

RDE project — Reducing Diffuse Emissions

A globally one-of-a-kind exhaust system ensures efficient and environmentally friendly multimetal production in Europe.



Reducing Diffuse Emissions (RDE) is a cutting-edge exhaust and filter system that captures 80 % of diffuse emissions from primary copper production directly at the source, treats and returns them to the production cycle.

Stage 1 of the system has been in successful operation at the Hamburg site since 2021, where it has significantly reduced diffuse emissions from copper production. The expansion stage implemented in mid-2026 rounded out the system with another notable improvement in performance.

RDE features innovative engineering and design: New technologies in novel combinations, the exceptionally high airstream processing capacity, and a highly advanced automated control system make it one of the most powerful assemblies in the world.

With a total investment volume of around €115 million — roughly €85 million for stage 1 — Aurubis has created the ideal conditions for even lower-impact multimetal production on the outskirts of Hamburg, while also safeguarding the sustainable production of strategically critical metals for European industry.

RDE at a glance

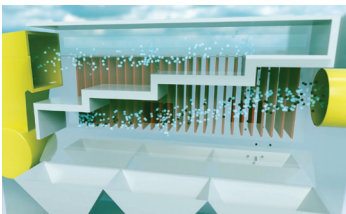
- » Total investment (stages 1 + 2): approx. €115 million
- » 7 ridge turrets (each measuring over 70 m²)
- » A total of 270 m of pipe (inner diameters of up to 4.5 m)
- » Around 19,000 filter elements
- » Airflow capacity: more than 1.6 million Nm³ air per hour
- » Filtered particle size: < 10 µm
- » Commissioning:
 - Stage 1: October 2021
 - Stage 2: June 2026

The system



Diffuse emissions are captured directly via **ridge turrets** in the copper smelter roofline. A total of seven of these roof openings are connected to the system. They respond dynamically to real-time operating conditions, and trigger extraction precisely when emissions occur. This enables Aurubis to operate the system very energy efficiently.

A **pipeline system** conveys the extracted air to the filtration units. RDE moves over 1.6 million standard cubic meters of air per hour — enough to fill more than six hot air balloons every minute. This high airflow capacity makes it possible to effectively enclose large production areas and treat the air.



The air is processed by a total of 19,000 **filter elements** in three filter modules. The filter technology used is designed to reliably remove even the finest particles from the air stream.

The cleaned air is then discharged in a controlled flow through three approximately 110-meter-high **exhaust towers** called stacks. The fine particulate matter captured by the filters contains valuable metals and is returned to the production process. This creates a closed loop that both optimizes raw material usage and increases resource efficiency.



Environmental protection and production as strategic principles

For Aurubis, environmental protection is an integral part of industrial value creation. RDE is a prime example of the company's strategic commitment to systematically integrate efficient multimetal production with environmental stewardship.

Aurubis continuously invests in modern environmental technologies to further advance processes and sustainably reduce emissions. RDE shows that industrial

production can be coupled with a high level of environmental protection, even in close proximity to urban centers, paving a clear pathway to the sustainable development of European industry.

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