

Aurubis AG Metals for Progress

ODDO BHF German Investment Seminar
New York

January 9th, 2024

 **Aurubis**



Our metals for an innovative world: Copper makes the circular economy possible

renewable energy



e-mobility



digitalization



urbanization

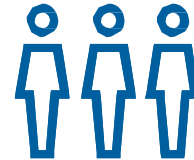


Aurubis: We are experts for metals.



Successful in
20 countries on
3 continents

> 7,100 x
passion and
engagement



157 years



of experience in the
production of non-
ferrous metals



One of the
worldwide leading
companies in
copper recycling

about **1 million t**



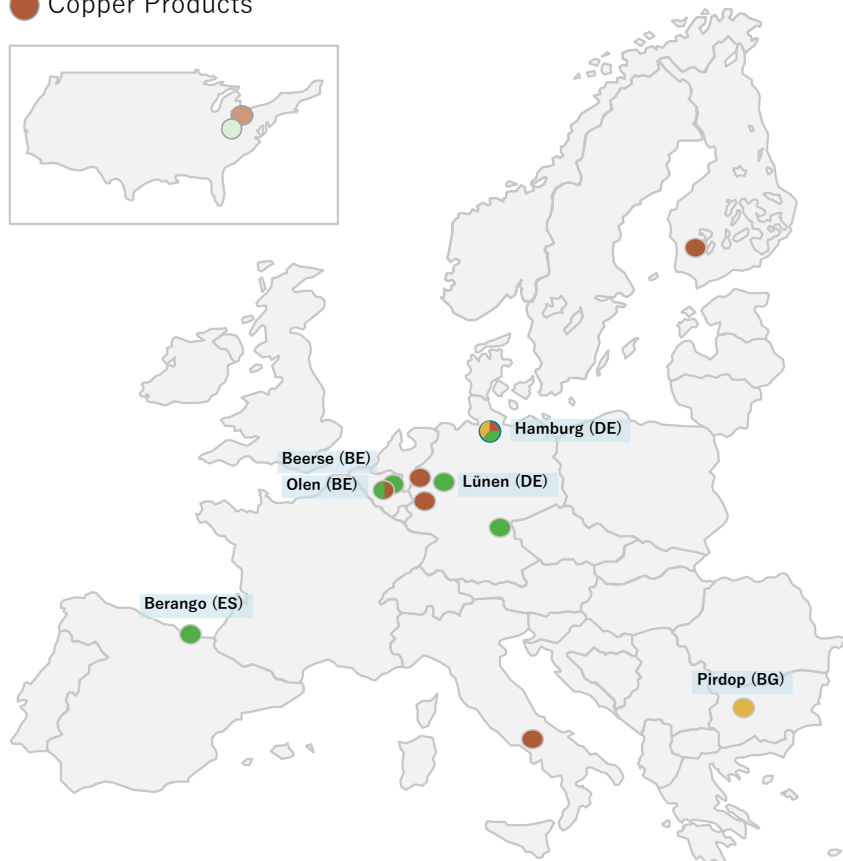
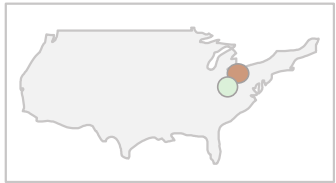
of recycling materials
are processed by Aurubis
on a yearly basis



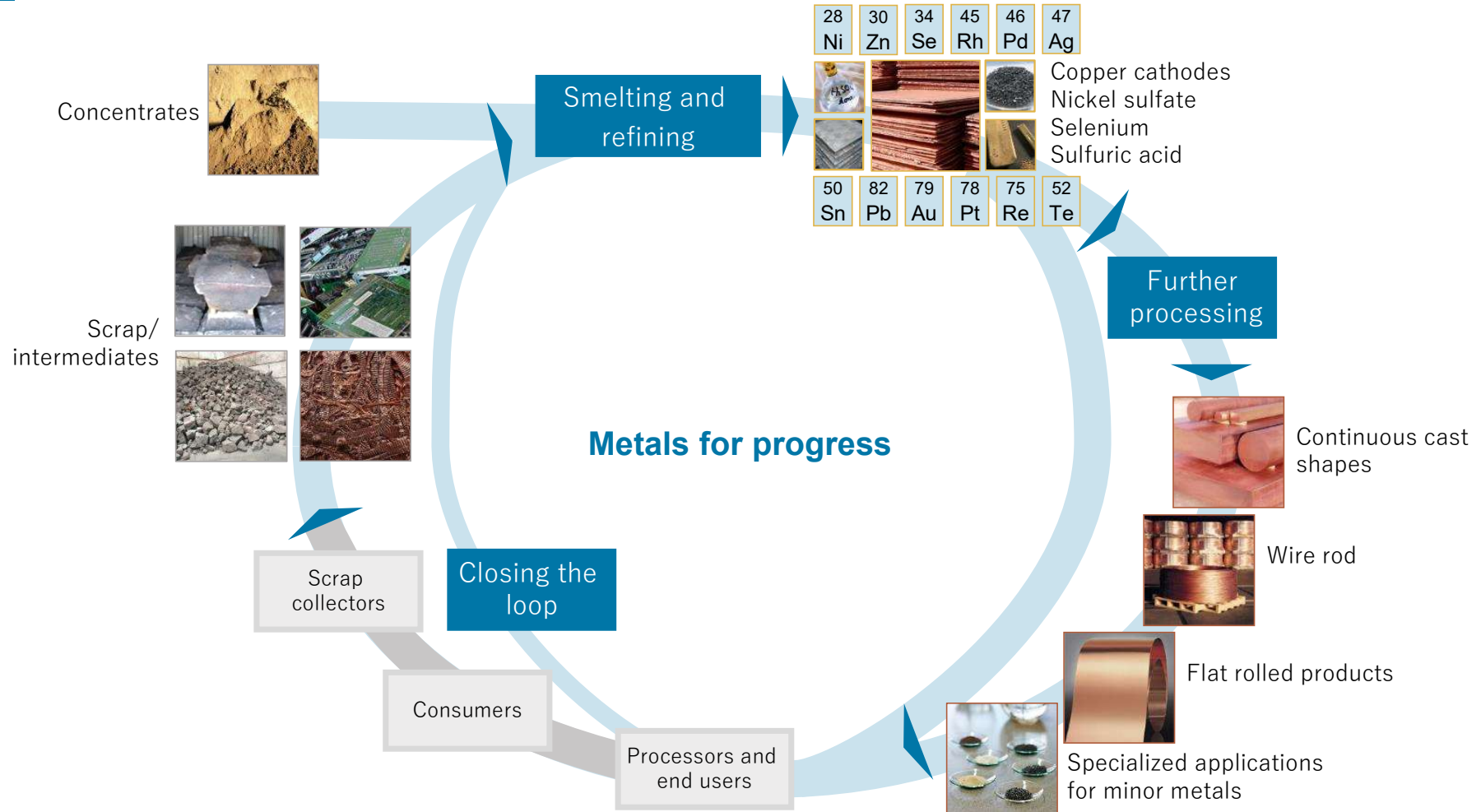
different **metals**
are recovered by
Aurubis

Aurubis production sites

- Headquarters
- Primary Copper
- Recycling/Precious Metals
- Copper Products



Closing the loop is part of Aurubis' integrated business model



Lower concentrate throughput due to shutdown with strong demand for wire rod

	FY 2022/23	Change vs. prior year		FY 2022/23	Change vs. prior year
 Concentrate processing ¹	2,319,000 t	-5 %	 Gold	49 t	+4 %
 Copper scrap/ blister copper input ²	515,000 t	-5 %	 Silver	921 t	+1 %
 Other recycling materials ²	565,000 t	+8 %	 Lead	38,088 t	-13 %
 Cathode output	1,109,000 t	0 %	 Nickel	3,488 t	-10 %
 Continuous cast wire rod output	876,000 t	-1 %	 Tin	7,858 t	-16 %
 Copper shapes output	178,000 t	-18 %	 Zinc	13,791 t	-1 %
 Flat rolled products + specialty wire output ³	133,000 t	-24 %	 Minor metals	875 t	+1 %
 Sulfuric acid output	2,158,000 t	-6 %	 Platinum group metals (PGMs)	9,858 kg	+4 %

¹ Custom smelter production ² Prior-year figures adjusted ³ Prior-year figures include FRP sites that have been sold

Aurubis closes fiscal year with respectable results at the upper end of the last forecast – despite criminal activities

<p>Operating EBT of € 349 million (PY: € 532 million)</p>	<p>ROCE 11.3 % (PY: 19.0 %)</p>	<p>The financial impact of the criminal acts directed against Aurubis had a significant negative effect on fiscal year 2022/23</p> <p>Operating EBT at the upper end of the forecast corridor: positively influenced by significantly higher treatment and refining charges for concentrates, a significant increase in the Aurubis copper premium, high demand for continuous cast wire rod, and higher income from refining charges for recycling materials</p> <p>Net cash flow doubled despite lower results of operations</p>
<p>Net cash flow € 573 million (PY: € 295 million)¹</p>	<p>Recommended dividend € 1.40 (PY € 1.80)</p>	<p>Additional strategic projects, such as the new precious metals processing plant, slag processing and 4th stage of the PV plant in Pirdop, have been approved</p> <p>Sustainability activities further expanded: completion of the test series with ammonia instead of natural gas, investments in hydrogen-capable (“H2-ready”) anode furnaces, successful Copper Mark certification of the plant in Olen</p> <p>Forecast for FY 2023/24 follows on from the high average earnings level of the last three years: operating result (EBT) between € 380 and 480 million</p>

¹ Prior-year figures adjusted.

» **The financial impact of the criminal activities had a negative effect on the result; key measures for increasing security have been identified and process adjustments made**

Criminal activities: Investigation moving forward at full speed

Initial situation

- Indications of significant deviations from the estimated metal inventories and in individual samples of specific shipments of input materials for the recycling area detected on August 31, 2023
- Highly professional criminal fraud activities identified as cause
- Extraordinary inventory launched immediately on August 31, 2023 values metals shortfall at € 185 million

Actionability established

- ✓ LKA investigating: **ongoing and close cooperation with the authorities**
- ✓ **SAFE Task Force established**
- ✓ **Supervisory Board Security and Safety Committee** convened
- ✓ Internal investigation carried out by **external and internal experts**
- ✓ **Transparent information** disclosed to the capital market and the general public

Criminal activities: Expanded level of knowledge

Current status of investigation into criminal activities

Theft that came to light in June

- Trial started on December 12, 2023. We anticipate a guilty verdict.
- No significant impact on FY 2022/23.

Manipulation of internal samples of specific input materials in the recycling area

- It has been narrowed down to one material group – the **focus is on catalyzers containing high levels of precious metals.**
- Shortfall in the high double-digit-million-euro range identified and booked against the € 30 million receivables paid from insurance.

Additional **precious metals shortfall (intermediates)**

- Forensic findings and comprehensive internal analyses reveal **possible scenarios,** but: **The investigation is still ongoing.**
- Low triple-digit-million-euro shortfall identified – countered by positive effects in the mid-double-digit-million-euro range.

Criminal activities: Security level increased

Financial impacts

- Balancing inventories using a variety of **reliable, industry-standard estimation procedures**
- These apply to **stocktaking** during inventory and to **determining extractable metal content**
- **Marginal fluctuations** in metal content are part of the business model. Metal price fluctuations also impact inventory measurement.
- These are the reasons the **effects on balance sheet date September 30, 2023 cannot be fully reconciled** with the € **185** million inventory difference identified on August 31, 2023.
- This results in a **total difference valued** at € **169** million on September 30, 2023.

Security measures enacted

✓ Risk-based weak-point analysis:

- ✓ Independent analysis of key critical areas
- ✓ The over 150 measures realized have effectively mitigated risk

✓ Immediate measures include:

- ✓ Tightening access authorization for sensitive areas
- ✓ Staff increases for control and security services
- ✓ Extensive video surveillance
- ✓ Intensified screening of suppliers
- ✓ Additional security for transports
- ✓ Optimizations in the inventory area: detect differences earlier in the future
- ✓ Targeted investments in security — such as new precious metals processing facility

» Security level significantly increased: similar incidents of this scope can be ruled out for the future

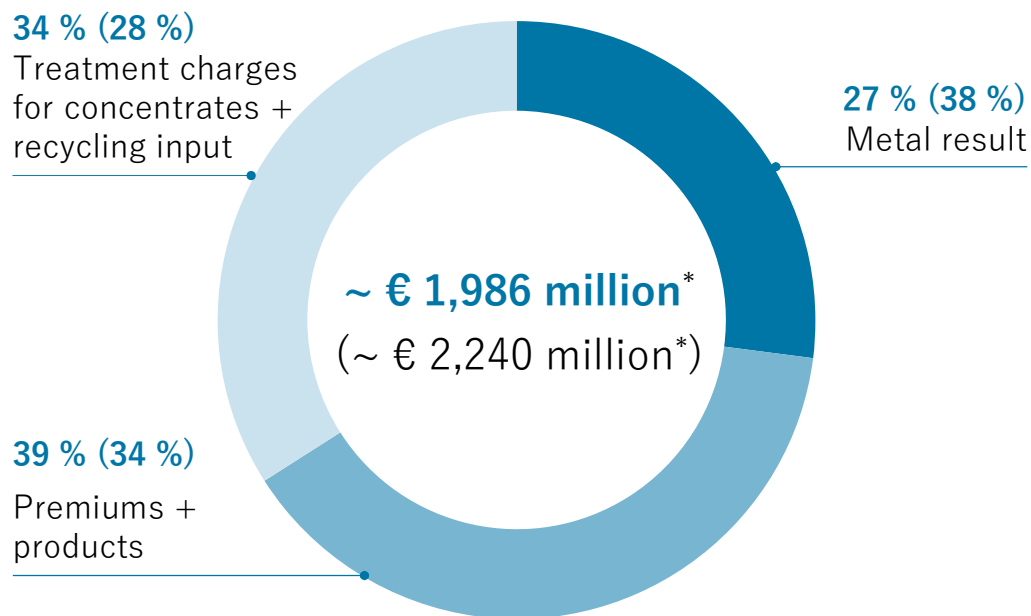
Financial impact of the criminal acts burden fiscal year 2022/23

(operating IFRS)		12M 2022/23	12M 2021/22	Change vs. prior year
Revenues	€m	17,064	18,521	-8 %
Gross profit	€m	1,470	1,647	-11 %
EBITDA	€m	557	753	-26 %
EBIT	€m	342	533	-36 %
EBT	€m	349	532	-34 %
Consolidated net income	€m	268	433	-38 %
Operating ROCE <small>(operating EBIT last 4 quarters)</small>	(%)	11.3	19.0	-



Gross margin for the Group in FY 2022/23

Breakdown of income components in the Aurubis Group FY 2022/23 (prior-year figures in parentheses)



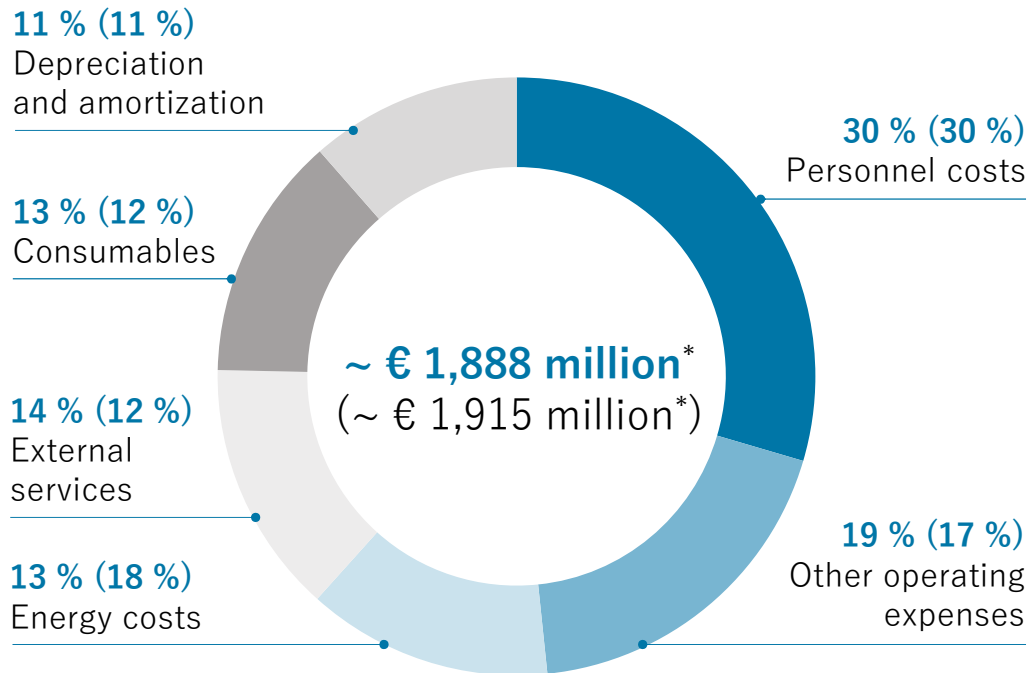
* Gross margin = Total of earnings components metal result, treatment and refining charges for concentrates + recycling input, and premiums + products

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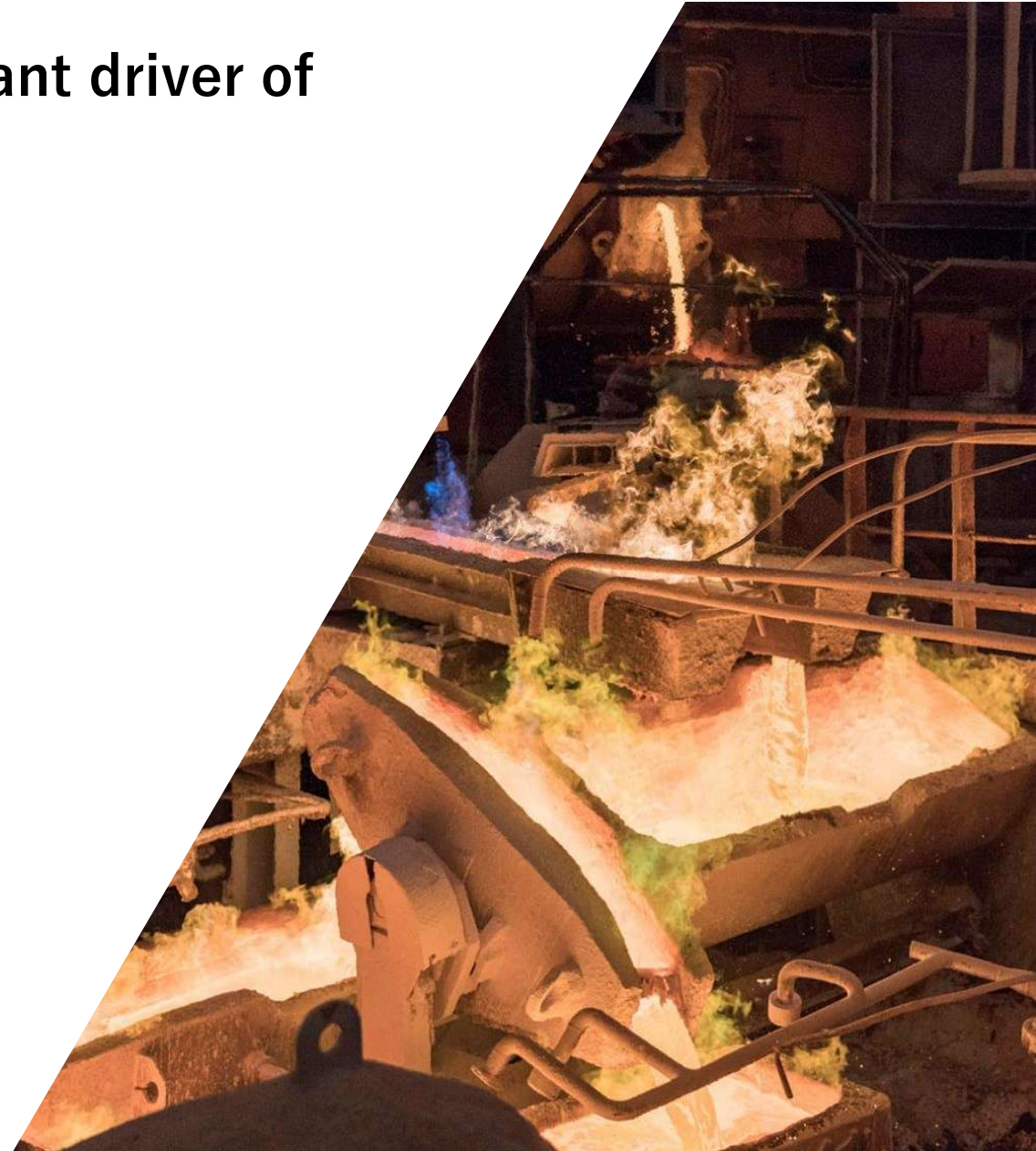
Lower energy costs were a significant driver of decrease in Group costs

Overview of cost/expense positions FY 2022/23
(prior-year figures in parentheses)



* Figures adjusted by energy compensations

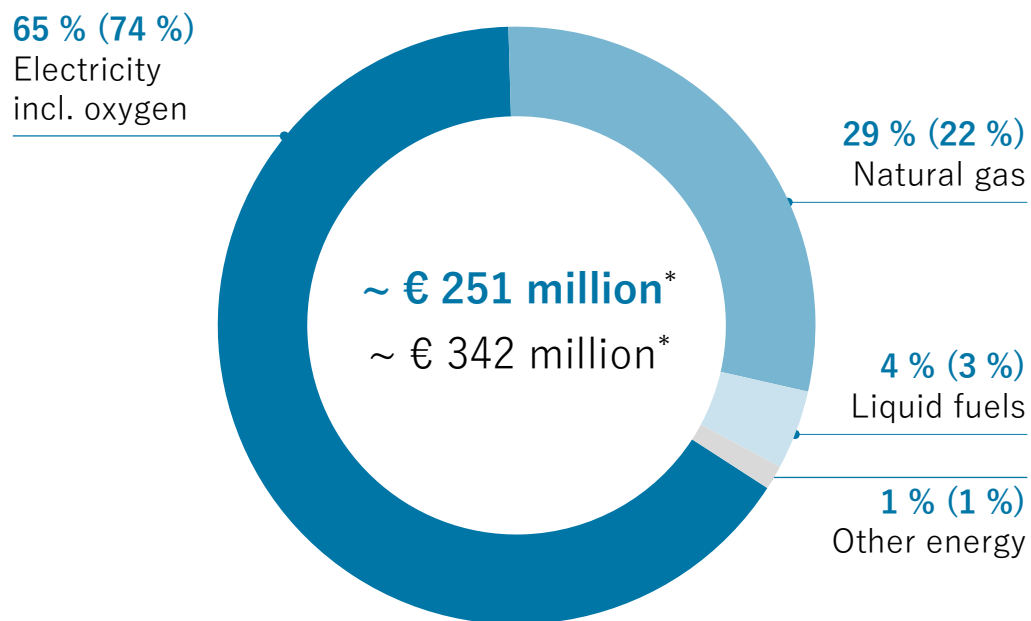
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Significant decrease in energy prices

Energy consumption/CO₂ scopes in the Aurubis Group

Breakdown of energy costs FY 2022/23 (prior-year figures in parentheses)



* Figures adjusted by energy compensations

Electricity consumption incl. oxygen in the Aurubis Group
CY 2022: approx. 1.85 TWh (PY: 1.94 TWh)

CO₂ emissions of 1.33 million t (CY 2022)

- 0.56 million t of direct emissions — Scope 1 (PY: 0.56 million t)
- 0.77 million t of indirect emissions related to purchased electricity; market based — Scope 2 (PY: 1.05 million t)

Solid balance sheet structure creates solid foundation for profitable, sustainable growth

		12M 2022/23	12M 2021/22	Target
ROCE ¹	%	11.3	19.0	15.0
Equity ratio (equity/total assets)	%	56.6	54.0	> 40.0
Debt coverage ²		-0.4	-0.5	< 3.0
Additional KPIs		12M 2022/23	12M 2021/22	
Capital expenditure	€m	633	362	
Capital employed (balance sheet date)	€m	3,182	2,866	
Net cash flow	€m	573	295 ³	

¹ Rolling EBIT last 4 quarters

² Net financial liabilities/rolling EBITDA last 4 quarters

³ Prior-year figures adjusted

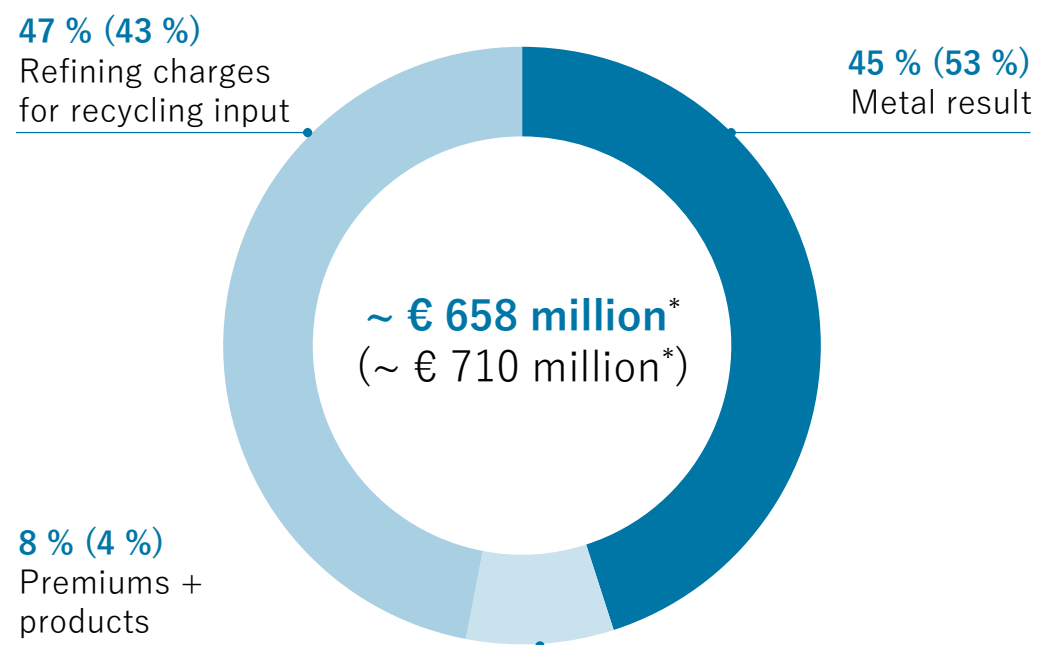


Multimetal Recycling segment

		12M	12M
Operating results		2022/23	2021/22
EBIT	€m	177	206
EBT	€m	174	205
ROCE ¹	%	15.4	25.7
Quantities			
Other recycling materials	mt	527	492
Copper scrap/blister copper	mt	322	325
Cathodes	mt	506	513

¹ Rolling EBIT last 4 quarters

Breakdown of income components in MMR segment
FY 2022/23 (prior-year figures in parentheses)



* Gross margin = Total of income components metal result, refining charges for recycling input, and premiums + products

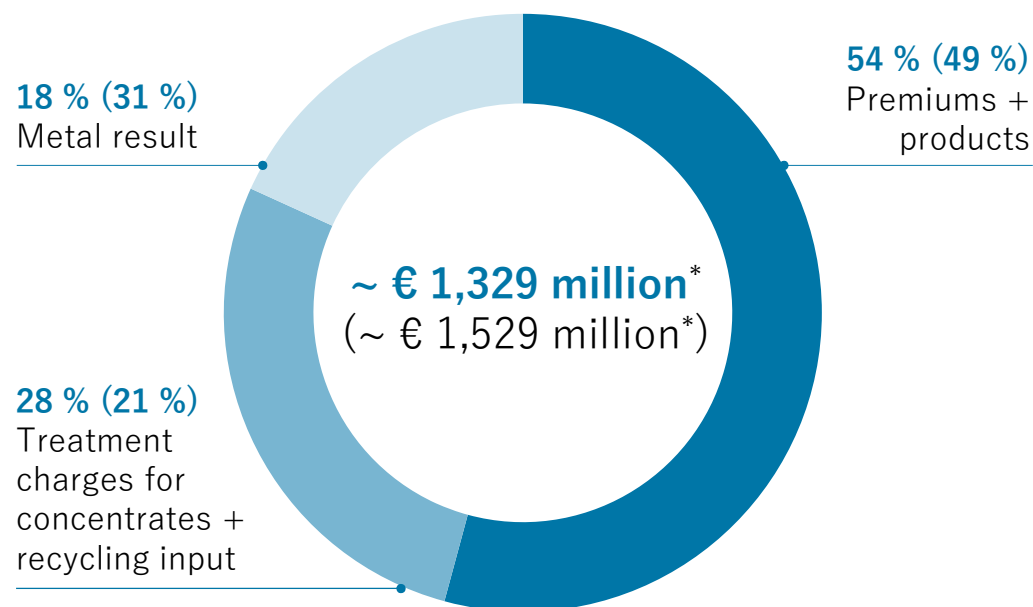
Custom Smelting & Products segment

		12M 2022/23	12M 2021/22 ²
Operating results			
EBIT	€m	241	388
EBT	€m	253	390
ROCE ¹	%	13.0	18.7
Quantities			
Concentrates	mt	2,319	2,429
Copper scrap/blister copper	mt	193	219 ²
Sulfuric acid	mt	2,158	2,296
Cathodes	mt	603	598
Rod	mt	876	880
Shapes	mt	178	218
Flat rolled products and specialty wire	mt	133	176

¹ Rolling EBIT last 4 quarters

² Prior-year figures adjusted

Breakdown of income components in CSP segment
FY 2022/23 (prior-year figures in parentheses)

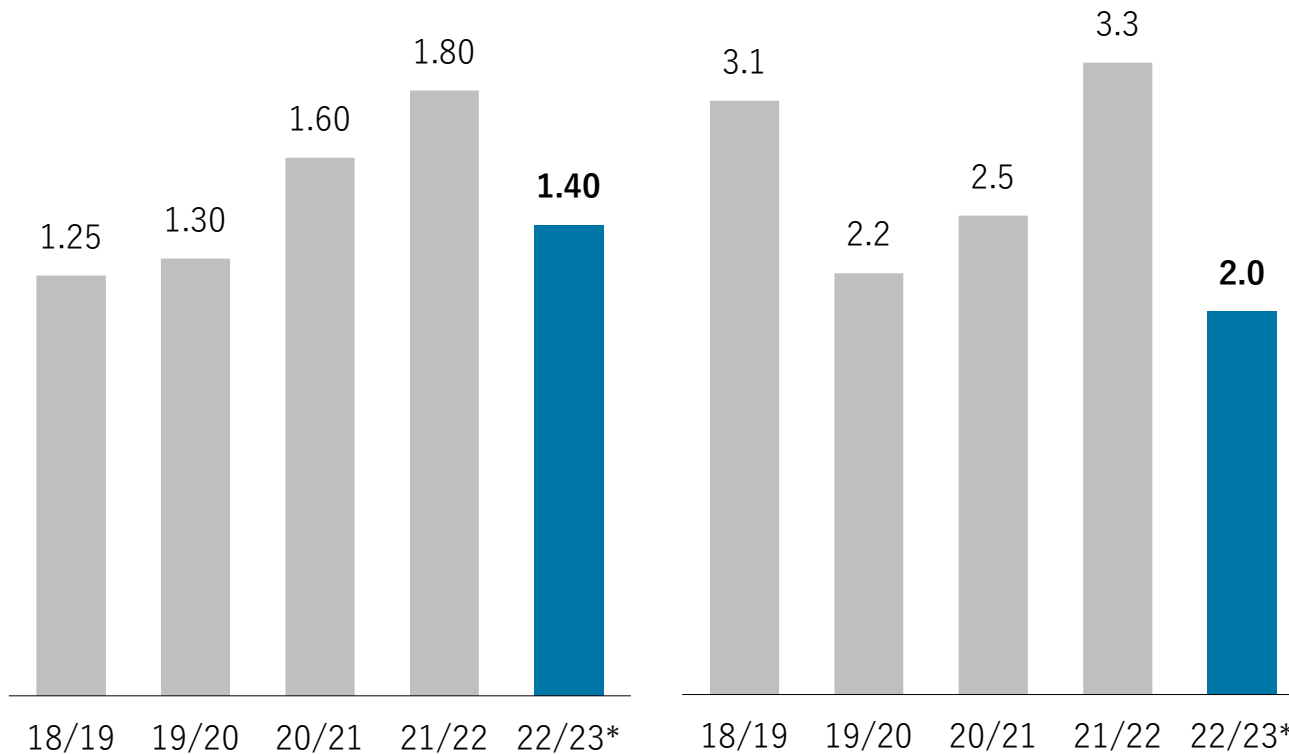


* Gross margin = Total of income components metal result, treatment and refining charges for concentrates + recycling input, and premiums + products

Dividend proposal for fiscal year 2022/23

Aurubis dividend (in € per share)

Dividend yield (in %)



* Recommendation

Aurubis' growth strategy requires high investments in the coming years

Strategic projects ensure considerable increase in overall group profitability in the years to come

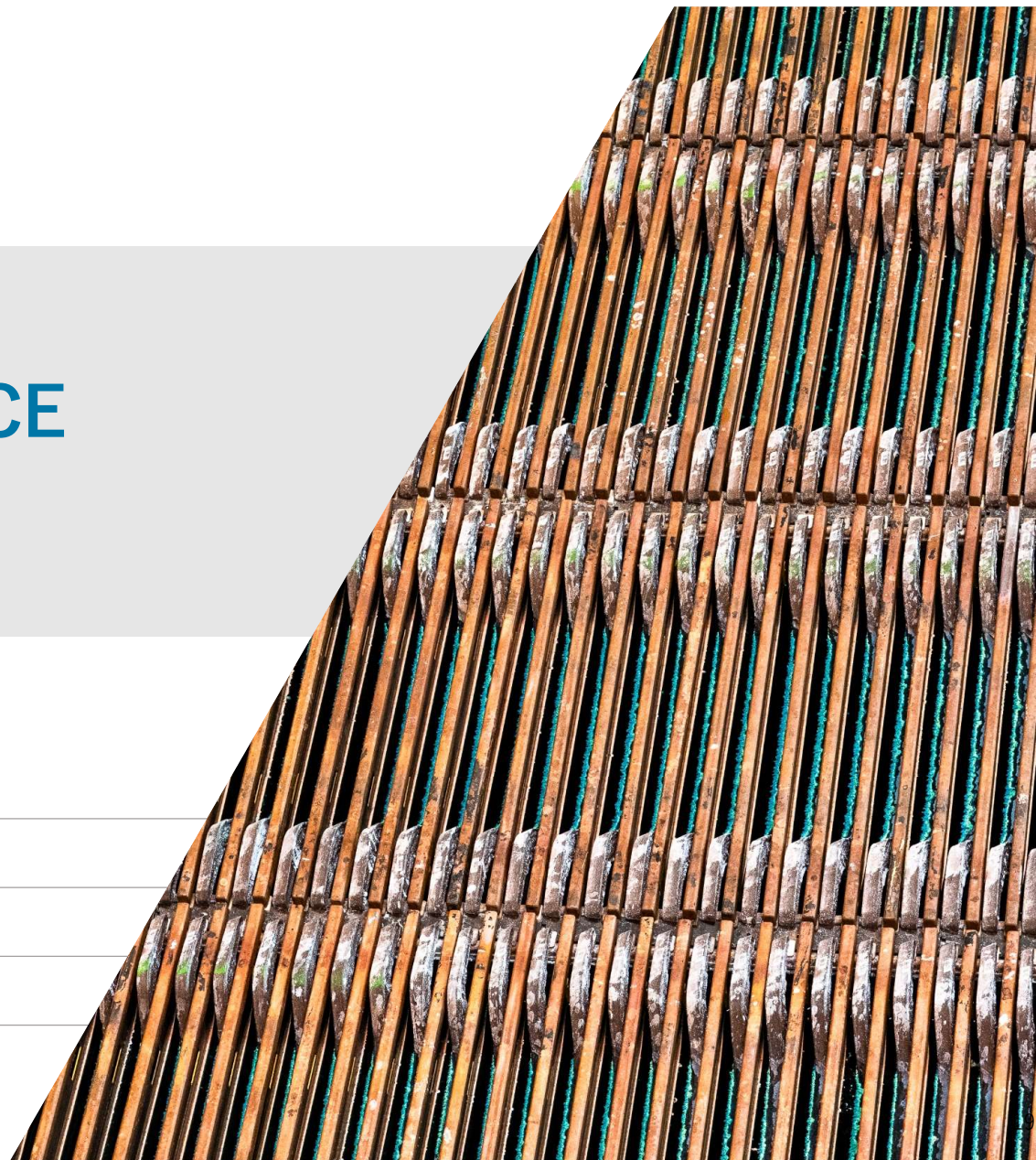
FY 2023/24 guidance

Our forecast range

Operating **EBT**
between € **380** million
and € **480** million

Operating **ROCE**
between **10** %
and **14** %

	Operating EBT in € million	Operating ROCE in %
Group	380–480	10–14
Multimetal Recycling	60–120	5–9
Custom Smelting & Products	410–470	19–23



Our strategy builds on Aurubis' sound mission and covers relevant aspects for driving sustainable growth



 **Industry Leadership in Sustainability**

- Enablers**
- Digitalization, automation, and “Plant of the Future”
 - Strategic resource management, talent and personnel development



» We are consistently implementing the strategy

Strategic investments and EBITDA impact to increase substantially

Short term

Currently approved

Strategic capex ~€ 1.7 billion approved

Key projects for the 3 strategic pillars – **Secure & Strengthen Core Business** (i.e., CRH & PM refinery), **Pursue Growth Options** (Aurubis Richmond), and **Sustainability** (i.e., PV park & Industrial Heating)

EBITDA impact over next 3 to 5 years ramping up to ~€ 260 million p.a., of which ~€ 170 million from Aurubis Richmond

Medium term

Medium-term planning

Additional strategic capex is included in the medium-term planning and projects are developed along the project stage gates

Additional EBITDA potential identified mainly in modular recycling system, battery recycling, and further expansion of Aurubis Richmond

Long term

Until 2030

Ambition and scale of our long-term growth and project plans remain at a high level

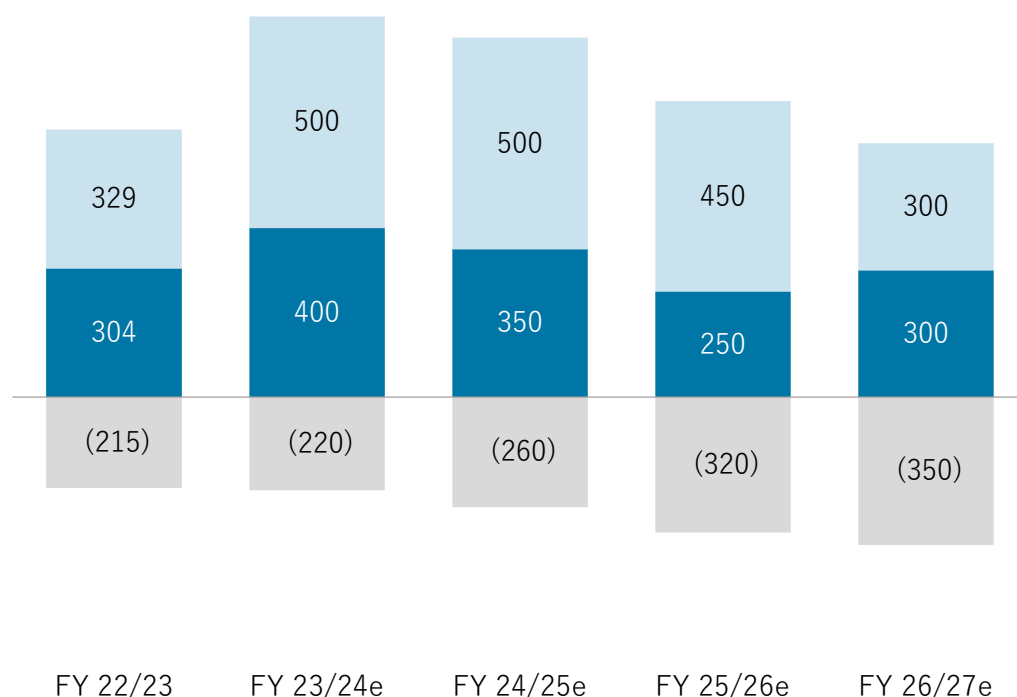
All capex projects are subject to a sustainability assessment (especially CO₂ contribution)

All strategic investments create valuable synergies with our existing processes and positively impact our op. ROCE target

Outflows from current project pipeline expected to peak in 2023/24

Capex planning broken down into baseline and strategic (in € million)

■ Baseline capex ■ Strategic capex ■ Depreciation



Investment horizon of the Group


- The planned maintenance schedule of the two primary smelters in Hamburg and Pirdop will change from planned maintenance every two years to a three-year cycle from FY 2025/26 onwards
- Depreciation will start substantially impacting the P&L after FY 2025/26
- Baseline capex primarily includes maintenance operations along with investment in environmental protection at all Group sites
- In total, the strategic capex creates valuable synergies to our existing processes and contributes positively to our op. ROCE target

Aurubis Richmond: On the path to successful commissioning in 2024



Aurubis Richmond – the leading processor of electric and electronic recycling materials in the US

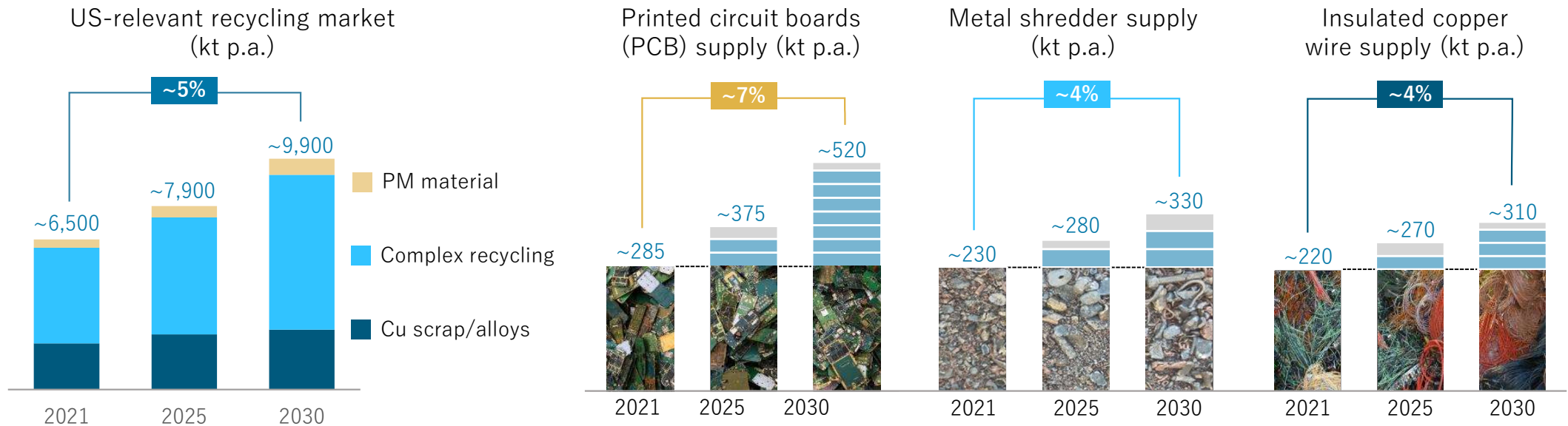


<p>Investment</p> <p>~ € 740 million</p>	<p>EBITDA p.a.</p> <p>~ € 80 million (by 2025/26)</p> <p>~ € 170 million (by 2026/27)</p>	<p> Pursue Growth Options</p> <p>Aurubis Richmond complements and expands our international integrated smelter network with a highly attractive investment in a promising growth market.</p> <p>The total investment includes additional infrastructure investments and inflation.</p> <p>Aurubis Richmond establishes us as the front-runner in the US recycling market – tied directly to our strength, innovative expertise, industry-leading metallurgical processes and flexible applications.</p> <p>With this, Aurubis will become the leading processor of electrical and electronic scrap in the US, by doubling the throughput capacity and output.</p> <p>~200 new jobs in total.</p>
<p>Start of production following ramp-up phase</p> <p>Module 1: 2024</p> <p>Module 2: 2026</p>	<p>~ 180,000 t input material</p> <p>~ 70,000 t blister copper output</p>	

➤ **Project strengthens the circular economy and underlines Aurubis' ambition to strengthen and expand our position as the most efficient integrated smelter network worldwide**

Very attractive market environment: Relevant recycling materials to grow at ~5 % p.a. in North America

Pursuing growth in North America



Key growth drivers



Collection rates

Increasing collection rates, especially of bulk e-waste and PCB materials (currently only ~30 %)



Declining exports

Net export of copper scrap **continuously decreasing due to increasingly restrictive import policies in China/SEA**



Incremental growth

Continuous growth of industrial activity and consumption of electronics lead to solid growth base

Aurubis Richmond: Expansion of front-runner position in the US recycling market



Augusta, Richmond County, Georgia, USA

Started as greenfield project, Aurubis is currently building the largest **complex recycling smelter** in the United States

Plant designed to recycle **PCBs, shredder**, and other **metal-containing recycling materials**



- 4 Top-blown rotary converters
- 2 Lead-tin alloy furnaces



2022 – 2025

Construction timeframe and plant equipment orders confirmed

Using **proven market technologies**

employed in the Aurubis network

Producing blister copper as a **marketable product**

and processing it within the Aurubis smelter network and for external sales

Further option for **brownfield expansion** on site



> 70,000 t blister copper recovered from recycling materials



~200 employees and managers planned



Future improvement of CO₂ footprint

PCB: Printed circuit boards

New precious metal processing plant in Hamburg heightens security and enables additional strategic projects

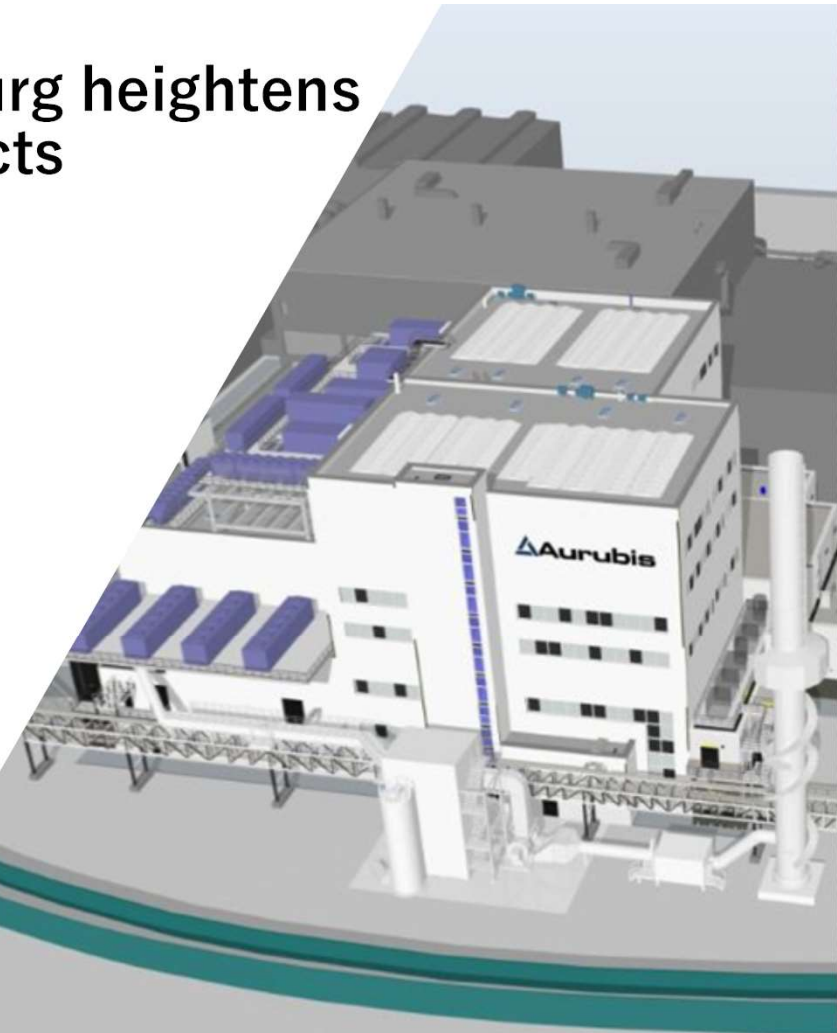
~€ 300 million investment optimizes process chain and includes integrated security concept – multiple security levels for higher physical security

Faster recovery of precious metals optimizes net working capital

Expanding processing capacity enables additional strategic projects by extending precious metal capacity

Setting benchmarks with innovative process and facility technology

15 % reduction of operating costs for precious metal processing



Secure
Core Business



Strengthen
Core Business

Secure core business: Complex Recycling Hamburg (CRH) – further optimization of smelting process






CRH



Secure & strengthen core business

CRH: Further optimization of the smelting process in Hamburg



		 Secure Core Business		 Strengthen Core Business
Investment ~ € 190 million	EBITDA p.a. ~ € 40 million (at full production)	<p>Aurubis is <u>strengthening its core business</u> and investing € 190 million for further optimization of the smelting process at the Hamburg site.</p> <p><u>Construction of a new TBRC at the Hamburg site incl. process gas cleaning system based on best available techniques (BAT).</u></p> <p>Processing <u>internal and external value-added complex intermediates and recycled materials</u> with additional treatment and refining charges and metal recoveries.</p> <p><u>Increase in metal yield (mainly precious metals) with lower process times.</u></p> <p>CRH is the prerequisite for further attractive strategic projects (e.g., higher yield of additional industrial and precious metals).</p> <p><u>Differentiation from competitors through expansion of metallurgical processes and extension of the value chain at the Hamburg site.</u></p>		
Start of production following ramp-up phase Q4 2025	~ 32,000 t p.a. Input of external material			

➤ **Project underscores Aurubis' commitment to its Hamburg site, while increasing capacities for the sustainable recovery of metals from intermediates and complex recycling materials**

Pursue growth options

Test pilot for battery recycling in Hamburg

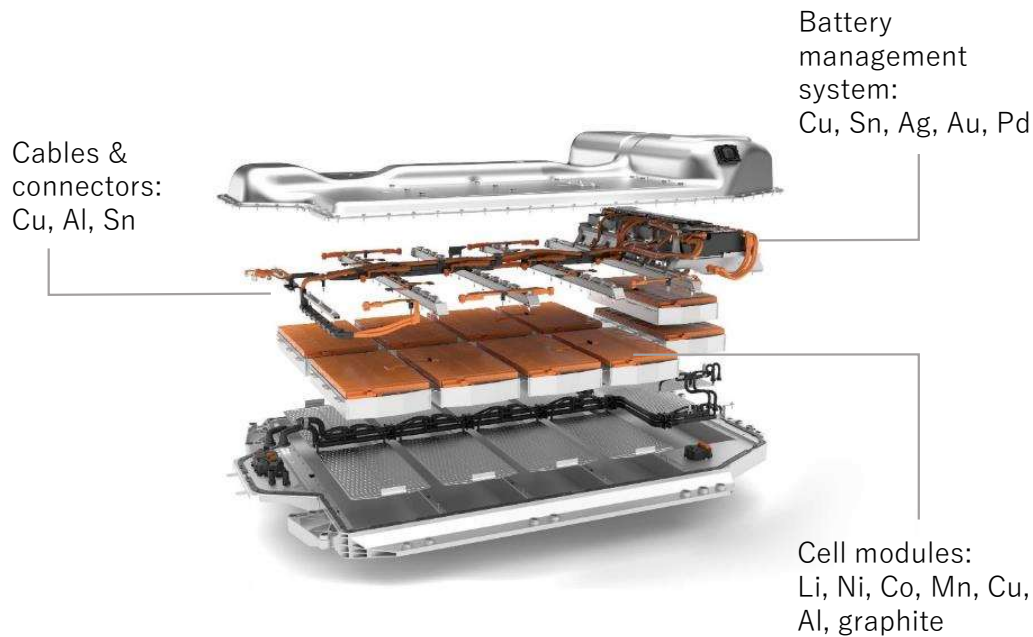


Battery recycling



Lithium-ion batteries – exceptional value hidden in complex products, complex recycling material

Batteries are complex scraps that are of huge value

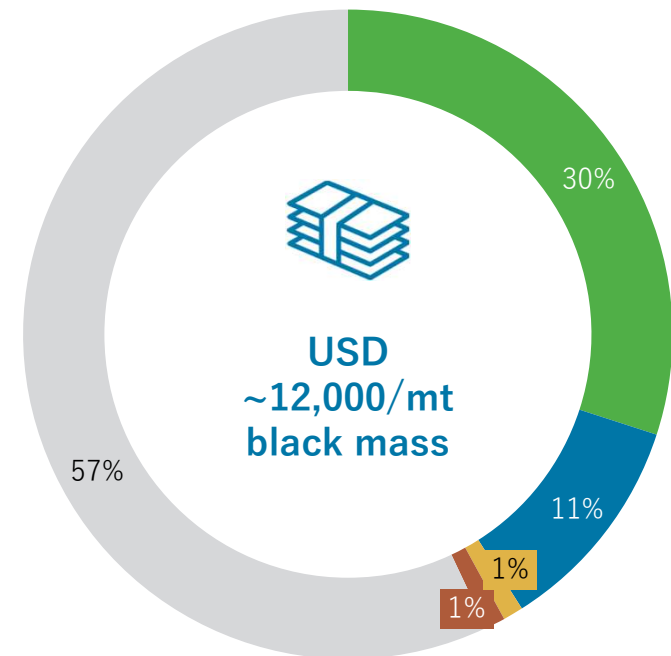


➤ Average black mass content: ~40 %

Source: BMW Group

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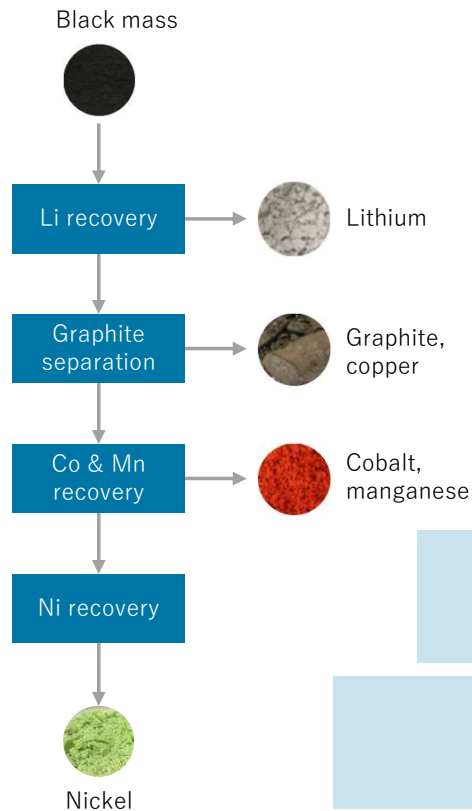
As the metal value in black mass is very high, capabilities to recover the value are essential



■ Nickel ■ Cobalt ■ Manganese ■ Copper ■ Lithium

Source: Aurubis, Roland Berger, LME

Our innovative process for black mass leverages capabilities of our integrated smelter network



Benefits of the unique Aurubis process

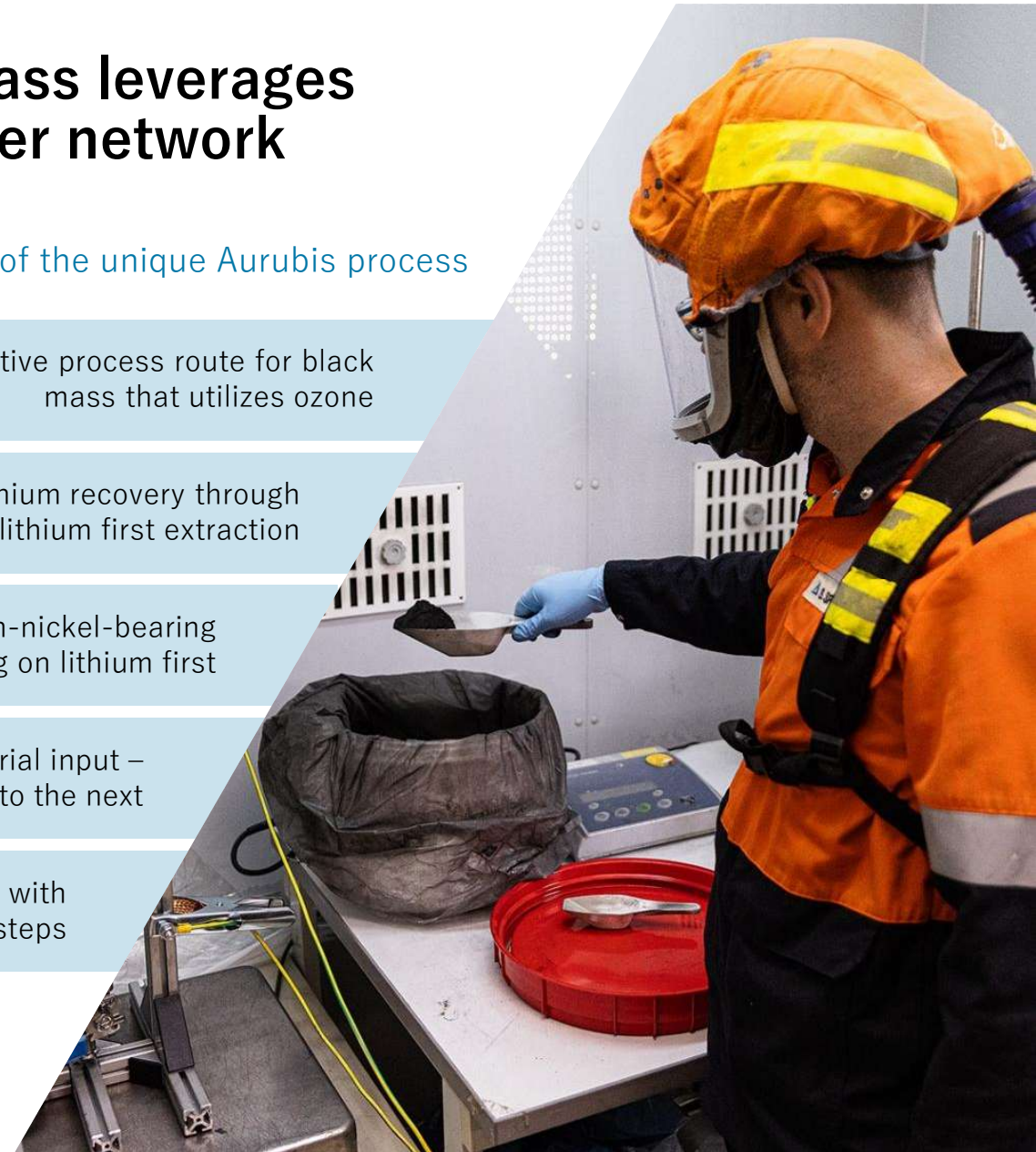
Innovative process route for black mass that utilizes ozone

High lithium recovery through lithium first extraction

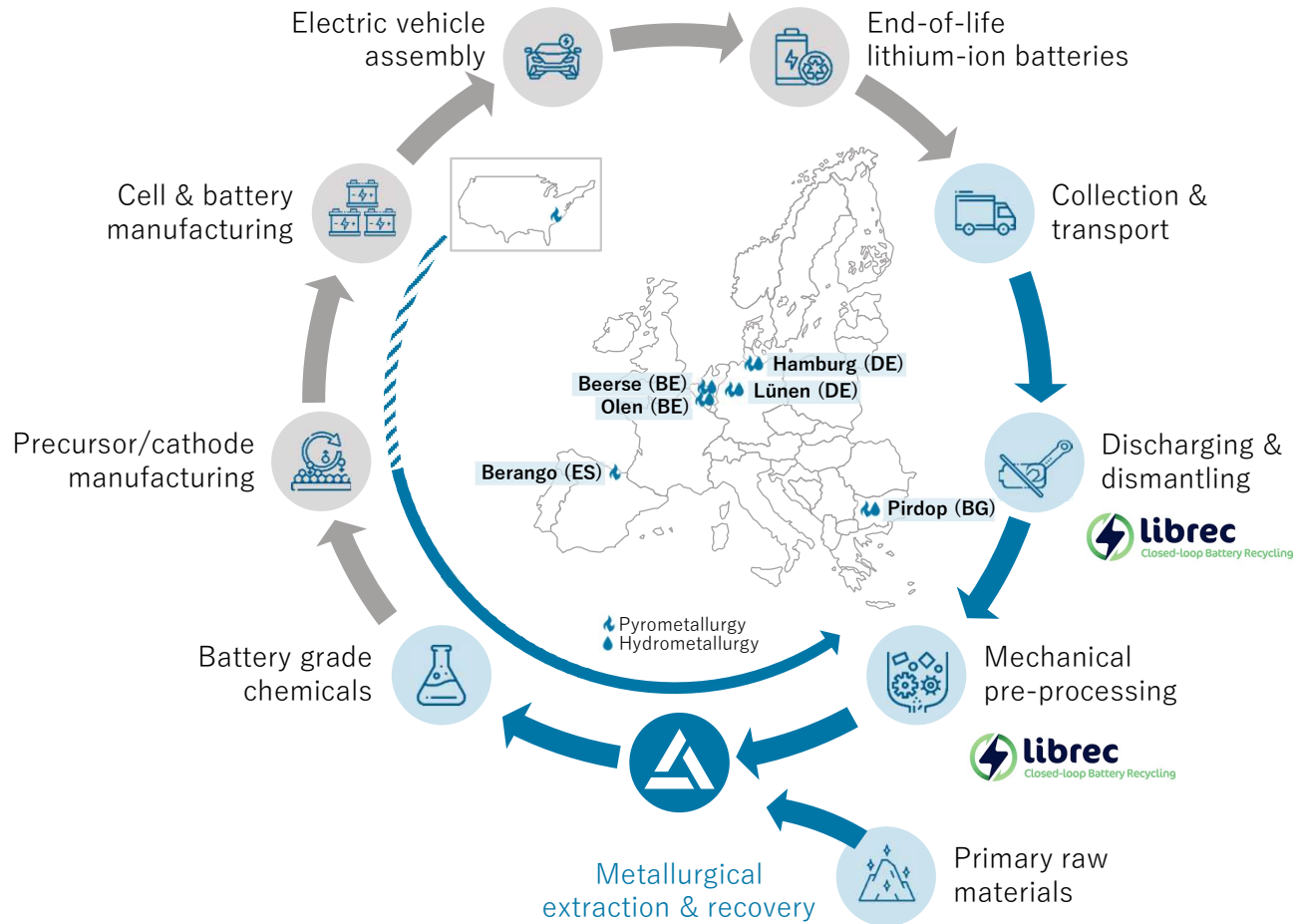
Ability to process non-nickel-bearing black mass by focusing on lithium first

Flexibility regarding raw material input – no recycling material is identical to the next

Modularity – compatible with further refining steps



Our sweet spot in the battery recycling value chain is based on Aurubis' core expertise



We are developing a fully-fledged battery recycling supply and value chain

First steps taken with Librec, a specialist company in Switzerland, to optimize metallurgy vis-à-vis pretreatment

Further existing partners with core expertise in recycling to cover the production of black mass

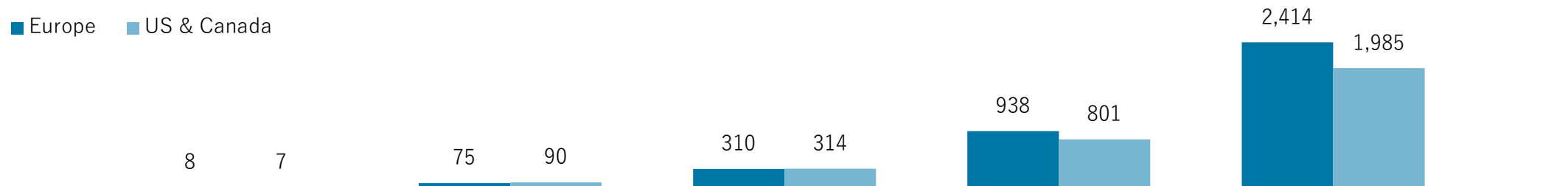
Aurubis' integrated smelter network offers unique benefits

Downstream: intensive partnership discussions with experts in chemicals production to close the loop in battery metals

In line with projected market growth, Aurubis could enter the commercial market in the second half of this decade

Regional supply of black mass for recycling (in kt)

■ Europe ■ US & Canada



2020

2025

2030

2035

2040

Further pilot test work campaigns (pilot & demo)

Engineering & construction

Commissioning & operation

Feasibility study

First commercial activities with demo plant in 2024

Start of commissioning commercial plant in 2026/27

Criteria for site selection of commercial plant determined; site selection process is underway as we speak

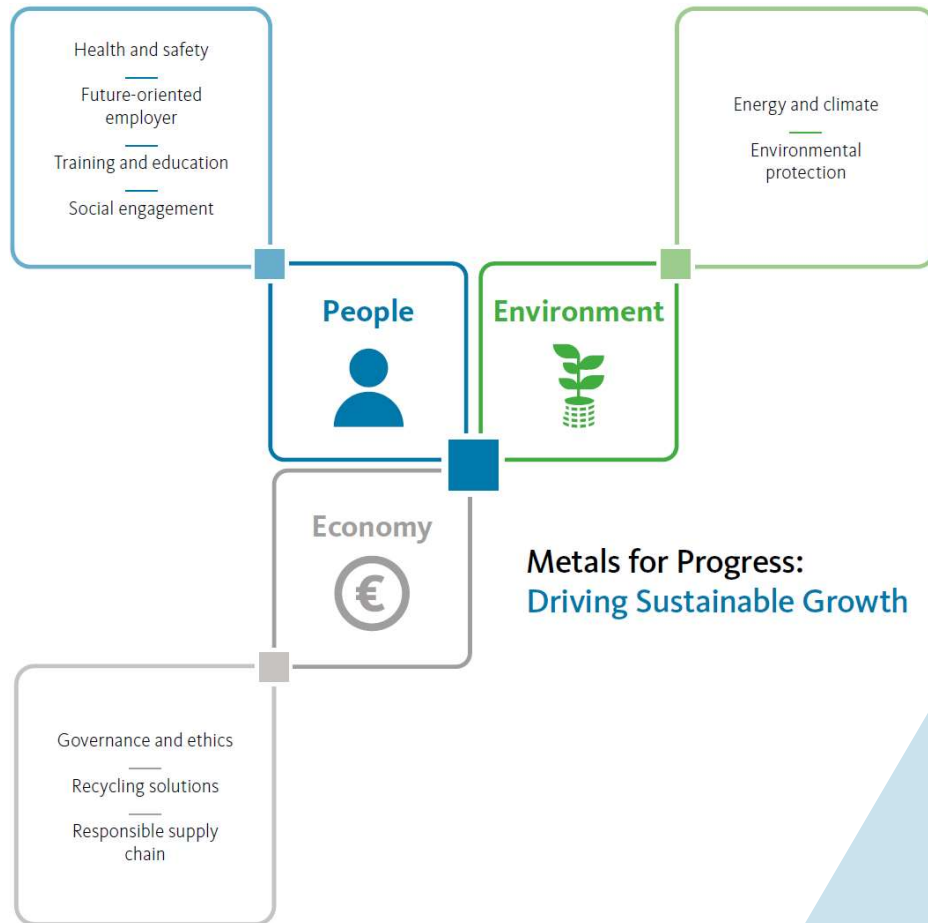
Demo plant will already deliver output on a small commercial scale, enabling build-up of market know-how and reputation

Industrial scale commercialization foreseen for 2026/27

Source: Rhomotion, Q2 2023

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We continue to lead our industry in sustainability – minimizing emissions and costs, maximizing opportunities in new business areas



We continue to strengthen our position as the most efficient and sustainable multimetal producer worldwide

1

Sustainability is a fundamental part of Aurubis' strategy

2

We strive for **balance** between economy, environment, and people

3

9 action areas, targets and measures across E, S, and G

The Copper Mark certification demonstrates our leadership in sustainable production practices



The Copper Mark launched for copper producers in March 2020



Focus on steady improvement of the sector's production practices



Aurubis Beerse and Solberg certification in 2023 expected



Basis:
UN SDGs & Risk Readiness Assessment



Joint Due Diligence Standard enables effective due diligence



Review of
32 sustainability criteria



Aurubis Bulgaria, Hamburg, Lünen and Olen already certified for meeting The Copper Mark's requirements



The copper value chain can be sustainable – promoting and driving this industry initiative demonstrates our responsibility and growing momentum for a more sustainable product.

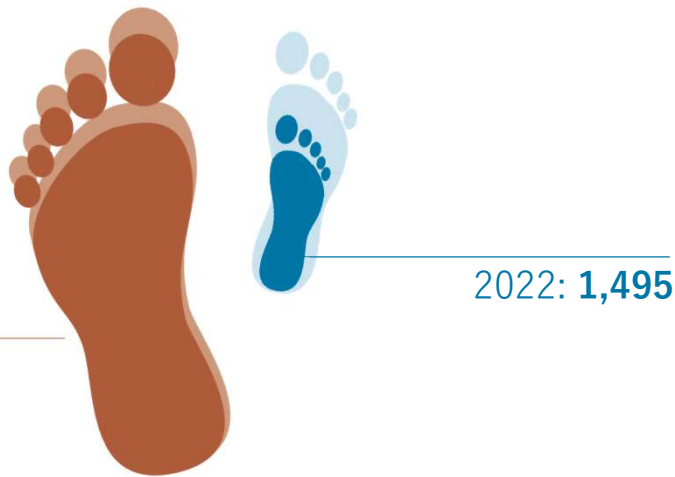


Leading the way with life cycle assessments – and substantially lower carbon footprints than industry averages

Copper cathodes (in kg CO₂ eq./t Cu)

Global industry average

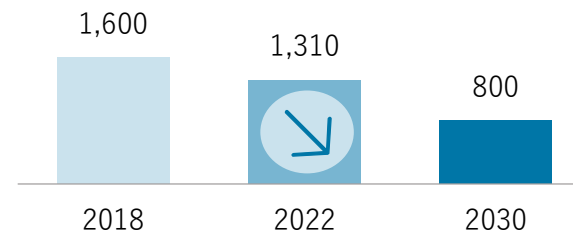
Aurubis



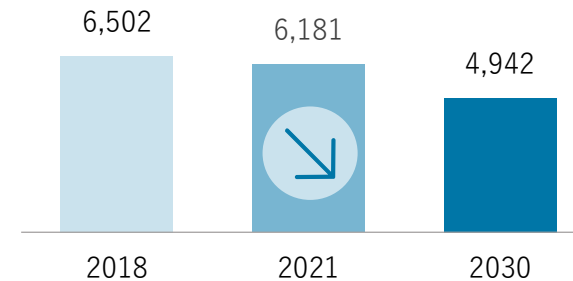
* Please note that ITA data is reported using the CML method of impact assessment, which has limited comparability.

Source: International Copper Association 2019, Aurubis LCA 2022

Absolute Scope 1+2 CO₂ emissions (in kt)



Scope 3 CO₂ emissions (in kt)¹



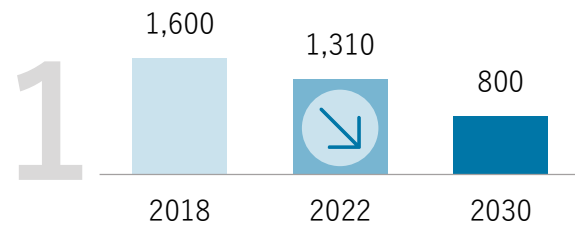
¹ Assumed steady copper cathode production until target year (physical intensity target)

Aurubis continuously pursues better energy efficiency: lowering costs and reducing CO₂ emissions

Our KPIs underline our sustainability ambitions and demonstrate momentum

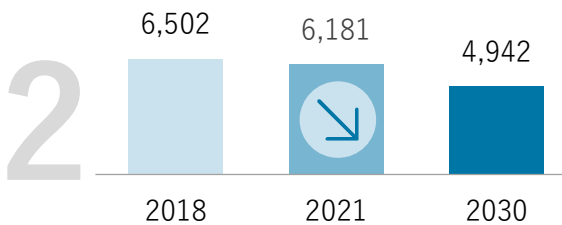


Absolute Scope 1+2 CO₂ emissions
(in kt)

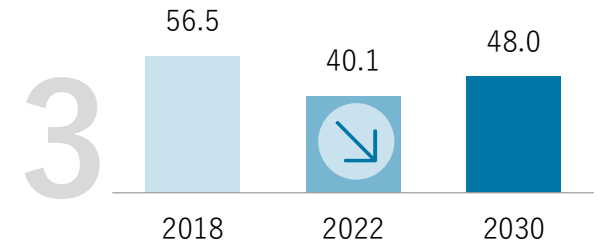


* Preliminary figures

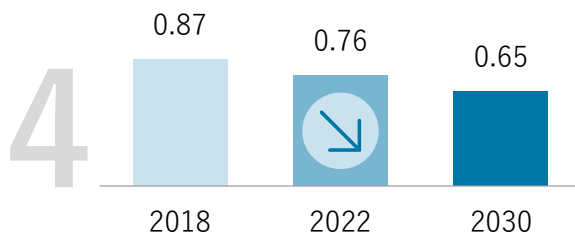
Scope 3 CO₂ emissions
(in kt)¹



Air emissions (dust)
(in g per t of multimetal Cu equivalent)²

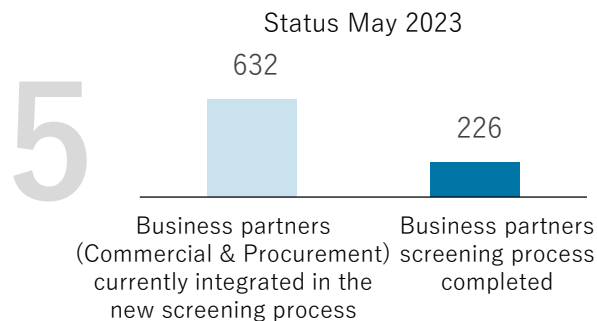


Metal emissions to water
(in g per t of multimetal Cu equivalent)²

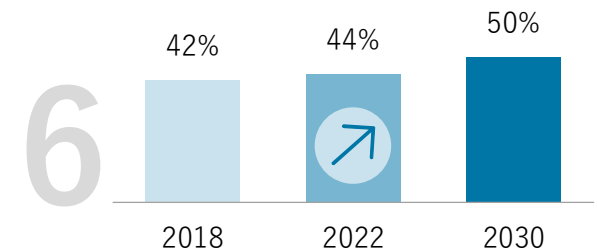


Supply chain integrity

For all identified high risk business partners we implemented action plans. This has reduced our business partner risk.³



Recycling content (Cu)
Recycling share of Cu cathodes (in %)



¹ Assumed steady copper cathode production until target year (physical intensity target)

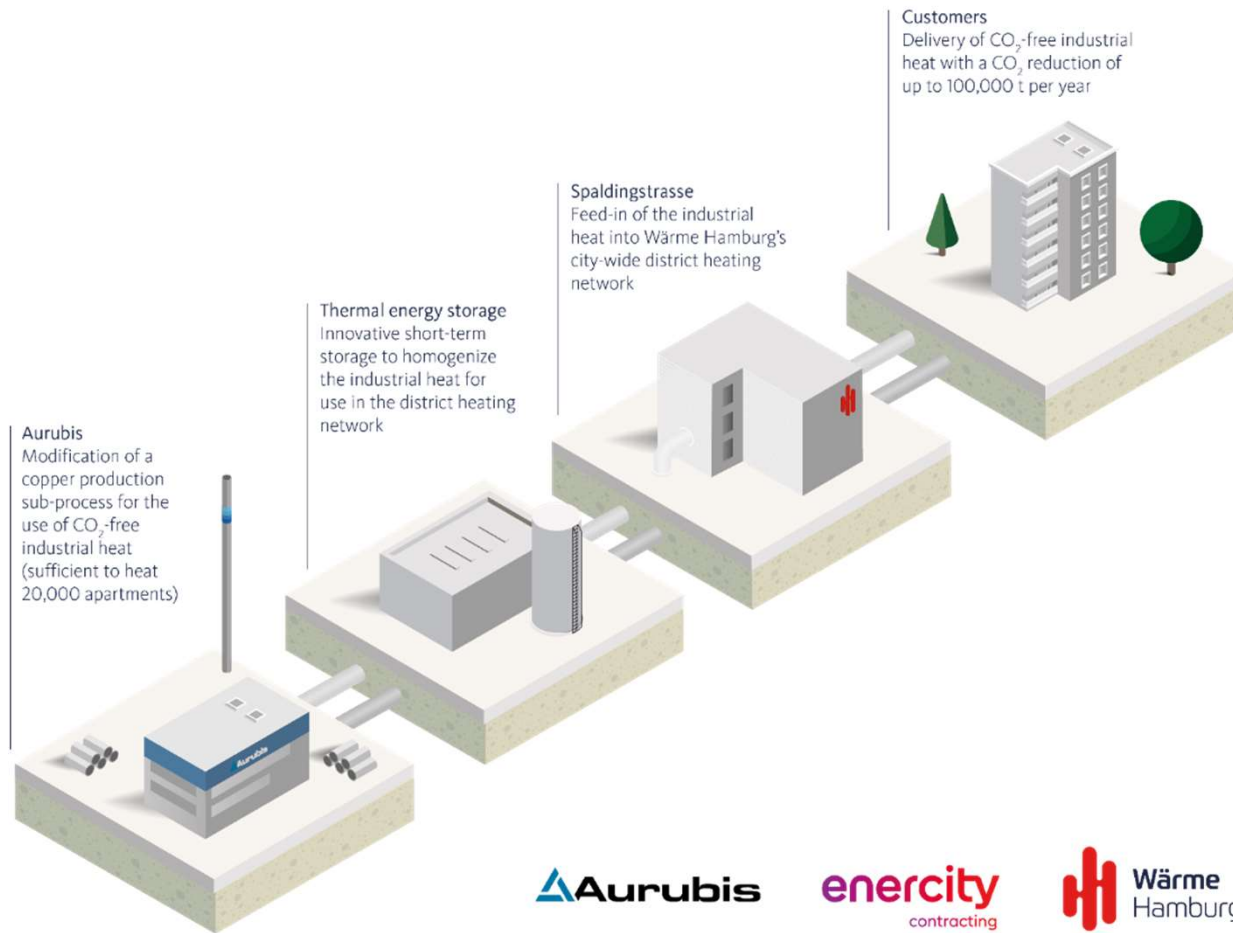
² Multimetal Cu equivalent: total metal produced at Aurubis smelters (Cu, Zn, Ni, Pb, Sn, Au, Pd, Pt, Ag, Rh, Se, Te) x weight factors

³ Aurubis is introducing a revised and uniform Business Partner Screening system in FY 2022/23, in which we bundle the requirements of the various regulations, standards, and initiatives.

Sustainability Energy and decarbonization projects



Industrial Heat



Expanding sustainable and cost-effective electricity generation at Bulgarian site

Investment of € 15 million in solar plant expansion stage in Bulgaria for additional output of around 18 MWp

Capacity of what is already the largest in-house solar park in Southeastern Europe set to double to almost 42 MWp by 2025

Once complete, the solar park will generate around 55,000 MWh of electricity per year, covering ~10 % of the plant's consumption

Solar park generates enough electricity to power 15,000 four-person households, or the equivalent of a small city

Preventing around 28,000 t of CO₂ emissions per year; further reduction of already very small carbon footprint per ton of copper output in an international industry comparison



Aurubis AG Metals for Progress

ODDO BHF German Investment Seminar
New York

January 9th, 2024

 **Aurubis**



Financial calendar

- Q1 2023/24 February 6, 2024
- AGM (virtual) February 15, 2024
- Q2 2023/24 May 8, 2024
- Q3 2023/24 August 5, 2024
- Annual Report 2023/24 December 5, 2024



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Aurubis at a glance

Based in [Hamburg](#), Aurubis AG develops its leading market position with a [responsible approach](#) to the [environment](#), [people](#) and [resources](#)



The company's main expertise is in optimally [processing concentrates](#) and [recycling raw materials](#) with complex qualities

[Metallurgical know-how](#), [state-of-the-art plant facilities](#), and extraordinarily [high environmental standards](#) for the sector make Aurubis an attractive partner for raw material suppliers



The company, which was founded in 1866 as [Norddeutsche Affinerie AG](#), is listed in the [MDAX](#) and produces more than [1 million t of copper cathodes](#) and various copper products from them with around [7,200 employees](#) worldwide



The Group is [active in more than 20 countries](#) and has production sites concentrated in [Europe](#) and [North America](#)



Aurubis is one of the world's leading producers of cathodes, rod and flat rolled copper products

Scheduled shutdowns in the next 3 years



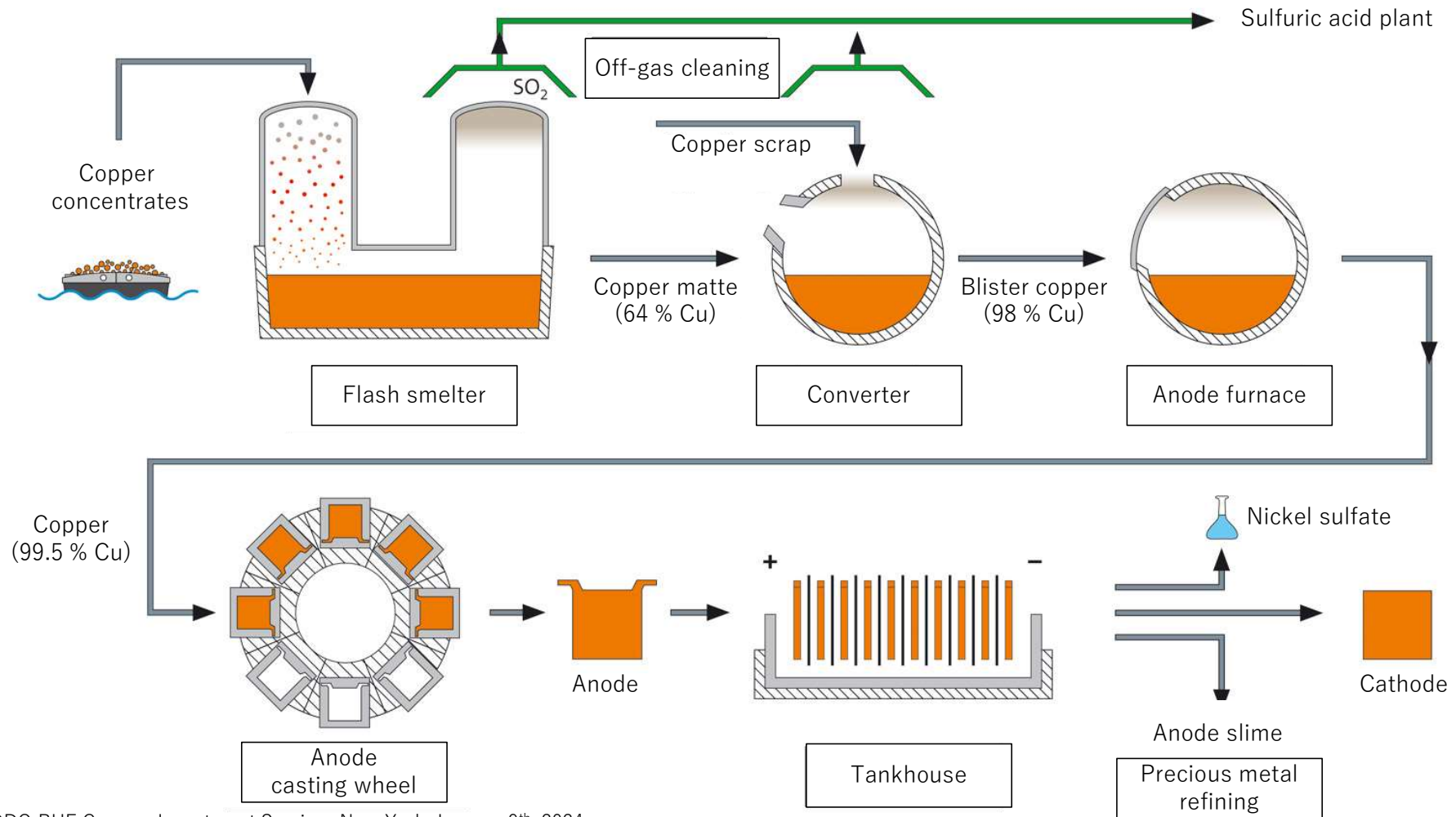
EBT effect from scheduled shutdowns (in € million)

Status: December 2023

	FY 2023/24		FY 2024/25		FY 2025/26	
Smelter maintenance Hamburg	May until beginning of July 2024	~44				
Anode furnace Hamburg					May/June 2026	~6
Smelter maintenance Pirdop			Apr/June 2025	~24		
KRS Lünen	May 2024	~10	May 2025	~10	May 2026	~10
Anode furnace Lünen	Nov/Dec 2023	~6	Nov/Dec 2024	~7	Nov/Dec 2025	~7



Primary copper production process



Disclaimer

Forward-looking statements

This document contains forward-looking statements that involve risks and uncertainties, including statements about Aurubis' plans, objectives, expectations and intentions. Readers are cautioned that forward-looking statements include known and unknown risks and are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond the control of Aurubis. Should one or more of these risks, uncertainties or contingencies materialize, or should any underlying assumptions prove incorrect, actual results could vary materially from those anticipated, expected, estimated or projected.