

Sustainability KPI Update 2023/24



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annual report online at:

annualreport2023-24.aurubis.com

 **Aurubis**
Metals for Progress

This 2023/24 KPI update supplements the information provided in the Non-Financial Report 2023/24.

Sites and employees

Consolidated sites

Europe

DE	Hamburg	Aurubis AG (headquarters)	2,799	
		Peute Baustoff GmbH	10	
	Lünen	Aurubis AG	683	
	Stolberg	Aurubis Stolberg GmbH & Co. KG	454	
	Emmerich	Deutsche Giessdraht GmbH	118	
	Röthenbach	RETORTE GmbH Selenium Chemicals & Metals	47	
BG	Pirdop	Aurubis Bulgaria AD	989	
BE	Olen	Aurubis Olen NV/SA	709	
	Beerse	Aurubis Beerse NV	496	
FI	Pori	Aurubis Finland Oy	320	
IT	Avellino	Aurubis Italia Srl	90	
ES	Berango	Aurubis Berango S. L. U.	102	
UK	Edinburgh	Aurubis Beerse NV	1	
FR	Metz	Aurubis Beerse NV	1	

Employees in Europe

6,819

US

Augusta	Aurubis Richmond LLP	160
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Employees in the US

160

Total employees

6,979

The KPIs relate to permanent and temporary employment arrangements as at the September 30, 2024 reporting date.

Excluding companies consolidated using the equity method.

Sites without employees are not listed.

Group representative offices are not listed separately.

Non-consolidated sites and independent sales employees

Europe

DE	Berlin	azeti GmbH, Berlin	37
SE	Västerås	Aurubis Holding Sweden AB	1
TR	Istanbul	Aurubis Turkey Kimya Anonim Sirketi	1

Employees in Europe

39

Asia

CN	Beijing ¹		1
	Shanghai	Aurubis Metal Products (Shanghai) Co., Ltd.	4
JP	Tokyo ¹		1
KR	Seoul ¹		1
UAE	Dubai	Aurubis Middle East DMCC	1

Employees in Asia

8

Total employees

47

¹ Agency/independent sales employees.

Raw materials

Concentrates and recycling materials are the raw materials from which copper is produced.

	Concentrates
	Recycling materials

Sales and distribution network

An international sales and distribution network markets our products.



Products

The copper is processed into products. Some products are already the result of copper production.

	Cathodes
	Wire rod
	Shapes
	Specialty profiles
	Precious metals
	Minor metals
	Sulfuric acid
	Iron silicate
	Strip/foil
	Specialty wire
	Synthetic minerals

Certifications

The following table provides an overview of the ESG-relevant certifications of all our production sites.

Certifications by site

Site	The Copper Mark	EMAS	ISO 14001	ISO 50001	ISO 9001	IATF 16949	EfbV	ISO 45001	ISO 27001
Production sites									
Hamburg, Headquarter (DE)	✓	✓	✓	✓	✓			✓	✓
Lünen (DE) ¹	✓	✓	✓	✓	✓		✓	✓	✓
Olen (BE)	✓		✓	✓	✓			✓	✓
Pirdop (BG)	✓		✓	✓	✓			✓	✓
Avellino (IT)		✓	✓	✓	✓			✓	✓
Beerse (BE)	✓		✓	✓	✓			✓	✓
Berango (ES)			✓	✓	✓			✓	✓
Buffalo (US) ²			✓	✓	✓	✓		✓	✓
Emmerich, Deutsche Giessdraht (DE)			✓	✓	✓			✓	✓
Hamburg, E.R.N. (DE) ³			✓	✓	✓		✓	✓	
Hamburg, Peute Baustoff (DE)			✓	✓	✓			✓	✓
Pori (FI)			✓	✓	✓			✓	✓
Röthenbach, RETORTE (DE)			✓	✓	✓			✓	✓
Stolberg (DE)	✓		✓	✓	✓	✓		✓	✓
Stolberg, Schwermetall Halbzeugwerk (DE) ⁴		✓	✓	✓	✓			✓	

¹ The plant is also certified through WEEELABEX in accordance with the EN 50625 European series of standards. The certificate confirms that waste electrical and electronic devices are efficiently treated and disposed of while minimizing environmental impact.

² Signing and closing on the sale took place on August 30, 2024.

³ The business activities of E.R.N. were discontinued on December 31, 2023.

⁴ Not majority-owned by Aurubis (50 % stake).

Explanation:

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 9001: standard for quality 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); ISO 45001: standard for occupational safety management systems; ISO 27001: standard outlining requirements for information security management systems

Economy

Overview

GRI 201-1

in € million	Unit	2023/24	2022/23
Operating earnings before taxes (EBT)	€m	413	349
ROCE (return on capital employed)	%	11.5	11.3
R&D expenditure	€m	14	15
Environmental protection investments	€m	214.4	52
Environmental protection investments since 2000 (cumulative)	€m	1,050.9	836

Average recycled copper content in copper cathodes in the Group 2023/24

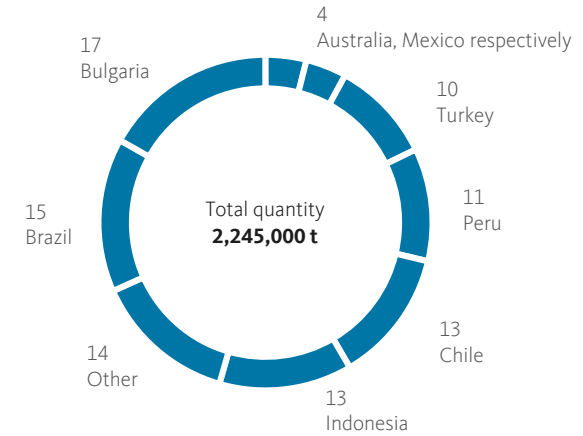
in %



Origin of concentrates and throughput 2023/24¹

GRI 301-1

in %

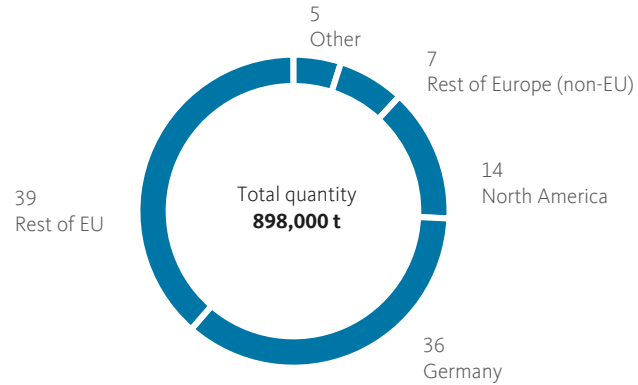


¹ Percentages have been commercially rounded.

Origin of recycling materials and throughput 2023/24¹

GRI 301-2

in %



¹ Percentages have been commercially rounded.

Compliance and anti-corruption: Employees trained in the past three years

GRI 205-2

	Unit	2021/22 – 2023/24
Anti-corruption	Employees	1,163
Percentage of total workforce	%	16.3
Antitrust law	Employees	470
Percentage of total workforce	%	6.6

Incidents or lawsuits

GRI 205-3, GRI 206-1, GRI 406-1

	Unit	2023/24
Corruption	Number	0
Antitrust law	Number	0
Discrimination	Number	0

Human rights

GRI 2-23

	Unit	2023/24
Reports received on topics relevant to human rights		See pages 95-99 Aurubis Annual Report 2023/24
Human rights, environmental protection, and safety clauses in supply contracts for primary raw materials	%	100

Environment

Energy

GRI 302-1, GRI 301-2, GRI 302-3

	Unit	2023	2022	2021
Total energy consumption within the organization	million MWh	3.39	3.44³	3.64³
Total energy consumption from renewable energies	million MWh	0.46	0.42	0.13
Total primary energy consumption¹	million MWh	1.73	1.76	1.85
Total fuel consumption from non-renewable sources	million MWh	1.73	1.76	1.72 ³
– Natural gas	million MWh	1.24	1.29	1.29 ³
– Heating oil	million MWh	0.00	0.00	0.00
– Liquefied petroleum gas (LPG)	million MWh	0.04	0.04	0.03
– Diesel	million MWh	0.05	0.04	0.01 ³
– Fuel oil	million MWh	0.29	0.29	0.32
– Coke	million MWh	0.06	0.09	0.11
Total fuel consumption from renewable sources	million MWh	0.002	0.002	0.002
– Wood and wood waste	million MWh	0.00	0.00	0.00
– Landfill gas (LFG)	million MWh	0.002	0.002	0.002
Total secondary energy consumption	million MWh	1.66	1.68³	1.79³
Total electricity consumption	million MWh	1.62	1.64³	1.79³
Total bought-in electricity	million MWh	1.58	1.59 ³	1.74 ³
– from non-renewable sources	million MWh	1.12	1.17 ³	1.62
– from renewable sources	million MWh	0.45	0.42 ³	0.13
Consumption of internally generated renewable energies	million MWh	0.045	0.053	0.013 ³
Consumption of bought-in steam	million MWh	0.03	0.03	0.00
Energy intensity²	MWh/t	2.32	2.16	2.39³

¹ Including energy consumption for on-site vehicle traffic.

² Values based on copper production, i.e., at the Hamburg, Lünen, Pirdop, Olen, Beerse and Berango sites.

³ Values have been recalculated and adjusted.

To evaluate our environmental protection performance, we carried out a life cycle assessment (LCA) for each of our main products. The results are available here: [Environmental profiles](#).

Reduction in energy consumption through individual projects

GRI 302-4

	Unit	2023
Total	MWh	347,418
Air leak detection optimized using new tools, Pori (FI)	MWh	320,082
Furnace operation optimized to handle idle times, Buffalo (US)	MWh	17,574
Preheating methane gas: Electric heat exchanger installed to raise temperature, Avellino (IT)	MWh	2,322
Forklift fleet converted to electric forklifts, Hamburg (DE)	MWh	1,808
Methane gas and combustion air pipes insulated, Avellino (IT)	MWh	1,635
Grafana dashboard to optimize washer operation in the smelter furnace, Hamburg (DE)	MWh	1,274
Ebner bell annealing system replaced by electric bell annealing furnace, Stolberg (DE)	MWh	1,000
New air compression system incl. turbo compressors installed, Hamburg (DE)	MWh	872
Limestone replaced in the RWN, Hamburg (DE)	MWh	570
Oxygen control improved in the oxygen system, Hamburg (DE)	MWh	281

CO₂ emissions

GRI 305-1, GRI 305-2, GRI 305-3, GRI 305-4

	Unit	2023	2022	2021
Scope 1 (emissions produced as a direct result of burning fuels in internal facilities)	in 1,000 t CO ₂	564	555	559
Scope 2 (emissions related to purchased energy, e.g., electricity)	in 1,000 t CO ₂	613	679 ¹	1,047
Total (Scope 1 + 2)	in 1,000 t CO ₂	1,177	1,234¹	1,605
Scope 3 (other indirect emissions)	in 1,000 t CO ₂	4,630	4,113	6,181

¹ Values have been recalculated and adjusted.

Scope 3 emissions by activity

GRI 305-3

	Unit	2023
Purchased goods and services	%	71.5
Upstream transport and delivery	%	13.9
Fuels and energy-related activities	%	4.2
Downstream transport and delivery	%	3.6
Investment goods	%	6.3
Employees' commuting routes	%	0.1
Generated waste	%	0.4
Business travel	%	0.02

Reduction in CO₂ emissions through individual projects

GRI 305-5

	Unit	2023
Total	t	6,756
Furnace operation optimized to handle idle times, Buffalo (US)	t	3,170
Limestone replaced in the RWN, Hamburg (DE)	t	900
New air compression system incl. turbo compressors installed, Hamburg (DE)	t	800
Ebner bell annealing system replaced by electric bell annealing furnace, Stolberg (DE)	t	455
Preheating methane gas: Electric heat exchanger installed to raise temperature, Avellino (IT)	t	424
Methane gas and combustion air pipes insulated, Avellino (IT)	t	298
Forklift fleet converted to electric forklifts, Hamburg (DE)	t	263
Grafana dashboard to optimize washer operation in the smelter furnace, Hamburg (DE)	t	232
Oxygen control improved in the oxygen system, Hamburg (DE)	t	211

Nitrogen oxides (NOx), sulfur oxide (SO₂), and dust¹

GRI 305-7

	Unit	2023	2022	2021
NOx	t	805	877	820
SO ₂	t	4,799	4,789	5,212
Specific SO ₂ emissions ²	g/t copper output	5.1	4.3	5.1
Dust	t	81	77	86
Specific dust emissions ^{1, 3}	g/t copper output	48	41	46
Specific dust emissions ⁴	g/t multimetal copper equivalent	42	40	42

¹ Values based on copper production, i.e., at the Hamburg, Lünen, Pirdop and Olen sites, and since 2020 also including the Beerse and Berango sites.

² Values based on primary copper production, i.e., at the Hamburg and Pirdop sites.

³ Value for reference year 2012 according to the 2022/23 milestones as part of the 2030 Aurubis sustainability targets: 72.

⁴ Value for reference year 2018 according to the 2030 targets as part of the 2030 Aurubis sustainability targets: 56.

Water and effluents

GRI 303-3, GRI 303-4, GRI 303-5

	Unit	2023	2022	2021
Total water withdrawal	million m ³	73.2	70.7	77.9
Water withdrawal by source:				
– Surface water	million m ³	69.8	67.4	74.2
– Rain water	million m ³	0.9	0.6	0.6
– Groundwater	million m ³	0.4	0.4	0.7
– Municipal water	million m ³	1.8	2.0	2.1
– Other ¹	million m ³	0.4	0.3	0.4
Total water discharge	million m ³	67.5	66.4	70.3
Water discharge by destination:				
– Surface water	million m ³	66.5	65.3	69.1
– Municipal wastewater system	million m ³	1.0	1.1	1.2
– Wastewater to third parties	million m ³	<0.1	<0.1	<0.1
Metal emissions to water²	g/t copper output	0.7	0.8	0.9
Metal emissions to water³	g/t multimetal copper equivalent	0.6	0.7	0.8

¹ Other: distilled water, steam, etc.

² In this table, we refer to the copper production sites that discharge directly into water. In Lünen and Berango, wastewater is directed to the public sewer system after being treated on the plant premises and is therefore not included. Value for reference year 2012 according to the 2022/23 milestones as part of the 2030 Aurubis sustainability targets: 2.2.

³ Value for reference year 2018 according to the 2030 targets as part of the 2030 Aurubis sustainability targets: 0.9.

KPIs related to waste

GRI 306-3, GRI 306-4, GRI 306-5

	Unit	2023	2022	2021
Hazardous waste	t	44,392	47,361	50,543
Landfilling	t	31,976	36,332	36,653
Disposal (thermal)	t	79	159	1,254
Thermal utilization	t	721	659	445
Recycling	t	10,117	8,035	10,338
Storage	t	1,248	257	1,417
Internal utilization/recycling	t	253	1,919	436
Non-hazardous waste	t	38,496	38,740	41,984
Landfilling	t	2,032	2,731	4,439
Disposal (thermal)	t	628	643	583
Thermal utilization	t	939	802	950
Recycling	t	33,721	33,828	34,970
Storage	t	290	71	211
Internal utilization/recycling	t	885	664	832
Construction waste	t	94,359	126,730	28,554

Conservation areas in close proximity (copper production sites)

GRI 304-1

	Name	Type	Distance	Direction
Hamburg (DE)	Hamburger Unterelbe	Natura 2000	200 – 600 m	Southeast
	Holzhafen	Natura 2000	600 – 1,000 m	East
	Heuckenlock/Schweenssand	Natura 2000	3,600 m	South
Pirdop (BG)	Tsentralen Balkan – bufer (bird sanctuary)	Natura 2000	ca. 1,700 m ca. 2,300 m	Northeast
	Tsentralen Balkan – bufer (nature reserve)	Natura 2000	ca. 1,000 m	North
	Sredna Gora ¹	Natura 2000	ca. 2,300 m	South
Lünen (DE)	In den Kaempfen, Im Mersche, and Langerner Hufeisen	Natura 2000	< 2,000 m	Northeast
	Lippeaue	Natura 2000	< 5,000 m	Northwest
	Lippe-Unna, Hamm, Soest, Warendorf	Natura 2000	< 2,500 m	Northwest
Olen (BE)	Valleigebied van de Kleine Nete met haar brongebieden, moerassen en heiden	Natura 2000	ca. 1,000 m	North
	De Vallei van de Kleine Nete Benedenstroom	VEN ²	ca. 1,000 m	North
	Het Olens Broek-Langendonk	VEN ²	ca. 1,000 m	North
Beerse (BE)	Eksterheide	Natura 2000	ca. 500 m	West
	Duivelskuil	Natura 2000	ca. 750 m	Southwest
	Pomp-Poelberg	Natura 2000	ca. 1,000 m	Northwest
Berango (ES)	Ría de Mundaka-Cabo de Ogoño Marine Area	Natura 2000	ca. 3,500 m	North
	Ría del Barbadun	Natura 2000	ca. 10,000 m	Southwest

¹ The Sredna Gora nature conservation area 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).

People

Personnel structure

GRI 2-7, GRI 401-1, GRI 405-1

	Unit	2023/24	2022/23	2021/22
Total employees	Number	6,979	7,230	6,913
– Female	%	15	14	13
– Male	%	85	86	87
Blue collar	Number	3,919	4,168	4,018
– Female	%	4	4	4
– Male	%	96	96	96
White collar	Number	2,777	2,757	2,567
– Female	%	29	29	28
– Male	%	71	71	72
Apprentices (including Pirdop, BG)	Number	283	305	328
– Female	%	15	12	13
– Male	%	85	88	87
Temporary workers ¹	Number	143	136	170
New employee hires (including apprentices)	Number	961	930	853
Turnover rate (excluding apprentices)	%	9.9	8.3	9.5
Average length of employment in the company	Years	12.7	13.3	14.0

¹ Personnel that are legally employed by an external service provider, regularly work for Aurubis, and have been approved in the course of internal personnel and resource planning. External consultants and service providers are not included.

Temporary and permanent employment contracts¹

GRI 2-7

	Unit	2023/24		2022/23		2021/22	
		Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
Total employees	Number	6,373	323	6,621	304	6,325	260
Female	Number	916	69	898	70	801	60
Male	Number	5,457	254	5,723	234	5,524	200
Employees in Germany	Number	3,595	238	3,499	209	3,402	159
Employees in Europe (excluding Germany)	Number	2,618	85	2,549	82	2,416	77
Employees in the US	Number	160	0	573	13	507	24

¹ Excluding apprentices.

Commitment to a living wage

Aurubis is committed to ensuring that employee salaries comply with the minimum wage requirements set out in the applicable labor laws across the regions where we operate. Beyond legal compliance, we also account for living wage benchmarks specific to each country and region, ensuring our employees receive fair compensation that covers their living expenses. According to data from [WageIndicator.org](https://www.wageindicator.org), the minimum wages in all EU countries where we operate exceed the living wage, demonstrating our adherence to high standards of fair compensation. Similarly, at our Richmond site in Georgia, US, employees are paid above the living wage benchmarks.

in %

2023/24

Employees with a salary above the living wage ¹	100
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¹ The estimate is based on WageIndicator.org's benchmarks, which are specific to each country and region in which we operate.

Age structure

GRI 405-1

as at the reporting date September 30¹

Number	2023/24	2022/23	2021/22
<30 years	1,068	1,039	955
30–50 years	3,633	3,610	3,381
>50 years	1,995	2,276	2,249

¹ Excluding apprentices.

Proportion of women in management

GRI 405-1

in %	2023/24	2022/23	2021/22
On the Supervisory Board	36	33	33
On the Executive Board	20 ¹	25	0
1 st management level	23	26	24
2 nd management level	16	18	22

¹ The percentage is lower than last year due to a transition period during the shift from the old to the new board members when the Executive Board temporarily had five members, instead of four.

Individuals with disabilities

GRI 405-1

in %	2023/24	2022/23	2021/22
Percentage of individuals with a severe disability ¹	4.8	5.1	5.5

¹ For Aurubis AG.

Proportion of employees covered by collective wage agreements¹

GRI 2-30

in %	2023/24	2022/23	2021/22
Proportion of total employees	87	87	86
Proportion of AG employees	87	87	87

¹ The applicable collective bargaining agreements ensure the minimum standard at all our sites. The remaining percentages are executives and management employees in senior positions.

Apprenticeship rate and apprentice retention rate in Germany

in %	2023/24	2022/23	2021/22
Apprenticeship rate	6.8	7.5	8.1
Apprentice retention rate	73.6	67.3	79.1

Training hours

GRI 404-1

	2023/24	2022/23	2021/22
Average number of training hours per employee in the Group	22.4	21.1	15.3
Blue collar	19.7	19.2	12.0
White collar	26.3	24.1	20.9
Percentage of employees receiving training in the Group	93.8 %	98.3 %	83.6 %
Blue collar	92.9 %	99.2 %	76.3 %
White collar	97.3 %	97.5 %	95.8 %

Occupational safety

GRI 403-9

	Unit	2023/24	2022/23	2021/22
Employees				
Absolute number of accidents ¹	Number	34	33	34
– of which fatal accidents	Number	0	3	0
LTIFR ²	Rate	3.1	3.2	3.2
Severity rate	Rate	0.2	0.27	0.22
Total hours worked	Number	10,854,359	10,335,754	10,687,081
Temporary workers				
Absolute number of accidents	Number	5	4	4
– of which fatal accidents	Number	0	0	0
LTIFR	Rate	17.5	16	10.9
Contractors				
Absolute number of accidents	Number	19	12	12
– of which fatal accidents	Number	1	0	0
LTIFR	Rate	3.8	2.8	3.1

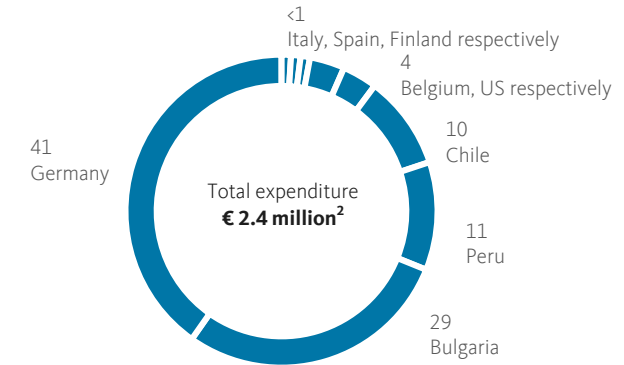
¹ Accidents with lost time of at least one full shift, including fatalities. Minority shareholdings not included. As of August 1, 2022, excluding the sold sites Zutphen (Netherlands), Birmingham (United Kingdom), Dolný Kubín (Slovakia), and Mortara (Italy). Including Aurubis Richmond (US) starting October 1, 2022.

² Relating to Aurubis employees.

Total expenditure for social engagement and regional distribution 2023/24¹

GRI 203-1, GRI 413-1

in %



¹ Percentages have been commercially rounded.

² The total expenditure mainly comprises sponsorship contributions and donations.

About the KPI Update

GRI 2-3

This KPI update supplements the information provided in our Non-Financial Report 2023/24. The reporting period is fiscal year 2023/24. The Aurubis fiscal year starts on October 1 and ends on September 30. All environmental and energy KPIs are reported for calendar year 2023, not for fiscal year 2023/24. These KPIs are primarily used for internal management purposes and reporting for governmental authorities, for which the calendar year is the given period under review.

In addition to Aurubis AG, the scope of consolidation includes all of the fully consolidated subsidiaries (as at September 30, 2024), and therefore fundamentally corresponds to the scope of consolidation of the annual report, excluding Schwermetall Halbzeugwerk GmbH & Co. KG, in which Aurubis holds a 50 % stake. The Fehrbellin site has belonged to joint venture Cablo GmbH with the recycling company TSR Recycling GmbH & Co. KG since June 1, 2021. Aurubis holds a 40 % stake. The environmental and energy KPIs are reported for production sites that are majority owned (>50 %) by Aurubis (see [page 3](#)). This reflects the majority of energy consumption and emissions. The volume at the sales offices is negligible in comparison. Copper production mentioned in the context of environmental KPIs refers to primary and secondary copper production at the Hamburg, Lünen, Olen, Pirdop, Beerse and Berango sites. Any deviations from the scope of consolidation are expressly stated for the relevant figures.

The non-financial report is released annually as part of the annual report. The non-financial report for the 2023/24 fiscal year was released with the Aurubis AG Annual Report in December 2024.

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