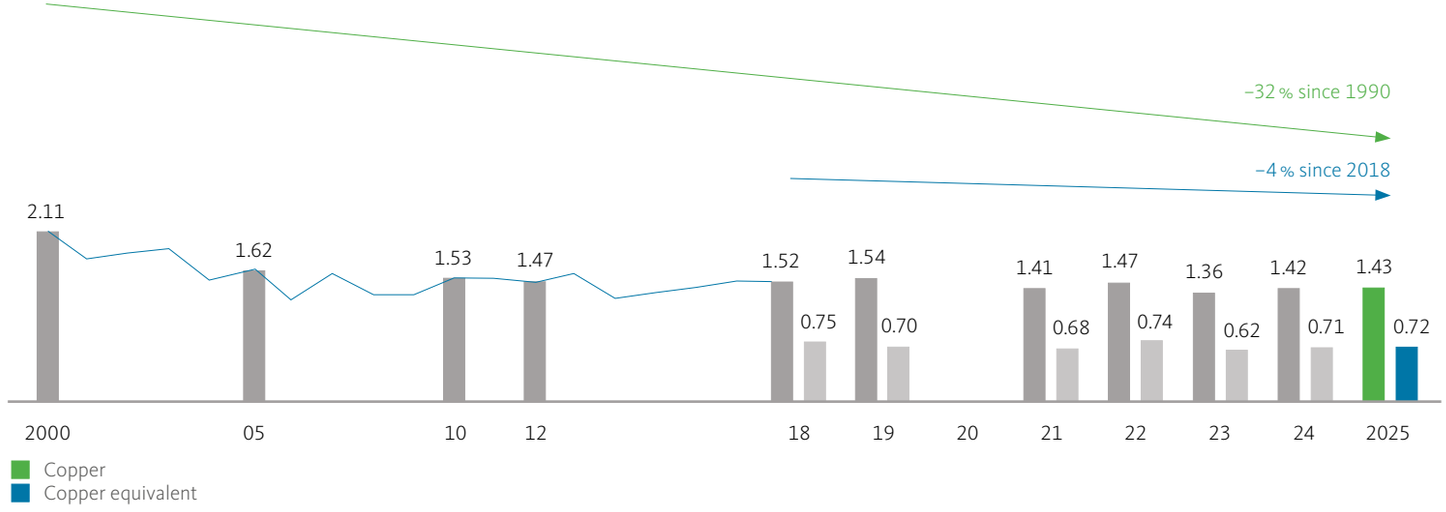
Planning manufacturing processes that conserve resources and using alternative heat extraction are continuously decreasing demand for cooling water, by just under 30 % since 2010 and by 13 % since 2020. Water demand is also kept to an absolute minimum at any given time due to more precise monitoring of temperature-related discharge parameters.

As in the previous year, over 60 % of the precipitation was used as cooling water prior to discharge in 2025. The year had an unusually low level of precipitation.

The Aurubis plant in Hamburg is a certified specialist company in accordance with the German Federal Water Act (WHG). Aurubis was externally recertified as a specialist company under the WHG in 2024.

**Fig. 2.12: Metal emissions in water at the Hamburg site since 2000**

Metal emissions in g/t of copper output and in g/t of copper equivalent



## 3.3. Soil and groundwater

There are soil impurities typical for industrial areas at the Hamburg plant owing to many years of industrial use. The heavy metal pollution values are so low that no remediation is required from an official point of view. The plant premises are mostly paved so that soil impurities cannot mobilize.

Furthermore, the groundwater is protected from soil impurities by a water-resistant layer of clay. A sheet pile wall was also erected in the primary smelter that effectively prevents backwater from flowing beyond the plant premises. This protective measure is regularly inspected through advisory backwater monitoring to ensure that it is working properly.

To prevent negative changes in the soil and groundwater, Aurubis operates systematic soil and groundwater monitoring, which is also a component of the valid report on the initial condition that was issued on May 4, 2018 for the entire plant premises. An update is scheduled for 2025 based on the first soil monitoring and the second groundwater monitoring.

Soil management in connection with treatment capacities on site limit the volume of soil that accumulates during construction measures, for example, and therefore conserves landfill capacities.

All foundational measures are adapted to the specific geological conditions so as not to negatively impact the function of geological barriers.

**Facilities handling substances hazardous to water**

At the Hamburg plant, Aurubis AG operates about 300 installations to handle substances hazardous to water that fall under the scope of the Ordinance on Equipment Handling Substances Hazardous to Water (AwSV). During the technical audits carried out in 2024, the accredited inspection authority once again found no safety-relevant deficiencies whatsoever. Keeping the plants in proper technical order plays a key role in protecting the soil and groundwater.

## 3.4. Waste

A total of 107,885 t of waste was received and recycled at the Hamburg site in 2025, of which 6,927 t were classified as hazardous waste. A total of 2,591 t of this came from other countries and was registered.

Overall, 6 % of the waste accepted was used as a slag former (e.g., spent abrasives, sand and excavation residues), and 94 % was used for metal recovery (dust, slimes, slags and precious metal-bearing sweeps).

In 2025, about 1.23 million t of input materials were processed at the Hamburg site. During processing, 11,669 t of production-related waste accumulated, which was disposed of in an environmentally sound manner Fig. 2.13.

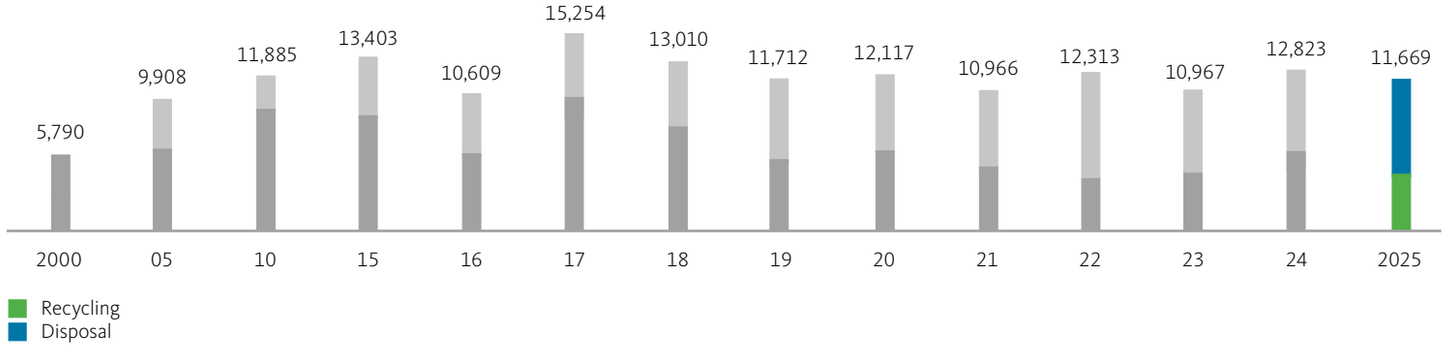
With an annual output of 451,775 t of refined copper in 2025, the specific waste level is 26 kg per ton of product (2024: 29 kg/t).

The conversion of raw materials into products thus remained at a high level. Of the entire volume, 4,286 t was directed to recycling and 7,383 t to external disposal. This corresponds to a recycling rate of approximately 37 %. Most of the waste that is disposed of is slimes from off-gas cleaning, as well as washing fluid and emulsions.

A total of 24,598 t of olivine pyroxene rock from the secondary smelter (RWN) and 5,743 t of slag material from the primary smelter (RWO) could not be marketed as product and were taken to landfills. In the process, around 81 % of the volumes were recycled for use as landfill construction material.

**Fig. 2.13: Disposal methods for production-related waste at the Hamburg site**

in t/year



A total of 56,743 t of construction waste accumulated in 2025. The volume declined somewhat year-over-year but was still relatively high due to growth projects in implementation at the site.

## 3.5. Energy and climate protection

We act responsibly towards future generations by economically using raw materials and energy. Our main energy sources are electricity and natural gas. Aurubis AG consumed a total of 1.17 TWh of energy at the Hamburg site in 2025. With an annual output of 451,775 t of copper, this translates to specific energy consumption of roughly 2.56 MWh/t of copper output (previous year: 2.54 MWh/t). It includes the electricity used to produce the oxygen necessary for the processes.

Furthermore, landfill gas was used in the production processes instead of natural gas (2025: 1.9 GWh). Aurubis uses 100 % of the landfill gas occurring at the former Georgswerder landfill, though the supply volume from the landfill is continuously declining.

Viewed over the medium term, specific energy consumption has stagnated at the Hamburg site in the past several years despite the energy efficiency measures that have been implemented. Important reasons for this are the higher percentage of multimetal recycling and the commissioning of new facilities, such as the ridge turret suction system in the secondary smelter and in the primary smelter (Project RDE), which increases energy requirements due to the operation of the suctioning and filter equipment.

Taking a longer-term view, specific energy consumption has been significantly reduced at the Hamburg production site in the past few decades, falling by about 45 % compared to 1990. It has even

**Fig. 2.14: Energy consumption at the Hamburg site**
in MWh/t of copper output

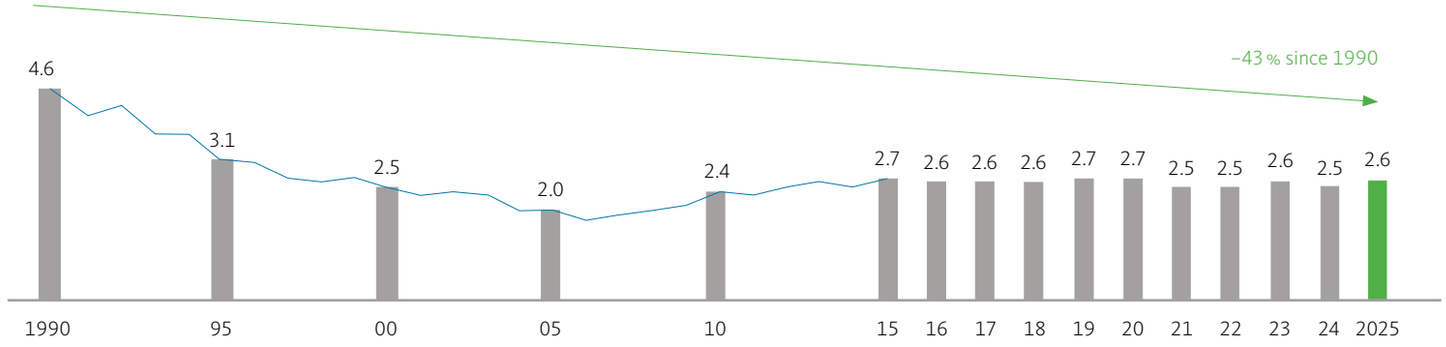
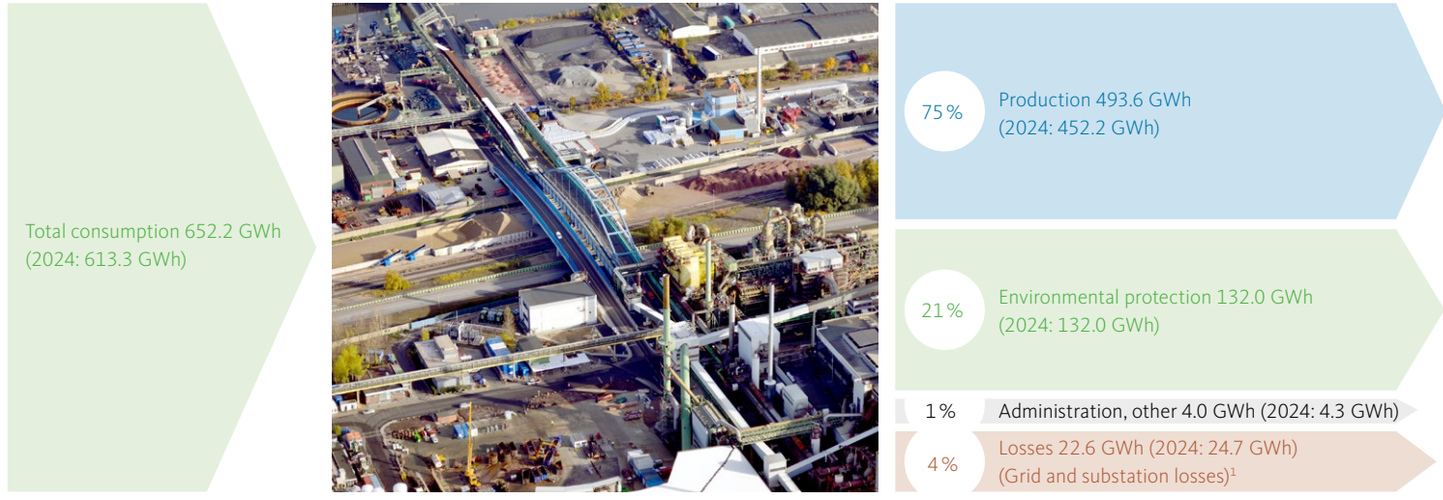



**Fig. 2.15: Breakdown of energy consumption at the Hamburg site**




[1] Consisting of unmeasured consumption, substation losses from 110,000 V to 400 V over multiple stages, and line losses. The figure is within the range that can be expected in the industry.

been possible to reduce fuel-related specific $CO_2$ output by around 70 % since 1990. The reason for this is the strongly reduced use of particularly $CO_2$-intensive fuels, especially coal.

With an output of 451,775 t of copper output in the calendar year, specific $CO_2$ emissions from fuel amounted to 0.26 t $CO_2$/t of product in 2025 Fig. 2.16. This corresponds to 117,256 t of $CO_2$.

The calculation is based on $CO_2$ emission factors from the following sources:

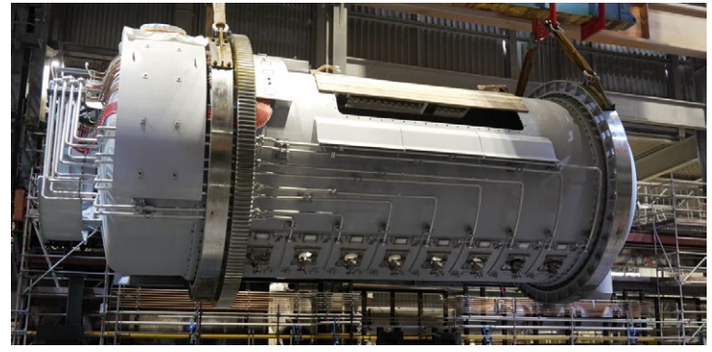
- For natural gas: GasCalc calculation program, Version 2.6, published by SmartSim GmbH
- For all other fuels: German Emissions Trading Authority (DEHSt) data, last reviewed in January 2026

When it comes to maintenance measures and new investments, engines and other energy-consuming equipment with as high an energy efficiency class as possible are used.

To enable the use of renewable energies, we are arranging more flexible electricity sourcing to be able to react to fluctuating availability. The first power-to-steam installation at the Hamburg plant was commissioned in 2019. This is an electrode steam boiler that can be hooked up to the grid during phases in which there is a surplus of renewable energy. In parallel, the existing steam boilers powered by natural gas are ramped down accordingly. This allows renewable energies to be used instead of fossil fuels to generate a heat output of 10 MW at the site. This reduces the load on the energy grid at the same time. Automated operation of the process kicked off in 2024, and flexibility enhancements are ongoing.

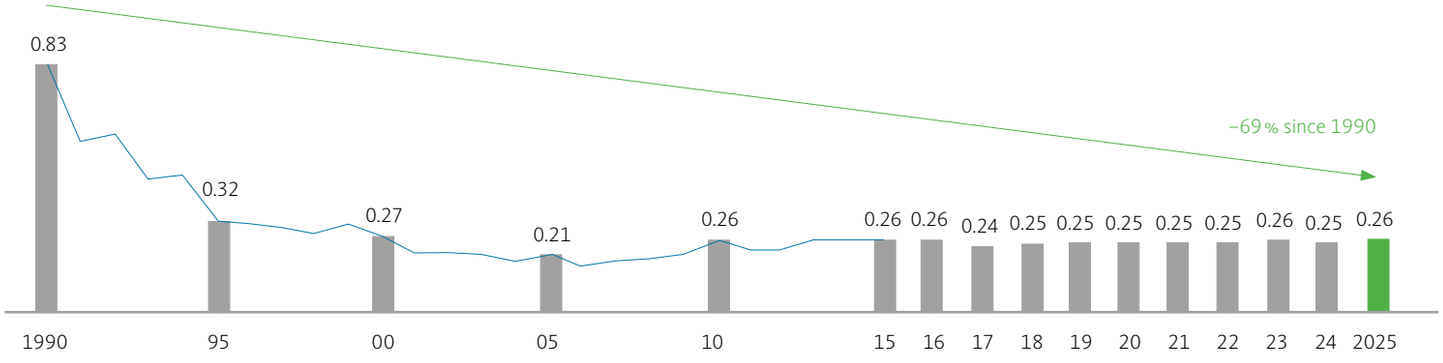
During the FSH24 large-scale shutdown, two new anode furnaces were installed that can use hydrogen as an alternative to natural gas.

New power-to-steam facility in the Hamburg plant



Installing hydrogen-ready anode furnaces

**Fig. 2.16: $CO_2$ emissions from fuels at the Hamburg site**
in t $CO_2$/t of copper output



### Waste heat use

Aurubis strives to use process waste heat to the greatest possible extent. It is used to heat buildings, to facilitate the production processes, and to generate electricity. With 76 % of the steam required generated from residual heat, very little was produced from fossil fuels in 2025. Copper production from ore concentrates begins in the flash smelter in the primary smelter (RWO). Its exhaust gases have a temperature of 1,400°C and contain about 35 % sulfur dioxide, which is processed into sulfuric acid in a contact acid plant.

The flash smelter's hot exhaust gases are initially cooled in a waste heat boiler, producing 60-bar steam.

Several steam turbines have been installed at the Hamburg site as an effective energy-saving measure. The 60-bar steam is first depressurized to 20 bar in the Interplant turbine, which was commissioned in 2014. The 20-bar steam serves as process steam for various processes in the plant. The remaining steam volume is depressurized to 3 bar in the first stage of another steam turbine in the thermal power plant. This steam is then available as process and heating steam in the plant and administrative buildings. A total of 4.8 GWh of electricity was produced from waste heat in 2025.

The heat transition is an important part of the energy transition. This is especially true for a metropolis like Hamburg, which has about 900,000 apartments. The energy needed to provide heating, warm water, and lighting to the city's buildings makes up 40 % of the total energy demand and is therefore significantly higher than the energy demand in the transport and industry sectors. Today, the heat supply in Hamburg is dominated by decentralized, gas-fueled heating systems and by a large central district heating network whose thermal output is based on conventional large-scale power plants and heat generation from coal, gas and waste. The implementation of the project is therefore

Fig. 2.17: District heating pipeline route from the Aurubis plant

a central milestone on the path to more sustainability and better climate protection.

On October 29, 2018, the supply system for providing the HafenCity East district with industrial heat from Aurubis was commissioned in an inauguration ceremony. With the implementation of this joint project, which is unique in Germany and is supported by the climate alliance between Aurubis and energy service provider enercity, up to 160 million kWh of heat per year can be transferred to consumers via pipeline. This is equivalent to the heat demand of about 8,000 four-person households. Aurubis' production facilities also use up to 40 million kWh. Aurubis and enercity each invested about €21 million. The project was funded by the German Federal Ministry for Economic Affairs and Energy.

The heat is $CO_2$ free. It is generated without the use of fossil fuels and released as heat of reaction in sulfuric acid production. This forward-looking use of waste heat can save up to 20,000 t of $CO_2$ annually. The Elbe River benefits as well: Recovering the heat saves about 12 million m³ of cooling water per year.

The German Energy Agency honored the joint project with the 2018 Energy Efficiency Award in the Energy Transition 2.0 category as a flagship project. Furthermore, the project received the German Renewables Award 2018 from the Renewable Energies Cluster, the ener.CON Europe Award 2019, and the Responsible Care Award 2019 from the VCI. The climate alliance was honored as a finalist for the EUSEW Awards by the European Commission and the Innovation Prize for Climate and the Environment by the German Federal Ministry for the Environment in 2019 and 2020, respectively.

**Industrial Heat expansion**

Extensive retrofitting measures carried out in the contact acid plant during the FSH24 large-scale shutdown enable us to now supply up to 60 MW or 500 million kWh of industrially generated, $CO_2$-free heat per year to the city. The two Industrial Heat projects have been able to reduce $CO_2$ by up to a combined 120,000 t per year and heat up to 28,000 Hamburg households as of the 2024/25 heating period. The associated supply contract was concluded with the municipal supplier of district heating. This makes a significant contribution to decarbonizing the city's district heating network Industrial Heat 2.0: Carbon-free heat from Hamburg.

**Direct $CO_2$ emissions — Emissions Trading System**

As an energy-intensive company, the Hamburg site has been required to participate in the European Emissions Trading System (ETS) since 2013, now in the fourth trading period. The direct $CO_2$ emissions — mainly from natural gas consumption — are verified by TÜV NORD CERT and reported to the German Emissions Trading Authority (DEHSt).

Registered $CO_2$ emissions amounted to 148,219 t for 2025. More than 60 % were caused by the fuels used, mainly natural gas, while the remainder was caused by the carbon contained in the raw materials, recycling materials, and additives.

**Indirect $CO_2$ emissions**

Copper production is an energy-intensive process, so a reliable electricity supply is very important. Aurubis therefore has a long-term electricity supply contract. Electricity production leads to $CO_2$ emissions, which are indirect $CO_2$ emissions for Aurubis, and therefore indirect environmental effects. Contractual instruments such as certificates of origin were accounted for at a rate of 50 % for the German sites, leading to a $CO_2$ impact of 239,327 t from our production at the Hamburg site.

Retrofitting the contact acid plant in the Industrial Heat project

Hamburger Energiewerke warm water buffer tank

The electricity producer already reported these indirect $CO_2$ emissions to the trading authority. Any costs were passed on via the electricity price and were financially compensated in some cases. Therefore, these indirect $CO_2$ emissions are not included in the amount reported by Aurubis to the trading authority.

**$CO_2$ reduction targets**

The Aurubis Group has set ambitious targets and would like to be carbon-neutral before 2050. The aim is to reduce the $CO_2$ emissions associated with fossil fuels and electricity (Scope 1 + 2) by half throughout the Group by 2030. $CO_2$ emissions resulting from processes, transport, supply chains, etc. are to be reduced by 24 % by 2030 (Scope 3; reference year: 2018 respectively).

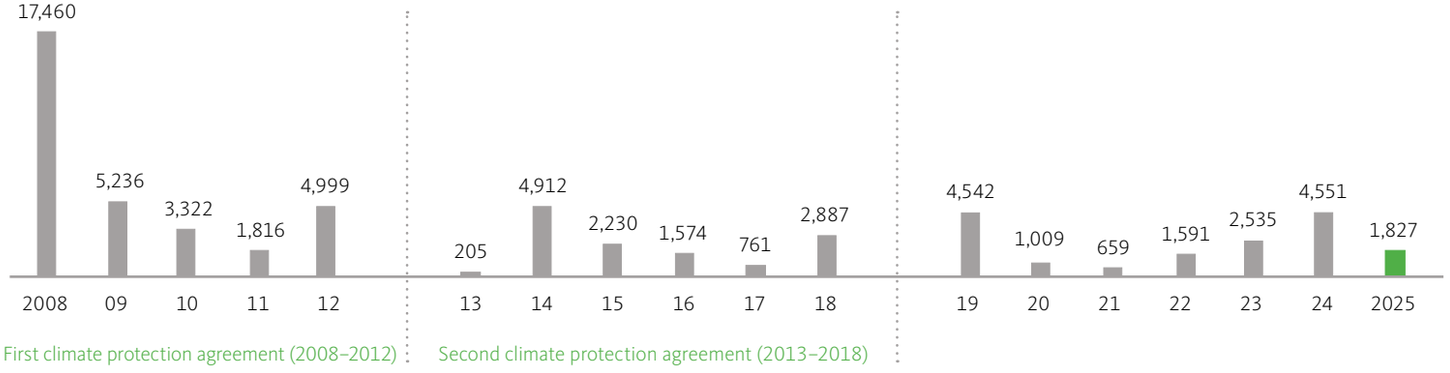
Our commitment to the Science Based Targets initiative (SBTi) underpins the Group's tireless efforts to reduce greenhouse gases. We have committed to setting science-based $CO_2$ reduction targets based on the SBTi, and as such to contributing to the 1.5 °C goal of the Paris Climate Agreement.

Implemented energy optimization measures have already cut more than 30,000 t of $CO_2$ per year since 2013.

The cuts are due to higher facility efficiency, energy-optimized operation, process improvements, and heat recovery. Smaller cuts resulted from the blanket use of LED lighting. The external industrial heat supply is not included in the $CO_2$ reductions mentioned.

**Fig. 2.18: Annual $CO_2$ reduction at the Hamburg site in the context of the Hamburg Climate Protection Concept**

First and second climate protection agreement, in t of $CO_2$/year




## 3.6. Noise, odors and vibrations

Aurubis constructs and operates its production facilities in accordance with current noise reduction technology. The noise register developed for the Hamburg site lists all of the relevant noise sources. The local environmental authority has defined noise immission limits for 20 immission areas surrounding the site. These requirements are established in the permits. The impact on the noise situation in the neighborhood is evaluated for all facility modifications and, if necessary, measures are derived and implemented. Aurubis is planning to update the noise register in the scope of an upcoming project. There were no noise complaints in 2025. Odors and vibrations were reviewed as part of the environmental aspect assessment. Based on the technologies implemented and the monitoring results from the relevant authorities, they are not considered significant environmental aspects.

## 3.7. Biodiversity

As an industrial site, Aurubis strives to promote urban biodiversity. Wherever possible, unpaved areas are left close to their natural state and are only tended to if required for operations. The green areas surrounding the plant premises with bushes and trees serve as a refuge for a number of bird and insect species and are preserved. No chemical pesticides are used on plants.

Together with the environmental authority and the NABU conservation organization, additional measures were coordinated to support nature and species conservation efforts in Hamburg in 2024 as part of the UnternehmensNatur network. An assessment of the overall situation identified additional potential to promote urban biodiversity, which will be integrated into plant development and transformation projects as well as possible.

Various open areas on the premises are well suited for developing habitats for insects and birds in particular. Additional greenery, specifically native plant species, along edges and shoulders increase biodiversity. Wherever possible, sunny areas are designed as well-tended wildflower meadows that serve as important stepping stone biotopes for wild bees, bumblebees, hoverflies and butterflies. Vertical greenery and green roofs are still key options for optimally using limited space.

One special focus is maintaining the peregrine falcon habitat in the plant, where three offspring were reported in 2024 again.

Aurubis also keeps its own tree registry and integrates new plants into its project plans whenever possible. Due to the limited space, the company promotes biodiversity outside of the plant premises as well, for example by supporting environmental education provided by nature conservation associations at schools. An environmental mobile, Bombus, operated by the German Association for the Protection of Forests and Woodlands is used for this purpose.

Today, emissions at the Hamburg site have already reached a point where there is no negative impact on ecologically sensitive conservation areas, especially with regard to acidification and eutrophication. Aurubis' ecological footprint is improving continuously with a significant contribution from the Hamburg plant.

Native plant species are prioritized when new greenery is planted. Suitable building facades will be home to vertical gardens in the future, creating additional habitats for birds and insects as well. Furthermore, the plant is a breeding area for a number of songbird species, such as the black redstart. Potential nesting areas in various niches of production building facades are maintained if possible. The proximity to bodies of water increases food sources as well.

Peregrine falcon during release after brief veterinary treatment due to a flight accident

Green roof with wildflowers

Example for new wildflower areas

Plant walls with greenery

### 3.8. Indirect environmental aspects

Indirect environmental aspects arise first and foremost from the transport of material and from the mines supplying Aurubis with copper concentrates. Nevertheless, the supply chain for products and raw materials is very important to the Aurubis Group. In this context, we refer to our Sustainability Statement and the section “A comparison — Life cycle assessments for our metal products” in the Group portion of this Environmental Report, which provides detailed information about our supply chain management.

## 4. Audits, inspections, emergency preparedness

**Audits and inspections by governmental authorities**
The production facilities at the Hamburg site are monitored by the relevant governmental authorities as part of inspections and emissions surveillance. The reports on the inspections pursuant to the IED directive have been published online in the city of Hamburg’s Transparency Portal since 2016. In 2025, all inspections verified proper operation in accordance with permits.

**Emergency measures and crisis management**
There are currently 64 “hazardous incident companies” in Hamburg. A hazardous incident is any event in which a fire, explosion or similar occurrence releases hazardous substances that put people and the environment at serious risk. Because of the type and quantity of materials handled, the Hamburg production site is subject to the expanded obligations of the German Hazardous Incident Ordinance. The site is therefore subject to particularly strict safety precautions to prevent serious operational disruptions. Furthermore, for the case that hazardous incidents occur despite the safety precautions, measures to limit impacts have to be adopted. The safety report outlines the technical and organizational safety precautions and is reviewed and updated as necessary whenever there are changes to any facilities, at the latest every five years.

There were no incidents or other reportable disruptions in operations during the reporting period. Two emergency and crisis management drills were carried out in 2025. In August 2025, the alarm and danger prevention plan was applied and tested during a major fire incident in the surrounding neighborhood. A large-scale drill for a selected hazard situation in operations is scheduled for 2026.

All inspections specifically related to the Major Accidents Ordinance were carried out and no defects were identified.

## 5. Partnerships and engagement

**Commitment to the environment — Partnership for air quality and low-emission mobility**
In 2012, the city of Hamburg, Aurubis and eleven other companies established the Partnership for Air Quality and Low-Emission Mobility. The objective is to reduce pollution, especially $NO_x$, resulting from individual transport.

To promote the use of bikes and public transport, a city bike station was set up at the Hovestrasse plant entrance in 2019. The intention is to encourage employees to use bikes in their daily commutes between home and work or between home and subway or train stations. The station connects the plant to Hamburg’s city-wide bike-borrowing system.

Moreover, Aurubis rents 40 lockable bike spaces each at the closest train station, Veddel, and the new train/subway station Elbbrücken. This provides employees with free bike parking, an option that allows them to travel quickly and conveniently from public transport stations to work.

In order to promote electric vehicles, a total of 150 charging stations were set up at the employee parking lots on Hovestrasse and the Müggenburger Hauptdeich. E-mobility for internal plant traffic is also emphasized.

Due to the voluntary environmental and climate protection measures it implemented in 2025 again, Aurubis Hamburg is still recognized as an active member of the Hamburg Environmental Partnership and has been distinguished for its exemplary environmental performance.


UMWELT PARTNER 2025

## 6. Environmental Program

A revised version of the Environmental Program, which is based on the internal target management system, has been in use since 2024.
The relevant environmental KPIs and assessments of the environmental measures are available in more detail in the respective chapters.

| Target | Planned measures | Degree of implementation/date |
|---|---|---|
| **Compliance** | | |
| Ensuring compliance with operator obligations | HAZOP efficacy checks<br>Expanded management of regulations and legal obligations<br>Developing officially recognized self-monitoring by extensively fulfilling requirements at a measuring station pursuant to Section 29a of the Federal Immission Control Act<br>Concept for technical reviews including the AwSV | Concept starting 2025, continuous execution |
| Adapting to new air pollution control requirements | Adaptation strategy in accordance with TA Luft/39th Federal Immission Control Act<br>Consideration of external conditions (air pollution control plans, Elbtower) | Depends on legislative developments |
| **Management system** | | |
| Avoiding negative environmental impacts | Environmental governance as a continuous improvement process with targets and KPIs | Concept in 2025, implementation starting 2026 |
| **Reducing emissions** | | |
| Ensuring values adhere to the future target value for particulate matter Veddel 20VE of 6.0 ng/m³, even with increasing atmospheric inversions and dry weather conditions | Expansion of ridge turret suctioning Air — Immissions | Stage two under construction, commissioning mid-2026 |

| Target | Planned measures | Degree of implementation/date |
|---|---|---|
| **Improving water pollution control** | | |
| Metal loads to water — 10 kg/a reduction in FY 2023/24 compared to 2020 | Optimizing the wastewater treatment plant process parameters by improving the dosing strategy and through technical optimizations and online measuring technology | 10 kg achieved for both stormwater systems in the 2023 reporting year<br>Process control permanently adapted |
| Reducing cooling water consumption by 10 % by FY 2025/26 compared to 2020 | Switching cooling systems to circulation systems | 2025 target achievement: 13 % |
| Reducing cooling water demand by 20 % by 2030 compared to 2020 | Further converting circuit cooling to closed circuits | |
| **Reducing energy consumption and $CO_2$ emissions** | | |
| $CO_2$ reduced by 2,000 t plant-wide in FY 2025/26 | Various individual projects, e.g., boosting efficiency by using 6 kV frequency converters | Basic engineering for $SO_2$ blower and wire production |
| Enhancing electricity sourcing flexibility | Installing a large-scale battery (12 MW) | Detailed engineering |
| **Waste reduction** | | |
| At least 3 tests of internal Venturi slime processing | Developing potential internal processing methods for Venturi slime | The hydrometallurgical approach will not be pursued further since this has not been successful thus far. The trials in top blown rotary converter 1 (TBRC1) demonstrated that the material can be fundamentally processed in TBRC1. Additional trials with Venturi slime should take place in TBRC1 three times per year to optimize the process and facility. |
| Reducing the amount of used emulsion to be disposed of from the rod plant by at least 20 % | Testing an ultra-filtration system followed by an investment decision | Tests were executed — this solution will not be pursued further because purchase and operation make little economic sense. |

## 7. Key figures for Aurubis AG, Hamburg site, in the 2025 calendar year

Developments in KPIs are explained in the text.

| Input | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Financial investments** | | | | |
| Investments in environmental protection | € thousand | 21,126 | 108,189 | 61,625 |
| Other investments | € thousand | 182,606 | 169,771 | 167,609 |
| **Total investments** | **€ thousand** | **203,731** | **277,960** | **229,234** |
| **Raw materials** | | | | |
| Copper ore concentrates | t | 1,188,874 | 906,676 | 1,225,792 |
| Copper scrap/refining material | t | 41,532 | 13,170 | 14,699 |
| Other Cu-bearing raw materials | t | 97,715 | 164,974 | 72,293 |
| Precious metal-bearing raw materials | t | 10,999 | 6,295 | 8,587 |
| Lead concentrate, scrap and waste | t | 26,159 | 18,516 | 27,050 |
| Other secondary raw materials (waste) for recycling | t | 6,550 | 4,514 | 6,729.9 |
| **Total TC/RC-earning raw materials** | **t** | **1,371,829** | **1,114,145** | **1,355,151** |
| **Operating supplies and materials** | | | | |
| Limestone, sand and additives incl. cyclone sand | t | 118,626.8 | 73,145.5 | 90,105 |
| Iron as aggregate | t | 13,201.6 | 8,420.1 | 8129 |
| **Total input materials** | **t** | **1,503,657** | **1,188,942** | **1,453,384** |
| **Input material per t of copper** | **t/t Cu** | **3.4** | **2.7** | **3.2** |

| Input | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Energy** | | | | |
| Electricity consumption | MWh | 656,919 | 610,513 | 647,332 |
| Natural gas | MWh | 412,250 | 427,455 | 448,060 |
| Coke | MWh | 70,162 | 59,828 | 61,722 |
| Other energy sources (landfill gas, fuel oil, diesel) | MWh | 14,740 | 12,500 | 9,694 |
| **Total energy consumption (excluding internal production)** | **MWh** | **1,154,071** | **1,118,635** | **1,166,808** |
| **Energy consumption per t of copper** | **MWh/t Cu** | **2.6** | **2.5** | **2.6** |
| **Use of regenerative/renewable energy** | | | | |
| **Use of electrical energy to generate steam[1]** | **MWh** | **12,381** | **31,651** | **8,622** |
| **Water withdrawal** | | | | |
| River water | m³ | 59,349,421 | 48,272,507 | 57,969,500 |
| Potable water | m³ | 392,814 | 468,517 | 515,049 |
| Precipitation | m³ | 479,560 | 678,591 | 399,502 |
| Total water withdrawal | m³ | 60,221,800 | 49,419,615 | 58,884,051 |
| Water consumption (withdrawal) per t of copper | m³/t Cu | 137 | 112 | 130 |
| **Area used at the Hamburg site** | | | | |
| Total plant area | m² | 874,000 | 874,000 | 874,230[2] |
| Buildings and paved area | m² | 758,000 (equivalent to 87 %) | 758,000 (equivalent to 87 %) | 750,981[2] (equivalent to 86 %) |

[1] Mainly used at times when there is a high supply of renewable energy in the grid.
[2] Area was remeasured in 2025.

| Output | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Products** | | | | |
| Copper output | t | 438,143 | 441,464 | 451,775 |
| Sulfuric acid products as $H_2SO_4$ (from exhaust gas cleaning, standardized to 100 % acid) | t | 947,714 | 719,613 | 960,669 |
| Iron silicate stone (incl. granules) | t | 738,967 | 534,178 | 705,123 |
| Silver, gold and PGMs | t | 1,227 | 1,226 | 1,304 |
| Nickel sulfate | t | 1,015 | 902 | 1,051 |
| Other metal compounds (tellurium, tin, selenium) | t | 390 | 377 | 350 |
| Lead | t | 10,663 | 10,009 | 10,911 |
| **Total products** | **t** | **2,138,119** | **1,706,867** | **2,131,183** |

| Output | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Waste** | | | | |
| Recycling | t | 4,484 | 6,324 | 4,286 |
| Disposal | t | 6,483 | 6,499 | 7,383 |
| **Hazardous waste** | **t** | **8,283** | **8,086** | **8,493** |
| AVV[1] 16 10 01* Washing water | t | 2,321 | 2,660 | 3,140 |
| AVV 10 06 06* Waste after off-gas treatment | t | 3,066 | 2,275 | 2,487 |
| AVV 10 04 04* Lead flue dust | t | 1,201 | 1,084 | 706 |
| AVV 12 01 09* Waste emulsion | t | 1,354 | 973 | 1,186 |
| Other | t | 1,695[2] | 1,094[3] | 974[4] |
| **Non-hazardous waste** | **t** | **2,684** | **4,736** | **3,176** |
| AVV 15 01 03 Scrap wood | t | 1,151 | 1,219 | 1,304 |
| AVV 19 08 14 Sludge from water management | t | 605 | 2,443 | 872 |
| AVV 200301 Municipal solid waste | t | 428 | 600 | 546 |
| Other | t | 500[5] | 474[6] | 454[7] |
| **Total waste** | **t** | **10,967** | **12,822** | **11,669** |
| **Waste per t of copper output** | **kg/t Cu** | **25** | **29** | **26** |
| Conversion into products | % | 99.2 | 98.9 | 99.0 |
| Construction waste (informative) | t | 25,571 | 65,209 | 56,743 |
| **Total waste** | **t** | **36,537** | **78,032** | **68,412** |
| **Waste per t of input material** | **kg/t** | **25** | **70** | **56** |

[1] Waste List Ordinance (AVV).
[2] Comprises 23 waste code numbers (AVV).
[3] Comprises 20 waste code numbers (AVV).
[4] Comprises 9 waste code numbers (AVV).
[5] Comprises 8 waste code numbers (AVV).
[6] Comprises 10 waste code numbers (AVV).
[7] Comprises 19 waste code numbers (AVV).
The table may include slight deviations in the totals due to rounding.

| Output | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Emissions** | | | | |
| Dust[1, 2] | t | 34 | 24 | 30 |
| Dust per t of copper | g/t Cu | 77 | 54 | 67 |
| Dust per t of copper equivalent | g/t Cu eq. | 35 | 27 | 34 |
| Copper per t of copper output | g/t Cu | 12.6 | 8.5 | 10.0 |
| Lead per t of copper output | g/t Cu | 2.2 | 2.0 | 2.7 |
| Arsenic per t of copper output | g/t Cu | 0.7 | 0.4 | 0.5 |
| $SO_2$ | t | 1,722 | 1,231 | 1,561 |
| $NO_x$ per t of copper output | g/t Cu | 385 | 316 | 427 |
| Direct $CO_2$ emissions (ETS, excluding diesel) | t | 161,703 | 136,932 | 148,219 |
| of which $CO_2$ from fuels | t | 112,245 | 110,997 | 117,256 |
| $CO_2$ from fuels per t of copper output | t/t Cu | 0.27 | 0.25 | 0.26 |
| Direct $CO_2$ emissions (diesel for vehicles) | t | 3,295 | 2,804 | 2,011 |
| Indirect $CO_2$ emissions from electricity consumption less contractual instruments such as proofs of origin (incl. oxygen production)[3] | t | 348,991 | 274,731 | 239,327 |
| Metal discharge in water | kg | 594 | 626 | 646 |
| Metal discharge in water per t of copper | g/t Cu | 1.4 | 1.4 | 1.4 |
| Metal discharge in water per t of copper equivalent | g/t Cu eq. | 0.62 | 0.71 | 0.36 |
| **Water discharge** | | | | |
| Direct discharge | m³ | 57,355,691 | 47,843,270 | 54,896,988 |
| Indirect discharge | m³ | 63,149 | 41,594 | 37,186 |
| **Total water discharge** | **m³** | **57,418,840** | **47,884,864** | **54,934,174** |
| **Water discharge per t of copper output** | **m³/t Cu** | **131** | **108** | **122** |
| **Energy supply** | | | | |
| Supply of industrial waste heat to the city | MWh | 43,336 | 33,443 | 193,229 |

[1] For dust content (metals), see the information provided in the "Air — Emissions" section.
[2] Figure also includes dust from fugitive sources.
[3] The supplier's $CO_2$ emission factor is taken as a basis.
There may be slight deviations in the totals due to rounding.

# Lünen Site



# 1. Site profile

### The Lünen plant

Aurubis AG's Lünen plant is located on the southern edge of the city of Lünen, just one kilometer from town hall, and is one of the world's largest copper recycling facilities.

The site was built and commissioned on undeveloped land between the Cologne-Minden railway and the Datteln-Hamm Canal in 1916 as a branch plant of Hüttenwerke Kayser AG in Berlin. After the loss of the Berlin plants and reconstruction after the end of World War II, the production facilities were continuously expanded and steadily modernized. After the then-Norddeutsche Affinerie AG acquired the majority of Hüttenwerke Kayser shares in 2000, the plant was initially integrated into the company structure and expanded to become the Group's recycling center. Today Aurubis AG's Lünen site is one of the largest secondary copper smelters in the world, with a production capacity of around 210,000 t of copper cathodes annually. On the 316,000 m² plant grounds, about 680 employees (including roughly 40 apprentices) produce copper anodes, copper cathodes, iron silicate sand, and a number of co-products Fig. 3.1.

### The processes

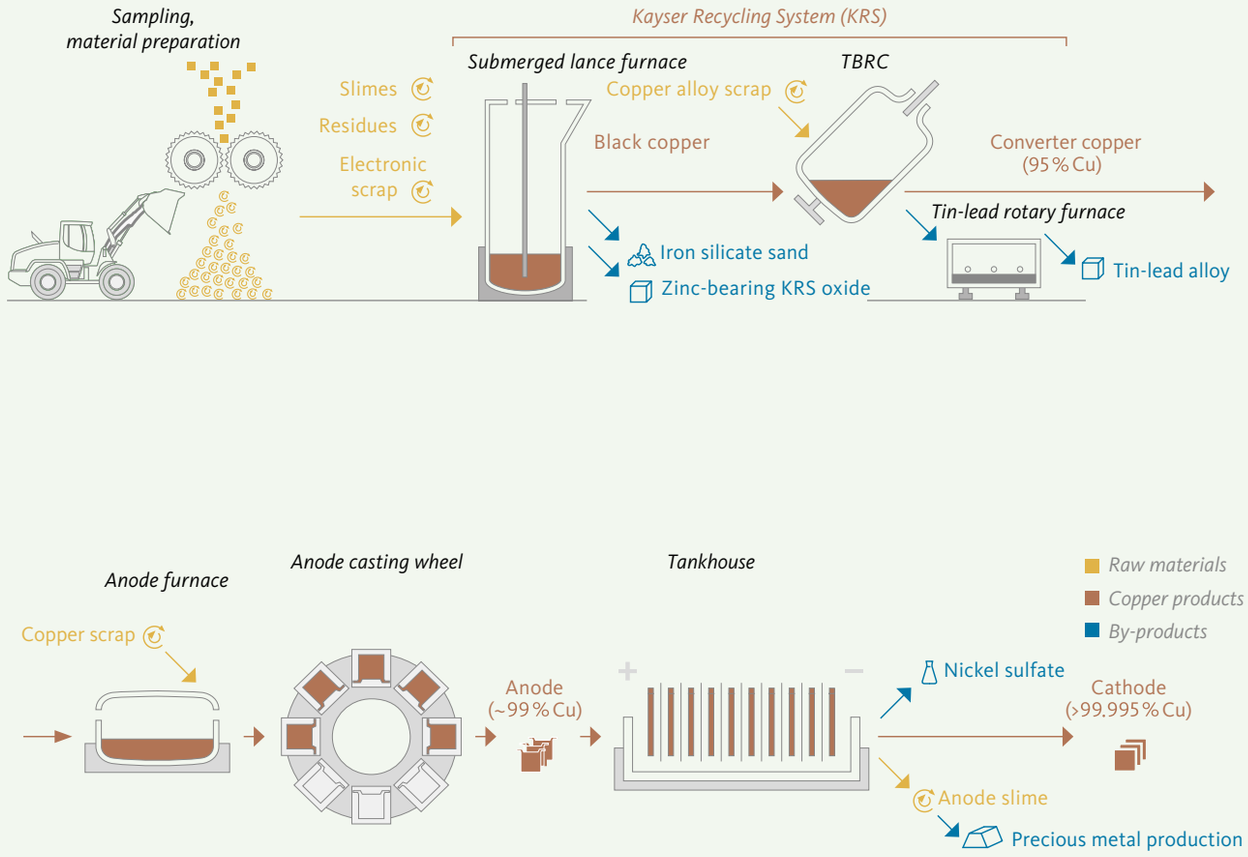
The Lünen site is a multimetal recycling site capable of processing highly complex raw materials in its own smelting and refining processes. Thanks to its options for flexibly using secondary raw materials, the Lünen plant can handle materials with complex compositions, such as pre-processed electrical and electronic scrap, old cars, and ashes from waste incineration in addition to traditional materials like copper and alloy scrap, slimes and industrial residues. The recycling process used in each case depends on the consistency and chemical composition of the raw materials.

After the input materials are delivered (usually by truck), processing begins with sampling, followed by a material preparation step. Depending on quality and composition, the raw materials are crushed, then treated and separated in the material preparation plant or directly conditioned into input mixtures before undergoing a multi-stage metallurgical process.

**Fig. 3.1: Overview of Lünen site facilities**


1 South plant entrance with noise protection wall 2 Rainwater retention facility 3 Material preparation 4 Sampling 5 E-scrap preparation 6 Warehouse 4
7 KRS 8 TBRC 9 Leaching plant 10 Anode smelter 11 Copper tankhouse 12 Cathode warehouse 13 Kupferstrasse plant entrance 14 ATASI 15 Administrative building

**Fig. 3.2: Multimetal recycling at the Lünen site**




Pyrometallurgical processing starts in the Kayser Recycling System (KRS), which was commissioned in 2002 and gained a TBRC (top-blown rotary converter) in 2011 as part of the KRS Plus project. The converter copper produced in the TBRC is refined together with copper scrap in the anode furnace and cast into copper anodes in a casting plant. These anodes are then refined electrolytically into copper cathodes — the site's final product. The tankhouse in Lünen processes anodes from other Aurubis sites as well Fig. 3.2.

Zinc-bearing KRS oxide, iron silicate sand (slag granules), a lead-tin alloy, nickel and copper sulfate, and anode slimes are produced as by-products of multimetal recycling. At the Hamburg site, precious metals like gold and silver are recovered from anode slimes, together with a PGM[1] solution. The ratio of copper cathodes to by-products is about 1:1, though the increasingly complex recycling raw materials are steadily shifting the ratio to more by-products with minor metals. No process-related waste accumulates.

[1] PGM = platinum group metal.

## 2. Environmental protection organization and management systems

**Environmental management organization**

Aurubis AG operates facilities requiring a permit in accordance with Section 52b of the Federal Immission Control Act and Section 58 of the Circular Economy Act. As such, the company's Executive Board or an appointed Board member is responsible for compliance with environmental protection and radiation protection regulations.

The officer functions at the Lünen site, for example:

- Immission protection and accident prevention
- Waste management
- Radiation protection
- Specialist company under the Water Management Act
- Occupational safety

are carried out by Lünen plant employees.

A Group employee located in Lünen fills the role of hazardous materials officer. Corporate Environmental Protection centrally oversees the tasks related to implementing the European chemical regulations REACH and CLP (Classification, Labelling and Packaging), which are outlined in the Corporate Environmental Protection Policy.

**The integrated management system for occupational health and safety, energy, quality and the environment**

The Lünen site has been certified in accordance with the environmental management systems EMAS and ISO 14001 since 1997. The site's environmental management system, together with the management systems for quality, energy, and occupational health and safety, comprise the integrated management system (IMS). The IMS includes the requirements placed on the Lünen plant as an end processor of electrical and electronic scrap (pursuant to the CENELEC standard TS 50625-5), in part as a waste management facility (Circular Economy Act, KrWG), and as an initial treatment facility (Electrical and Electronic Equipment Law, ElektroG).

The external audits annually carried out as part of the IMS certification involve reviewing the environmental data, the fulfillment of legal provisions, and the effectiveness of the operating processes. Furthermore, the management systems' efficacy is assessed annually through IMS audits. The results of the company environmental audits and internal audits are compiled in reports and discussed with the plant managers during the annual Management Review. The management systems are evaluated to ensure they are suitable, appropriate and effective and to assess whether the requirements for the integrated management system are being implemented successfully.

**Tasks of the environmental management system**

The production processes are securely managed through the environmental management system at the Lünen plant. The targets and measures are defined and their implementation is monitored continuously. Environmental management includes documenting operational processes, executing internal audits, routine recordings, and site inspections.

The environmental management system ensures that the applicable legal requirements are fulfilled with respect to environmental protection. Furthermore, it drives continuous improvement through product and process design that takes the environment and occupational safety into account. Saving energy is also an essential element of environmental protection, supported by the ISO 50001-certified energy management system. This system depicts energy flows transparently and identifies possible optimization potential.

The management systems and organization of the IMS are described clearly and extensively in a handbook available to employees. Consequently, the IMS handbook and associated process and work instructions do not just address environmentally relevant issues and incident prevention, but also quality assurance measures, energy management, and occupational health and safety. This management handbook ensures that all activities that concern environmental aspects and occupational safety issues are planned, managed, monitored and continuously improved with due regard to legal requirements.

Employees are briefed on newly emerging and changing legal requirements in regular environmental protection training courses. Employees can use the operational improvement system to proactively contribute suggestions and ideas for optimizing processes and improving energy efficiency.

The environmental management systems in Lünen support measures that fulfill the new Aurubis corporate strategy as well, which defines new and ongoing targets related to people, the environment, and the economy for 2030.

To guarantee compliance with these targets, uniform environmental KPIs are regularly established and reviewed for the Group, as well as verified by external auditors. Examples of these KPIs include specific metal emissions to air and water.

## 3. Environmental aspects and performance

Investments in environmental protection measures continue to be of crucial importance in Lünen. More than €145 million in total was invested in environmental protection from 2000 to 2025 Fig. 3.3.

Following the acquisition of Hüttenwerke Kayser in 2000, Aurubis AG set new standards through extensive investment projects with new and improved facilities, such as the Kayser Recycling System (KRS) with an investment volume of about €40 million.

The emission reduction concept for the period 2005 to 2009, which was agreed upon with the relevant governmental authorities, was initially estimated at around €10 million and was later increased by further investments of €25 million in additional measures (for instance, reducing dust emissions from KRS input materials in warehouse 4 and extensively paving storage areas).

Between 2015 and 2019, process optimizations were the primary focus at the Lünen plant. At the moment, more investments are planned for optimizing existing facilities (those used for input material storage and handling, for example) and to possibly build new ones, with the goal of achieving additional improvements such as reducing fugitive emissions.

### 3.1. Air

**Emissions**

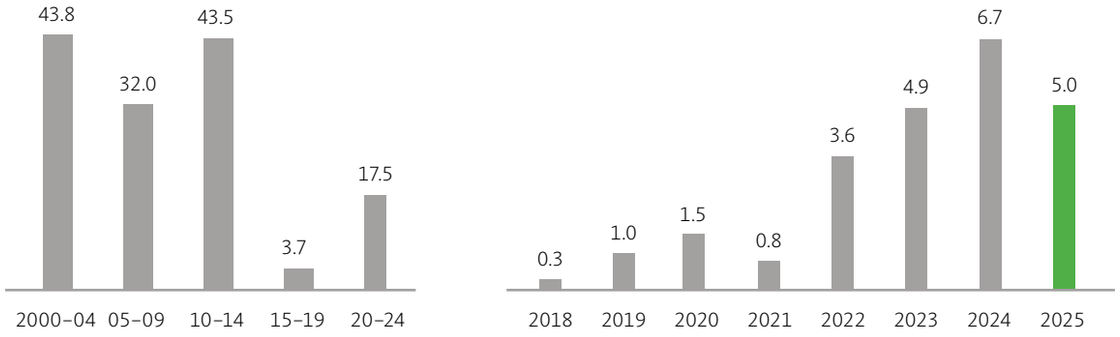
Emissions from directed sources (chimneys) are monitored with continuous measuring devices that transfer the emissions data. In addition to dust, substances like sulfur dioxide, nitrogen oxides, hydrogen chloride, hydrogen fluoride, and mercury are measured continuously depending on relevance. Other off-gas and dust components are measured manually.

The emission limits for air pollutants are stipulated in the TA Luft (Technical Instructions on Air Quality Control), with the limits in the permit requirements for some facilities falling well below the TA Luft standards. The limit values from the TA Luft relevant for Aurubis are featured in chapters 5.2.2, 5.2.4, 5.2.5, 5.2.7 and 5.4.3.3.1. Emissions to air comply with the limit values in the permits, or fall significantly below them in some cases. The same applies to additional substances listed in the permits, such as $NO_x$, HCl and HF.

The long-term goal of the Lünen plant is to achieve a continued reduction in emissions despite increasingly complex input materials. The difficulty in this regard is that the measured levels are already far below the detection limits in many areas, which could also be a reason for emission fluctuations in the calibration of the measuring devices. Because the emission level is already very low, significant reductions like those in the past cannot be expected through individual technical measures anymore. The goal is to continue maintaining this very low level and to improve it wherever possible.

**Fig. 3.3: Capital expenditure for environmental protection measures at the Lünen site[1]**

in € million




[1] The data relates to environmental investments per fiscal year. Single years are provided for readability, for example 2025 for fiscal year 2024/25.

https://www.verwaltungsvorschriften-im-internet.de/bsvwvbund_18082021_IGI25025005.htm

Emissions of dust and especially dust components (copper, lead, arsenic, etc.) have been considerably reduced at the Lünen site in the past several years due to mitigation measures. The graphic presented here also incorporates the fugitive emissions including storage and handling. In 2024, dust emissions were again at the same low level of the past several years Fig. 3.4.

Due to new, specific reduction targets set throughout the Group as part of the revised Sustainability Strategy, in the future, the associated reporting on specific emissions will no longer be based on input material, but rather on a multimetal indicator — the copper equivalent. The approach and calculation method are described in detail in the Group section of the Environmental Report in Targets and successes in environmental protection.

Reporting on dust emissions in the Lünen plant will remain based on input material volume to show medium- and long-term trends Fig. 3.4–Fig. 3.7.

Emission measurements with drones at the Lünen plant

**Fig. 3.4: Dust emissions at the Lünen site**

Dust emissions in g/t of input material and in g/t of copper equivalent

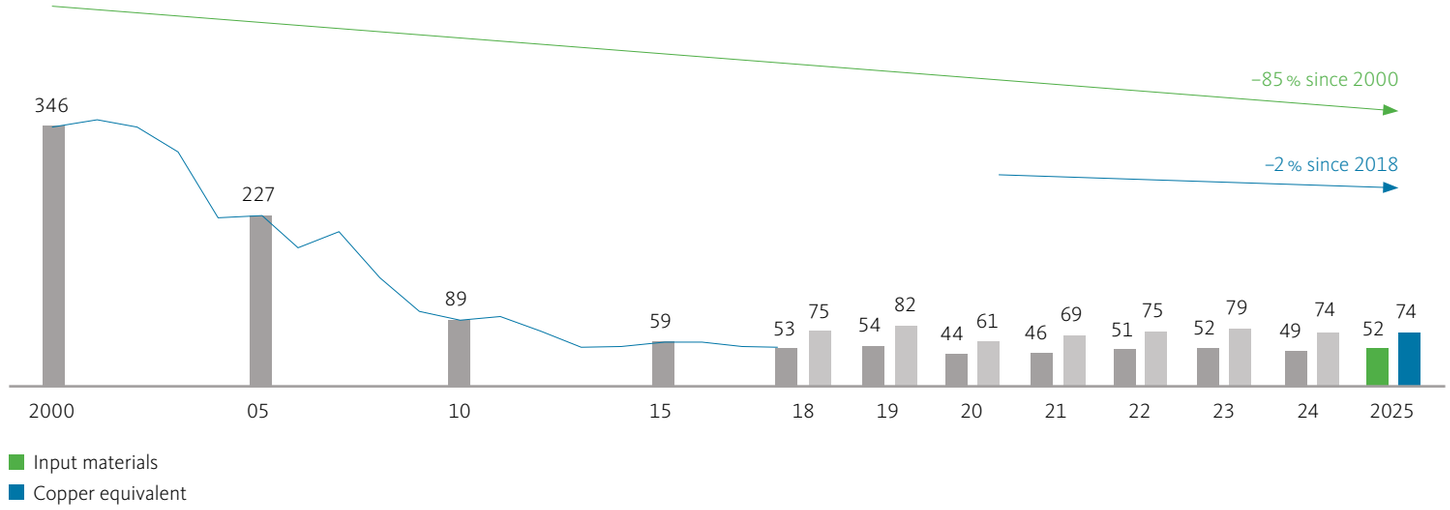
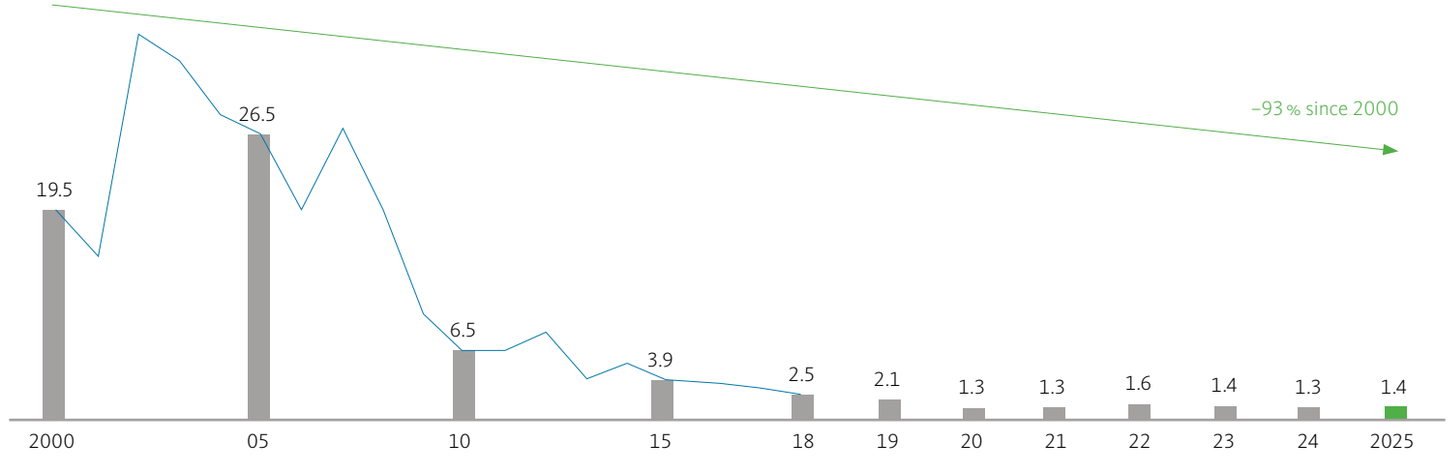



**Fig. 3.5: Copper emissions at the Lünen site**

Copper in g/t of input material



The Lünen plant uses complex recycling materials. As technical devices become smaller and smaller, and the number of processing stages increases correspondingly, copper production is lower, but there are more by-products per ton of material input. As a result, the new multi-metal indicator provides an optimal depiction of the Lünen plant and its complex input materials since it includes the value created from all metal categories.

In 2020, an innovative method for recording fugitive emissions using drones was used for the first time in close collaboration with the University of Düsseldorf. Drones outfitted with dust measuring devices fly around the plant buildings and provide live evaluation data on the existing dust pollution. This method enables precise measurement of current fugitive emissions. This has helped identify potential emission sources in the anode furnace area. For instance, a building adjoining the boiler of the anode furnace area was better dust-proofed and a roof section in the anode furnace casting area was equipped with a water sprinkler for dust abatement. In the future, drones will be used to measure fugitive emissions as needed.

### Immissions

To measure the immissions of dust precipitation including metallic components, the LANUV (NRW State Agency for Nature, Environment and Consumer Protection) operates a network of currently 11 "Bergerhoff" measuring points in the area surrounding the Lünen plant Fig. 3.8.

The closest LANUV measuring station for recording concentrations of particulate matter (PM10) is located on Viktoriastrasse (northeast of the plant). The position corresponds to that of the plant's calculated immission maximum Fig. 3.9.

**Fig. 3.6: Lead emissions at the Lünen site**

Lead in g/t of input material

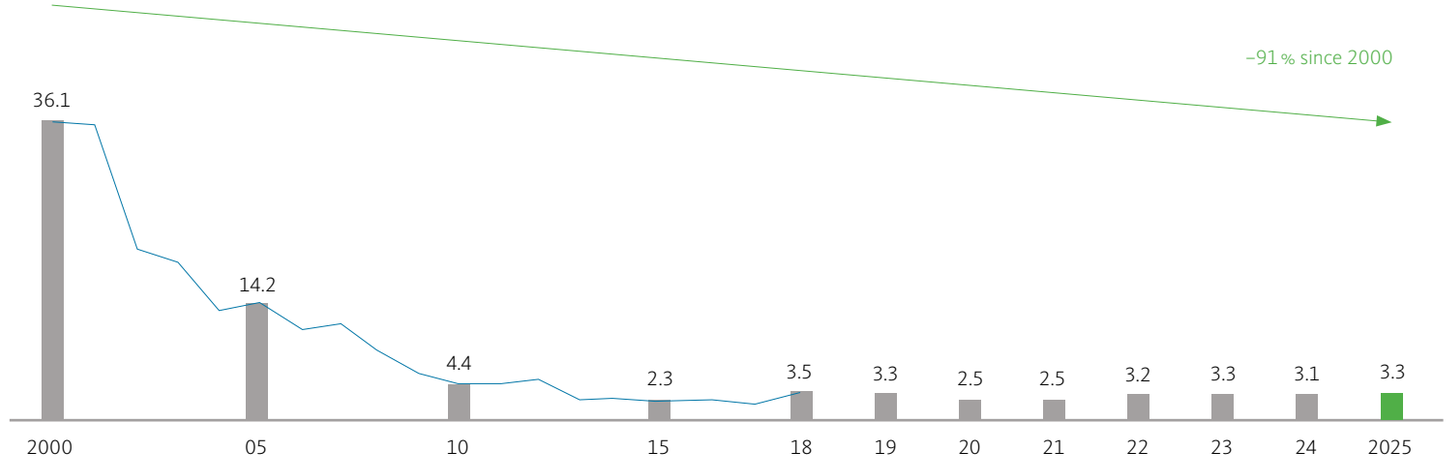
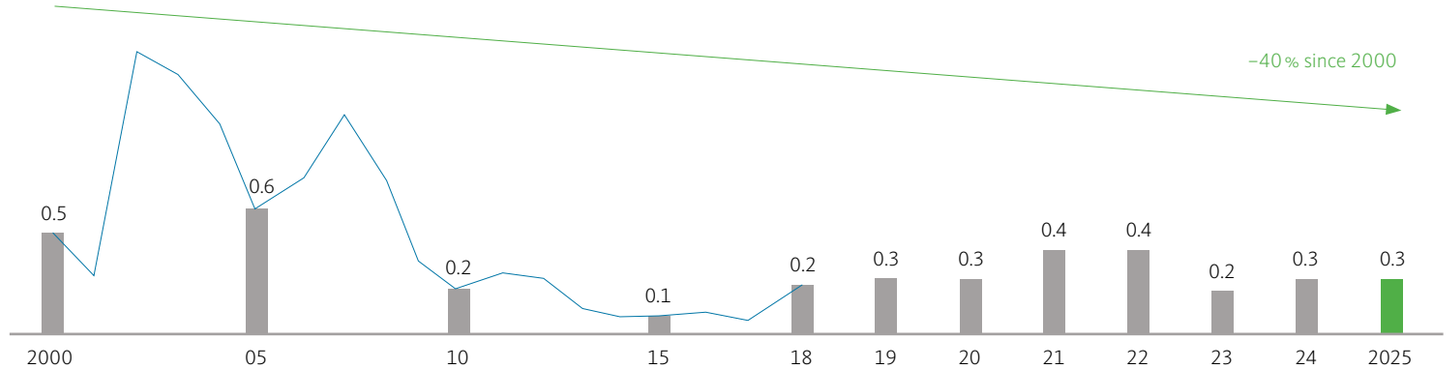
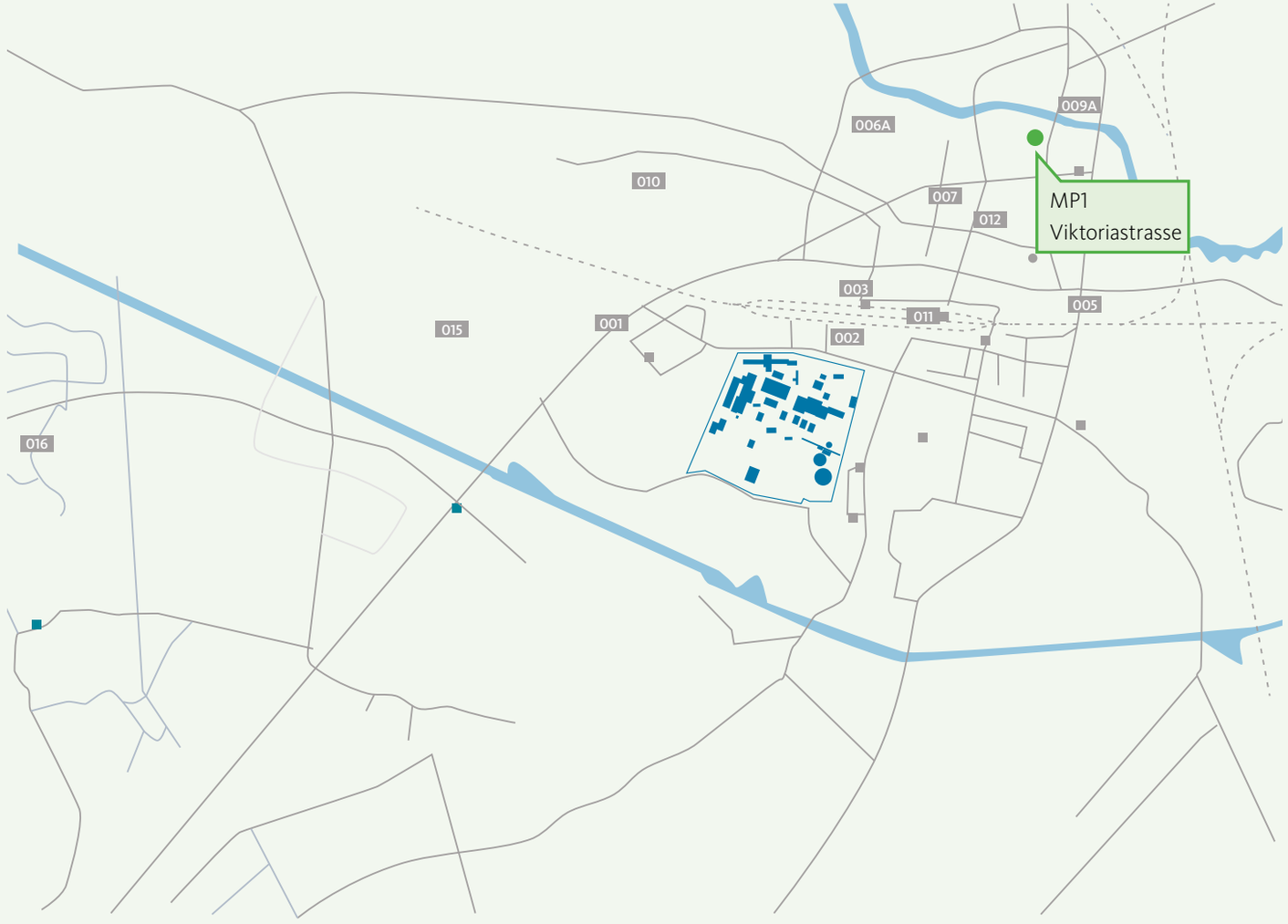



**Fig. 3.7: Arsenic emissions at the Lünen site**

Arsenic in g/t of input material



## Fig. 3.8: Locations of immission measuring points near the Aurubis plant in Lünen




**"Bergerhoff" measurement points in Lünen:**

| | |
|---|---|
| 001 | Buchenberg |
| 002 | Kleine Bergstrasse |
| 003 | Bergstrasse 48 |
| 005 | Bebelstrasse/Süggelbach |
| 006A | Rail line/mosque |
| 007 | Lünen South freight yard |
| 009A | B 236/Lippebrücke |
| 010 | Im Wiesengrund |
| 011 | Builder's association/building yard |
| 012 | Rail line/Kantstrasse |
| 015 | Im Engelbrauck/north side |
| 016 | Im Siepen |

Aurubis plant building

Source: LANUV

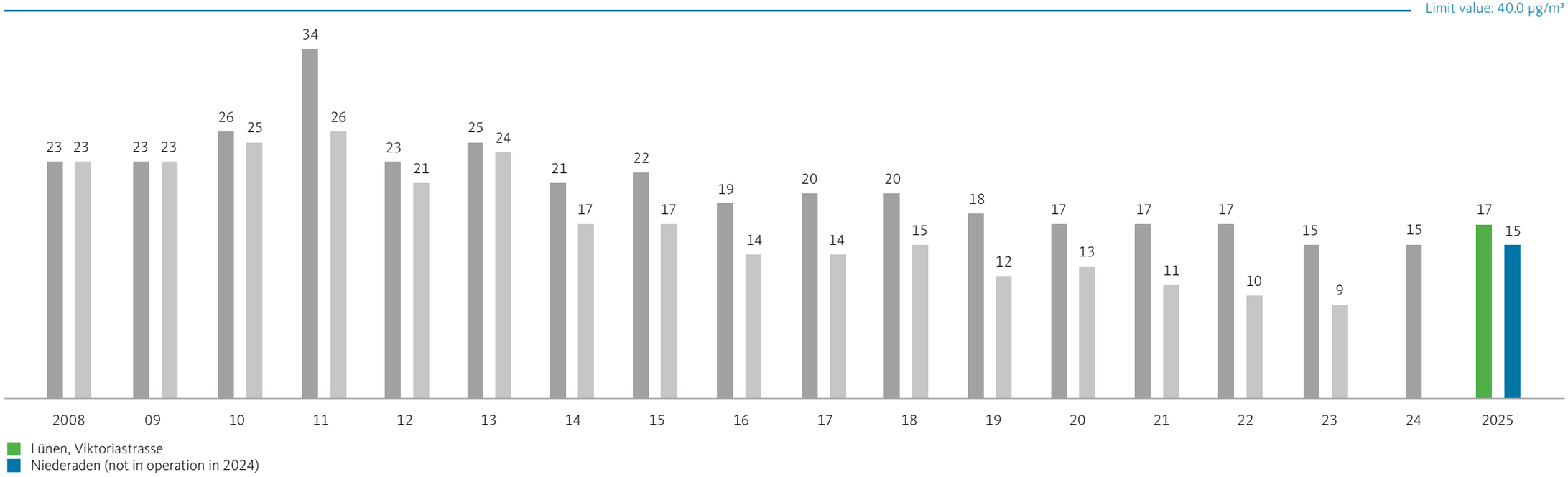
In the past ten years, there has been a significant reduction in dust immissions, primarily dust components. While isolated deposition values of the TA Luft were exceeded in some cases, the distribution of the deposited substances resulted from a number of specific emission parameters, such as meteorological conditions and properties of the substances, so immissions and depositions cannot be directly attributed to individual emitters. With regard to the immission situation in the Kupferstrasse industrial area, Aurubis communicates with the relevant governmental authorities and the other companies on site to identify and implement suitable reduction measures. Consequently, the Lünen plant reassessed the situation in an open dialogue with the authorities in early 2023 and planned additional emission reduction steps in conjunction with growth projects, including closing the roof of the KRS building, installing an off-gas cleaning system for optimal suctioning within the scope of the projects, cleaning and directing emissions through a directed source, closing the ridge turrets of the anode casting hall, and optimizing slag handling in the slag breaking area.

The measurements of air quality for suspended particulates and their components indicate that the levels are significantly and consistently below the limit values for both PM10 and lead, as well as below the EU target values for arsenic, cadmium and nickel Fig. 3.9–3.13. The LANUV measuring point at Niederaden is listed for comparison; it serves LANUV as a reference measuring point without industrial impact.

The LANUV measuring program investigating leafy vegetables from small gardens in Lünen near the plant was initially suspended and started up again in 2024 as part of continuous environmental monitoring.

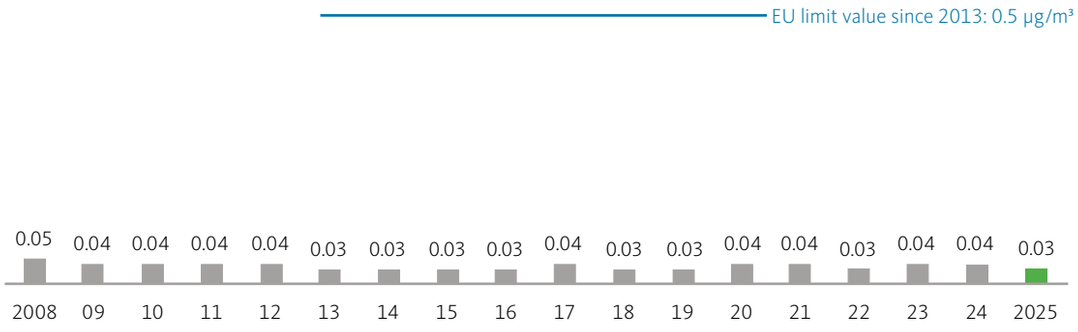
**Fig. 3.9: Immissions of particulate matter (PM10) compared to the plant's calculated immission maximum**

Comparison of dust immissions in µg/m³ at the Lünen site, Viktoriastrasse and Niederaden



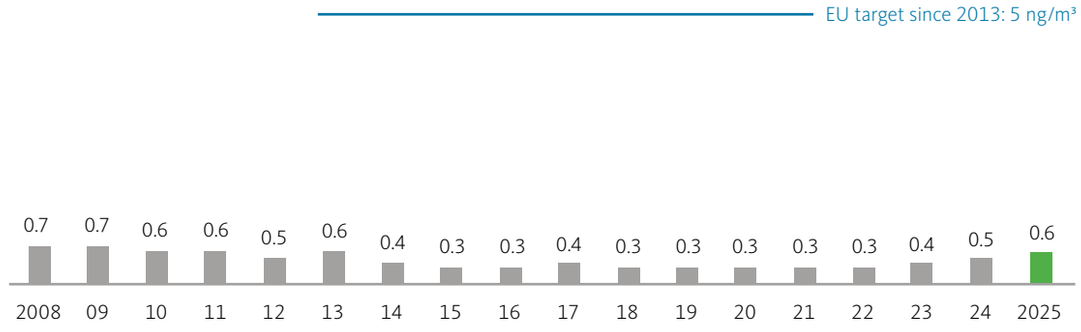
## Fig. 3.10: Lead

Lead immissions in µg/m³



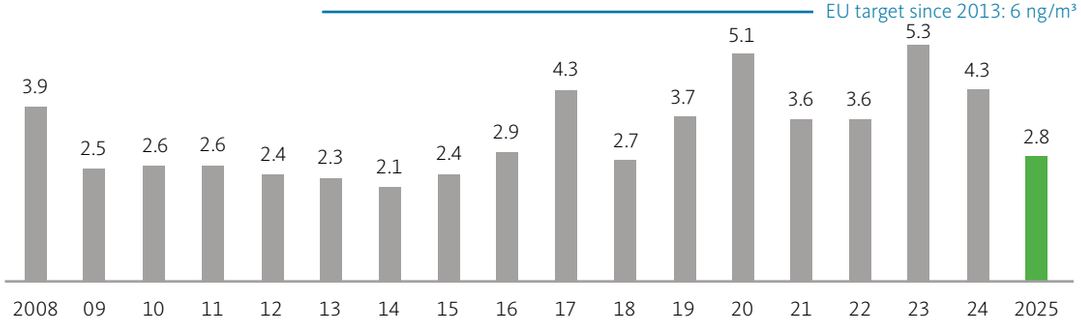

## Fig. 3.11: Cadmium

Cadmium immissions in ng/m³



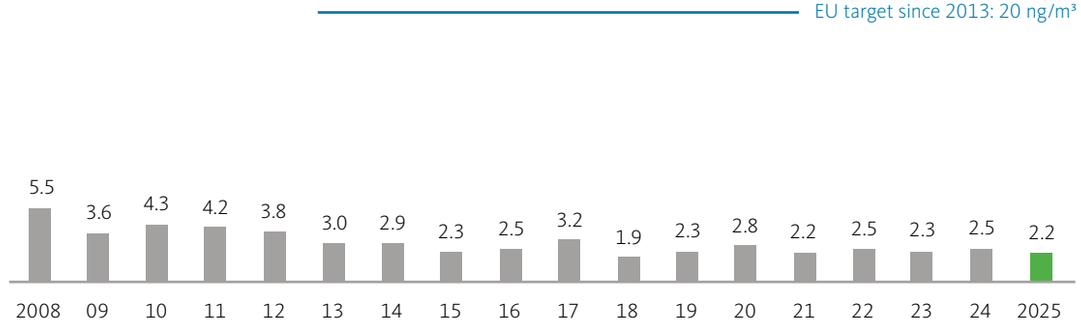

## Fig. 3.12: Arsenic

Arsenic immissions in ng/m³




## Fig. 3.13: Nickel

Nickel immissions in ng/m³



## 3.2. Water

Water is used in the Lünen plant for various cooling purposes, including anode cooling and slag granulation, as feed water for the steam boiler, and increasingly for operating several sweepers, as well as sprinkling driveways, plant/storage surfaces, and input materials. Particularly these latter measures to reduce dust emissions make it difficult to significantly reduce water consumption.

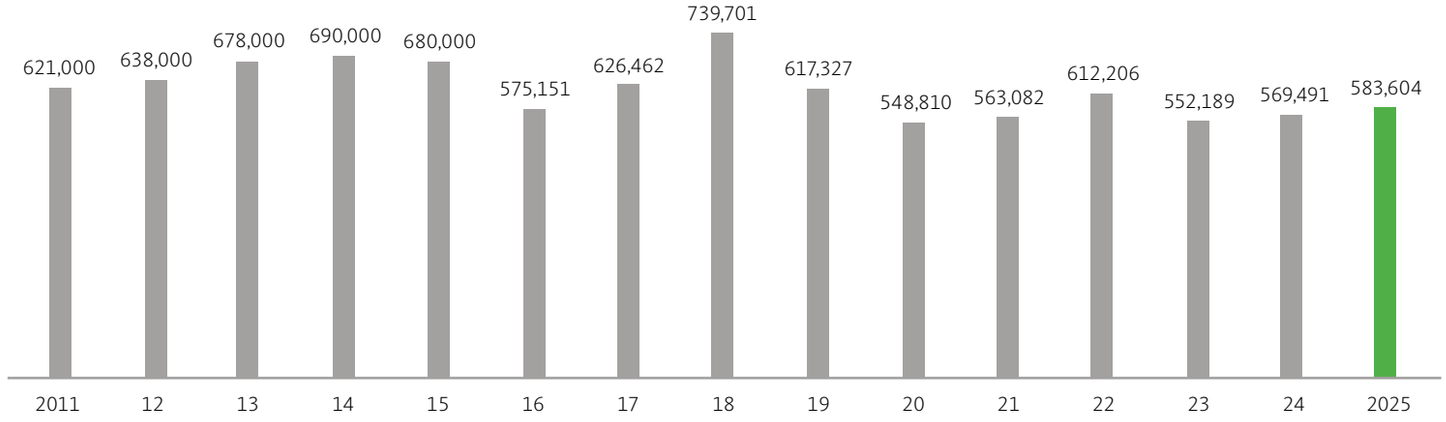
To conserve water resources as much as possible, the Lünen site operates a facility for rainwater retention, treatment and utilization, which covers a large part of the internal cooling and process water needs with collected rainwater.

The rainwater volume used in this way has increased continuously during the past several years, and water consumption from the public water network has decreased accordingly. In 2025, just under 339,000 m³ of process water was used for internal purposes. Overall, the rainwater-use project has significantly surpassed the projected quantities. In 2025, water consumption and wastewater discharge were at good levels similar to the past years Fig. 3.14 and Fig. 3.15. There were no notable incidents in 2025 that had any significant impact on the site's water consumption. Water withdrawal and release depend on different factors, however, including weather-related factors (e.g., precipitation volumes and evaporation) and production-related factors (e.g., increased evaporation in production processes and measurement deviations), and can fluctuate as a result.

For the coming years, additional optimizations are planned for internal water use, such as reviewing the further treatment of internal process water (reverse osmosis, evaporation). The goals are to use water internally to the greatest possible extent and prevent the discharge of process water into the public sewer system.

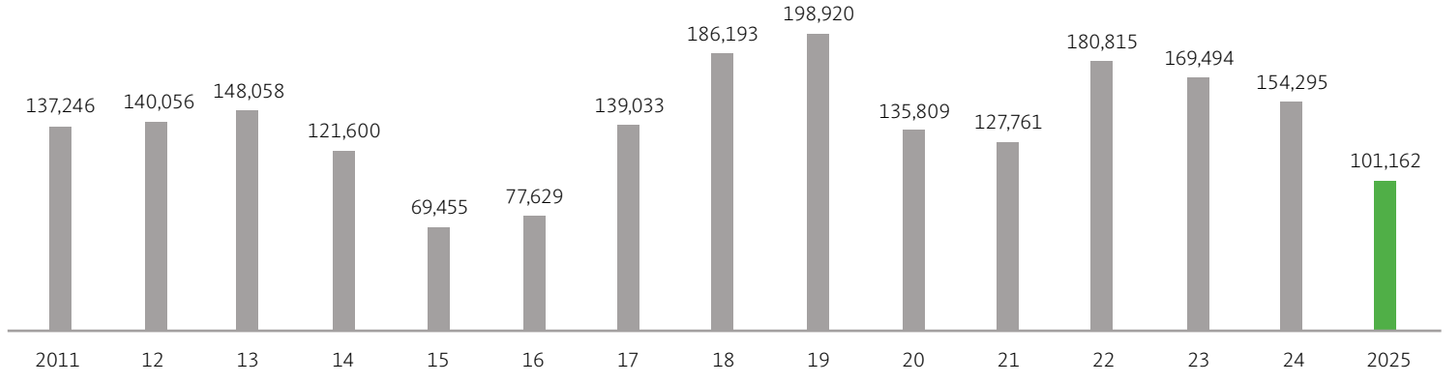
### Fig. 3.14: Water consumption at the Lünen site

Water consumption in m³/year




### Fig. 3.15: Wastewater discharge at the Lünen site

Wastewater discharge in m³/year[1]




[1] Wastewater discharge from rainwater retention has been recorded since 2017; as a result, the 2015 and 2016 figures are substantially lower than in comparable years.

## 3.3. Soil and groundwater

Since the plant opened in 1916, facilities producing non-ferrous metals have been operated continuously at the site. In conjunction with war damage, this led to soil pollution in the past.

On the basis of comprehensive tests, a remediation plan was developed and coordinated with the responsible authorities. In late 2014, a remediation agreement was signed with the Unna district describing the further agenda and the steps planned to remediate the soil and groundwater at the Lünen site.

The remediation concept includes encapsulating the contaminated area with the help of a sealing wall, as well as a drainage facility that requires the discharged water to be purified. Part of the sealing wall and some extraction wells have already been completed in the run-up to construction measures. An alternative concept is currently being drafted and will then be coordinated with the authorities.

The oil damage remediation system, the first measure implemented to remediate an oil phase in a former oil storage area, went into regular operation in 2020. This system cleans the extracted groundwater, which is then used as internal process water; the separated oil phase is disposed of externally by a specialized company that operates the system for Aurubis. In addition, the remediation progress is monitored externally with regular reports to the authorities.

For the other remediation measures, the goal is to use the remediated water in a similar way to sensibly combine remediation with further resource conservation.

For decades now, preventative measures have been developed in order to eliminate future contamination of the soil. They are primarily related to the facilities dealing with materials hazardous to water, such as the tankhouse and oil storage. Furthermore, the storage spaces for input materials are being designed so that not even traces of deposits or components of input materials hazardous to water can end up in the soil.

**Facilities handling substances hazardous to water**

At the Lünen plant, Aurubis AG operates about 25 installations to handle substances hazardous to water that fall under the scope of the Ordinance on Equipment Handling Substances Hazardous to Water (AwSV). During the technical audits carried out in 2025, the accredited inspection authority once again found no safety-relevant deficiencies whatsoever. Keeping the plants in proper technical order plays a key role in protecting the soil and groundwater.

## 3.4. Waste

The waste from the Lünen plant mainly results from packaging from delivered materials, from construction measures, and from spent furnace lining from the KRS, anode furnaces, etc. The externally marketed contingents of the material preparation plant, such as aluminum for continued recycling, are also inevitably among the waste from the site, as they do not lose their waste properties through processing. In the meantime, sorting in the facility has become nearly homogeneous, making it possible to deliver all contingents completely as raw material for recycling to the respective industries for several years now.

A total of 433 t of hazardous waste accumulated in 2025, mainly spent furnace lining material. All of this waste was sent for recycling.

Spent furnace lining material volumes can vary a great deal because they accumulate counter-cyclically depending on the specific furnace campaigns of the site's different smelter units.

Additionally, a central waste collection point began operating in 2023. This centralization allows the waste streams to be channeled better, prevents impurities, and lowers waste costs. In addition to the information shown in Fig. 3.16, the table of KPIs in the Appendix provides a detailed breakdown of hazardous and non-hazardous waste streams.

A complete waste balance for the site is available pursuant to Section 21 of the Circular Economy Act. This is submitted annually to, and accepted by, the responsible authorities by the March 30 deadline.

**Fig. 3.16: Waste generated at the Lünen site**

| | Unit | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|
| **Non-hazardous waste** | t/year | 19,712 | 8,944 | 5,206 | 4,045 | 4,689 | 6,561 |
| **Hazardous waste** | t/year | 402 | 329 | 372 | 348 | 367 | 433 |
| **Construction waste** | t/year | 3,015 | 14,638 | 58,349 | 36,256 | 23,633 | 9,248 |
| **Total waste volume, incl. construction waste** | t/year | 23,129 | 23,911 | 63,725 | 40,649 | 28,689 | 16,242 |

## 3.5. Energy and climate protection

Energy is required first and foremost for the metallurgical processes (primarily heating oil and natural gas), as well as for the tankhouse (electricity). Steam or thermal energy for leaching and electrolysis is mainly produced in the waste heat boilers of the KRS submerged lance furnace and anode furnace. There are also two auxiliary boilers primarily fueled with natural gas.

Since 2015, a two-stage condensation turbine has been in operation to produce electricity for internal use from waste heat steam through cogeneration. The steam from the process waste heat is initially depressurized from about 18 bar to 5 bar in the first turbine stage. Steam is removed for thermal use and the remaining volume is then depressurized to 0.1 bar in the second turbine stage. Turbine capacity for captive power generation was around 7.9 GWh in 2025. It should be noted that the turbine was not online for a longer period of time from August 2025 to January 2026 due to overhaul and repair work. An additional estimated 6 GWh would have been generated had this not been the case.

Developments and background on the use of primary energy sources:

- The plant's total energy consumption amounted to 487 GWh in 2025, a 20 GWh reduction in energy demand compared to the previous year.
- The central factor impacting energy consumption is full tankhouse operation following the overhaul completed in 2024.
- Continued high input of energy-intensive, complex raw materials such as shredder materials and residues.

The electricity required for environmental protection measures remains unchanged at roughly one-third of total electricity demand.

At 341 GWh in 2025, primary energy input is around the five-year average. At about 146,000 t, direct $CO_2$ emissions are well below the prior-year level of around 161,000 t of $CO_2$. Externally certified data indicates that the organic components in the raw materials still contribute more to the site's $CO_2$ emissions than the main energy source, heavy fuel oil.

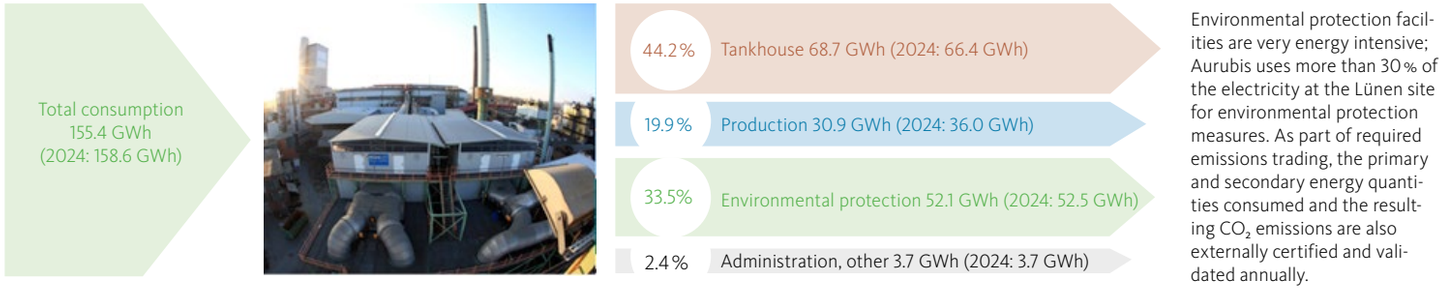
Copper cathode output rose from about 165,106 t in 2024 to 174,585 t. The number of copper anodes delivered to the Hamburg site decreased by 28 %. The goal of the Lünen site is to continue pushing the use of complex raw materials.

### Fig. 3.17: Energy consumption[1] at the Lünen site

| | Unit | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|
| **Primary energy consumption** | MWh | 360,990 | 337,970 | 352,437 | 352,519 | 339,461 | 346,889 | 349,142 | 340,607 |
| **Secondary energy consumption** | MWh | 164,593 | 155,067 | 163,553 | 153,145 | 155,021 | 148,584 | 158,641 | 146,433 |
| **Total energy consumption** | MWh | 525,583 | 493,036 | 515,990 | 505,664 | 494,482 | 495,473 | 507,783 | 487,040 |
| **Energy consumption per ton of copper output** | MWh/t Cu | 2.73 | 2.79 | 2.83 | 3.00 | 2.69 | 2.98 | 2.92 | 2.66 |

[1] Calculated using DEHSt (German Emissions Trading Authority) standards.

### Fig. 3.18: Breakdown of energy consumption at the Lünen site




Environmental protection facilities are very energy intensive; Aurubis uses more than 30 % of the electricity at the Lünen site for environmental protection measures. As part of required emissions trading, the primary and secondary energy quantities consumed and the resulting $CO_2$ emissions are also externally certified and validated annually.

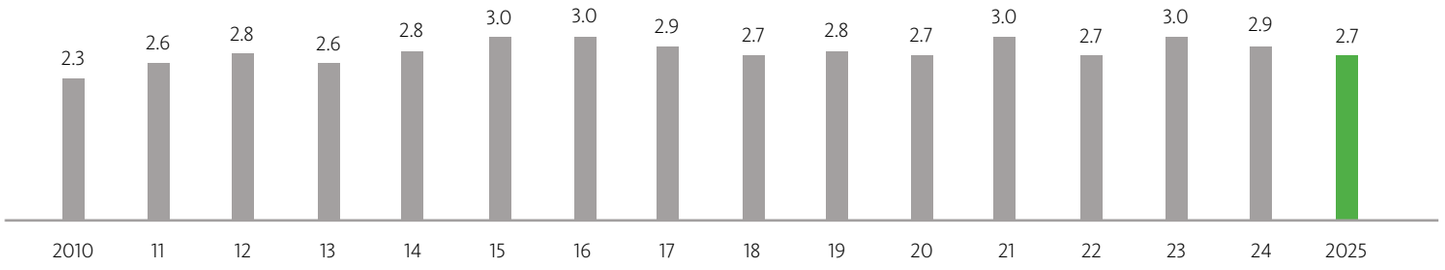
### Fig. 3.19: Direct $CO_2$ emissions at the Lünen site

| | Unit | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|
| **Direct $CO_2$ emissions** | t/year | 169,415 | 163,572 | 162,166 | 164,854 | 156,794 | 161,596 | 162,777 | 148,548 |
| **Biogenic $CO_2$** | t/year | 300 | 295 | 313 | 379 | 334 | 295 | 386 | 327 |
| **$CO_2$ subject to DEV 2020[1]** | t/year | 166,918 | 161,113 | 159,739 | 162,276 | 154,294 | 159,218 | 160,337 | 145,935 |

[1] 2020 Data Collection Regulation for the third emissions trading allocation period.

### Fig. 3.20: Energy consumption at the Lünen site

in MWh/t of copper output




**$CO_2$ reduction targets**

Aurubis AG is dedicated to treating the environment and limited natural resources with care as part of its sustainability targets. Furthermore, long-term company success is to be secured through responsible business practices and stable growth. Aurubis AG has also pledged to reduce its $CO_2$ footprint by 50 % for Scope 1 and 2 emissions by 2030. ISO 50001 requires consideration of climate risks and $CO_2$ emission reduction in energy management to counter climate change and sustainably boost energy efficiency. This is presented in a risk analysis that takes into account the impact of climate change on the plant.

These Group targets are broken down according to the respective site. As a secondary copper producer, the Lünen site faces a particular challenge. Around 50 % of the site's $CO_2$ emissions arise from the complex secondary materials used as input materials. More efficient pretreatment and improved sorting lines can be used to initially convert some "unavoidable" $CO_2$ emissions into "avoidable" $CO_2$ emissions. The 50 % target can also be achieved in Lünen by replacing fossil fuels such as oil and gas with green energy sources and planning and implementing energy projects such as the expansion of photovoltaics and the construction of a steam storage facility at the site.

## 3.6. Noise, odors and vibrations

Noise protection measures take high priority in the cdesign of new facilities in particular. The goal is to ensure that any additional noise pollution in the area, as defined by the TA Lärm regulation, is only marginal, i.e., the levels should be at least 10 dBA lower than the TA Lärm immission reference values. This requirement was fulfilled in the last few years in all projects, and noise reduction measures are continuously carried out at existing facilities as well.

There were few noise complaints in 2025. Those that were attributed to sources on the Aurubis plant premises were immediately remedied. No limit values were exceeded in any measurable way. Sixteen noise complaints were lodged in the course of 2025.

Vibrations were reviewed as part of the environmental aspect assessment pursuant to ISO 14001. Based on the technologies implemented and the monitoring results from the relevant authorities, they are not considered significant environmental aspects.

## 3.7. Biodiversity

Aurubis AG Lünen's plant premises are adjacent to agricultural land and are just a few kilometers from multiple Natura 2000 nature conservation areas (In den Kämpen, Cappenberger Wälder, and Lippeaue). Respecting and promoting biodiversity are therefore high priorities for us. For example, Aurubis has reviewed larger expansion projects such as the KRS Plus project with extensive FFH[1] assessments in order to identify possible impacts on biodiversity. In smaller projects in the plant and in the neighborhood, we continue to take active steps to promote and preserve biodiversity — such as by planting greenery on plant surfaces that are not in use (noise protection wall).

[1] Flora Fauna Habitat Directive (EU Habitats Directive).

### 3.8. Indirect environmental aspects

Most input materials and auxiliary materials are delivered by truck, mainly because the type of delivery is the supplier's choice. About 70 % of deliveries arrive through the Buchenberg entrance, which is completely located in an industrial area of the Lünen city harbor and is separated from residential areas with an effective noise protection wall. An increase of deliveries by rail via the side track at the plant is planned for the future.

An air separation unit was commissioned at the site in 2026, enabling Aurubis to generate oxygen and nitrogen directly on site. This will eliminate truck deliveries of liquid oxygen going forward, as well as the energy-intensive process to re-evaporate it. The result is 3,000 fewer truck transports per year and thus a $CO_2$ reduction of up to 8,500 t. This cuts emissions and traffic but also noticeably improves the noise situation in the area surrounding the site.

## 4. Audits, inspections, emergency preparedness

**Audits and inspections by governmental authorities**
The following environmental inspections were carried out by the relevant governmental authorities in 2025:

» IED[1] plant inspection focusing on the acceptance of the steam accumulator system permitted September 23, 2024 (file number: 900-0877505-0001/IBG-0008-G 35/24 - Fr).

The inspections were completed without any deviations. The reports are available online on the Arnsberg District Council website.

**Emergency measures and crisis management**
Because of the type and quantity of materials handled, the Lünen site is subject to what are called the expanded obligations of the German Hazardous Incident Ordinance. Aurubis therefore developed a comprehensive safety report together with external experts and in close coordination with the responsible governmental authority, in which all incident scenarios are addressed and concrete safeguards are derived from them. The safety report is revised regularly and is adjusted and expanded to reflect the results of hazardous incident inspections. The hazardous substances register indicates the locations of these substances in the plant as well as potential incident scenarios.

The Lünen plant's incident information is provided to neighbors near the plant and can also be accessed online on the Aurubis website at any time. The information provided to those living near the plant was reviewed and updated in early 2025.

There were no incidents or malfunctions with significant environmental effects within the definition of the Hazardous Incident Ordinance at the Lünen plant during the reporting period.

## 5. Partnerships and engagement

**Engagement for the environment, mobility and society at the Lünen site**
The Lünen site follows a holistic approach to promoting sustainable development. In addition to continually improving environmental performance, this also includes steps to encourage low-impact mobility and contributions to community development in the region. One focus is support for sustainable mobility solutions. A publicly accessible Rad-Service bike station was set up at the north plant entrance in collaboration with the city of Lünen. This promotes the use of bikes in everyday traffic and helps reduce traffic-related emissions. Furthermore, the site supports regional initiatives that strengthen the local community and indirectly boost sustainable site development. This includes funding for Lünen's youth fire department and volunteer fire department, which strengthens volunteer structures and civil protection. Likewise, the site supports Lünen's children and youth outpatient hospice service, sponsored by the German Children's Hospice Association. Social organizations such as the Evangelische Familienzentrum Johannes are sponsored on a project basis. When it comes to education and supporting young people, the site sponsors programs that help secure skilled workers and ensure equal opportunity in the long term. Initiatives such as Joblinge assist young people in their transition from school to work. Educational opportunities are also supported at the Unna district's special-needs school.

Another aspect of the site's social engagement is sponsoring local sports and associations. Long-term partnerships with regional sports organizations and event support reinforce social networks. The site takes part in regional events, for instance local public screenings of sporting events, to encourage transparency and dialogue with the public. This provides opportunities to talk to local citizens and inform them about site-related activities. There has also been an agreement with the city of Lünen to promote biodiversity in the municipal area since late 2025. The measures described here supplement the environmental management system and contribute to the site's sustainable development and to encouraging low-impact mobility in a regional context.

[1] Industrial Emissions Directive.

## 6. Environmental Program

The targets set in the context of the Environmental Statement 2025 were reviewed to determine the extent to which they had been achieved and implemented. Dialogue with employees, training, audits and quality circles served as a basis for discussing and evaluating the environmental protection measures, as well as developing a new environmental protection program for 2026. The relevant environmental KPIs and assessment of the environmental measures are available in more detail in the respective chapters. The results are presented in the following Environmental Program.

| Target | Planned measures | Degree of implementation/date |
|---|---|---|
| **Air pollution control** | | |
| Concept for better dust control in storage areas throughout the entire plant | Setting up new Legio walls, boxes with slanted roofs, semi-automatic water sprinklers with the help of central technical containers and various water sprinklers and misting machines. | The concept was developed and presented to the governmental authorities. Implementation began in 2023 and is continiously advanced. |
| Reducing emissions and improving odor immissions in the plant surroundings | New filter in sampling with extraction ring in the sampling hall. | The filter was commissioned in 2023. Additional steps are under review. |
| **Water pollution control** | | |
| Optimizing wastewater flows | Separately treating sanitation water, improving the ratio of used surface water to drained surface water to close to 100 %. | The previous targets were achieved and the water usage concept to prevent unused process water from being discharged was developed.<br>A schedule of preliminary inspections has been drawn up.<br>Pump trials were executed and treatment procedures were tested in 2025.<br>The results are currently being evaluated. |
| **Waste management/polluted areas** | | |
| Renaturation of the internal, defunct blast furnace slag (HOS) landfill | The historic HOS landfill has been partially remediated. The remaining part of the landfill has been secured and a restructuring plan, including an official permit, is being drawn up. | The safety measures were completed at the end of March 2024. Restructuring is targeted for the end of 2028. |
| **Energy optimization** | | |
| Enhancing energy efficiency | Developing an assessment basis that takes the following aspects into account:<br>» Form of energy<br>» Raw material structures<br>» Raw material availability<br>» Raw material composition (complexity)<br>» Price volatility | The Energy Performance Indicators (ENPIs) are reliable and sound. In the coming years, standards-based assessment benchmarks will be introduced for the entire process in order to better monitor sustainable energy development. |
| Developing a steam storage facility for optimized use of steam | The goal of the installed steam accumulators is to minimize energy losses and optimize the supply of process steam for the boilers and plant facilities. | The project was implemented in 2025. |

## 7. Key figures for Aurubis AG, Lünen site, in the 2025 calendar year

Developments in KPIs are explained in the text.

| Input | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Raw materials** | | | | |
| Recycling raw materials | t | 326,112 | 313,485 | 318,573 |
| Blister, etc. | t | 10,728 | 7,972 | 8,530 |
| Copper anodes from other Aurubis sites | t | 1,480 | 20,215 | 27,322 |
| Bleed | t | 44,115 | 42,605 | 31,271 |
| **Total raw materials** | **t** | **382,435** | **384,276** | **380,860** |
| **Input material per t of copper** | **t/t Cu** | **2.30** | **2.21** | **2.08** |
| **Operating supplies and materials** | | | | |
| Oxygen | million m³ | 41 | 44 | 39 |
| Rhine sand | t | 19,528 | 9,524 | 9,432 |
| Limestone | t | 1,661 | 218 | 134 |
| **Energy** | | | | |
| External power sources | MWh | 141,246 | 149,110 | 146,433 |
| Internal power sources | MWh | 7,338 | 9,252 | 7,919 |
| Natural gas, oil, coal | MWh | 346,889 | 349,142 | 332,995 |
| Total energy consumption | MWh | 495,473 | 507,783 | 487,040 |
| **Use of regenerative/renewable energy** | | | | |
| Use of process heat | MWh | 7,200 | 9,259 | 5,619 |

The table may include slight deviations in the totals due to rounding.

| Input | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Water withdrawal/uptake** | | | | |
| Potable water | m³ | 552,189 | 569,491 | 583,604 |
| Precipitation | m³ | 269,912 | 213,037 | 142,520 |
| Other sources (e.g., raw materials) | m³ | 39,099 | 37,547 | 27,155 |
| **Total water uptake** | **m³** | **861,200** | **820,075** | **753,279** |
| **Water consumption (withdrawal) per t of copper output** | **m³/t Cu** | **5.2** | **4.7** | **4.1** |
| **Area used** | | | | |
| Total plant area (incl. south plant entrance) | m² | 316,000 | 316,000 | 316,279[1] |
| Buildings and paved area | m² | 252,784 (equivalent to 80 %) | 252,784 (equivalent to 80 %) | 245,412[1] (equivalent to 78 %) |

[1] Area calculation updated 03/2026.
The table may include slight deviations in the totals due to rounding.

| Output | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Products** | | | | |
| Copper products sold (cathodes, anodes and blister) | t | 166,324 | 173,919 | 183,387 |
| KRS oxide | t | 24,260 | 20,722 | 18,483 |
| Iron silicate sand | t | 160,872 | 155,768 | 165,358 |
| Other (tin composite, nickel sulfate, etc.) | t | 21,353 | 20,921 | 17,048 |
| Total products | t | 372,762 | 371,330 | 384,276 |
| **Waste** | | | | |
| **Total waste volume, including construction waste** | **t** | **40,649** | **28,689** | **16,242** |
| **Construction** | **t** | **36,256** | **23,633** | **9,248** |
| **Hazardous waste** | t | **348** | **367** | **433** |
| AVV[1] 16 11 03* Spent potlining | t | 248 | 258 | 341 |
| AVV 13 02 05* | t | 34 | 23 | 27 |
| AVV 16 07 08* Wastes containing oil | t | 20 | 33 | 29 |
| Other | t | 46[2] | 53[3] | 36[4] |
| **Non-hazardous waste** | **t** | **4,045** | **4,689** | **6,561** |
| AVV 19 12 04 Plastic waste | t | 1,333 | 1,583 | 1,677 |
| AVV 19 10 02 Aluminum | t | 1,310 | 1,727 | 2,516 |
| AVV 15 01 03 Wood (pallets) | t | 593 | 702 | 727 |
| Other | t | 810[5] | 677[6] | 1,641[7] |
| Total waste per t of copper output | kg/t Cu | 26 | 29 | 38 |
| Total waste per t of input material | kg/t | 11 | 13 | 18 |

[1] Waste List Ordinance (AVV).
[2] Comprises 12 waste code numbers (AVV).
[3] Comprises 9 waste code numbers (AVV).
[4] Comprises 8 waste code numbers (AVV).
[5] Comprises 15 waste code numbers (AVV).
[6] Comprises 15 waste code numbers (AVV).
[7] Comprises 12 waste code numbers (AVV).

The table may include slight deviations in the totals due to rounding.

| Output | Unit | 2023 | 2024 | 2025 |
|---|---|---|---|---|
| **Emissions** | | | | |
| $CO_2$ (direct emissions) per t of copper output | t $CO_2$/t Cu | 0.96 | 0.92 | 0.80 |
| Dust per t of copper output | g/t Cu | 121 | 109 | 108 |
| Dust per t of copper equivalent | g/t Cu eq. | 80 | 75 | 100 |
| $SO_2$ per t of output | kg/t Cu | 5.4 | 5.2 | 4.8 |
| $NO_x$ per t of copper output | kg/t Cu | 1.7 | 2.0 | 1.7 |
| **Water discharge** | | | | |
| Wastewater (indirect discharge) | m³ | 169,500 | 154,300 | 101,162 |
| Water discharge per t of copper output | m³/t Cu | 1.02 | 0.89 | 0.55 |

The table may include slight deviations in the totals due to rounding.

# CERTIFICATE

EMAS
VERIFIED ENVIRONMENTAL MANAGEMENT

Aurubis AG

Hovestr. 50, 20539 Hamburg
Kupferstr. 23, 44532 Lünen

Registration-No.: DE-131-00035

Date of first registration: 1st November 2005

This certificate is valid until: 19th May 2029

This organisation has established an environmental management system according to Regulation (EC) No. 1221/2009 and EN ISO 14001:2015 (sections 4 to 10) to promote the continual improvement of environmental performance, regulary publishes an environmental statement, has the environmental management system verified and the environmental statement validated by an independent and accredited verifier, is registered under EMAS (www.emas-register.de) and therefore is entitled to use the EMAS-Logo.

IHK Industrie- und Handelskammer Hannover
Chamber of Industry and Commerce

Dr. Mirko-Daniel Hoppe

Hannover, 11th June 2026

INDUSTRIE- UND HANDELSKAMMER HANNOVER

TÜVNORD

## ENVIRONMENTAL VERIFIER'S DECLARATION ON VERIFICATION AND VALIDATION ACTIVITIES

EMAS

in accordance with the
**REGULATION (EC) No 1221/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 November 2009**
**on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)**

The signing environmental verifier Ralph Meß, licensed for the scope "NACE-Code 24.44 - production and initial processing of copper", declares, to have verified whether the whole organisation as indicated in the environmental statement of the organisation

**Aurubis AG**
**Hovestraße 50**
**20539 Hamburg**
**Germany**

**Aurubis AG**
**Kupferstraße 23**
**44532 Lünen**
**Germany**

with registration number D-131-00035 meet(s) all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme in the version amended by regulation (EU) 2017/1505 and regulation (EU) 2018/2026 are fulfilled (EMAS).

**By signing this declaration, I declare that**

- **the verification and validation has been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009,**
- **the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,**
- **the data and information of the environmental statement of the organisation reflect a reliable, credible and correct image of all the sites' activities, within the scope mentioned in the environmental statement.**

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Hannover, 19.05.2026

Ralph Meß
Environmental Verifier
DE-V-0300

TÜV NORD CERT
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**EDITORIAL DEADLINE**

This report describes calendar year 2025. Current events were included up to the editorial deadline of May 2026.

This Environmental Statement comprises Aurubis AG, which includes the Hamburg and Lünen sites.

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Metals for Progress

EN_26/05

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