

# Welcome to your CDP Climate Change Questionnaire 2023

## C0. Introduction

### C0.1

#### **(C0.1) Give a general description and introduction to your organization.**

Aurubis AG is a company in the basic materials industry that operates worldwide. Aurubis AG is the parent company of the Aurubis Group and is based in Hamburg, with production sites in Hamburg and Lünen. As an integrated group, Aurubis processes complex metal concentrates, scrap metals, organic and inorganic metalbearing recycling raw materials, and industrial residues into metals of the highest purity. In addition to the main metal, copper, Aurubis' metal portfolio also includes gold, silver, lead, nickel, tin, zinc, minor metals such as tellurium and selenium, and platinum group metals. Sulfuric acid, iron silicate, and synthetic minerals round off the product portfolio. In the course of our production processes, we convert copper concentrates and recycling materials into copper cathodes. This is the standardized product format that is traded on the international metal exchanges. We produce more than 1 million t of copper cathodes per year. Copper cathodes are the starting product for fabricating additional copper products, but they can also be sold directly. Our product portfolio mainly comprises standard and specialty products made of copper and copper alloys. When it comes to processing, we have manufacturing capabilities for continuous cast copper wire rod, continuous cast shapes, rolled products, strip, specialty wire, and profiles. Additional products result from processing the elements that accompany copper in the feed materials, elements that are in some cases purchased on purpose as part of our multimetal approach. These include different metals such as gold, silver, lead, nickel, tin, zinc, minor metals like tellurium and selenium, and platinum group metals. We also produce iron silicate and synthetic minerals. Sulfuric acid (> 2 million t p.a.) 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 company's headquarters, which is also home to one of our two primary smelters, is located in Hamburg, Germany. Most of our sites are in Europe, with larger production centres in Germany, Belgium, Bulgaria, and Spain as well as cold-rolling mills for flat rolled products, slitting centres, and rod plants in Germany and elsewhere in Europe. Outside Europe, Aurubis also has a production site in the US, and a global sales and service network. The company purchases the necessary feed materials, as it doesn't own any mines or stakes in mines. 6,913 employees worked for the Aurubis Group worldwide as of September 30, 2022. Of this number, 92% worked at the European plants and 8% worked in the USA. The sales markets for our products are varied and international. Aurubis' direct 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 energies, construction, and automotive sectors.

## C0.2

**(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.**

### Reporting year

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**Start date**

Januar 1, 2022

**End date**

Dezember 31, 2022

**Indicate if you are providing emissions data for past reporting years**

No

## C0.3

**(C0.3) Select the countries/areas in which you operate.**

Belgium  
Bulgaria  
Finland  
Germany  
Italy  
Spain  
United States of America

## C0.4

**(C0.4) Select the currency used for all financial information disclosed throughout your response.**

EUR

## C0.5

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.**

Operational control

## C-MM0.7

**(C-MM0.7) Which part of the metals and mining value chain does your organization operate in?**

**Row 1**

**Mining**

**Processing metals**

- Copper
- Gold
- Platinum group metals
- Silver
- Nickel
- Zinc
- Lead
- Other non-ferrous metals, please specify  
Selenium, Tellurium, Tin

**C0.8**

**(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?**

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	DE 000 67 66 504

**C1. Governance**

**C1.1**

**(C1.1) Is there board-level oversight of climate-related issues within your organization?**

Yes

**C1.1a**

**(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.**

Position of individual or committee	Responsibilities for climate-related issues
Chief Executive Officer (CEO)	The CEO and the Executive Board define the strategy for the Aurubis Group and afterwards align the strategy with the Supervisory Board. One key pillar of Aurubis' strategy is Sustainability incl. climate related projects and targets. The CEO and the Executive Board approve the investment budget which is a cornerstone of each years Mid Term Planning prior to final submission for approval by Supervisory Board. On top of that, each Capital Expenditure project of > 2 Mio. € has to be

	<p>individually approved by the Executive Board with projects &gt; 10 Mio. € to be forwarded to Supervisory Board for final approval. Investment budget and individual project approvals also cover climate-related issues. Each quarter, an in-depth review by the CEO and Executive Board takes place on every major plant's financial and operating performance which also covers sustainability and climate-related issues. A recent example is the expansion of self-generated solar energy at Pirdop plant in Aurubis Bulgaria. The solar park will be expanded to increase output from 14MWh to 24MWh with an investment of €12 million. Already comprising of over 20,000 solar panels on a remediated and recultivated landfill of ca. 100,000m<sup>2</sup>, the expansion approved in December 2022 will make Aurubis Bulgaria the first industrial consumer in the country to invest in renewable energy production on this scale.</p>
Board Chair	<p>The Supervisory Board gives the final approval for the strategy defined by the Executive Board, that includes climate-related issues. The Audit Committee - being the Supervisory Board's mandatory committee focusing on financial topics – has a standard agenda which includes Sustainability and Risk Management on a quarterly basis. Both functions regularly address climate-related issues and risks. The Supervisory Board approves the investment budget which is a cornerstone of each year's Mid Term Planning. This investment budget contains all Capital Expenditure volumes for the following four financial years. On top of that, each Capital Expenditure project of &gt; 10 Mio. € has to be individually approved by the Supervisory Board. Investment budget and individual project approvals also cover climate-related issues.</p>

## C1.1b

### (C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – some meetings	<ul style="list-style-type: none"> <li>Reviewing and guiding annual budgets</li> <li>Overseeing major capital expenditures</li> <li>Overseeing and guiding employee incentives</li> <li>Reviewing and guiding strategy</li> <li>Overseeing and guiding the</li> </ul>	<p>Climate related issues are part of the many governance mechanisms at Aurubis. Example 1: On a quarterly basis, the Corporate Risk Report and once a year, the Strategic Risk Portfolio is presented by Corporate Risk Management. Both reporting formats regularly contain climate-related risks and corresponding risks mitigating measures. Based on review by the Executive Board, further appropriate risk mitigating measures or projects might be initiated. In addition, the CEO and the CFO participate in the weekly Group Financial Meeting (GFM) together with - among others - managers from Finance and Energy &amp; Climate Affairs. The purpose of the GFM is to monitor price and cost driver evolution (incl. USD, metal prices</p>

	development of a transition plan Overseeing and guiding scenario analysis Overseeing the setting of corporate targets Monitoring progress towards corporate targets Reviewing and guiding the risk management process	but also climate-related risk drivers such as energy and CO2 prices) and to decide on hedge positions if deemed appropriate. Example 2: Strategic projects are being reviewed in the Strategic committee. Strategic projects cover all projects that contribute to achieve our Aurubis strategy “Metals for Progress: Driving Sustainable Growth”, incorporating carbon reducing projects, like the industrial heat project. After being reviewed by the Strategic Committee, these projects are presented and reviewed by the Executive Board in the Executive Board Strategy Meeting.
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## C1.1d

**(C1.1d) Does your organization have at least one board member with competence on climate-related issues?**

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	Supervisory Board: One member is expert in sustainability and climate change: consultant in sustainability and lecturer of Sustainable Finance at Munich Business School; from 2018 – 2019 director of NKI Institut für nachhaltige Kapitalanlagen GmbH (Munich). CFO: author of scientific article: “Risk Management and Climate Change: challenges in risk reporting following the recommendations by TCFD with a special focus on energy-intensive industry”, published in WPg 2021, pages 1485 – 1493.

## C1.2

**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

**Position or committee**

Chief Executive Officer (CEO)

**Climate-related responsibilities of this position**

Developing a climate transition plan  
 Integrating climate-related issues into the strategy

Conducting climate-related scenario analysis  
 Assessing climate-related risks and opportunities  
 Managing climate-related risks and opportunities

**Coverage of responsibilities**

**Reporting line**

Reports to the board directly

**Frequency of reporting to the board on climate-related issues via this reporting line**

More frequently than quarterly

**Please explain**

The CEO is responsible for overall business strategy including all decisions pertaining to it. Sustainability is a core component of Aurubis’ strategy - Metals for Progress: Driving Sustainable Growth. The CEO reports directly to the board on the integration of climate-related issues into strategy (e.g. increased focus on recycled raw materials) and the current state of risks and opportunities that Aurubis’ faces (from flood risk to energy efficiency opportunities).

**C1.3**

**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

**C1.3a**

**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

**Entitled to incentive**

Chief Executive Officer (CEO)

**Type of incentive**

Monetary reward

**Incentive(s)**

Bonus - % of salary

**Performance indicator(s)**

Other (please specify)

CEO compensation includes a variable bonus component that also includes “corporate social responsibility” and “ecological objectives”. In 2022 this was

achieved through the roll-out of copper sustainability standards (copper mark) at several plants.

### **Incentive plan(s) this incentive is linked to**

Short-Term Incentive Plan

### **Further details of incentive(s)**

The variable pay for the CEO includes various criteria on which individual performance is based. Two of these criteria are corporate social responsibility and ecological objectives. Achievement of any initiative or target pertaining to these can lead to an increase in variable pay.

### **Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan**

By aligning corporate social responsibility and ecological objectives with CEO bonus schemes, Aurubis ensures that climate-related commitments and goals are part of top-down decision making and is tied on a personal level with executives (climate performance being tied to CEO pay). We see through this link a clear way to ensure that climate-related issues are present in all executive decisions.

## **C2. Risks and opportunities**

### **C2.1**

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

### **C2.1a**

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

	From (years)	To (years)	Comment
Short-term	0	3	
Medium-term	3	10	
Long-term	10	30	

### **C2.1b**

**(C2.1b) How does your organization define substantive financial or strategic impact on your business?**

**Definition of "substantive financial or strategic impact":** In general, Aurubis Group defines substantive financial or strategic impact as an impact which limits or delays future possibilities for strategic actions and therefore may require strategy adjustments. This could be the case for risks that bear the potential for a major shareholder or customer concern (e.g. impact on

reputation), for risks that pose a physical threat for one of our major sites (e.g. flooding) or for risks that negatively impact two or more major sites in parallel.

**Description of the quantifiable indicator:** A substantive financial or strategic impact on our business is defined in our risk management process as follows: either the impact on EBT is more than € 50 million and the probability of occurrence is at least “medium” (about as likely as not) or the impact on EBT is above € 20 million and the probability is high (more likely than not).

## C2.2

### (C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

#### Value chain stage(s) covered

Direct operations

#### Risk management process

Integrated into multi-disciplinary company-wide risk management process

#### Frequency of assessment

More than once a year

#### Time horizon(s) covered

Short-term

Medium-term

Long-term

#### Description of process

The Aurubis risk management process covers direct operations, climate related topics are integrated into multi-disciplinary company-wide risk management process; time horizon up to 30 years. 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) suited to our activities. Identifying and observing 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 sensible counter 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, 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. Identification: Risk management officers (who are by definition the risk owners) have been appointed for all sites, business sectors and central functions, and they form a network within the Group (Risk Management Organization). The Group headquarters (Corporate Risk Management = CRM) supports the plants. The Risk Management System (RMS) is documented in a corporate policy. Standard risk reporting takes place bottom-up each quarter using a Group-wide uniform reporting format. Within this format, the identified risks (incl. climate-related risks) and risks beyond a defined threshold - included are risks with a substantive financial or strategic impact - are explained and



evaluated based on their probability of occurrence and their business significance (incl. possible interdependencies). Measures to manage them are outlined. Assessment: Within this format, the identified risks (incl. climate-related risks) and risks beyond a defined threshold - included are risks with a substantive financial or strategic impact - are explained and evaluated based on their probability of occurrence and their business significance (incl. Possible interdependencies). Measures to manage them are outlined. The risks registered with Group headquarters are qualitatively aggregated into significant risk clusters by CRM and reported to the entire Executive Board. The report also establishes the basis for the report to the Audit Committee of the Supervisory Board as well as external risk reporting. In the quarterly report to the Executive Board and the Audit Committee, the qualitatively aggregated risk clusters are assessed with due regard to risk management measures (net perspective) based on their probability of occurrence and the potential effect on earnings. On top, once a year a strategic risk portfolio is reported to Executive Board and Audit Committee focusing on risks with a time horizon up to 30 years (incl. initiated or proposed mitigating measures). This strategic risk portfolio also contains results from latest physical climate risk analysis applying RCP 2.6 and RCP 8.5 scenarios covering all Aurubis production sites but also the Top 25 supplying sites for copper concentrates (mines).

Process for responding: As stated above, we strive to limit negative effects on earnings caused by risks by implementing appropriate and economically sound countermeasures. These countermeasures focus on the different options for risk response: accepting the risk, transferring the risk, avoiding the risk or reducing the risk. The individual risk owner (= Risk management officer) is responsible for selecting the appropriate countermeasure in his / her sphere of responsibility. For the majority of physical and transition climate risks, the risk owners of Aurubis choose to either avoid the risk or to reduce the risk. Parallel to these above-mentioned risk reporting processes, communication and organization, CRM is engaged in regular Jour Fixes with Corporate Energy & Climate Affairs, Environmental Protection and Sustainability for early and overarching risk identification and corresponding countermeasures in terms of climate-related risks. Please also have a look into our latest TCFD report which is part of Sustainability Report 22/23.

## C2.2a

### (C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Inclusion in risk assessment: Aurubis systematically includes regulation risks into the risk assessment process. Aurubis receives compensation for at least 50% of the indirect CO2 emissions which are part of the electricity cost. However, this also means that close to 50% of these indirect emissions are costs which are not compensated. Aurubis actively takes part in the political dialogue to counter the challenges that regularly arise from changes to regulatory requirements. Corporate

		Energy and Climate Affairs and Corporate External Affairs monitor on behalf of the plants the regulatory situation and create regular updates in exchange with trade associations. Based on this is a quarterly risk assessment done by the plants to quantify the impacts and estimate the likelihood. Example: Referring to indirect CO2 emissions which are currently not covered by compensation, any further price increase of CO2 is considered to be a risk (increase in cost) for Aurubis.
Emerging regulation	Relevant, always included	Inclusion in risk assessment: Aurubis assesses and values the risk quarterly. For the current trading period the copper sector kept the Carbon Leakage status for direct emissions, but also for the CO2 electricity price compensation. However, we closely monitor ideas by the EU commission for the periods beyond 2030 in terms of e.g. Carbon Border Adjustment Mechanism (CBAM). These ideas could result in much lower or even no free Emission Trading allowances and CO2 electricity price compensation. Hence, Aurubis actively takes part in the political dialogue to counter the challenges that regularly arise from changes to regulatory requirements. Corporate Energy and Climate Affairs and Corporate External Affairs monitor the regulatory situation on behalf of the plants and create regular updates in exchange with trade associations. Example: If free Emission Trading allowances and CO2 electricity price compensation are reduced Aurubis would have to bear the risk of rising financial burden. This burden could be further increased by an expected rise in CO2 prices resulting from supply shortage of available CO2 certificates.
Technology	Relevant, always included	Inclusion in risk assessment: One of the biggest challenges for many industries will be the decarbonisation of their core production processes, often with electrification. It is expected that this shift towards electrification could create electricity supply issues and these supply issues could have the potential to cause blackouts, which could harm production processes like those of Aurubis. As it is - at this stage - sometimes unclear how decarbonisation of a production process could be achieved, the risk can also be in the technology applied. For example, the decarbonisation technology can be much more expensive than the fossil-burning technology. Example: As Aurubis takes the blackout risk seriously, site by site reviews displayed certain investment needs into e.g. emergency backup generators. It is planned that these investments will be done in the coming two years.
Legal	Relevant, always included	Inclusion in risk assessment: Aurubis assesses and values the risk quarterly. We are closely monitoring the increasing numbers of climate litigation against German industrial companies following the judgement of the Federal Constitutional Court (24/03/2021) and the correspondingly updated Climate Protection Act. Meeting our own CO2 emission reduction targets by 2030 (reduction of scope 1 and scope 2 emissions by 50% and scope 3 by 24% compared to 2018 emissions) is therefore the most important measure to prevent possible litigation.

		<p>Example: Aurubis already started initiatives for decarbonization (e.g. industrial heat utilization, power to steam, pilot program on using H<sub>2</sub> instead of gas in one of our anode furnaces or the installation of a solar park in Pirdop). Due to the assessment of future demands in a low carbon future, decisions are made to approve these projects, fuelled also by taking these climate related risks into account (higher CO<sub>2</sub> costs, fluctuating electricity supply by renewables). However, it has to be stated that Aurubis currently cannot offset its own CO<sub>2</sub> emissions against the amount of CO<sub>2</sub> reduction resulting from projects like "Industrial heat".</p>
Market	Relevant, always included	<p>Inclusion in risk assessment: Aurubis systematically includes market risks into the risk assessment process. The focus on CO<sub>2</sub> emissions in world-wide supply chains is growing (Scope 3). Thus, for Aurubis' customers it is important to keep their CO<sub>2</sub> emissions in copper products, that they purchase (carbon footprint), as low as possible. There is a risk that these customers turn to other suppliers in order to reduce their carbon footprint if e.g. a competitor would be able to offer carbon-free copper. Counteracting this risk is one of the reasons why Aurubis works on energy efficiency and decarbonization goals.</p> <p>Example: We monitor customer expectations through close contact and exchange with customers and general market surveys. Several customers ask us to answer CDP Climate Change questionnaire. As another step of counter measures we do the annual climate reporting and the evaluation of this reporting by means of the CDP.</p>
Reputation	Relevant, always included	<p>Inclusion in risk assessment: Aurubis systematically includes reputation risks into the risk assessment process. The biggest reputational risk would arise from not meeting our own CO<sub>2</sub> emission reduction targets which we set ourselves for 2030 (reduction of scope 1 and scope 2 emissions by 50% and scope 3 by 24% compared to 2018 emissions). Hence, our responsible departments monitor the expectations of different stakeholders closely and engage in dialogues. Our departments External Affairs, Sustainability and Environmental Protection monitor the reputation especially in the local surrounding of the plants and report any emerging risk to Corp. Risk Management.</p> <p>Example: We work towards a good relationship with local authorities. Therefore, we work together with the local authorities in initiatives (like Hamburger Klimabündnis) and monitor emissions more than legally required. Additionally, we engage in projects like low carbon CO<sub>2</sub> neutral industrial heat for municipal heat supply. Not only investors, also our customers are paying heightened attention to whether Aurubis participates in climate reportings, such as the CDP and the Sustainability Report according to the GRI Standards. Actively participating in influential ESG ratings is also essential for us.</p>

Acute physical	Relevant, always included	Inclusion in risk assessment: Aurubis has started to assess the physical risk impacts from climate change onto our operations and sites applying scenario analysis (2° and 4° C) with a time horizon until 2050. While this is currently done for two pilot sites, it will then be further rolled out to the remaining sites. As an outcome of this exercise, we expect to better understand the possible vulnerability of our operations regarding climate change impacts and to identify possible investment ideas to strengthen the resilience of our operations and business model. Example: Aurubis headquarter and its biggest plant are located in the Hamburg port area which is vulnerable to the influence of tides of the North Sea via the river Elbe. Thus, the Hamburg port area is also vulnerable to storm surges caused by major storms in the North Sea area. Climate change models predict these storms can likely grow in intensity. The whole port area of Hamburg as well as the cities along the river Elbe are protected against these floods by a system of well-maintained dams and levees and this also includes the Hamburg plant of Aurubis. The recent flooding of plant Stolberg is another indication and example for acute physical risks.
Chronic physical	Relevant, always included	Inclusion in risk assessment: Aurubis has started to assess the physical risk impacts from climate change onto our operations and sites applying scenario analysis (2° and 4° C) with a time horizon until 2050. While this is currently done for two pilot sites, it will then be further rolled out to the remaining sites. As an outcome of this exercise, we expect to better understand the possible vulnerability of our operations regarding climate change impacts and to identify possible investment ideas to strengthen the resilience of our operations and business model. Example: A substantial rise in sea level can also cause flooding of plant Hamburg (see above under “acute physical risks”), hence scenario analysis described above also supports here

## C2.3

**(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes

## C2.3a

**(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Risk 1

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Current regulation

Carbon pricing mechanisms

**Primary potential financial impact**

Increased direct costs

**Company-specific description**

Six of our European sites are in the scope of the EU emissions trading system (EU-ETS). Under the EU-ETS, industrial installations considered to be at significant risk of carbon leakage receive special treatment to support their competitiveness. For the current trading period 2021 – 2030 – as copper sector is on the Carbon Leakage lists – Aurubis receives free allocations of CO2 certificates and gets approximately 50% of its indirect CO2 emissions compensated. As part of our strategy published in 2021 Aurubis has committed to reduce scope 1 and scope 2 emissions by 50% by 2030 to reach an emissions level of 800,000 t. As it is considered very likely that free allocations of CO2 certificates and indirect CO2 compensation will be cut or at least reduced, the risk Aurubis has to face is how big the impact of the remaining 800,000 t of CO2 emissions will be on its P&L, depending on the evolution of CO2 prices of course.

**Time horizon**

Medium-term

**Likelihood**

Very likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)****Potential financial impact figure – minimum (currency)**

40.000.000

**Potential financial impact figure – maximum (currency)**

120.000.000

**Explanation of financial impact figure**

The financial impact depends very much on the evolution of CO2 prices. CO2 prices for the EU ETS have climbed from 50 €/t a year ago to levels around 90 €/t in June 2023. Hence, price forecasts for the year 2030 are difficult to predict but a range of 100 – 150 €/t should be a reasonable approach. Therefore, the potential financial impact of changes in ETS legislation after 2030 – if no free allocations or compensations are

assumed –is derived as follows: 800,000 t CO<sub>2</sub> x price range of 100 – 150 €/ t CO<sub>2</sub>-price = € 80 – 120 million per year (maximum). Assuming that, due to ongoing Carbon Leakage protection up to 50% of scope 1 and 2 emissions will be as free allocations or compensations, the potential financial impact of changes in ETS legislation after 2030 is derived as follows: 800,000 t CO<sub>2</sub> x price range of 100 – 150 €/ t CO<sub>2</sub>-price x 50% = € 40 – 60 million per year (minimum).

**Cost of response to risk**

100.000.000

**Description of response and explanation of cost calculation**

Situation: We are currently receiving free allocations of CO<sub>2</sub> certificates to cover our direct CO<sub>2</sub> emissions according to copper being on the Carbon Leakage list. Plus, we are receiving compensation to cover our indirect CO<sub>2</sub> emissions in electricity price. However, considering the political goals of the Paris Agreement, we consider a regime change beyond 2030 to be expected. Very likely there will be a sharp decline or even a complete stop in the free allocation of allowances. We would expect similar developments to happen in CO<sub>2</sub> price compensation. This change in regulation combined with a likely increase in CO<sub>2</sub> prices would create significant annual financial burdens for Aurubis related to its 800,000 t CO<sub>2</sub> emissions for 2030. Task: We set ourselves emission reduction targets towards 2030 as part of our new strategy published in 2021 and following our commitment to Science Based Targets which had been approved by the SBTi in June 2021. As we recognize the risk, we initiated further steps. Action: Based on the SBTi approach explained above we have started already, as part of our decarbonization roadmap, to work on further emission reduction plans for the remaining 800,000 t of scope 1 and 2 emissions. The first project ideas have already been evaluated but are still too early to be further elaborated into. Further analysis and R&D work has to be done. Result: To achieve the SBT Aurubis initiated, commenced and implemented projects in 2021 to reduce carbon, for example the Industrial Heat project in Hamburg, the PV plant in Pirdop or the improvement of energy efficiency in buildings at our sites. The investment costs of these projects sum up to over EUR 100,000,000. These are allocated to big projects like the Industrial Heat project in Hamburg or the PV plant in Pirdop and a variety of other projects. We are also working on feasibilities how to use ammonia as a blending option for natural gas burners to reduce our emissions on a wider scale, especially as an alternative to hydrogen. Hydrogen, in particular green hydrogen, will not be available in sufficient quantities in the near future. We also monitor new technologies like e.g. Carbon Capture and Storage as a means to capture the carbon emissions which are released from the raw materials which we process in our smelters. However, both project ideas are in a very early stage and therefore it is not possible to provide a meaningful cost estimate at this time.

**Comment**

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**Identifier**

Risk 2

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Acute physical

Flood (coastal, fluvial, pluvial, groundwater)

**Primary potential financial impact**

Decreased revenues due to reduced production capacity

**Company-specific description**

Aurubis headquarters and its biggest plant is located in the Hamburg port area which is vulnerable to the influence of tides of the North Sea via the river Elbe. The Hamburg port area is also vulnerable to storm surges caused by major storms in the North Sea area. Climate change models predict these storms can likely grow in intensity. The whole port area of Hamburg as well as the cities along the river Elbe are protected against these floods by a system of well-maintained dams and levees and this also includes the Hamburg plant of Aurubis. Flooding of site Hamburg bears the risk to cause longer production shutdowns and complete breakdown of major equipment and production facilities, plus the flood and corresponding mud can cause major disruptions in the plant infrastructure incl. stability of buildings. In such a scenario the severity of a flood event and the impacted facilities, major disruption can last for at least 3 months.

**Time horizon**

Long-term

**Likelihood**

Very unlikely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

**Potential financial impact figure – minimum (currency)**

110.000.000

**Potential financial impact figure – maximum (currency)**

130.000.000

**Explanation of financial impact figure**

Flooding of site Hamburg bears the risk to cause longer production shutdowns and complete breakdown of major equipment and production facilities, plus the flood and corresponding mud can cause major disruptions in the plant infrastructure incl. stability of buildings. In such a scenario a flood event and the impacted facilities, major



disruption can last for at least 3 months. We would estimate the risk for a three-month production downtime of Hamburg site to be approximately € 90 million as one day of full production loss grosses up to ~ € 1 million. This € 1 million is a combination of margin losses due to production standstill and fixed costs for e.g. personnel, overhead, etc. On top of that comes repair, clean-up and remediation costs which can only be roughly guessed and are estimated to be in the range of € 20 to 40 million. Major Capex volumes for collapsed buildings are not included in this estimate. It has to be stated here that this is the gross risk which even in the long-term perspective (until 2050) is minimized to a low net risk by the existence of dams and levees as also described below. These dams and levees are high enough to withstand current projected storm surge levels. However, on a longterm perspective it is also very certain that these dams and flood prevention systems will have to be fundamentally upgraded and improved to protect Hamburg site for the years 2050 and beyond. These improvements / upgrades will come with significant Capex spendings for the years 2040 - 2050. Calculation of financial figure: 90 days production standstill x margin losses and fixed costs of one lost production day of € 1 million = € 90 million - plus € 20 million (minimum) clean-up, remediation, repair of machinery and infrastructure = € 110 million (minimum) - plus € 40 million (maximum) clean-up, remediation, repair of machinery and infrastructure = € 130 million (maximum).

### **Cost of response to risk**

30.000

### **Description of response and explanation of cost calculation**

The membership contribution of Aurubis to the "Polder" community grosses up to approx. € 30,000 p.a. It takes care of maintenance and repair of dam and levees to protect the Peute peninsula where Hamburg plant is located. Further costs are those for the Hamburg plant firefighting department. However, as its existence is a legal prerequisite for operations, the costs related to flood response cannot be directly allocated. Capital expenditures for a possible increase of levees and dams to protect against higher future flood levels are not planned for this decade. As this risk has a long-term horizon, the Capex will be invested probably beginning in the late 2030s until 2050. Situation: Hamburg plant is situated in the port area along River Elbe. The area is subject to flooding risk caused by high tides and storm surges due to heavy storms over the North Sea. Flooding would very likely cause production standstills. It is our understanding from communication with the relevant port authorities (Hamburg Port Authority (HPA)), that the plant is currently protected against flooding by dams and levees which are high enough to sustain even the highest possible flood levels that current estimates provide. Task: The impacts of global warming on the rise of sea levels and intensity of storms are carefully monitored: Communication channels to HPA have been set up to initiate further protection investments like increases of dams and levees (see above) Further to that, we also monitor the situation by applying regular scenario analysis including RCP 2.6 and RCP 8.5 scenarios. Action: At this stage, with dams and levees being sufficiently high, seasonal flood alarm trainings and emergency plan tests to be prepared for the very unlikely event of flooding belong to core activities. However, these costs are not separately recorded, as e.g. the Hamburg plant fire department is involved with all its staff and equipment. Capital Expenditures for a most probably



needed increase of levees to protect against higher flood levels are not planned at this stage. However, they must be kept in mind for the late 2030s.

Result: No immediate investment response required but Aurubis needs to closely monitor the situation.

## Comment

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### Identifier

Risk 3

### Where in the value chain does the risk driver occur?

Direct operations

### Risk type & Primary climate-related risk driver

Technology

Transitioning to lower emissions technology

### Primary potential financial impact

Decreased revenues due to reduced production capacity

### Company-specific description

Aurubis is an energy-intensive company, but Aurubis has already gone a long way decarbonising its core processes. This is validated by carbon footprint of Aurubis cathodes of 1,46 t CO<sub>2</sub> per ton of produced copper cathode while the average benchmark on the market is 3,8 t CO<sub>2</sub> per ton of copper cathode. This result is primarily driven by higher energy efficiency, but also by electrifying some of Aurubis processes. Hence, the production processes at Aurubis require a stable supply of electricity which is even growing with the embarkment on our decarbonization path in alignment with our new strategy. At the same time the electricity supply in Germany is impacted by government-led coal phase out to support the Paris climate agreement and the German specific nuclear phase out with last 3 remaining nuclear power plants shutdown in April 2023. These electricity supplies shall be replaced by mainly renewables. Parallel to this, many other industries – e.g. steel, aluminium, chemical, cement – have embarked on similar decarbonization paths most of which require additional volumes of electricity to replace fossil fueled processes. The increase in electricity demand and the shift towards renewables on the supply side bears the risk of an imbalanced situation which could lead to blackouts. Such blackouts are risks for an energy-intensive company like Aurubis. Since we produce 24/7, we also have no possibility to flexibilize our production - at times when the energy is available secured.

### Time horizon

Short-term

### Likelihood

Likely

### Magnitude of impact

Medium

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)****Potential financial impact figure – minimum (currency)**

3.000.000

**Potential financial impact figure – maximum (currency)**

41.000.000

**Explanation of financial impact figure**

Aurubis initiated blackout studies at major production sites. The impact of a blackout varies and depends very much on the production process. As a possible scenario we applied a power blackout of 2-24 hours. Based on these studies we estimate the financial risk of a power blackout for Hamburg to be € 25 million, for Pirdop to be € 13 million and for Lünen to be € 3 million. The main components of our estimate are explained using the case of Hamburg plant: Depending on weather and outside temperatures such a blackout can cause liquid metals in our furnaces and sulfuric acid in cooling towers to freeze and thereby to trigger a shutdown of up to 4 weeks. One day of shutdown for these facilities would cost us a lost margin of ~ € 0.6 million (4 weeks = € 17 million). On top of that we estimate costs to repair the expected damages to be ~ € 6 million. Smaller impact in other parts of Hamburg plant, mainly electrical infrastructure amount to € 2 million. Cost of a 24h blackout in Hamburg: € 17 million lost margin from production standstill + € 8 million damage and repair cost = € 25 million. The minimum impact would be from a blackout in the area of Lünen: € 3 million The maximum impact would be from such a blackout that affects Hamburg, Lünen, Pirdop at the same time: € 25 + 3 + 13 million = € 41 million.

**Cost of response to risk**

15.000.000

**Description of response and explanation of cost calculation**

Situation: Following the increased CO2 reduction targets set by EU commission and German climate change law which sharply increases the demand for renewable electricity and simultaneously lowers the stable supply of electricity through e.g. coal-phase out regulation combined with the approach to shutdown nuclear power plants and at the same time a slow speed of needed electricity grid expansion and storage for renewable energy the risk for secured electricity supplies is increasing. An unanticipated interruption of electricity supply could have a major impact on the operations as metals could freeze in the smelters and acid could freeze in cooling towers causing shutdowns of more than just a few days. Task: Aurubis did a plant-by-plant study for major operating sites to evaluate the local electricity supply situation and the already in place measures like emergency power generators or options of adapting operations to more flexibility. This also includes options to switch to other available electricity sources like nearby renewables to secure critical volumes. Action: The impact without

countermeasures is estimated to be € 25 million for site Hamburg alone. For more insights into cost composition please see above.

Result: Considering the outcome of the studies so far, we estimate investments for Hamburg to be approx. € 10 million, for Pirdop € 5 million. Total costs of response to risk is €15 million.

After these investments – e.g. emergency power generating units – have been made for Hamburg and Pirdop we aim to reduce the financial impact in case of risk occurrence to a level of € 4 to 5 million for Hamburg and even below € 1 million for Pirdop. Limiting the financial impact to €5 -6 million.

### Comment

## C2.4

**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

### C2.4a

**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.**

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#### Identifier

Opp1

#### Where in the value chain does the opportunity occur?

Direct operations

#### Opportunity type

Energy source

#### Primary climate-related opportunity driver

Use of lower-emission sources of energy

#### Primary potential financial impact

Reduced indirect (operating) costs

#### Company-specific description

i) DESCRIPTION of operational impact:

We operate in 7 countries worldwide, 6 of them in the European Union. Therefore, we are strongly affected by the EU Green Deal. With the Green Deal, the EU has an ambitious target for 2050: a resilient economy and society that achieves carbon neutrality through high innovative strength and competitiveness. This corresponds to Aurubis' goal, as is apparent in Aurubis' affirmation to the Science-Based Targets

initiative and the corresponding company targets in line with the 1.5°C goal of the Paris Climate Agreement, Aurubis is able to extract residual heat from its production processes. The use of residual heat replaces fossil fuels in the heat and steam production and therefore not only increases the level of energy efficiency, but also reduces carbon emissions.

ii) EFFECT on Aurubis:

In October 2018, Aurubis commissioned a 3.7-km-long pipeline that transfers excess heat from our Hamburg plant to our partner eneracity Contracting Nord GmbH, who then supplies the neighborhood HafenCity East with heat. This first stage of the Aurubis industrial heat supply saves about 20,000 t of CO<sub>2</sub> emissions annually. In December 2021, Aurubis and Wärme Hamburg signed a long-term heat supply contract. As of the 2024/25 heating period, about 20,000 more households in Hamburg will be supplied with CO<sub>2</sub>- free industrial heat from a sub-process of Aurubis copper production. This is part of a heat supply contract that the two companies signed. This follow-up project makes a significant contribution to achieving the city of Hamburg's climate goals and supports Aurubis' sustainability ambition through a further reduction of the carbon footprint. The use of CO<sub>2</sub>-free industrial heat in the Wärme Hamburg heating network will replace heat that is currently generated from fossil fuels. This can save up to 100,000 t of CO<sub>2</sub> emissions annually in Hamburg starting in 2025. The planned heat supply represents the biggest use of industrial heat in Germany.

**Time horizon**

Short-term

**Likelihood**

Virtually certain

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

3.000.000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact figure**

Start of production following ramp-up phase will be in the second half of 2024. At full production, Aurubis expects EBITDA contribution of ~€ 3 million coming from this project.

**Cost to realize opportunity**

97.000.000

**Strategy to realize opportunity and explanation of cost calculation**

## CASE STUDY

Situation: With the Green Deal, the EU has an ambitious target for 2050: A resilient economy and society that achieves carbon neutrality through high innovative strength and competitiveness. At the Aurubis plant in Hamburg we show how industry can be a valuable partner in combating climate change. As an industrial plant located near the city centre of Hamburg, we wanted to make our industrial excess heat usable for the households in Hamburg. Task: Aurubis is able to extract residual heat from its production processes. The use of residual heat replaces fossil fuels in the heat and steam production and therefore not only increases the level of energy efficiency, but also reduces carbon emissions. Aurubis takes a close look at all types of waste heat produced from its processes. Action: In October 2018, Aurubis commissioned a 3.7-km-long pipeline that transfers excess heat from our Hamburg plant to our partner energy contracting Nord GmbH, who then supplies the neighbourhood HafenCity East with heat. This first stage of the Aurubis industrial heat supply saves about 20,000 t of CO<sub>2</sub> emissions annually. In December 2021, Aurubis and Wärme Hamburg signed long-term heat supply contract. As of the 2024/25 heating period, about 20,000 more households in Hamburg will be supplied with CO<sub>2</sub>-free industrial heat from a sub-process of Aurubis copper production. This is part of a heat supply contract that the two companies signed. Result: The use of CO<sub>2</sub>-free industrial heat in the Wärme Hamburg heating network will replace heat that is currently generated from fossil fuels. This can save up to 100,000 t of CO<sub>2</sub> emissions annually in Hamburg starting in 2025. The planned heat supply represents the biggest use of industrial heat in Germany. Cost efficiency and project profitability achieved through funding from the German Federal Ministry for Economic Affairs and Energy and revenues from heat sales to Wärme Hamburg GmbH

COST CALCULATION: Estimated investment volume for the project is € 97 million.

**Comment**

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**Identifier**

Opp2

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Resource efficiency

**Primary climate-related opportunity driver**

Use of recycling

### **Primary potential financial impact**

Increased revenues through access to new and emerging markets

### **Company-specific description**

#### i) DESCRIPTION

of operational impact: Metals are the foundation for progress. With the Aurubis strategy, we are providing a clear answer to how we will continue solidifying and expanding our position as the most efficient and sustainable multimetal producer in the world: as a high-performance smelter network with a strong core business and new drivers of growth in recycling. Global market trends such as digitalization, the increase in renewable energies, and more sustainable business are driving the circular economy and therefore the reprocessing of valuable materials containing metals. We are taking advantage of this at Aurubis with a sense of purpose in order to significantly expand our recycling capacities in the years to come, penetrating new markets in a targeted way at the same time.

#### ii) EFFECT

With our multimetal recycling, we are making an important contribution to the efficient and environmentally friendly use of valuable resources. The construction of Aurubis Richmond, the largest multimetal recycling plant in the US with a processing capacity of 180,000 tons of valuable materials per year, is impressive proof of our approach. Aurubis broke ground on their Richmond plant in June 2022. Together with the expansion stage and taking into account a capital expenditure adjustment for infrastructure requirements and inflation of € 90 million for the current construction project, Aurubis plans to invest a total of € 640 million in the U.S. state of Georgia. Aurubis expects to generate operative earnings (EBITDA) of around € 170 million starting in fiscal year 2026/27.

### **Time horizon**

Short-term

### **Likelihood**

Virtually certain

### **Magnitude of impact**

Medium-high

### **Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

### **Potential financial impact figure (currency)**

170.000.000

### **Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)****Explanation of financial impact figure**

Aurubis expects to generate operative earnings (EBITDA) of around € 170 million starting in fiscal year 2026/27.

**Cost to realize opportunity**

640.000.000

**Strategy to realize opportunity and explanation of cost calculation**

CASE STUDY Situation:

Metals are the foundation for progress. With the Aurubis strategy, we are providing a clear answer to how we will continue solidifying and expanding our position as the most efficient and sustainable multimetal producer in the world: as a high-performance smelter network with a strong core business and new drivers of growth in recycling. Task: Aurubis is already enthusiastically shaping the circular economy, processing about 1 million t of recycling materials per year as a leading company for multimetal recycling. With our multimetal recycling, we are making an important contribution to the efficient and environmentally friendly use of valuable resources. The construction of Aurubis Richmond, the largest multimetal recycling plant in the US with a processing capacity of 180,000 tons of valuable materials per year, is impressive proof of our approach. The investment supports the ambitious goals to protect the environment and conserve resources while simultaneously contributing to the company's growth targets.

Action: Aurubis plans to spend an additional € 250 million to fast-track the expansion of its Richmond plant, which is currently under construction in Augusta, Georgia. This investment is projected to double throughput volume from the previously planned 90,000 tons of complex recycling materials to 180,000 tons per year.

Result: Aurubis broke ground on Richmond plant in June 2022. Together with the expansion stage and taking into account a capital expenditure adjustment for infrastructure requirements and inflation of € 90 million for the current construction project, Aurubis plans to invest a total of € 640 million in the U.S. state of Georgia. Aurubis expects to generate operative earnings (EBITDA) of around € 170 million starting in fiscal year 2026/27.

**COST CALCULATION:**

Aurubis broke ground on their Richmond plant in June 2022. Together with the expansion stage and taking into account a capital expenditure adjustment for infrastructure requirements and inflation of € 90 million for the current construction project, Aurubis plans to invest a total of € 640 million in the U.S. state of Georgia.

**Comment**

## C3. Business Strategy

### C3.1

**(C3.1) Does your organization’s strategy include a climate transition plan that aligns with a 1.5°C world?**

Row 1

**Climate transition plan**

Yes, we have a climate transition plan which aligns with a 1.5°C world

**Publicly available climate transition plan**

No

**Mechanism by which feedback is collected from shareholders on your climate transition plan**

We do not have a feedback mechanism in place, and we do not plan to introduce one within the next two years

**Attach any relevant documents which detail your climate transition plan (optional)**

### C3.2

**(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?**

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, quantitative

### C3.2a

**(C3.2a) Provide details of your organization’s use of climate-related scenario analysis.**

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA NZE 2050	Company-wide		1.5°C alignment scenario: <ul style="list-style-type: none"> <li>· scenario assumes global CO2 emissions to be net zero in 2050</li> <li>· scenario sets a pathway to stabilizing global average temperatures at 1.5°C above pre-industrial levels</li> <li>· advanced economies reach net zero emissions before developing economies</li> <li>· more drastic and non-linear policy adaptations expected</li> </ul>



			<p>to meet 1.5°C, these policy adaptations most likely include:</p> <ul style="list-style-type: none"> <li>o much higher CO2 prices which reach 250 USD / t in 2050</li> <li>o introduction of carbon pricing / ETS regimes in many more countries (e.g. U.S.A.)</li> <li>o subsidies to push green energy transformation (e.g. U.S. Inflation Reduction Act)</li> </ul> <p>· Hence, Aurubis strategy is tied to NZE scenario as Aurubis long-term target is to be “carbon-neutral well before 2050”</p> <p>· Plus, Aurubis joined the UN Global Compact Business Ambition for 1.5°C, at the end of 2019, pledging to work on science-based CO2 reduction targets. The Science Based Targets initiative (SBTi) validated these CO2 reduction targets in 2021, thus confirming that we are contributing to limiting global warming to 1.5°C in line with the Paris Climate Agreement.</p> <p>· Physical climate risks for Aurubis plants and major concentrate supply source locations have been analyzed applying RCP 2.6 scenario which also aims limiting global average temperatures at 1.5°C above pre-industrial levels.</p>
<p>Physical climate scenarios RCP 8.5</p>	<p>Company-wide</p>		<p>Climate crisis scenario (&gt; 4.1 °C):</p> <ul style="list-style-type: none"> <li>· scenario assumes global CO2 emissions will further increase by 2050 as fossil fuels remain as the major source of energy</li> <li>· in this scenario global average temperatures would reach &gt; 4.1°C above pre-industrial levels in 2100</li> <li>· regional but also global geopolitical conflicts over water and food resources likely as a result of climate crisis (e.g. drought and water scarcity, heatwaves, flooding due to sea level rise, tropical cyclones and heavy rain events)</li> <li>· migration waves away from regions hit hardest by climate crisis</li> <li>· (as a result global GDP expected to decrease)</li> <li>· Physical climate risks for Aurubis plants and major concentrate supply source locations have been analyzed applying RCP 8.5 scenario; physical climate risks expected to be (much) higher than in RCP 2.6 scenario.</li> </ul>

## C3.2b

**(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.**

### Row 1

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#### Focal questions

- Risks

- o Which physical risks arise in the different scenarios?
- o Which transition risks arise in the different scenarios?
- o Which measures have to be implemented to tackle these risks?

- Opportunities

- o Which economic opportunities arise in the different scenarios?
- o Which decisions have to be made in order to benefit from those opportunities?

#### Results of the climate-related scenario analysis with respect to the focal questions

IEA NZE 2050

- o Physical Risks:

Please compare: TCFD report in 2023 sustainability report on page 93-95, but also risk 2 in section C2.3a of this CDP report

- o Transition Risks:

Please compare: TCFD report in 2023 sustainability report on page 93, but also risk 1 and risk 3 in section C2.3a of this CDP report

- o Measures:

Physical risks: as described in detail for risk 2 in section C2.3a of this CDP report

Transition risks:

- set up and execute decarbonization roadmap as described in risk 1 in section C2.3a of this CDP report,
- invest into emergency power generators as described in risk 3 in section C2.3a of this CDP report

- o Opportunities:

Please compare TCFD report in 2023 sustainability report on pages 92-93, but also Opportunities 1 and 2 as described in section C2.4a of this CDP report

RCP 8.5

o Physical Risks:

Please compare: TCFD report in 2023 sustainability report on page 93-95, but also risk 2 in section C2.3a of this CDP report

o Transition Risks:

We hardly see any transition risks as there will be no transition required

o Measures:

Physical risks: as described in detail for risk 2 in section C2.3a of this CDP report

o Opportunities:

We hardly see any opportunities in RCP 8.5

### C3.3

**(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.**

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Recycling is a driver of growth for Aurubis. Our copper cathodes already contain about 44% recycling material.. We want to achieve 50% recycling content in copper cathodes by 2030. North America and Europe in particular provide us with significant growth opportunities that we will leverage with our scalable Aurubis modular system to develop new recycling plants. With our multimetal recycling, we are making an important contribution to the efficient and environmentally friendly use of valuable resources. The construction of Aurubis Richmond, the largest multimetal recycling plant in the US with a processing capacity of

		180,000 tons of valuable materials per year, is impressive proof of our approach.
Supply chain and/or value chain	Yes	<p>To close the value chain for copper and other metals, we place a high priority on the closing-the-loop approach. The focus of this approach is on materials such as production waste and residues that accumulate along the copper value chain in production, for example with our customers. Closing the loop is only possible if metals are returned after use.</p> <p>Therefore, customer relationships and product marketing take the return of metals into consideration as well. For example, the production units provide individualized solutions for taking back recycling materials that accumulate in the processing of copper products and other metals in the various value-added stages that take place with product customers and their customers. The whole process opens up options for customers to sell production residues or copper scrap to Aurubis and to receive refined copper in return, for instance. Thanks to our integrated smelter network, we find solutions, even for metallurgical challenges, and are thus able to serve customers from a variety of sectors. As part of our closing-the-loop activities, we built up partnerships especially in product sales through which we not only sell our products, but also take back recycling raw materials that customers accumulate, in addition to other service offerings. The raw material cycle thus comes full circle.</p>
Investment in R&D	Yes	<p>Research and Development (R&amp;D) is part of the successful Aurubis growth strategy. At the core of R&amp;D is the continued development of our metallurgical expertise, with the aim of extracting a large number of metals from increasingly complex raw materials and recycled materials in an efficient and sustainable process. The entire Aurubis Group's R&amp;D expenditures in fiscal year 2021/22 amounted to € 12 million.</p> <p>Aurubis R&amp;D has been working on key projects to improve the sustainability of multimetal production. These efforts include, for example, the continued development of the application of iron silicate. The focus here lies on the application of Aurubis iron silicate as a sustainable construction material with a low CO<sub>2</sub> footprint. R&amp;D is working together with the building materials industry as well as research institutes and universities on various projects aimed at achieving this goal.</p>

Operations	Yes	<p>Sustainable conduct and business activities are integral components of the Aurubis strategy. We have set targets and specified concrete measures for reducing CO2 emissions, with the goal of achieving carbon-neutral production well before 2050. Our production technologies and facilities are already making a crucial contribution to responsible resource use, supporting the energy transition along with our products.</p> <p>Hydrogen is an important source of future energy. Aurubis has carried out successful large-scale tests on the use of hydrogen in copper production in Hamburg, where it was used as a highly efficient reducing agent in the so-called anode furnace. Based on these tests, future requirements for the conversion of the anode furnace were determined and a technical planning process was initiated. Intensive research is being carried out into other possible uses of hydrogen. Because green hydrogen in particular is not yet available in sufficient quantities, R&amp;D has been focusing intensively on potential uses of ammonia as an alternative to hydrogen in copper production. The question of ammonia splitting versus direct utilization was specifically analyzed and a test installation was developed. First test campaigns, on industrial scale to date, validated potential of ammonia as alternative fuel for cathode shaft furnace; implications for production processes are now under evaluation.</p>
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### C3.4

**(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Access to capital	<p>Revenues:</p> <p>Aurubis is one of the world’s leading recyclers of copper and complex recycling raw materials. It is also a leader in its sustainability efforts under ecological, social, and ethical criteria. In light of the rising importance of resource efficiency, we expect demand for recycling solutions and low-loss metal production and recovery to continue growing. This is also supported and promoted by increasingly strict national and international</p>

		<p>legislation and initiatives such as the European Green Deal. More and more, customers and suppliers are making higher sustainability demands at the same time, which can also benefit Aurubis. Thanks to our multimetal recycling activities and proximity to our copper product customers, we consider ourselves to be in a position to offer expanded “closing the loop” solutions. Following the complete, successful integration of the Metallo Group, Aurubis has been able to extend its recycling capabilities even further. We are significantly expanding our regional service range in North America after deciding to invest in a new recycling plant in the US. . More than 488,000 t or 44% of Aurubis Group cathode output come from reprocessed copper containing scrap. Moreover additional financial impact results from scrap refining charges.</p> <p>Direct Costs:</p> <p>In December 2022 the Supervisory Board of Aurubis AG approved the expansion of the existing photovoltaic plant at the Pirdop site. An initial investment volume of around € 12 million will be employed to considerably increase the existing plant’s output from 14 MW to 24 MW. Once the second expansion is complete, it will generate the electricity it would take to power 9,000 households, or a small city, every year. Compared to coal-fired power generation, this will save 34,000 tons of CO2 emissions per year – or over 500,000 tons for the planned operating period of 15 years. This makes Aurubis’ in-house solar park a key component for the ongoing decarbonization of production in Bulgaria. The project will also advance Aurubis’ sustainability goals that call for a 50 % reduction of Scope 1 + 2 emissions by 2030.</p> <p>Access to capital:</p> <p>In early February 2022, we took out a € 350 million ESG linked syndicated credit line over a period of five years. ESG stands for environmental and social governance. The loan conditions are tied to the company’s EcoVadis rating, so commitment to sustainability is having a direct impact on the costs of Group financing.</p>
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### C3.5

**(C3.5) In your organization’s financial accounting, do you identify spending/revenue that is aligned with your organization’s climate transition?**

	Identification of spending/revenue that is aligned with your organization’s climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	Yes, we identify alignment with a sustainable finance taxonomy	At both the company and activity level

## C3.5a

**(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's climate transition.**

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### Financial Metric

CAPEX

### Type of alignment being reported for this financial metric

Alignment with a sustainable finance taxonomy

### Taxonomy under which information is being reported

EU Taxonomy for Sustainable Activities

### Objective under which alignment is being reported

Climate change mitigation

### Amount of selected financial metric that is aligned in the reporting year (unit currency as selected in C0.4)

35.121

### Percentage share of selected financial metric aligned in the reporting year (%)

10

### Percentage share of selected financial metric planned to align in 2025 (%)

### Percentage share of selected financial metric planned to align in 2030 (%)

### Describe the methodology used to identify spending/revenue that is aligned

Aurubis' core business activities - production of copper, other non-ferrous metals and by products and processing and recycling complex concentrates and reusable raw materials, are currently not covered by the EUT and are designated as non-taxonomy eligible in accordance with the delegated acts. Therefore, only supporting economic activities and activities that are not part of the core business are classified as taxonomy-eligible.

For the fiscal year 2021/22, the economic activities which were identified to classify as taxonomy-eligible under the EUT were:

- Electricity generation using photovoltaic technology
- Generation of heating/cooling from waste heat
- Construction, expansion and operation of water collection, treatment and supply systems.
- Public local and regional passenger transport, passenger vehicle transport.
- Renovation of existing buildings
- Acquisition and ownership of buildings

Based on the description of the activities and the technical evaluation criteria, Aurubis classifies all of the above-mentioned activities under the first environmental target "Climate protection".

The KPIs published in the context of the EUT are prepared in the same way as the Aurubis Group's financial report based on the International Financial Reporting Standards (IFRS) and only include fully consolidated Aurubis AG companies.

The CapEx KPI represents the proportion of capital expenditures associated with taxonomy-eligible economic activities or related to the acquisition of products or services from taxonomy-eligible economic activities. Capital expenditures disclosed in accordance with the EUT includes additions to financial fixed assets excluding goodwill, additions to financial fixed assets and proportions accounted for using the equity method. Capitalized capital expenditures for CapEx projects that are attributed to taxonomy-eligible activities are included in the numerator when determining the taxonomy-eligible proportions. Because the core business and the revenue-generating activities of Aurubis are currently not reflected in the taxonomy, the mentioned activities primarily result in the recognition of taxonomy-eligible CapEx for fiscal year 2021/22 were:

- Extraction of carbon-free industrial heat from a sub-process of copper production for use in the Hamburg district heating system. Aurubis AG and Hamburg Energiewerke GmbH are taking advantage of this opportunity to further expand one of the largest industrial heat supply systems in Germany.
- Construction of recycling facility at the site in Georgia (US) -building investments incurred in the current fiscal year are recognized as taxonomy-eligible in this context.
- Construction of a 10 MW photovoltaic facility in Pirdop (Bulgaria); this will be one of the largest photovoltaic facilities for internal electricity generation by a company in Bulgaria. Only building investments are reported as taxonomy eligible in the current fiscal year.

Capital expenditures under the Taxonomy Regulation differs significantly from capital expenditures for environmental protection measures reported in the Annual Report due to the definition, the taxonomy test to be performed, and the simplified approach to identifying relevant capital expenditures adopted in the year of first-time reporting. The background of this is, among other things, that Aurubis 'core business and the related production facilities are currently not chargeable under the Taxonomy Regulation. This means that these items cannot be transferred to environmental investments in the current fiscal year.

Aurubis will be required to implement the full reporting requirements of the EUT for the first time starting in the fiscal year 2022/23. This means that economic activities should be divided into taxonomy-eligible, non-taxonomy-eligible, and taxonomy-aligned economic activities in accordance with the reporting form for non-financial companies. Disclosure of the three KPIs then becomes mandatory at the activity level.



## C3.5b

**(C3.5b) Quantify the percentage share of your spending/revenue that was associated with eligible and aligned activities under the sustainable finance taxonomy in the reporting year.**

## C3.5c

**(C3.5c) Provide any additional contextual and/or verification/assurance information relevant to your organization's taxonomy alignment.**

# C4. Targets and performance

## C4.1

**(C4.1) Did you have an emissions target that was active in the reporting year?**

Absolute target

Intensity target

## C4.1a

**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

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**Target reference number**

Abs 1

**Is this a science-based target?**

Yes, and this target has been approved by the Science Based Targets initiative

**Target ambition**

1.5°C aligned

**Year target was set**

2021

**Target coverage**

Company-wide

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Market-based

**Scope 3 category(ies)**

**Base year**

2018

**Base year Scope 1 emissions covered by target (metric tons CO2e)**

565.989

**Base year Scope 2 emissions covered by target (metric tons CO2e)**

987.513

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)**

**Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)**

**Base year total Scope 3 emissions covered by target (metric tons CO2e)**

**Total base year emissions covered by target in all selected Scopes (metric tons CO2e)**

1.553.502

**Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1**

100

**Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2**

100

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO<sub>2</sub>e)**

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)**

**Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)**

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)**

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)**

**Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)**

**Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)**

**Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)**

**Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)**

**Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)**

**Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes**

100

**Target year**

2030

**Targeted reduction from base year (%)**

50

**Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]**

776.751

**Scope 1 emissions in reporting year covered by target (metric tons CO2e)**

555.231

**Scope 2 emissions in reporting year covered by target (metric tons CO2e)**

763.497

**Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)**

**Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)**

**Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)**

**Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)**

1.318.728

**Does this target cover any land-related emissions?**

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

**% of target achieved relative to base year [auto-calculated]**

30,225130061

**Target status in reporting year**

Underway

**Please explain target coverage and identify any exclusions**

Target covers 100% of scope 1 and 2 emissions and includes no exclusions

**Plan for achieving target, and progress made to the end of the reporting year**

Aurubis communicated the overall emission reduction target to the sites and developed a roadmap that identifies site specific targets and projects to reduce carbon emissions by 2030. We have achieved the interim target 2022 through the following actions: PV Plant Pirdop. Improvements in energy efficiency in buildings. Usage of process waste heat to increase efficiency.

In 2022 we also acquired Guarantees of Origins (GoO) for our operations in Germany. Purchase of renewables is a core component in our strategy.

The increased used of photovoltaics and the acquisition of guarantees of origin certificates have contributed most.

Moreover, we drive our transformation forward with tests with H2 and NH3 to discover where it can be used in our production.

**List the emissions reduction initiatives which contributed most to achieving this target**

**C4.1b**

**(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).**

**Target reference number**

Int 1

**Is this a science-based target?**

Yes, and this target has been approved by the Science Based Targets initiative

**Target ambition**

2°C aligned

**Year target was set**

2021

**Target coverage**

Company-wide

**Scope(s)**

Scope 3

**Scope 2 accounting method**

**Scope 3 category(ies)**

Category 1: Purchased goods and services

Category 2: Capital goods



Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)

Category 4: Upstream transportation and distribution

Category 5: Waste generated in operations

Category 6: Business travel

Category 7: Employee commuting

Category 9: Downstream transportation and distribution

**Intensity metric**

Metric tons CO<sub>2</sub>e per metric ton of product

**Base year**

2018

**Intensity figure in base year for Scope 1 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 2 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO<sub>2</sub>e per unit of activity)**

4,492

**Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO<sub>2</sub>e per unit of activity)**

0,08

**Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO<sub>2</sub>e per unit of activity)**

0,168

**Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO<sub>2</sub>e per unit of activity)**

0,305

**Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO<sub>2</sub>e per unit of activity)**

0,005

**Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO<sub>2</sub>e per unit of activity)**

0,002

**Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO<sub>2</sub>e per unit of activity)**

0,01

**Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO<sub>2</sub>e per unit of activity)**

0,642

**Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for total Scope 3 (metric tons CO<sub>2</sub>e per unit of activity)**

5,9

**Intensity figure in base year for all selected Scopes (metric tons CO<sub>2</sub>e per unit of activity)**

5,9

**% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure**

**% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure**

**% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure**

78,8

**% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure**

1

**% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure**

3

**% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure**

5,3

**% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure**

0,1

**% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure**

0

**% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure**

0,2

**% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure**

**% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure**

11,3

**% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure**

**% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure**

**% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure**

**% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure**

**% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure**

**% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure**

**% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure**

**% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure**

**% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure**

100

**% of total base year emissions in all selected Scopes covered by this intensity figure**

100

**Target year**

2030

**Targeted reduction from base year (%)**

24

**Intensity figure in target year for all selected Scopes (metric tons CO<sub>2</sub>e per unit of activity) [auto-calculated]**

4,484

**% change anticipated in absolute Scope 1+2 emissions**

0

**% change anticipated in absolute Scope 3 emissions**

24

**Intensity figure in reporting year for Scope 1 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 2 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for total Scope 3 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for all selected Scopes (metric tons CO<sub>2</sub>e per unit of activity)**

**Does this target cover any land-related emissions?**

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

**% of target achieved relative to base year [auto-calculated]**

**Target status in reporting year**

Underway

**Please explain target coverage and identify any exclusions**

Excluded categories 8. Upstream leased assets, 10. Processing of sold products, 11. Use of sold products, 12. End-of-life treatment of sold products, 13. Downstream leased assets, 14. Franchises, 15. Investments are not applicable as Aurubis has no emission stemming from these categories.

**Plan for achieving target, and progress made to the end of the reporting year**

Our first step to achieve the target is to improve our data base for Scope 3 emissions. For this reason, we started a survey within our concentrate suppliers as well as a new system to calculate the transport related emissions during the reporting year. When the data is validated, we will develop the plan to achieve the target based on this data. Through supplier engagement Aurubis is collaborating with key suppliers like Anglo American and Codelco in order to provide assurances in the mining, processing and transporting of copper (e.g., Copper Mark Chain of Custody). These collaborations also place a strong focus on climate change mitigation, as the partners have also developed ambitious decarbonization plans. Additionally, we are working to explore opportunities to increase transparency and traceability in the supply chain alongside identifying efficiency drivers. Further in Chile we are identifying opportunities to contribute towards circular economy projects as part of the German-Chilean Raw Materials Partnership.

**List the emissions reduction initiatives which contributed most to achieving this target****C4.2****(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

Net-zero target(s)

**C4.2c****(C4.2c) Provide details of your net-zero target(s).****Target reference number**

NZ1

**Target coverage**

Company-wide

**Absolute/intensity emission target(s) linked to this net-zero target**

Abs1

Int1

**Target year for achieving net zero**

2045

**Is this a science-based target?**

Yes, we consider this a science-based target, and we have committed to seek validation of this target by the Science Based Targets initiative in the next two years

**Please explain target coverage and identify any exclusions**

Aurubis set itself the target to become carbon-neutral way before 2050. This includes all Scopes 1,2,3 and we work on multiple initiatives to achieve this target. The biggest challenge state process emissions that are not avoidable. CCS and CCU are possible solutions.

**Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?**

Yes

**Planned milestones and/or near-term investments for neutralization at target year**

We set an intermediate target to reduce our Scope 1+2 emissions until 2030 by 50% and our Scope 3 emissions by 24% per ton of product. In the course of this process we developed a roadmap to identify appropriate measures. The identified measures consist of the switch to green electricity, use of hydrogen, ammonia and the electrification of processes. To achieve the 2030 target, multiple measures have to be implemented by 2030.

**Planned actions to mitigate emissions beyond your value chain (optional)**

N/A

**C4.3**

**(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**

Yes

**C4.3a**

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	4	0
To be implemented*	0	0
Implementation commenced*	1	3.015



Implemented*	15	2.738
Not to be implemented	0	0

## C4.3b

**(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.**

---

### Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

### Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)

1.075

### Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

### Voluntary/Mandatory

Voluntary

### Annual monetary savings (unit currency – as specified in C0.4)

497.739

### Investment required (unit currency – as specified in C0.4)

10.000

### Payback period

<1 year

### Estimated lifetime of the initiative

Ongoing

### Comment

Operation optimization AO casting machine

---

### Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

### Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)

516

### Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

239.129

**Investment required (unit currency – as specified in C0.4)**

10.000

**Payback period**

<1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Adjustment of heating curves, temperature reduction rooms.

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

**Estimated annual CO2e savings (metric tonnes CO2e)**

61

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

**Investment required (unit currency – as specified in C0.4)**

**Payback period**

**Estimated lifetime of the initiative**

**Comment**

installation of compressed air flow limiters

**Initiative category & Initiative type**

Energy efficiency in production processes  
Combined heat and power (cogeneration)

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

10

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

0

**Investment required (unit currency – as specified in C0.4)**

0

**Payback period**

<1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Set the holding Furnace level to minimum during weekend production stop

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

3

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

2.625

**Investment required (unit currency – as specified in C0.4)**

2.135

**Payback period**

<1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Insulation of lubricating oil tanks, so as to reduce the ignition time of the electric resistance which allows the oil to be heated

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Cooling technology

**Estimated annual CO2e savings (metric tonnes CO2e)**

4

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

3.883

**Investment required (unit currency – as specified in C0.4)**

**Payback period**

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Increase the cooling water temperature

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

**Estimated annual CO2e savings (metric tonnes CO2e)**

7

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

6.721

**Investment required (unit currency – as specified in C0.4)**

20.000

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Installation of inverter on Launderers 1 and 2, and on The Holding Furnace blowers

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Combined heat and power (cogeneration)

**Estimated annual CO2e savings (metric tonnes CO2e)**

462

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

129.204

**Investment required (unit currency – as specified in C0.4)**

52.515

**Payback period**

<1 year

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Electric heat exchanger to increase the methane gas combustion temperature to 200°C

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Compressed air

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

11

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

**Investment required (unit currency – as specified in C0.4)**

**Payback period**

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Reduction of the operating pressure of the compressors from 5.9 bar to 5.6 bar

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Process optimization

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

387

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

**Investment required (unit currency – as specified in C0.4)**

**Payback period**

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Reduce of 6 kV grid power losses

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Compressed air

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

16

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

5.000

**Investment required (unit currency – as specified in C0.4)**

13.800

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Retrofitting of compressed air system

---

**Initiative category & Initiative type**

Energy efficiency in production processes  
Process optimization

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

75

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

10.400

**Investment required (unit currency – as specified in C0.4)**

54.000

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

Ongoing

**Comment**

CTR - EBO - Frequency control of the Delmet exhaust fan

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Cooling technology

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

68

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

9.400

**Investment required (unit currency – as specified in C0.4)**

39.500

**Payback period**

4-10 years

**Estimated lifetime of the initiative**

Ongoing

**Comment**

CTR - Reintegrate steam condensate in rinsing water

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Cooling technology

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

35



**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

5.400

**Investment required (unit currency – as specified in C0.4)**

19.500

**Payback period**

1-3 years

**Estimated lifetime of the initiative**

Ongoing

**Comment**

CTR - Reintegrate steam condensate in rinsing water

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Process optimization

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

7

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

1.283

**Investment required (unit currency – as specified in C0.4)**

**Payback period**

**Estimated lifetime of the initiative**

Ongoing

**Comment**

Conversion to LED lighting offices electrolysis and workshops

## C4.3c

**(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Internal price on carbon	Internal price on carbon: When investments in projects with fossil fuels but also process optimization or new facilities that reduce emissions are made, they are valued with a CO2 price forecast. The resulting savings are taken into account for investment calculations and are therefore a driver for investment decisions.
Compliance with regulatory requirements/standards	Compliance with regulatory requirements/standards: Investments in emissions reductions are done in alignment with EU-ETS reduction targets (binding target) to avoid the obligation for additional certificate purchase.
Internal incentives/recognition programs	Internal incentives/recognition programs: New ideas could be submitted via a company suggestion system and in case of implementation they are honoured with a bonus depending on the savings. Furthermore, certain managers have individual bonus pay-outs depending on climate related targets that also consist of emission reductions.

## C4.5

**(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?**

Yes

## C4.5a

**(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.**

### Level of aggregation

Group of products or services

### Taxonomy used to classify product(s) or service(s) as low-carbon

No taxonomy used to classify product(s) or service(s) as low carbon

### Type of product(s) or service(s)

Heating and cooling

Other, please specify

Industrial Heat

### Description of product(s) or service(s)

**Industrial Heat:**

Aurubis extracts industrial heat for the heat supply of Hamburg's HafenCity East district, and since 2021 for the Rothenburgsort district as well. This heat forms when sulfur dioxide is converted to sulfuric acid. Each year, up to 160 million kWh of heat can be extracted from the processes, equivalent to a more than 20,000 t reduction in CO<sub>2</sub> annually.

We save about half of this quantity on the plant premises since we use waste heat, not natural gas, to produce steam. The other half of the CO<sub>2</sub> reduction is due to the transmission of heat to the HafenCity East neighborhood, where conventional fuels would otherwise generate district heating. In 2021 the decision was made to expand the project: As of the 2024/25 heating period, about 20,000 more households in Hamburg will be supplied with CO<sub>2</sub>-free industrial heat from a sub process of Aurubis copper production.

The use of CO<sub>2</sub>-free industrial heat in the heating network will replace heat that is currently generated from fossil fuels. This can save up to 100,000 t of CO<sub>2</sub> emissions annually in Hamburg starting in 2025. The planned heat supply represents the biggest use of industrial heat in Germany

**Have you estimated the avoided emissions of this low-carbon product(s) or service(s)**

Yes

**Methodology used to calculate avoided emissions**

Other, please specify

Calculated avoided emissions based on emission factors for average in district heating

**Life cycle stage(s) covered for the low-carbon product(s) or services(s)**

Cradle-to-gate

**Functional unit used**

MWh - Heat

**Reference product/service or baseline scenario used**

Average emissions for district heating

**Life cycle stage(s) covered for the reference product/service or baseline scenario**

Cradle-to-gate

**Estimated avoided emissions (metric tons CO<sub>2</sub>e per functional unit) compared to reference product/service or baseline scenario**

20.000

**Explain your calculation of avoided emissions, including any assumptions**

We save about half of this quantity on the plant premises since we use waste heat, not natural gas, to produce steam. The other half of the CO<sub>2</sub> reduction is due to the

transmission of heat to the HafenCity East neighborhood, where conventional fuels would otherwise generate district heating.

**Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year**

0,02

## C5. Emissions methodology

### C5.1

**(C5.1) Is this your first year of reporting emissions data to CDP?**

No

### C5.1a

**(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?**

**Row 1**

**Has there been a structural change?**

Yes, a divestment

Yes, other structural change, please specify

The implementation of a new department "Sustainability"

**Name of organization(s) acquired, divested from, or merged with**

Zutphen site, Netherlands

**Details of structural change(s), including completion dates**

Zutphen (Netherlands) is no longer included in the KPIs as of August 1, 2022. Aurubis sold part of its Flat Rolled Products (FRP) segment sites to KME SE in the reporting year. The sale was approved by the relevant supervisory authorities in May and closed with effect from July 29, 2022.

To better reflect the Group's sustainability ambitions, an independent Sustainability division with increased staffing levels was created in January 2022. The new head of the Sustainability division reports directly to the CEO, who has overall responsibility for the topic of sustainability in the Aurubis Group. The Sustainability division serves as the interface between the divisions relevant for sustainability, and coordinates all of the associated processes within the Group. The Sustainability division is also responsible for continuously reviewing and developing the sustainability targets and for supporting the sites and divisions in the operational implementation of measures – including the Group-wide decarbonization strategy in particular. To this end, contacts have been appointed at the sites and in the relevant corporate functions.

## C5.1b

**(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?**

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology	For the reporting year 2022 , the calculation methodology has changed and significantly improved. We used a more accurate approach for the purchased concentrates, upstream and downstream transport. We applied mine specific emission factors for the main suppliers of copper concentrates and used specific factors for the different type of transport (e.g. bulk carriers and container ships). Furthermore, we applied a more reliable database (Sphera LCA for Experts) for all emission factors. As a result, the data quality and accuracy of the calculation increased. On the other hand, the comparison with previous years may not be plausible. This needs to be evaluated in more details and if needed the same methodology would be applied to previous years, especially the baseline year.

## C5.1c

**(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?**

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	Yes	Scope 3	We have recalculated the base year, but due to increasingly accurate data and changes in methodology, we may need to do another recalculation and re-sharpening of the base year.	Yes

## C5.2

**(C5.2) Provide your base year and base year emissions.**

### Scope 1

#### Base year start

Januar 1, 2018

#### Base year end

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

565.989

**Comment**

**Scope 2 (location-based)**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 2 (market-based)**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

987.513

**Comment**

**Scope 3 category 1: Purchased goods and services**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

5.120.869

**Comment**

**Scope 3 category 2: Capital goods**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

91.386

**Comment**

**Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

191.922

**Comment**

**Scope 3 category 4: Upstream transportation and distribution**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

347.169

**Comment**

**Scope 3 category 5: Waste generated in operations**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

5.181

**Comment**

### **Scope 3 category 6: Business travel**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

2.116

**Comment**

### **Scope 3 category 7: Employee commuting**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

11.650

**Comment**

### **Scope 3 category 8: Upstream leased assets**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

### **Scope 3 category 9: Downstream transportation and distribution**

---

**Base year start**

Januar 1, 2018

**Base year end**

Dezember 31, 2018

**Base year emissions (metric tons CO2e)**

731.749



**Comment**

**Scope 3 category 10: Processing of sold products**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 11: Use of sold products**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 12: End of life treatment of sold products**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 13: Downstream leased assets**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 3 category 14: Franchises**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 3 category 15: Investments**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 3: Other (upstream)**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**Comment**

**Scope 3: Other (downstream)**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

## **C5.3**

**(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

## **C6. Emissions data**

### **C6.1**

**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO<sub>2</sub>e?**

**Reporting year**

---

**Gross global Scope 1 emissions (metric tons CO<sub>2</sub>e)**

555.231

**Comment**

Scope 1 emissions are preliminary data pending external verification.

### **C6.2**

**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

**Row 1**

---

**Scope 2, location-based**

We are reporting a Scope 2, location-based figure

**Scope 2, market-based**

We are reporting a Scope 2, market-based figure

**Comment**

## C6.3

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO<sub>2</sub>e?**

### Reporting year

---

#### Scope 2, location-based

705.513

#### Scope 2, market-based (if applicable)

763.497

#### Comment

Scope 2 emissions are preliminary data pending external verification.

## C6.4

**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?**

No

## C6.5

**(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.**

### Purchased goods and services

---

#### Evaluation status

Relevant, calculated

#### Emissions in reporting year (metric tons CO<sub>2</sub>e)

3.431.900

#### Emissions calculation methodology

Supplier-specific method

Average data method

Spend-based method

#### Percentage of emissions calculated using data obtained from suppliers or value chain partners

33

#### Please explain

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. Main contributors of the Purchased Goods and Services Category are concentrates, cathodes, anodes & blisters as well as maintenance parts and auxiliaries (chemicals). The CO<sub>2</sub> equivalent emissions of the maintenance parts were calculated with a spend-

based approach. A total volume of purchased concentrate was provided, sourced from 46 different mines. For 30 of these mines supplier-specific emission factors were given, originated out of the Skarn database. The emission factor applied for the concentrate from the other 16 mines is based on the LCA Study from the ICA (International Copper Association) for the year 2021. As well Cathode and Blister copper are industry average LCA data from the same ICA study. The emission factors for the anodes and auxiliaries are from the Sphera LCA for Experts database and are the same emission factors used in the LCA Study for Aurubis AG.

## Capital goods

---

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

136.708

### Emissions calculation methodology

Spend-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. The emissions of this category were calculated using the spend based approach. For some locations, the line items were clustered using the provided ""Investment clusters"" and emission factors were mapped on this level. Where no information was given or it was not clear from the name of the line item, a conservative emission factor was chosen.

## Fuel-and-energy-related activities (not included in Scope 1 or 2)

---

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

169.972

### Emissions calculation methodology

Fuel-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. Emissions in category 3.3 were calculated based on physical data provided for Scope 1 and 2 by Aurubis AG für the calendar year 2022. The amount was converted where necessary

and mapped to a representative direct emission factor from Sphera LCA FE LCI database and SCCS Emission Factor Impact Libraries for the respective location or country. The indirect residual mix shares per country were derived from the Sphera emission factors. Where direct and indirect residual mix emission factors was not available for a specific country in the Sphera LCA FE database, the corresponding country-specific direct and indirect location-based emission factors were compared as a proxy to make an approximation for missing residual emission factors. A global average composition of renewable electricity for the market-based approach was used. As outlined in the GHGP Guidance, biogenic emissions from direct use of biogenic energy sources were calculated and documented separately. Two Aurubis-specific emission factors for indirect electricity emissions were calculated by Sphera to reflect realistic transmission and distribution losses as well as electricity fuel source from hard coal as discussed with the client.

## Upstream transportation and distribution

---

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

187.229

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. The transportation and distribution of upstream products was classified along 7 different transportation modes. Each transportation mode has a different emission factor (EF), according Sphera LCA for Experts Database. The EF produces the CO<sub>2</sub> equivalent per ton of product transported over one kilometre. The travelled distance of each product was calculated from the original port/land up to the final delivery in each location, resulting in mixes of sea and land distances. The tonnage (load) of each product was multiplied by the individual travelled distance to obtain a "ton\*km" value in its different transportation modes (ton\*km per ship, ton\*km per truck, etc.). The sum of these "ton\*km" values was then multiplied by the EF corresponding to its mode of transport, resulting in 7 different total emissions. For the water transportation it was assumed that all concentrates were transported in bulk carrier, while all other products were transported in container ships.

## Waste generated in operations

---

### Evaluation status

Not relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

16.326

**Emissions calculation methodology**

Waste-type-specific method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. With regard to data availability, the CO2e emissions (t CO2e) for waste were calculated with the physical unit approach. Company-wide waste data in metric tons were provided. Sphera LCA for Experts Emission Factors were mapped for each waste type as specific as possible. The GHG Protocol Scope 3 Standard applies the 'recycled content method' to account for emissions from recycling. This method allocates the recycling emissions to the user of the recycled material. Thus, the recycling emissions within these categories were set to zero.

**Business travel****Evaluation status**

Not relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

632

**Emissions calculation methodology**

Fuel-based method

Distance-based method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. 'Global raw Data of total km flown and flight length were provided. These data were broken down into the categories short, medium, long, and international flights, in order to use more granular emission factors. Data of rental cars for global activities provided a mixture of total (unspecified) fuel used, total km driven, partial data to the fuel-types of rental cars (diesel, gasoline) used as well as how far each type was driven. The primary data for fuel type of rental cars were used as a proxy to approximate the amount of fuel types of other rental car data where this was not provided.

**Employee commuting****Evaluation status**

Relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

3.953

**Emissions calculation methodology**

Average data method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**

0

**Please explain**

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. The number of fulltime employees broken down by country was provided. Country-specific commuting distances as well as commuting transportation modal splits were found for Germany, Belgium, USA, Spain, and Italy. For Finland and Bulgaria Eurostat Averages were used. For the remaining employees without a specific country of origin, company average commuting distance and modal split were used. Country-specific statistical sources were used to determine commuting distance per day in Germany, Belgium, USA, and Spain. For the remaining Countries the average daily commuting distance for Germany, Belgium, and Spain was used. Eurostat statistics were used for vehicle occupancy rates in Germany, Belgium, Italy and Spain. For vehicle occupancy in the USA, statistics from the U.S. Census Bureau, The American Community Survey, were used. For the remaining European countries a weighted average from the Eurstat survey was used. The Number of country-specific Working Days per Year was determined based on Sphera research and ranges between 218 (Germany) to 235 (USA) (Sick-Days ignored as a conservative approach). A global emission factor was used for estimated commuting emissions with vehicles. A Germany-specific emission factor for trains was used for estimated commuting distances with public transit.

**Upstream leased assets****Evaluation status**

Not relevant, explanation provided

**Please explain**

There are no significant upstream leased assets to be accounted for.

**Downstream transportation and distribution****Evaluation status**

Relevant, calculated

**Emissions in reporting year (metric tons CO2e)**

166.262

**Emissions calculation methodology**

Distance-based method

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**



0

**Please explain**

Calculation according to the Greenhouse Gas Protocol Scope 3 Standard. The transportation and distribution of downstream products was classified along 7 different transportation modes. Each transportation mode has a different emission factor (EF), according Sphera LCA for Experts Database. The EF provided the emitted CO<sub>2</sub> equivalent per ton of product per travelled kilometer. The travelled distance of each product was calculated from the original port/land up to the final delivery in each location, resulting in mixes of sea and land distances. The tonnage (load) of each product was multiplied by the individual travelled distance to obtain a "ton\*km" value in its different transportation modes (ton\*km per ship, ton\*km per truck, etc.). The sum of these "ton\*km" values was then multiplied by the EF corresponding to its mode of transport, resulting in 7 different total emissions. For the water transportation it was assumed that all products were transported in container ships.

**Processing of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Aurubis is a producer of base materials. Due to the nature of our products and the innumerable variants of processing and end-of-life treatment, it is impossible to make valid assumptions about the related emissions. It is therefore regarded as not relevant based on the criteria established by the Greenhouse Gas Protocol Standard.

**Use of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Aurubis is a producer of base materials that do not cause any direct use phase emissions.

**End of life treatment of sold products**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Aurubis is a producer of base materials. Due to the nature of our products and the innumerable variants of processing and end-of-life treatment, it is impossible to make valid assumptions about the related emissions. It is therefore regarded as not relevant based on the criteria established by the Greenhouse Gas Protocol Standard.

**Downstream leased assets**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

There are no downstream leased assets to be accounted for.

**Franchises**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

There are no franchises to be accounted for.

**Investments**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

There are no investments that are not already covered in the other scopes and categories.

**Other (upstream)**

---

**Evaluation status**

Not evaluated

**Please explain**

**Other (downstream)**

---

**Evaluation status**

Not evaluated

**Please explain**

## C6.7

**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

No

## C6.10

**(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO<sub>2</sub>e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

---

**Intensity figure**

0,000072

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

1.318.728

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

18.520.522.000

**Scope 2 figure used**

Market-based

**% change from previous year**

33,33

**Direction of change**

Decreased

**Reason(s) for change**

Change in renewable energy consumption

Other emissions reduction activities

Divestment

**Please explain**

The primary driver for emissions decrease is the purchase of GoOs and generation of on-site renewable energy. Other factors including other emission reduction initiatives mention in 4.3b and divestments e.g. of the Zutphen site in the Netherlands contribute a small percentage.

## C7. Emissions breakdowns

### C7.1

**(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

No

### C7.2

**(C7.2) Break down your total gross global Scope 1 emissions by country/area/region.**

Country/area/region	Scope 1 emissions (metric tons CO2e)
United States of America	32.668
EU28	522.564

## C7.3

**(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

By facility

### C7.3b

**(C7.3b) Break down your total gross global Scope 1 emissions by business facility.**

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Hamburg, Germany	158.410	53,521576	10,03331
Pirdop, Bulgaria	53.488	42,703374	24,177048
Lünen, Germany	154.333	51,60646	7,50755
Olen, Belgium	43.755	51,177305	4,879092
Stolberg, Germany	2.620	50,759048	6,234986
Buffalo, USA	32.668	42,948404	- 78,892807
Pori, Finland	23.263	61,462226	21,861253
Avellino, Italy	17.863	40,914388	14,790612
E.R.N., Hamburg, Germany	105	53,526343	10,029339
Retorte, Hamburg, Germany	302	49,49038	11,24973
Peute Baustoffe, Hamburg, Germany	8.099	53,51133	10,05728
Deutsche Giessdraht, Emmerich, Germany	16.286	51,82784	6,26501
Beerse, Belgium	34.077	51,31962	4,81783
Berango, Spain	9.962	43,36787	2,993

## C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

**(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.**

	Gross Scope 1 emissions, metric tons CO2e	Comment
Metals and mining production activities	555.231	

## C7.5

**(C7.5) Break down your total gross global Scope 2 emissions by country/area/region.**

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
United States of America	13.994	1.263
EU28	691.519	762.234

## C7.6

**(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.**

By facility

### C7.6b

**(C7.6b) Break down your total gross global Scope 2 emissions by business facility.**

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Hamburg, Germany	258.043	330.420
Pirdop, Bulgaria	257.191	266.896
Lünen, Germany	79.141	77.228
Olen, Belgium	45.425	45.425
Stolberg, Germany	13.046	12.730
Buffalo, USA	13.994	1.263
Pori, Finland	4.975	4.241
Avellino, Italy	6.102	6.102
E.R.N, Germany	82	82
Retorte, Germany	749	1.044
Peute Baustoffe, Germany	142	142
Emmerich, Germany	7.022	4.459
Beerse, Belgium	19.602	13.464
Berango, Spain	0	0

## C7.7

**(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?**

Yes

### C7.7a

**(C7.7a) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.**

---

**Subsidiary name**

Deutsche Giessdraht

**Primary activity**

Copper

**Select the unique identifier(s) you are able to provide for this subsidiary**

No unique identifier

**ISIN code – bond**

**ISIN code – equity**

**CUSIP number**

**Ticker symbol**

**SEDOL code**

**LEI number**

**Other unique identifier**

**Scope 1 emissions (metric tons CO<sub>2</sub>e)**

16.286

**Scope 2, location-based emissions (metric tons CO<sub>2</sub>e)**

7.022

**Scope 2, market-based emissions (metric tons CO<sub>2</sub>e)**

4.459

**Comment**

---

**Subsidiary name**

Peute Baustoff GmbH

**Primary activity**

Iron & steel

**Select the unique identifier(s) you are able to provide for this subsidiary**

No unique identifier

**ISIN code – bond**

**ISIN code – equity**

**CUSIP number**

**Ticker symbol**

**SEDOL code**

**LEI number**

**Other unique identifier**

**Scope 1 emissions (metric tons CO<sub>2</sub>e)**

8.099

**Scope 2, location-based emissions (metric tons CO<sub>2</sub>e)**

142

**Scope 2, market-based emissions (metric tons CO<sub>2</sub>e)**

142

**Comment**

---

**Subsidiary name**

RETORTE GmbH Selenium Chemicals & Metals

**Primary activity**

Other non-metallic minerals

**Select the unique identifier(s) you are able to provide for this subsidiary**

No unique identifier

**ISIN code – bond**

**ISIN code – equity**

**CUSIP number**

**Ticker symbol**

**SEDOL code**

**LEI number**

**Other unique identifier**

**Scope 1 emissions (metric tons CO<sub>2</sub>e)**

302

**Scope 2, location-based emissions (metric tons CO<sub>2</sub>e)**

749

**Scope 2, market-based emissions (metric tons CO<sub>2</sub>e)**

1.044

**Comment**

---

**Subsidiary name**

E.R.N. Elektro-Recycling Nord GmbH

**Primary activity**

Recycling

**Select the unique identifier(s) you are able to provide for this subsidiary**

No unique identifier

**ISIN code – bond**

**ISIN code – equity**

**CUSIP number**

**Ticker symbol**

**SEDOL code**



**LEI number**

**Other unique identifier**

**Scope 1 emissions (metric tons CO2e)**

105

**Scope 2, location-based emissions (metric tons CO2e)**

82

**Scope 2, market-based emissions (metric tons CO2e)**

82

**Comment**

## C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Metals and mining production activities	705.513	763.497	

### C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

### C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
--	--	----------------------------------	------------------------------	----------------------------

Change in renewable energy consumption	209.994	Decreased	13,4	Remaining scope 2 changes after accounting for divestment and change in output.
Other emissions reduction activities	2.738	Decreased	0,2	Emission Reduction Initiatives
Divestment	34.643	Decreased	2,2	This is the total emissions for the Zutphen facility in the Netherlands which has been sold and is not part of the reporting boundary in 2022. The total emissions for Zutphen are scope 1: 4809 and Scope 2 MB: 29834. As this facility has been sold this is a decrease. As a percentage of total scope 1 and 2 = $34643/1566620 = 2\%$ .
Acquisitions				
Mergers				
Change in output	688	Decreased	0,04	Change in output was calculate using the formula below: = % change in output x total change in scope 1 and 2.
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified	1.184,18	Decreased	0,08	Remaining scope 1 changes after accounting for divestment, change in output & reduction initiatives
Other				

## C7.9b

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Market-based

## C8. Energy

### C8.1

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 15% but less than or equal to 20%

### C8.2

**(C8.2) Select which energy-related activities your organization has undertaken.**

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

### C8.2a

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	1.661	1.761.903	1.763.564
Consumption of purchased or acquired electricity		391.491	1.380.783	1.772.274
Consumption of purchased or acquired heat		716	4.056	4.772

Consumption of purchased or acquired steam		0	33.092	33.092
Consumption of self-generated non-fuel renewable energy		13.903		13.903
Total energy consumption		407.771	3.179.833	3.587.604

## C-MM8.2a

**(C-MM8.2a) Report your organization's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.**

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	HHV (higher heating value)	1.763.564
Consumption of purchased or acquired electricity		1.772.274
Consumption of purchased or acquired heat		4.772
Consumption of purchased or acquired steam		33.092
Consumption of self-generated non-fuel renewable energy		13.902
Total energy consumption		3.587.604

## C8.2b

**(C8.2b) Select the applications of your organization's consumption of fuel.**

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

## C8.2c

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

## Sustainable biomass

---

### Heating value

Unable to confirm heating value

### Total fuel MWh consumed by the organization

0

### MWh fuel consumed for self-generation of electricity

0

### MWh fuel consumed for self-generation of heat

0

### MWh fuel consumed for self-generation of steam

0

### Comment

## Other biomass

---

### Heating value

Unable to confirm heating value

### Total fuel MWh consumed by the organization

1.661

### MWh fuel consumed for self-generation of electricity

0

### MWh fuel consumed for self-generation of heat

0

### MWh fuel consumed for self-generation of steam

0

### Comment

## Other renewable fuels (e.g. renewable hydrogen)

---

### Heating value

Unable to confirm heating value

### Total fuel MWh consumed by the organization

0

### MWh fuel consumed for self-generation of electricity

0

### MWh fuel consumed for self-generation of heat

0

**MWh fuel consumed for self-generation of steam**

0

**Comment**

## Coal

---

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

99.348

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

0

**Comment**

## Oil

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

335.464

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

**Comment**

## Gas

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

1.327.091

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

**MWh fuel consumed for self-generation of steam**

**Comment**

**Other non-renewable fuels (e.g. non-renewable hydrogen)**

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

**Comment**

**Total fuel**

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

1.763.564

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

**Comment**

## C8.2d

**(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.**

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	38.718	38.718	13.903	13.903
Heat	58.909	27.742	58.909	27.742
Steam	915.548	915.548	779.703	779.703
Cooling	0	0	0	0

## C-MM8.2d

**(C-MM8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed for metals and mining production activities.**

	Total gross generation (MWh) inside metals and mining sector boundary	Generation that is consumed (MWh) inside metals and mining sector boundary
Electricity	38.718	38.718
Heat	58.909	27.742
Steam	915.548	915.548
Cooling	0	0

## C8.2e

**(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.**

### Country/area of low-carbon energy consumption

United States of America

### Sourcing method

Default delivered electricity from the grid (e.g. standard product offering by an energy supplier) from a grid that is 95% or more low-carbon and where there is no mechanism for specifically allocating low-carbon electricity

### Energy carrier

Electricity



**Low-carbon technology type**

Hydropower (capacity unknown)

**Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)**

120.442

**Tracking instrument used**

Contract

**Country/area of origin (generation) of the low-carbon energy or energy attribute**

United States of America

**Are you able to report the commissioning or re-powering year of the energy generation facility?**

No

**Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)**

**Comment**

---

**Country/area of low-carbon energy consumption**

Spain

**Sourcing method**

Other, please specify

Green electricity products from an energy supplier (e.g. green tariffs)

**Energy carrier**

Electricity

**Low-carbon technology type**

Solar

**Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)**

11.699

**Tracking instrument used**

Contract

**Country/area of origin (generation) of the low-carbon energy or energy attribute**

Spain

**Are you able to report the commissioning or re-powering year of the energy generation facility?**

No

**Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)**

**Comment**

---

**Country/area of low-carbon energy consumption**

Germany

**Sourcing method**

Unbundled procurement of energy attribute certificates (EACs)

**Energy carrier**

Electricity

**Low-carbon technology type**

Wind

**Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)**

812.622

**Tracking instrument used**

GO

**Country/area of origin (generation) of the low-carbon energy or energy attribute**

Germany

**Are you able to report the commissioning or re-powering year of the energy generation facility?**

No

**Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)**

**Comment**

---

**Country/area of low-carbon energy consumption**

Bulgaria

**Sourcing method**

Other, please specify  
Installation of own PV plants

**Energy carrier**

Electricity

**Low-carbon technology type**

Solar

**Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)**

25.428

**Tracking instrument used**

Other, please specify  
Own generation

**Country/area of origin (generation) of the low-carbon energy or energy attribute**

Bulgaria

**Are you able to report the commissioning or re-powering year of the energy generation facility?**

Yes

**Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)**

2021

**Comment**

On-site solar plant commissioned by Aurubis to generate own electricity for Pirdop facilities in Bulgaria

## C8.2g

**(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.**

---

**Country/area**

United States of America

**Consumption of purchased electricity (MWh)**

132.354

**Consumption of self-generated electricity (MWh)**

0

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

132.354

**Country/area**

Germany

**Consumption of purchased electricity (MWh)**

815.466

**Consumption of self-generated electricity (MWh)**

13.286

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

518.783

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

1.347.535

**Country/area**

Belgium

**Consumption of purchased electricity (MWh)**

288.277

**Consumption of self-generated electricity (MWh)**

5

**Consumption of purchased heat, steam, and cooling (MWh)**

33.092

**Consumption of self-generated heat, steam, and cooling (MWh)**

10.063

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

331.437

**Country/area**

Bulgaria

**Consumption of purchased electricity (MWh)**

485.266

**Consumption of self-generated electricity (MWh)**

25.428

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

414.445

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

925.139

---

**Country/area**

Italy

**Consumption of purchased electricity (MWh)**

14.086

**Consumption of self-generated electricity (MWh)**

0

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

14.086

---

**Country/area**

Finland

**Consumption of purchased electricity (MWh)**

25.126

**Consumption of self-generated electricity (MWh)**

0

**Consumption of purchased heat, steam, and cooling (MWh)**

4.772

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

29.898

---

**Country/area**

Spain

**Consumption of purchased electricity (MWh)**

11.699

**Consumption of self-generated electricity (MWh)**

0

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

11.699

## C9. Additional metrics

### C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

### C-MM9.3b

(C-MM9.3b) Provide details on the commodities relevant to the metals production activities of your organization.

---

**Output product**

Copper

**Capacity (metric tons)**

1.111.000

**Production (metric tons)**

1.111.000

**Annual production in copper-equivalent units (thousand tons)**

1.111

**Scope 1 emissions (metric tons CO2e)**

544.853

**Scope 2 emissions (metric tons CO2e)**

644.006

**Scope 2 emissions approach**

Market-based

**Pricing methodology for-copper equivalent figure**

Production of copper is based on the total production of copper cathodes.

**Comment**

With our current production output we use nearly 100% of our capacity.

## C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

**(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?**

	Investment in low-carbon R&D	Comment
Row 1	Yes	<p>Research and development (R&amp;D) at Aurubis is clearly aligned with the multimetal strategy and includes both optimization of existing processes and the development of new processes and products. The key focus is on further developing metallurgical expertise to efficiently, sustainably process complex raw materials and recycling materials.</p> <p>Used in place of natural gas or other fossil reducing agents, hydrogen can reduce CO2 emissions in copper production in the future. R&amp;D is investigating the metallurgical use of hydrogen in Aurubis' processes. A flagship project is the large-scale trial on the use of hydrogen in the anode furnace of the Hamburg primary smelter. We have kicked of additional projects together with universities in order to investigate key metallurgical fundamentals regarding the behavior of hydrogen in complex metallurgy. The entire Aurubis Group's R&amp;D expenditures in fiscal year 2021/22 amounted to € 12 million.</p>

## C-MM9.6a

**(C-MM9.6a) Provide details of your organization's investments in low-carbon R&D for metals and mining production activities over the last three years.**

### Technology area

Other, please specify  
 Green metals

### Stage of development in the reporting year

Pilot demonstration

### Average % of total R&D investment over the last 3 years

20

**R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)**

### Average % of total R&D investment planned over the next 5 years

**Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan**

Aurubis performed tests using hydrogen as a reductant in the anode furnace to substitute natural gas.

Aurubis is also continuously collaborating with EU innovation and research projects to further investigate the potential offered by iron silicate in new applications and to develop less carbon-intensive construction materials. There are multiple projects in which Aurubis actively takes part in, e.g. DuRSAAM and SOCRATES, both financed by Horizon 2020.

## C10. Verification

### C10.1

**(C10.1) Indicate the verification/assurance status that applies to your reported emissions.**

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place



## C10.1a

**(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.**

---

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Underway but not complete for reporting year – previous statement of process attached

**Type of verification or assurance**

Third party verification/assurance underway

**Attach the statement**

 AUR\_21\_22\_CDP Letter\_AssuranceReport.pdf

**Page/ section reference**

Non- Financial Report 21/22  
Letter of Assurance Report 21/22

**Relevant standard**

ISAE3000

**Proportion of reported emissions verified (%)**

100

## C10.1b

**(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.**

---

**Scope 2 approach**

Scope 2 market-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Underway but not complete for reporting year – previous statement of process attached

**Type of verification or assurance**

Third party verification/assurance underway

**Attach the statement**

 Aurubis\_non Financial Report\_FY\_2021\_22 (4).pdf

**Page/ section reference**

Non-Financial Report 21/22  
p.87

**Relevant standard**

ISAE3000

**Proportion of reported emissions verified (%)**

100

## C10.1c

**(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.**

---

**Scope 3 category**

Scope 3: Purchased goods and services  
Scope 3: Capital goods  
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)  
Scope 3: Upstream transportation and distribution  
Scope 3: Waste generated in operations  
Scope 3: Business travel  
Scope 3: Employee commuting  
Scope 3: Downstream transportation and distribution

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Underway but not complete for reporting year – previous statement of process attached

**Type of verification or assurance**

Third party verification/ assurance underway

**Attach the statement**

 Aurubis\_Annual Report FY\_2021\_22.pdf

**Page/section reference**

Non-Financial Report 21/22  
p.87

**Relevant standard**

ISAE3000

**Proportion of reported emissions verified (%)**

100

## C10.2

**(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?**

Yes

### C10.2a

**(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?**

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C4. Targets and performance	Year on year change in emissions (Scope 1 and 2)	International Standard on Assurance Engagements (ISAE) 3000	Auditor checks and verifies sustainability related KPIs for the Non-financial declaration of Aurubis in accordance with the International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board.
C4. Targets and performance	Year on year change in emissions (Scope 3)	International Standard on Assurance Engagements (ISAE) 3000	Auditor checks and verifies sustainability related KPIs energy year for the Non-financial declaration of Aurubis in accordance with the International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board.
C8. Energy	Energy consumption	International Standard on Assurance Engagements (ISAE) 3000	Auditor checks and verifies sustainability related KPIs energy year for the Non-financial declaration of Aurubis in accordance with the International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board.
C6. Emissions data	Year on year change in	International Standard on	Auditor checks and verifies sustainability related KPIs energy year for the Non-financial

	emissions (Scope 1 and 2)	Assurance Engagements (ISAE) 3000	declaration of Aurubis in accordance with the International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board.
C6. Emissions data	Year on year change in emissions (Scope 3)	International Standard on Assurance Engagements (ISAE) 3000	Auditor checks and verifies sustainability related KPIs energy year for the Non-financial declaration of Aurubis in accordance with the International Standard on Assurance Engagements (ISAE) 3000: Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board.

## C11. Carbon pricing

### C11.1

**(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?**

Yes

#### C11.1a

**(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.**

EU ETS

#### C11.1b

**(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.**

##### EU ETS

**% of Scope 1 emissions covered by the ETS**

85,42

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

Januar 1, 2022

**Period end date**

Dezember 31, 2022

**Allowances allocated**

699.409

**Allowances purchased**

175.000

**Verified Scope 1 emissions in metric tons CO2e**

486.653

**Verified Scope 2 emissions in metric tons CO2e**

0

**Details of ownership**

Facilities we own and operate

**Comment**

## C11.1d

**(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

The EU ETS works on the 'cap and trade' principle. A cap is set on the total amount of certain greenhouse gases that can be emitted by the installations covered by the system. The cap is reduced over time so that total emissions fall. The cap is set in line with the Paris Agreement. By operating state-of-the-art, innovative plant technologies, Aurubis holds a leading position in climate and environmental protection in primary and secondary copper production. Today, continued high capital expenditure for environmental protection leads to relatively small improvements, as a leading global environmental standard has already been achieved and there are technological boundaries in some instances, as in the case of emission reduction.

To be able to comply with target of EU-ETS, Aurubis set Science-based targets and strives to reduce its Scope 1+2 emissions by 50% by 2030.

By implementing carbon emission reduction initiatives Aurubis complies with the EU-ETS and its target to reduce carbon emissions.

## C11.2

**(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?**

No

## C11.3

**(C11.3) Does your organization use an internal price on carbon?**

Yes

## C11.3a

**(C11.3a) Provide details of how your organization uses an internal price on carbon.**

---

### **Type of internal carbon price**

Implicit price

### **How the price is determined**

Alignment with the price of allowances under an Emissions Trading Scheme

### **Objective(s) for implementing this internal carbon price**

Change internal behavior

Drive energy efficiency

Drive low-carbon investment

Identify and seize low-carbon opportunities

Navigate GHG regulations

Other, please specify

For investments above €1 million we rely on the price of carbon to provide us with a traffic light indicator on the attractiveness of the investment.

### **Scope(s) covered**

Scope 1

Scope 2

### **Pricing approach used – spatial variance**

Uniform

### **Pricing approach used – temporal variance**

Static

For short term projections the current EEX price of carbon is used. €85 is the average price of one ton of carbon in Reporting Year 2023. We will be relying on tracking the EU ETS price as it progresses towards 2030.

### **Indicate how you expect the price to change over time**

### **Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO<sub>2</sub>e)**

85

### **Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO<sub>2</sub>e)**

85

### **Business decision-making processes this internal carbon price is applied to**

Other, please specify

For investments above €1 million we rely on the price of carbon to provide us with a traffic light indicator on the attractiveness of the investment.

**Mandatory enforcement of this internal carbon price within these business decision-making processes**

No

**Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan**

Aurubis is since 2013 part of the EU-ETS. The EU-ETS means direct and indirect carbon costs for Aurubis. With an implicit carbon price we are able to describe this cost burden today, but also in the future. All new projects with relevance to the energy supply and consumption are checked by Corporate Energy and Climate Affairs and/or the responsible energy departments on site. Within the assessment of the project, carbon costs are considered, either as direct costs or as indirect costs in the electricity price or both.

## C12. Engagement

### C12.1

**(C12.1) Do you engage with your value chain on climate-related issues?**

Yes, our suppliers

Yes, our customers/clients

Yes, other partners in the value chain

### C12.1a

**(C12.1a) Provide details of your climate-related supplier engagement strategy.**

**Type of engagement**

Other, please specify

Collaboration with suppliers through MoUs and joint initiatives (primarily Anglo American and Codeco)

**Details of engagement**

Other, please specify

Collect other climate related information at least annually from suppliers

**% of suppliers by number**

0

**% total procurement spend (direct and indirect)**

**% of supplier-related Scope 3 emissions as reported in C6.5**

**Rationale for the coverage of your engagement**

### **Impact of engagement, including measures of success**

The objective of the collaboration between Anglo American and Aurubis is to provide assurances for the way copper is mined, processed, transported and brought to market. Applying their combined expertise, Aurubis and Anglo American will also explore the opportunities of technology-driven traceability solutions to bring greater transparency to the entire production cycle, as well as areas of common interest in technology development.

Aurubis and Codelco, signed a memorandum of understanding (MoU). In support of the German-Chilean Raw Materials Partnership, the agreement includes cooperating and sharing insights with the aim of contributing to building a more sustainable, responsible, and growing copper industry (copper is essential to meet climate targets) and value chain. In this context, it identifies potential areas of cooperation with respect to smelter operations and circular economy projects in Chile.

Our commitment is clear and can be summed up in one product label: Tomorrow Metals by Aurubis.

This label is our promise to our customers and all our stakeholders that our entire product range is manufactured and delivered using only the highest ecological and social standards – today and in the future. This applies to our responsibility in the supply chain in particular. The comparative figures from our life cycle assessments also show how much better we are than the industry average.

### **Comment**

## **C12.1b**

**(C12.1b) Give details of your climate-related engagement strategy with your customers.**

---

### **Type of engagement & Details of engagement**

Education/information sharing

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

### **% of customers by number**

100

### **% of customer - related Scope 3 emissions as reported in C6.5**



**Please explain the rationale for selecting this group of customers and scope of engagement**

As part of broader customer outreach Aurubis engages with all customers on sustainability when educating them about Aurubis products. This engagement takes the form of educating customers of Aurubis’s own GHG footprint, its ESG performance (including supply chain, sourcing) and its climate targets and reduction measures.

**Impact of engagement, including measures of success**

**C12.1d**

**(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.**

Strategy for prioritizing engagement:

We see our employees as other partners in the value chain.

At the headquarters in Hamburg, we support alternatives to conventional individual transport of our employees with free, lockable bike boxes at two nearby train/subway stations to improve the connection between the plant premises and local public transport. During the reporting year, two StadtRAD (a bike rental/sharing system) stations started up near the plant premises with the same goal. Additional projects for sustainable mobility are in the planning stage. Increasing flexibility in electricity sourcing (target of 10 % by fiscal year 2022/23). As part of its mobility plan, Aurubis Belgium provides the option of bike leasing, including e-bikes and speed pedelecs. Employees with speed pedelecs can complete the mandatory safety training in sessions organized by the site.

**C12.2**

**(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization’s purchasing process?**

No, but we plan to introduce climate-related requirements within the next two years

**C12.3**

**(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?**

Row 1

**External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

- Yes, we engage directly with policy makers
- Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate
- Yes, we fund organizations or individuals whose activities could influence policy, law, or regulation that may impact the climate

**Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?**

Yes

**Attach commitment or position statement(s)**

Environmental Report 2023 (pages A-9, A-11-12, A 18-25, A 34-35, A-37)

 Aurubis Environmental Report 2023\_EN.pdf**Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan**

As an energy-intensive company, Aurubis feels committed to climate protection. We hence invest in energy-efficient plant technologies at all sites, carry out measures to save additional energy, and implement projects such as the use of industrial heat for heating purposes and the photovoltaic system in Pirdop. This long-term commitment has been successful: we have considerably reduced our CO<sub>2</sub> emissions per ton of copper. The carbon footprint of Aurubis' cathode copper is already 60 % below the global average of all copper smelters and refineries. We have also committed to the Science Based Targets Initiative setting science-based CO<sub>2</sub> reduction targets. We want to reduce absolute scope 1 and 2 GHG emissions 50% and the scope 3 GHG emissions by 24% per ton copper cathode by 2030 (2018 base year). Also we want to become carbon-neutral well before 2050.

At all of the relevant production sites, we have been successfully implementing CO<sub>2</sub> reduction projects through different energy efficiency measures for years. Furthermore, we are working on making our electricity uptake more flexible, so that we can react to fluctuating electricity availability and use more renewable energies. Shifting the electricity supply to renewable energies, utilizing hydrogen as a reducing agent in the copper process, and investing in new facilities: this is what the future holds. And we also provide solutions outside of our plants, solutions that save energy and thus CO<sub>2</sub> – such as the Industrial Heat project.

The individual production steps in the Aurubis value chain are complex and very energy-intensive. Accordingly, the effective and efficient use of energy is an issue of ecological and economic responsibility. The use of energy is the main source of CO<sub>2</sub> emissions in the Group. Taking the entire value chain into consideration, over half of the CO<sub>2</sub> emissions are upstream and downstream. Most of the Scope 3 emissions originate from the activities of the mining companies from which we source ore concentrates.

The Life Cycle Assessment shows, that the CO<sub>2</sub> footprint of our copper cathode is 60% below the average world wide. Also our silver products are 50% below world average, and 55% lower for gold. The values for tin are even at 76 % below the global average of the International Tin Association. In 2022 we also screened the effects of climate change on our own business activities based on the Task Force on Climate-related Financial Disclosure. (see Sustainability Report 2023, p. 92)

## C12.3a

**(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?**

---

**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

European Emission Trading System (EU-ETS)

**Category of policy, law, or regulation that may impact the climate**

Carbon pricing, taxes, and subsidies

**Focus area of policy, law, or regulation that may impact the climate**

Other, please specify  
(Cap and trade)

**Policy, law, or regulation geographic coverage**

Regional

**Country/area/region the policy, law, or regulation applies to**

Other, please specify  
Europe

**Your organization's position on the policy, law, or regulation**

Support with minor exceptions

**Description of engagement with policy makers**

Policy Papers  
Association Work  
Contact with decision makers

**Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation**

Aurubis is active in a sector that is considered to be at Carbon-Leakage risk. Aurubis therefore engages to ensure current level of Carbon-Leakage protection.

Aurubis engages as well to ensure that there is no double cost burden due to EU-ETS and other climate related policies.

Aurubis supports flexibility between technical solutions, market opportunities and the current state of research and technology.

Aurubis also strongly supports increase of incentives for frontrunner companies and the application of innovative technologies.

Aurubis emphasizes that a drastic reduction in free allocation of ETS certificates with simultaneously sharply rising CO2 prices will tie up a lot of capital in the future. This would make investments in low-carbon technologies more difficult.

**Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

**Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?**

---

**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

Circular Economy Action Plan

**Category of policy, law, or regulation that may impact the climate**

Climate change adaptation

**Focus area of policy, law, or regulation that may impact the climate**

Other, please specify

Circular economy

**Policy, law, or regulation geographic coverage**

Regional

**Country/area/region the policy, law, or regulation applies to**

Europe

**Your organization's position on the policy, law, or regulation**

Support with minor exceptions

**Description of engagement with policy makers**

Policy Papers

Association Work

Contact with decision makers

**Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation**

Aurubis supports the idea of strengthening eco-design measures towards more Circular Economy and the request to Circular Europe Network to develop standards for product recyclability. - Aurubis asks for measures to stop illegal shipments of electrical waste to non-EU countries. - In the framework of the circular economy, some call for banning or substituting hazardous materials to reduce their presence in material loops and recycled materials. In the context of metals recycling however it is often complex or even impossible to substitute them as metals have unique properties which support given functionalities. As new metals cannot be invented substituting a metal is often done by using another metal. In this respect Aurubis supports the Action Plan which proposes the analysis of policy options to address the interface between chemicals, products and waste legislation. - Applying a strictly hazard-based REACH authorization process for substances commonly present in metal production/recycling could then lead to a

decrease in the amount of waste recycled in Europe and would most likely trigger disposal and landfill or (illegal) shipment of valuable materials outside the EU. - Aurubis supports the new definition of “final recycling process” which comprises all steps of the recycling value chain as well as we support the proposal for EU standards of material efficient recycling of electronic waste. - Aurubis welcomes the general requirements for Extended Producer Responsibility (EPR) as a step towards more transparency and efficiency of the EPR schemes especially on household electronic goods. - Aurubis is a strong advocate to use industrial synergies in Circular Economy to accelerate decarbonization across different energy-intensive sectors. This includes the application of iron silicate as a substitute material and reductant in the construction which would help decarbonize and increase circularity in this sector.

**Have you evaluated whether your organization’s engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

**Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?**

---

**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

CBAM

**Category of policy, law, or regulation that may impact the climate**

Carbon pricing, taxes, and subsidies

**Focus area of policy, law, or regulation that may impact the climate**

Other, please specify

Carbon Border Adjustment Mechanism

**Policy, law, or regulation geographic coverage**

Regional

**Country/area/region the policy, law, or regulation applies to**

Europe

**Your organization’s position on the policy, law, or regulation**

Oppose

**Description of engagement with policy makers**

Policy Papers

Association Work

Contact with decision makers

**Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation**

CBAM is not a solution for the copper sector. Copper is traded internationally as a commodity on the stock exchange. As a price taker, EU copper producers cannot therefore pass on direct and indirect emission costs to their customers. However, if copper were also included in the CBAM, the copper producers would have to bear the full CO2 costs. In contrast, global producers only pay the CO2 costs for the proportion of their products that are imported into the EU.

In addition, copper is not usually imported as a pure metal, but mainly used in products. Due to the large number of individual parts of these products (e.g. electronic devices), which are produced in global value chains, it is not comprehensible which CO2 footprint the contained copper contains.

**Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

**Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?**

---

**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

Taxonomy

**Category of policy, law, or regulation that may impact the climate**

Climate change mitigation

**Focus area of policy, law, or regulation that may impact the climate**

Other, please specify  
Sustainable Finance

**Policy, law, or regulation geographic coverage**

Regional

**Country/area/region the policy, law, or regulation applies to**

Europe

**Your organization's position on the policy, law, or regulation**

Support with minor exceptions

**Description of engagement with policy makers**

Policy Papers  
Association Work  
Contact with decision makers

### **Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation**

Copper is not included as Taxonomy-eligible yet. Due to the heterogeneity of the copper sector, no product benchmarks were established under the ETS. We have fallback approach. Since there are no ETS product benchmarks, it is more difficult to establish criteria for copper. Thus, there is unequal treatment of sectors with ETS fallback benchmarks compared to sectors with ETS product benchmarks. Currently the EU-Commission is working on technical screening criteria to include sectors not covered. The legislation already obliges companies to report whether they are taxonomy eligible or non-eligible. This creates a problem, as for the time being reporting as non-eligible (even if under assessment) might send wrong signals to the investors. Therefore, the creation of a separate reporting category "under assessment" is essential. Additionally, it will be crucial to define criteria for the substantial contribution of copper production to climate mitigation and the other environmental objectives, based on objective metrics and include copper in the list of sustainable economic activities.

With the release of the criteria for the first two environmental objectives, at the date of publication of this report the taxonomy still omits many activities. The background to this is that the current version of the taxonomy only covers the activities of companies in sectors that account for more than 90% of direct greenhouse gas emissions in Europe. Given the current status of the EUT, it would be a misinterpretation of the EUT to regard economic activities that are non-eligible for the taxonomy per se as non-sustainable in the overall context. Possible future incorrect interpretations can be increasingly countered by expanding the taxonomy to include the other four environmental goals, including the addition of further economic activities.

### **Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

### **Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?**

---

#### **Specify the policy, law, or regulation on which your organization is engaging with policy makers**

Carbon Contracts for Difference (CCfD)

#### **Category of policy, law, or regulation that may impact the climate**

Climate change mitigation

#### **Focus area of policy, law, or regulation that may impact the climate**

Other, please specify

Funding for Climate Change Investments

#### **Policy, law, or regulation geographic coverage**

National

**Country/area/region the policy, law, or regulation applies to**

Germany

**Your organization's position on the policy, law, or regulation**

Support with no exceptions

**Description of engagement with policy makers**

Policy Papers,  
Association Work,  
Contact with decision makers

**Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation**

**Have you evaluated whether your organization's engagement on this policy, law, or regulation is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

**Please explain whether this policy, law or regulation is central to the achievement of your climate transition plan and, if so, how?**

## C12.3b

**(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.**

---

**Trade association**

Eurometaux

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

Yes, we publicly promoted their current position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

Support of the EU Climate protection goals. We encourage them with this.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**



**Describe the aim of your organization's funding**

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

---

**Trade association**

European Chemical Industry Council (CEFIC)

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

Yes, we publicly promoted their current position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

Support of the EU Climate protection goals.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**

**Describe the aim of your organization's funding**

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

---

**Trade association**

Federation of German Industries (BDI)

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

Yes, we publicly promoted their current position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

Support of the EU Climate protection goals.

Support of the EU and national climate protection goals.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**

**Describe the aim of your organization's funding**

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

---

**Trade association**

German Chemical Industry Association (VCI)

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

Yes, we publicly promoted their current position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

Support of the EU and national climate protection goals.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**

**Describe the aim of your organization's funding**

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

---

**Trade association**

Other, please specify

BDE Bundesverband der Deutschen Entsorgungs-, Wasser- und Kreislaufwirtschaft e. V.

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

Yes, we publicly promoted their current position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

Support of the EU and national climate protection goals.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**

**Describe the aim of your organization's funding**

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

---

**Trade association**

Other, please specify

International Copper Association (ICA): Decarbonization roadmap

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

Yes, we publicly promoted their current position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

Support of the EU and national climate protection goals.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**

**Describe the aim of your organization's funding**

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

## C12.3c

**(C12.3c) Provide details of the funding you provided to other organizations or individuals in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.**

---

**Type of organization or individual**

Trust or foundation

**State the organization or individual to which you provided funding**

Stiftung Klimawirtschaft

**Funding figure your organization provided to this organization or individual in the reporting year (currency as selected in C0.4)**

50.000

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

Advocacy on behalf of its customers/ supporters towards mainly national decision makers

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

## C12.4

**(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

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**Publication**


In mainstream reports, incorporating the TCFD recommendations

**Status**

Complete

**Attach the document**

 Aurubis\_Annual Report FY\_2021\_22.pdf

 Aurubis\_Sustainability\_Report\_2023.pdf

### **Page/Section reference**

Annual report: p. 40-45 Empowering Sustainability p. 94-154 Combined Management Report

Annual report: p. 53-89 Sustainability

Annual report: p. 133-144 Risk and opportunity report

TCFD report : p. 92-96 of the Sustainability Report

### **Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

### **Comment**


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### **Publication**

In voluntary communications

### **Status**

### **Attach the document**

 Aurubis\_Sustainability\_Report\_2023.pdf

### **Page/Section reference**

A-08 Environmental Protection in Aurubis Group

A-21 Energy and Climate Protection

A-27 Risks and Opportunities

A-38 Environmental protection – Facts and figures

### **Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

### **Comment**


**Publication**

In voluntary sustainability report

**Status**

Complete

**Attach the document**

 Aurubis\_Sustainability\_Report\_2023.pdf

**Page/Section reference**

**Content elements**

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Emission targets

**Comment**

## C12.5

**(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.**

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	Science Based Targets Network (SBTN) Task Force on Climate-related Financial Disclosures (TCFD) UN Global Compact	

## C15. Biodiversity

### C15.1

**(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?**

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity
Row 1	Yes, board-level oversight	<p>Within the executive board, the Chief Operating Officers (COOs) have the responsibility to support all large sites in the Aurubis Group. Hence, they are taking on the mentoring for the composition of the investment budgets which contains all Capital Expenditure volumes of the plants for the following four financial years. This budget then also includes environmental projects which can be also biodiversity related. Several times throughout a fiscal year the COOs host the Group Operating Meeting (GOM) with all major sites, Corporate Environmental Protection and – if needed - Sustainability and Corporate Energy &amp; Climate Affairs among others to participate. The purpose of the GOM is to present and review major projects - especially if they are important and relevant for other sites - and to serve as an information exchange on site-relevant topics, both of which also incl. environmental and biodiversity-related issues.</p> <p>In the resort of the Chief Operating Officer (COO), the Head of Corporate Environmental Protection is responsible for the strategic positioning of environmental protection in the Group. Local environmental officers oversee the environmental protection duties at the individual sites following national environmental legislation with technical supervision of Corporate Environmental Protection management.</p>

## C15.2

**(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?**

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	<p>Other, please specify</p> <p>Environmental Protection Target: Improving nature conservation at the production sites</p>	

## C15.3

**(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?**

### Impacts on biodiversity

---

**Indicate whether your organization undertakes this type of assessment**

Yes

**Value chain stage(s) covered**

Upstream

**Tools and methods to assess impacts and/or dependencies on biodiversity**

No biodiversity assessment tools/methods used

### Dependencies on biodiversity

---

**Indicate whether your organization undertakes this type of assessment**

No, but we plan to within the next two years

## C15.4

**(C15.4) Does your organization have activities located in or near to biodiversity-sensitive areas in the reporting year?**

Yes

### C15.4a

**(C15.4a) Provide details of your organization's activities in the reporting year located in or near to biodiversity -sensitive areas.**

---

**Classification of biodiversity -sensitive area**

Natura 2000 network of protected areas

**Country/area**

Germany

**Name of the biodiversity-sensitive area**

Hamburger Unterelbe

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site



**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Yes, but mitigation measures have been implemented

**Mitigation measures implemented within the selected area**

Operational controls

Abatement controls

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

In the year under review, we completed a pilot project at the Hamburg site for the greening of facades on the plant premises to promote biodiversity and improve the ambient air. We also participate in the "UnternehmensNatur" (Corporate Nature) initiative. This cooperative project involving the Chamber of Commerce, the Association of North German Housing Companies, NABU and Hamburg's environmental authority supports companies in creating habitats for animals and plants by designing and maintaining their company grounds as naturally as possible.

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**Classification of biodiversity -sensitive area**

Other biodiversity sensitive area, please specify

Nature Reserve and EU Bird Sanctuary

**Country/area**

Germany

**Name of the biodiversity-sensitive area**

Holzhafen

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Yes, but mitigation measures have been implemented

**Mitigation measures implemented within the selected area**

Operational controls

Abatement controls

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

In the year under review, we completed a pilot project at the Hamburg site for the greening of facades on the plant premises to promote biodiversity and improve the ambient air. We also participate in the “UnternehmensNatur” (Corporate Nature) initiative. This cooperative project involving the Chamber of Commerce, the Association of North German Housing Companies, NABU and Hamburg's environmental authority supports companies in creating habitats for animals and plants by designing and maintaining their company grounds as naturally as possible.

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**Classification of biodiversity -sensitive area**

Other biodiversity sensitive area, please specify  
Nature Reserve and EU Bird Sanctuary

**Country/area**

Germany

**Name of the biodiversity-sensitive area**

Heuckenlock/ Schweenssand

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Yes, but mitigation measures have been implemented

**Mitigation measures implemented within the selected area**

Operational controls  
Abatement controls

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

In the year under review, we completed a pilot project at the Hamburg site for the greening of facades on the plant premises to promote biodiversity and improve the ambient air. We also participate in the “UnternehmensNatur” (Corporate Nature) initiative. This cooperative project involving the Chamber of Commerce, the Association of North German Housing Companies, NABU and Hamburg's environmental authority supports companies in creating habitats for animals and plants by designing and maintaining their company grounds as naturally as possible.

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**Classification of biodiversity -sensitive area**

Natura 2000 network of protected areas

**Country/area**

Bulgaria

**Name of the biodiversity-sensitive area**

Pirdop

- Tsentralen Balkan – bufer (nature conservation area)
- Tsentralen Balkan – bufer (bird sanctuary)
- Sredna gora (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).

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Yes, but mitigation measures have been implemented

**Mitigation measures implemented within the selected area**

- Operational controls
- Abatement controls

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

- At the Pirdop site, we are restoring disused landfill areas on the premises.

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**Classification of biodiversity -sensitive area**

Natura 2000 network of protected areas

**Country/area**

Germany

**Name of the biodiversity-sensitive area**

- Lünen (DE)
- In den Kämpfen, Im Mersche, and Langerner Hufeisen
- Lippeaue
- Lippe-Unna, Hamm, Soest, Warendorf

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Yes, but mitigation measures have been implemented

**Mitigation measures implemented within the selected area**

Operational controls

Abatement controls

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

Aurubis AG Lünen's plant premises are adjacent to agricultural land and are just a few kilometers from several Natura 2000 nature conservation areas (In den Kämpen, Cappenberger Wälder, and Lippeaue). So it is particularly important to protect and promote biodiversity here, which is why we have commissioned extensive expert reports on possible impacts on biodiversity. Furthermore, we actively implement measures in smaller projects at the plant and in the neighborhood to promote and preserve biodiversity, such as through the diverse greening of unused areas around the plant (noise protection embankment, old landfills) and installing nesting sites on buildings and chimneys.

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**Classification of biodiversity -sensitive area**

Natura 2000 network of protected areas

**Country/area**

Belgium

**Name of the biodiversity-sensitive area**

Olen

Valleigebied van de Kleine Nete met brongebieden, moerassen en heiden

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Not assessed

### **Mitigation measures implemented within the selected area**

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

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#### **Classification of biodiversity -sensitive area**

Other biodiversity sensitive area, please specify

VEN: Vlaams Ecologisch Netwerk (Flemisch Ecological Network)

#### **Country/area**

Belgium

#### **Name of the biodiversity-sensitive area**

Olen

- De Vallei van de Kleine Nete Benedenstroom

- Het Olenbroek en Langendonk

#### **Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Not assessed

### **Mitigation measures implemented within the selected area**

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

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#### **Classification of biodiversity -sensitive area**

Natura 2000 network of protected areas

#### **Country/area**

Belgium

#### **Name of the biodiversity-sensitive area**

- Beerse
- Eksterheide
  - Duivelskuil
  - De Pomp-Poelberg

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Not assessed

**Mitigation measures implemented within the selected area**

**Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented**

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**Classification of biodiversity -sensitive area**

Natura 2000 network of protected areas

**Country/area**

Spain

**Name of the biodiversity-sensitive area**

- Berango
- Ría de Mundaka-Cabo de Ogoño, Marine Area
  - Ría del Barbadún

**Proximity**

Up to 5 km

**Briefly describe your organization's activities in the reporting year located in or near to the selected area**

Major production site

**Indicate whether any of your organization's activities located in or near to the selected area could negatively affect biodiversity**

Not assessed

### Mitigation measures implemented within the selected area

Explain how your organization's activities located in or near to the selected area could negatively affect biodiversity, how this was assessed, and describe any mitigation measures implemented

## C15.5

**(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?**

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity-related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection


## C15.6

**(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?**

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	

## C15.7

**(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Risks and opportunities Other, please specify Projects on biodiversity	Environmental report 2022, page 30  1

 12022\_Environmental\_Report\_EN.pdf

## C16. Signoff

### C-FI

**(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.**

### C16.1

**(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

	Job title	Corresponding job category
Row 1	Chief Executive Officer (CEO)	Chief Executive Officer (CEO)

## SC. Supply chain module

### SC0.0

**(SC0.0) If you would like to do so, please provide a separate introduction to this module.**

Aurubis AG is a company in the basic materials industry that operates worldwide. Aurubis AG is the parent company of the Aurubis Group and is based in Hamburg, with production sites in Hamburg and Lünen. As an integrated group, Aurubis processes complex metal concentrates, scrap metals, organic and inorganic metalbearing recycling raw materials, and industrial residues into metals of the highest purity.

In addition to the main metal, copper, Aurubis' metal portfolio also includes gold, silver, lead, nickel, tin, zinc, minor metals such as tellurium and selenium, and platinum group metals. Sulfuric acid, iron silicate, and synthetic minerals round off the product portfolio. In the course of our production processes, we convert copper concentrates and recycling materials into copper cathodes. This is the standardized product format that is traded on the international metal exchanges. We produce more than 1 million t of copper cathodes per year. Copper cathodes are the starting product for fabricating additional copper products, but they can also be sold directly. Our product portfolio mainly comprises standard and specialty products made of copper and copper alloys. When it comes to processing, we have manufacturing capabilities for continuous cast copper wire rod, continuous cast shapes, rolled products, strip, specialty wire, and profiles. Additional products result from processing the elements that accompany copper in the feed materials, elements that are in some cases purchased on purpose as part of our multimetal approach. In particular, these include different metals such as gold, silver, lead, nickel, tin, zinc, minor metals like tellurium and selenium, and platinum group metals. We also produce iron silicate and synthetic minerals. Sulfuric acid (> 2 million t p.a.) 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 company’s headquarters, which is also home to one of our two primary smelters, is located in Hamburg, Germany. Most of our sites are located in Europe, with larger production centres 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 also has a production site in the US, and a global sales and service network. The company purchases the necessary feed materials, as it doesn’t own any mines or stakes in mines. 6,913 employees worked for the Aurubis Group worldwide as of September 30, 2022. Of this number, 92% worked at the European plants and 8% worked in the USA. The sales markets for our products are varied and international. Aurubis’ direct 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 energies, construction, and automotive sectors.

## SC0.1

**(SC0.1) What is your company’s annual revenue for the stated reporting period?**

	Annual Revenue
Row 1	18.521.000

## SC1.1

**(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.**

## SC1.2

**(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).**

## SC1.3

**(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?**

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	The establishment of a common approach to enable the private sector to assess, display and benchmark the environmental performance of products, services and companies based on the comprehensive assessment of environmental Impacts over the life-cycle.

## SC1.4

### **(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

Yes

## SC1.4a

### **(SC1.4a) Describe how you plan to develop your capabilities.**

Aurubis continues its involvement in the Environmental Footprint project. With the development of the environmental footprint, the EU Commission wants to create a consistent method for calculating the environmental performance of products and organizations throughout Europe, assess them and facilitate comparisons. In 2013 the Commission published the Environmental Footprint (EF) methodology to measure and communicate the life cycle environmental performance of products (Product Environmental Footprint, PEF) and organizations (Organisational Environmental Footprint, OEF), and launched a pilot phase. Aurubis was active in both areas. Aurubis took a leading role in the OEF pilot on “Copper Production”, which was coordinated by the research center of the EU Commission (Joint Research Center, JRC). For the PEF pilot phase, Aurubis worked together with the European organization Eurometaux, the European Copper Institute and other companies from the non-ferrous metals and steel industries on the pilot project “Metal Sheet Metal for Various Applications”. In 2017 we finalised the OEF sector-specific rules for copper production and tested how to communicate Environmental Footprint information to stakeholders and the effectiveness of the communication vehicle. The OEF sector rules for copper production have been successfully approved by the Steering Committee on 15 February 2018. The Copper OEF develops a harmonized method to measure and communicate the life cycle environmental performance of copper producing companies, and well demonstrates the positive aspects of copper metallurgy and multi-metal recycling. The PEF category rules for metal sheet have been also finalised and were approved in November 2018. The Environmental Footprint pilot phase ended in April 2018 and a transition phase is now established until possible adoption of policies implementing the Product Environmental Footprint (PEF) and Organisation Environmental Footprint (OEF) methods.

Aurubis will continue to contribute to the further developments of the EF methodology during the transition phase. As part of its commitment to sustainable Development, the copper industry is committed to providing data and information to enable users of copper to evaluate its impacts and benefits across the life cycle, from raw material extraction to end-of life recycling. Aurubis has been involved for many years in life cycle assessment of copper cathode and contributed to the generation of cradle-to-gate life cycle inventory (LCI) that evaluates the environmental impacts associated with global copper cathode production ( in cooperation with the International Copper Association).The latest update of the environmental profile of global copper cathode has been released by the International Copper Association at the beginning of 2018. The LCA for the Aurubis Copper Cathode was also published in that year. An update of this LCA was published in 2022. Aurubis has also performed life cycle assessment studies with the purpose to conduct Environmental product declarations (EPD) on the basis of EN 15804 and ISO 14025 for copper and copper alloys sheets used for architectural applications. The Environmental Product Declarations (EPD) for six Aurubis Nordic products of copper/ copper

alloys sheets are published by the Institut Bauen und Umwelt e.V.. A challenge remains: the yearly update of the database.

## SC2.1

**(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.**

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### Requesting member

### Group type of project

New product or service

### Type of project

Other, please specify

Processing of black mass from lithium-ion batteries with the goal of closing the cycle of valuable metals for electric vehicles. Pilot plant Hamburg

### Emissions targeted

Actions that would reduce our own operational emissions (our scope 1 & 2)

### Estimated timeframe for carbon reductions to be realized

Other, please specify

SBTI targets ICA decarbonization roadmap Copper Mark (also engage to reduce Co2 emissions along the value chain) Collaboration with other companies both upstream and downstream to enable more sustainable copper value chain

### Estimated lifetime CO2e savings

### Estimated payback

### Details of proposal

## SC2.2

**(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

No

## SC4.1

**(SC4.1) Are you providing product level data for your organization's goods or services?**

No, I am not providing data

## Submit your response

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	<b>I understand that my response will be shared with all requesting stakeholders</b>	<b>Response permission</b>
Please select your submission options	Yes	Public

**Please confirm below**

I have read and accept the applicable Terms